TO:	Maureen Gardiner, RTE; City of San Diego Emanuel Alforja, TE; City of San Diego
FROM:	Phuong Nguyen, TE; CR Associates Joseph Perez, EIT; CR Associates
DATE:	September 19, 2025
RE:	College Area Community Plan Update – Mobility Technical Report

This technical memorandum documents the mobility technical analysis conducted for the College Area Community Plan Update (College Area CPU). The analysis results presented herein reflect the College Area CPU Mobility Element networks and the utilize transportation modeling conducted for the City of San Diego Blueprint SD Initiative (Blueprint SD).

Introduction

The mobility analysis for the College Area CPU incorporates the proposed changes within the mobility element network, which includes updates to the active transportation network, transit network, and roadway network. **Figure 1** displays the planned bicycle network by classification, **Figure 2** displays the planned pedestrian route types, and **Figure 3** displays the recommended roadway network classifications within the College Area CPU. Intersection geometrics were modified to reflect the envisioned College Area CPU network changes and are displayed in **Figure 4.**

The City of San Diego adopted the General Plan amendment under the Blueprint San Diego Initiative (Blueprint SD), in July 2024. Blueprint SD updated the City's long-range planning framework to promote infill development near high-quality transit, reduce vehicle miles traveled (VMT), and support the City's climate, housing, and mobility goals by identifying Climate Smart Village Areas for future growth. As part of this process, the City developed a transportation model, based on the San Diego Association of Governments (SANDAG) Activity Based Model 2+ (ABM2+) Regional transportation model in order to reflect Blueprint SD's land use assumptions related to population and employment growth in Climate Smart Village Areas. It should be noted that other than Hillcrest FPA and University CPU which were processed with the Blueprint SD initiative, Blueprint SD did not propose additional zoning changes which would occur with subsequent community plan updates, such as the College Area CPU. For additional information on the transportation modeling for Blueprint SD, see Appendix J of the Blueprint SD Programmatic Environmental Impact Report (Blueprint SD PEIR).

Traffic volumes for the College Area CPU were derived from the Blueprint SD transportation model utilizing the City of San Diego Mobility Adjustment Tool. An analysis conducted by CR Associates found that the Blueprint SD model forecasts citywide VMT[1] approximately 10.7% higher than the 2021 RTP. However, this increase in VMT is modest relative to the projected build-out capacity of population (+21.3%) and employment (+21.2%), which suggests that Blueprint SD would achieve improved transportation efficiency, resulting in lower VMT per capita due to increased density and better access to transit and active modes. To ensure local analyses remain consistent with regional trends and do not overstate future roadway demands, traffic volumes derived from the Blueprint SD model were conservatively reduced by 10.7%.

[1] The VMT was calculated using the sum of link method. It works by summing the product of the traffic volume and the length of each road segment (link) in a network. $VMT=\sum(Volume_i \times Length_i)$

Figure 1: Planned Bicycle Facilities

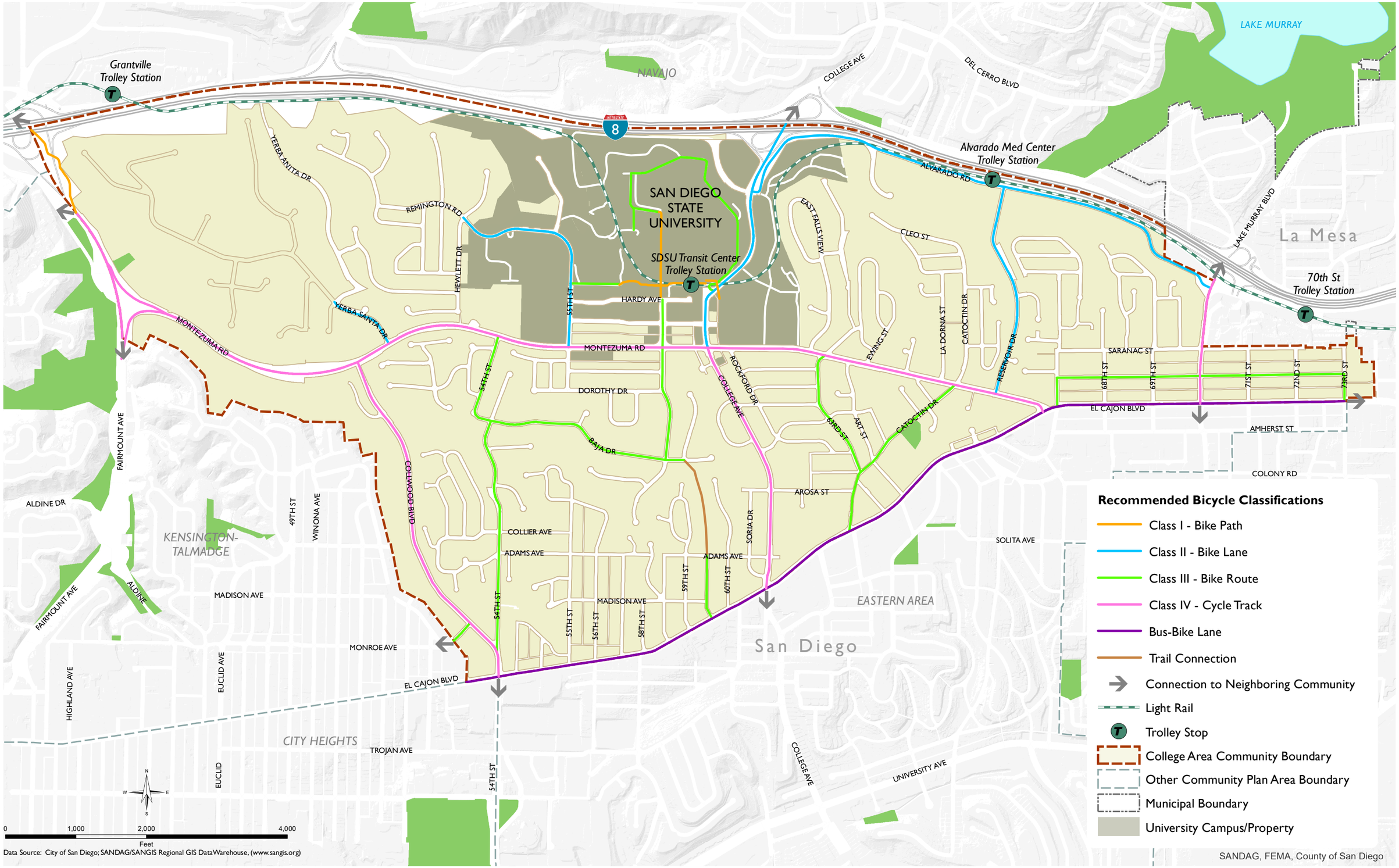
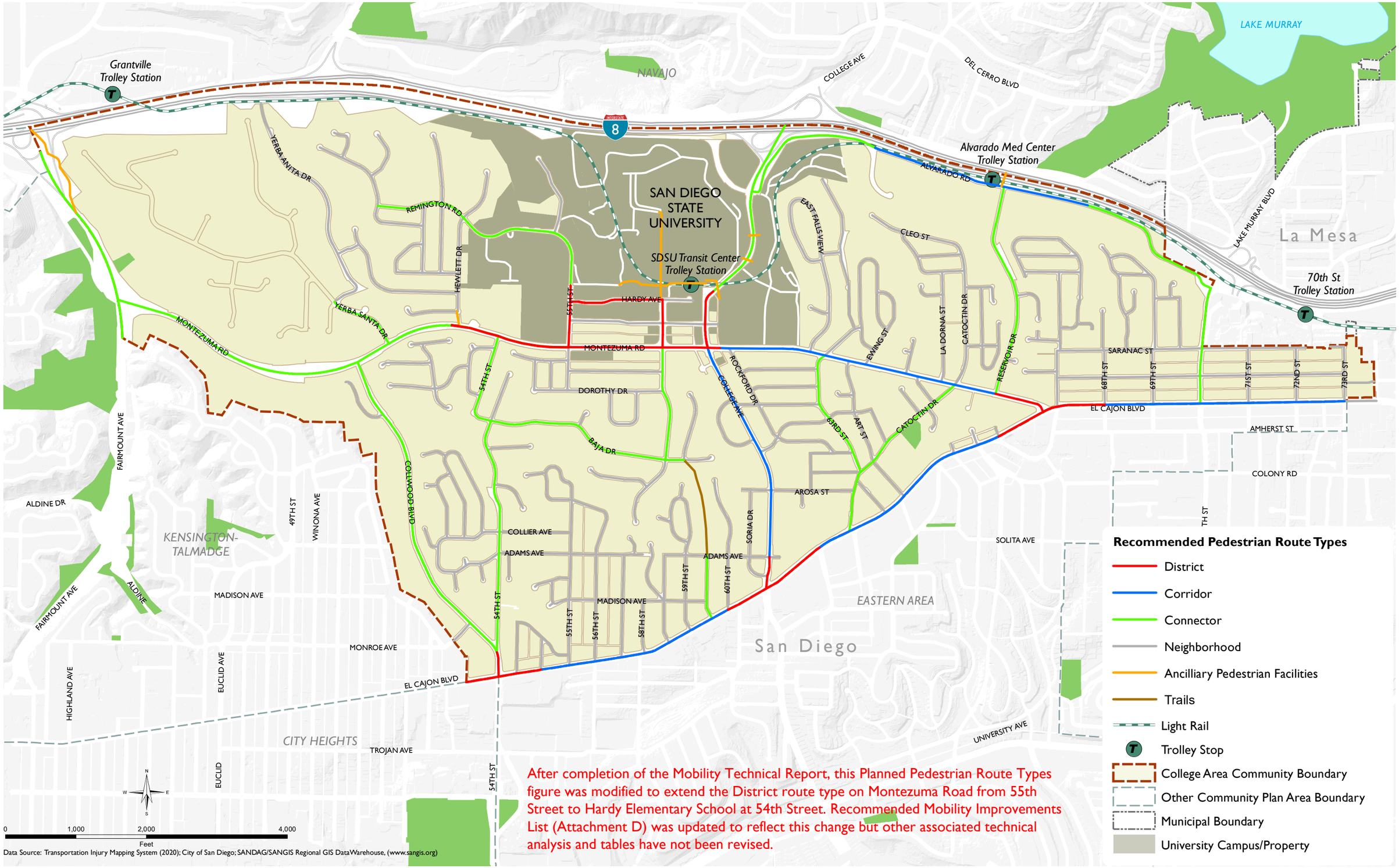
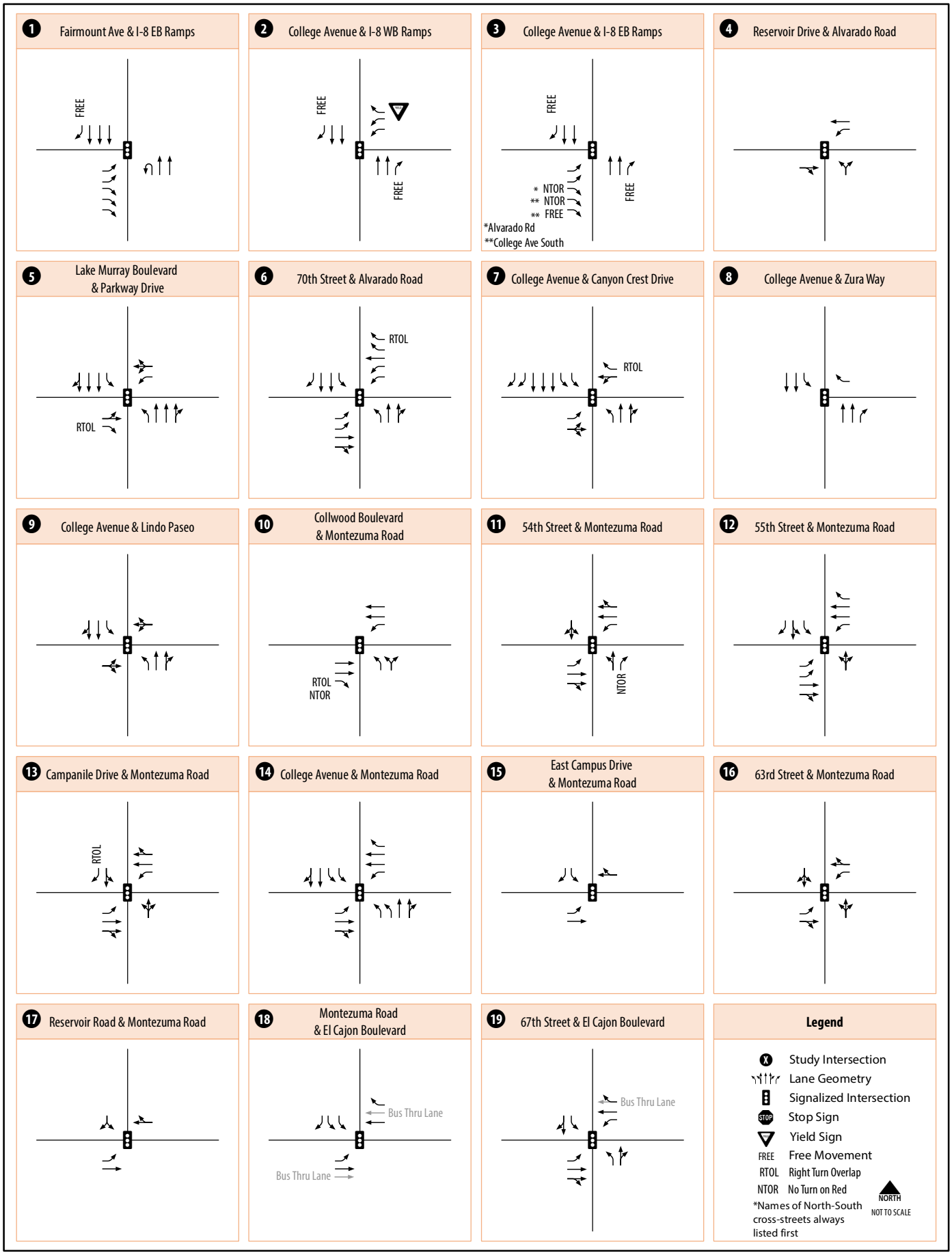


Figure 2: Planned Pedestrian Route Types



After completion of the Mobility Technical Report, this Planned Pedestrian Route Types figure was modified to extend the District route type on Montezuma Road from 55th Street to Hardy Elementary School at 54th Street. Recommended Mobility Improvements List (Attachment D) was updated to reflect this change but other associated technical analysis and tables have not been revised.

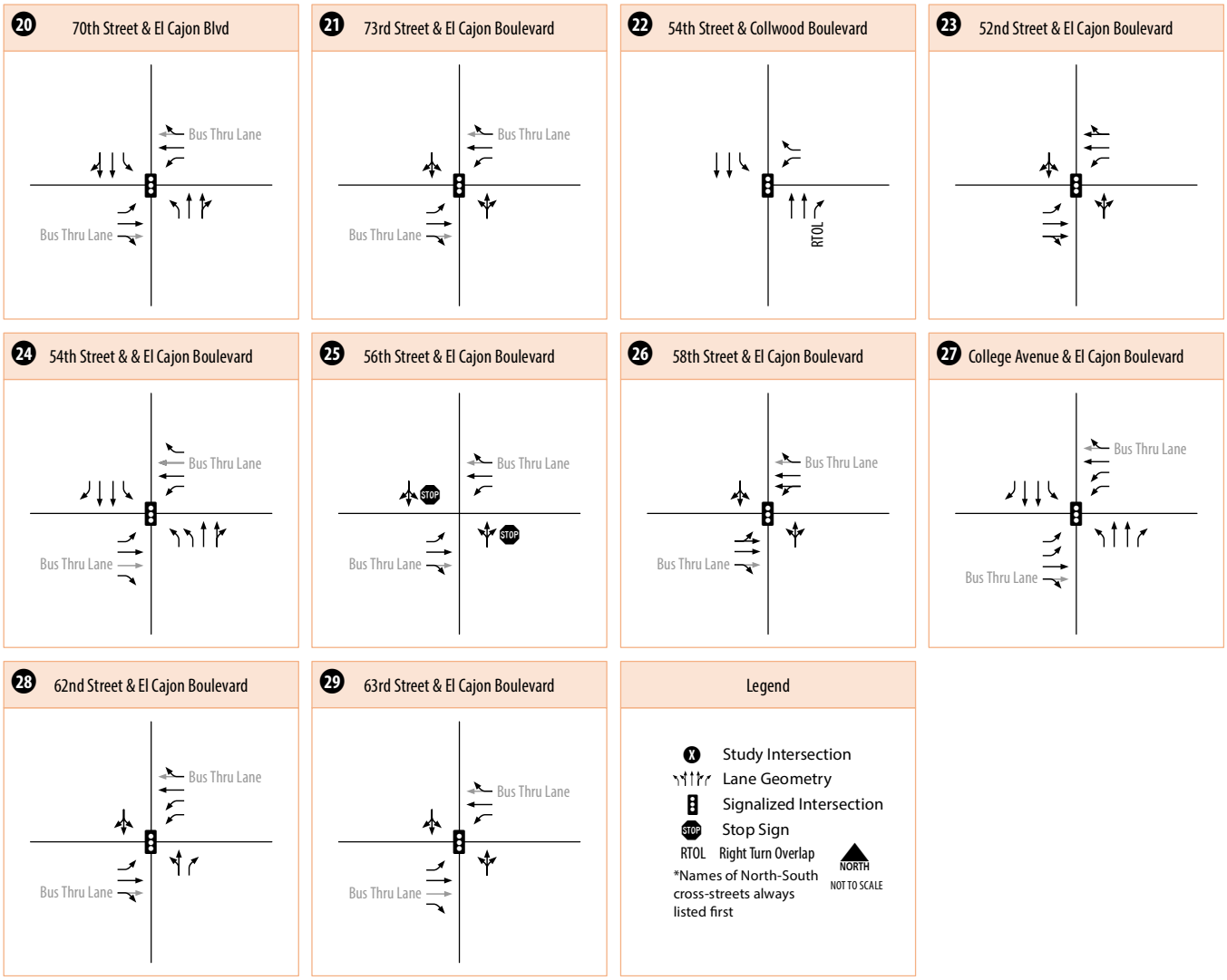
Figure 3: Recommended Roadway Network Classifications



College CPU
Future Conditions Traffic Operation Analysis

Figure 4
Intersection Geometrics - Planned Conditions

C+R



College CPU
Future Conditions Traffic Operation Analysis

Figure 4
Intersection Geometrics - Planned Conditions

Network Development

The mobility network for the College Area Community Plan Update (CPU) was developed through a comprehensive, data-driven process. It includes enhancements to the roadway system, bicycle and pedestrian infrastructure, and public transit services. This network reflects the findings of detailed transportation analyses, incorporates community input, and aligns with applicable state laws and the goals of the City of San Diego General Plan. It was further shaped by guidance from regional planning documents, including the San Diego Association of Governments (SANDAG) Regional Transportation Plan and the Kumeyaay Corridor Comprehensive Multimodal Corridor Plan (CMCP).

As described in the Existing Conditions Report, certain improvements had been previously proposed in the College Area Community Public Facilities Financing Plan (PFFP), adopted in February 2014. However, these earlier proposals were found to conflict with the current priorities and planning objectives for the community and therefore were not included in the updated mobility element.

Attachment A presents a cross-reference of these earlier improvements, indicating whether each has been incorporated into the updated planned network. In addition, Attachment A includes the assumed cross-section classification for each major roadway within the project study area, reflecting the planned roadway configuration used for the mobility and traffic operations analysis.

Bicycle Mobility

The planned network is comprised of Class I Bike Paths, Class II Bike Lanes, Class III Bike Routes, Bus-Bike Lanes, and Class IV Separated Bikeways (also known as Cycle Tracks). The mileage for each classification under existing and planned conditions is summarized in **Table 1**.

Table 1 - Bicycle Milage by Classification

Classification	Existing Conditions[1] + Recently Constructed[2] (Miles)	Planned Buildout Conditions (Miles)	Planned Unbuilt (Miles)
Class I – Bike Path	0.8	0.8	-
Class II – Bike Lane	4.9[3]	3.5	1.6
Class III – Bike Route	3.6[3]	4.9	3.9
Class IV – Separated Bikeway	1.2	5.3	4.0
Bus-Bike Lane	-	2.6	2.6
Unpaved Trail	-	0.3	0.3
Total	**10.5**	**17.4**	**12.4**

Source: CR Associates (2025)

Notes:
[1] Existing conditions analysis documented within the Existing Mobility Assessment for College Area Community Plan Update prepared by CR Associates, January 2023 (**Attachment B**).
[2] Recently constructed bicycle facilities between January 2023 and September 2025
[3] Conversion from Class II Bike Lane to Class IV – Separated Bikeway (Cycle Track)

As shown, Class II – Bike Lanes and Class IV – Separated Bikeways combined comprise approximately half of the mileage in the planned network.

Figure 5 shows the Bicycle Level of Traffic Stress (LTS) of all streets within the College Area under planned conditions. This measure was applied to all roadways in the community traversable by bicycle, regardless of the presence of a planned striped and/or signed bicycle facility. **Table 2** summarizes roadway centerline mileage by LTS score in the College Area.

Table 2 - Mileage by LTS Score

LTS Score	Miles
LTS 1-2	44.8
LTS 3	3.6
LTS 4	1.0
Total	**49.4**

Source: CR Associates (2025)

As shown, over 90% of the College Area roadway mileage scored in the category of LTS 1 or LTS 2 which are most suited for All Ages and Abilities with full implementation of the planned bicycle network. In contrast, the LTS scores under existing conditions were primarily LTS 3 and 4 along many major corridors within the community. Appendix D in the Existing Mobility Assessment describes the criteria and scoring for the LTS performance measure.

All proposed bicycle facilities not fully built to classification were assessed at a planning level to determine the expected implementation method necessary considering the recommended facility's width requirements, the roadway's existing curb-to-curb width, the planned classification of the roadway, and presence of parking to determine what change(s) to the roadway would be needed for project implementation. **Table 3** summarizes those expected methods/modifications needed to complete the implementation of the bicycle network by mileage. Approximately 4.9 miles of the College Area's planned bicycle network are already built to classification, leaving about 12 miles of roadway where expected implementation methods were determined as shown in Table 3 (also see **Attachment C**).

Table 3 - Implementation Method for Unbuilt Sections of College CPU Bicycle Network

Implementation Method	Miles
No Modifications Needed (e.g., Sharrows and striping without changing lane widths)	6.1
Parking Lane Removal	3.6
Lane Width Reduction	0.7
Travel Lane Repurposing	1.7
Trail Construction	0.3
Total	**12.4**

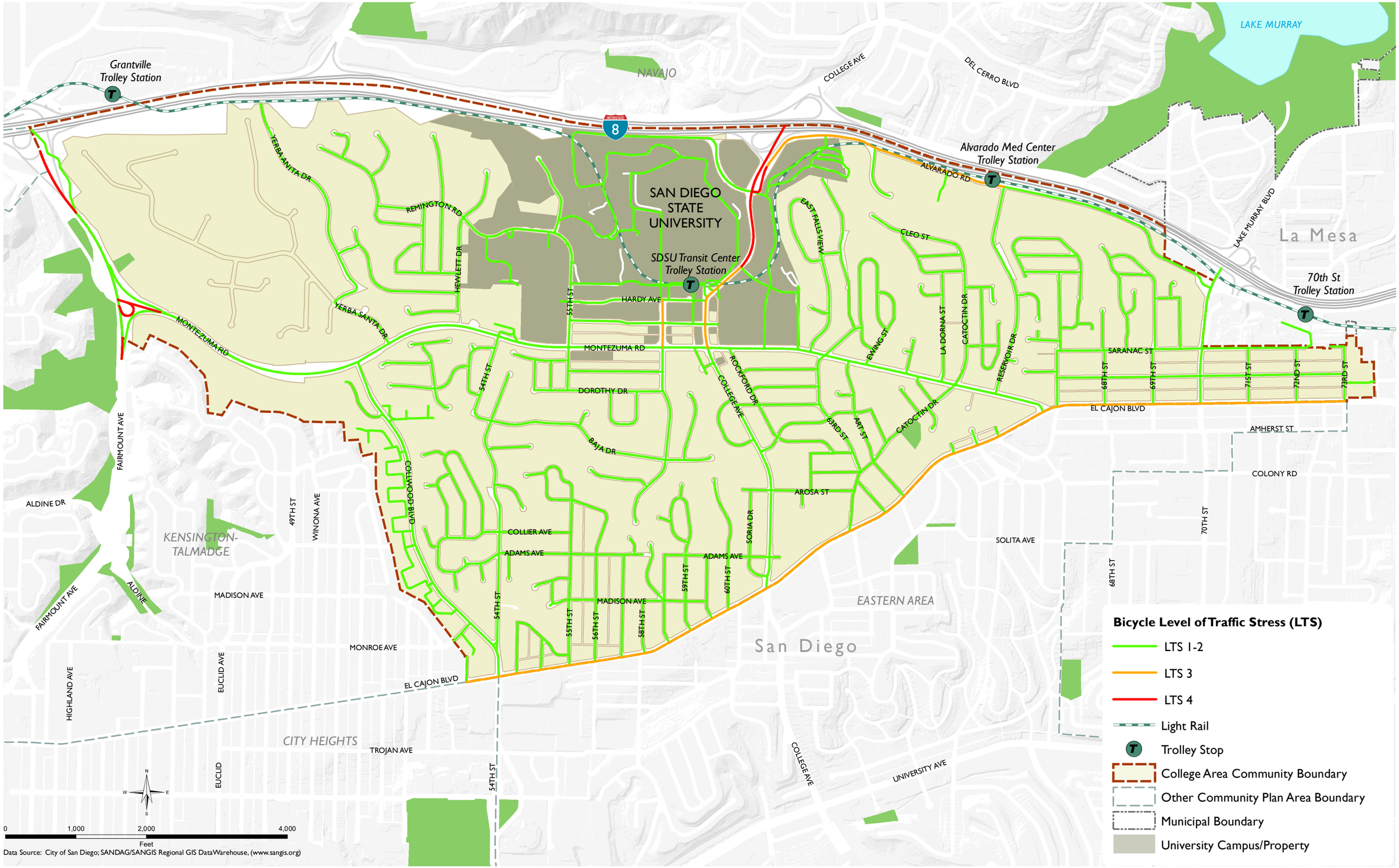
Source: CR Associates (2025)

As shown, the primary implementation methods are parking removals and travel lane repurposing. About 6.1 miles of bikeway can be implemented with only minor modifications, these modifications include adding sharrows, striping, lane width reduction.

The planned bicycle network shapefile (provided with this memo), includes the following fields, which are consistent with the City of San Diego's efforts to standardize transportation network GIS data attributes:

- Street
- From
- To
- Functional Class
- Class
- Class Type
- Category (existing vs planned)
- Shape Length (feet)
- Miles
- Implementation Mechanism
- Edit date/user
- Bidirectional
- Community
- Source

Figure 5: LTS Score – Planned Conditions



Pedestrian Mobility

The planned pedestrian route types are comprised of Districts, Corridors, Connectors, Neighborhood sidewalks, Auxiliary Pedestrian Facilities, and Trails. **Table 4** summarizes the mileage of pedestrian route type planned within the College Area.

Table 4 - Mileage by Pedestrian Route Type

Route Type	Miles
District	2.2
Corridor	3.7
Connector	8.6
Neighborhood	26.5
Ancillary	0.9
Trails	0.3
Total	**42.2**

Source: CR Associates (2025)

As shown, the Neighborhood is the most predominant planned pedestrian route type, encompassing 26.5 miles of roadway in the College Area, followed by Connector, along 8.6 miles of roadway in the College Area.

Figure 6 shows Pedestrian Environmental Quality Evaluation (PEQE) scores under planned conditions within the study area along select walkway segments and crossing locations, reflecting the assumed standard of infrastructure and amenity each route type should have. **Table 5** summarizes the PEQE scores by mileage of walkway segments (including both sides of the street) within the study area for existing and planned conditions. Under planned conditions, Low PEQE scoring walkways are mostly eliminated, while primarily High PEQE scoring walkways increase.

Table 5 - PEQE Walkway Segment Summarized by Mileage

PEQE Score	Existing Miles	Future Miles	Change in Miles (+/-)
High	1.3	10.5	+9.2
Medium	14.4	10.4	-4.0
Low	5.8	0.6	-5.2
Total	**21.5**	**21.5**	**0.0**

Source: CR Associates (2025)

Figure 6: PEQE Score – Planned Conditions

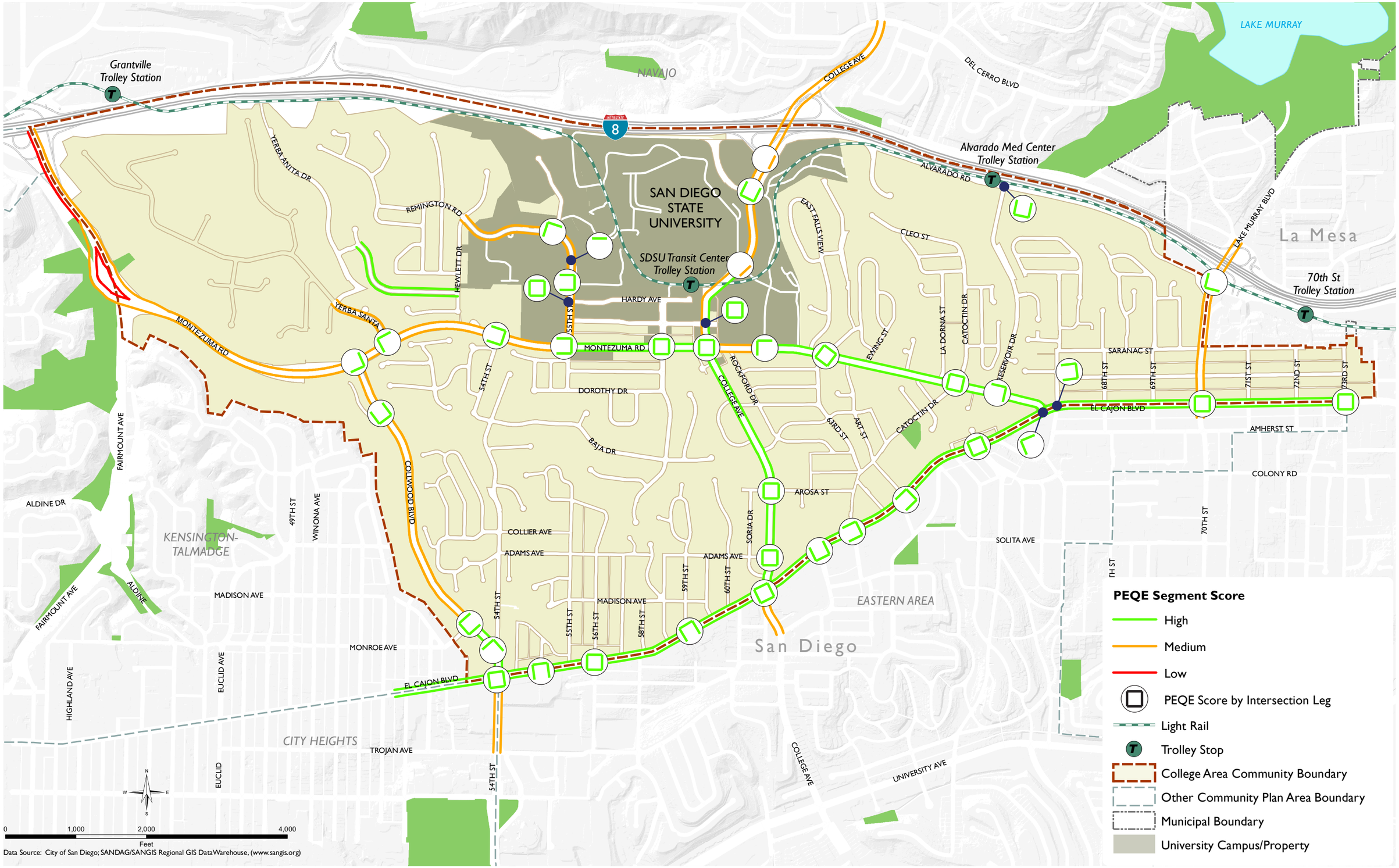


Table 6 summarizes the PEQE scoring by intersection crossing location and compares the existing and planned conditions. Under planned conditions, most approaches improve to High PEQE scores, and no Low PEQE scoring crossings remain.

Table 6 - PEQE Scores by Intersection Crossing Location

PEQE Score	Existing Number of Approaches	Planned Number of Approaches	Change in Number of Approaches (+/-)
High	30	117	+87
Medium	80	2	-78
Low	9	0	-9
Total	**119**	**119**	**0**

Source: CR Associates (2025)

Table 7 summarizes the recommended pedestrian improvements at crossing locations, derived from the changes assumed under planned PEQE conditions. Some pedestrian improvements such as high visibility crosswalks were recommended throughout the College Area, while other types of improvements such as Lead Pedestrian Intervals (LPI) were recommended for District pedestrian route types as well as some Corridor Pedestrian route types. (Also see **Attachment D**). The proposed treatments are based on the number of intersection legs requiring improvements. However, physical constraints may limit the ability to implement these treatments on all approaches. Final determination and feasibility will be assessed at the project level.

Table 7 - Intersection Pedestrian Improvement

Recommended Pedestrian Improvement	Crossing Legs
Add Pedestrian Signage (by Crossing Leg)[2]	108
LPI (by Crossing Leg)	86
Bulb-outs[3]	54
High-Visibility Crosswalk	24
Advanced Stop Bar	22
Upgrade Curb Ramp to ADA	9
New ADA Curb Ramp Installation	5
Total	**308**

Source: CR Associates (2025)

As shown, the most common intersection pedestrian improvements are the addition of pedestrian signage, addition of LPI to the pedestrian crossing phase, and the installation of high-visibility crosswalks.

Table 8 summarizes pedestrian improvements along the walkway segments derived from changes assumed under planned PEQE conditions. As shown, the primary improvements include upgraded lighting, increased buffer treatments, sidewalk widening, and sidewalk infill.

[2] Pedestrian signage may include signs such as "Vehicles Must Yield to Pedestrians" or other applicable warnings and regulatory messages. The specific type and placement of signage should be determined at the project level based on site conditions and design requirements.

[3] The installation of bulb-outs should be evaluated at the project level to determine the most appropriate and effective solution for each intersection. This evaluation may identify alternative treatments, such as the installation of a roundabout, based on site-specific conditions and design objectives.

Table 8 - Walkway Segment Pedestrian Improvement

Pedestrian Improvement	Miles
Pedestrian Scale Lighting[4]	10.0
Incorporation of street furniture or street trees within the pedestrian zone adjacent to vehicular travel lanes.	5.1
Sidewalk Infill	4.6
Widen Sidewalk	0.6
Increased Horizontal Separation between Sidewalk and Street	0.4
Total	**20.7**

Source: CR Associates (2025)

The planned pedestrian route type shapefile (provided with this memo), includes the following fields, which are consistent with the City of San Diego's efforts to standardize transportation network GIS data attributes:

- Street
- From
- To
- Functional Class
- Class
- Class Type
- Category
- Shape Length (feet)
- Miles
- Implementation Mechanism
- Edit date/user
- Bidirectional
- Community
- Source

In addition to the planned pedestrian route type shapefile, the shapefiles described below are also provided.

<u>Pedestrian Intersection Improvements</u> – an intersection shapefile that include the following fields:

- ID & Code
- Intersection Name / Cross Street
- Intersection Leg
- Improvement Type: Advanced Stop Bar, Bulbout, High-Visibility Crosswalk, LPI[5], New ADA Ramp, Pedestrian Signage, and Ramp Upgrade to ADA
  Note: Each improvement type is identified as separate features

<u>Pedestrian Improvement Segments</u> – a segment shapefile that includes the following fields:

- Street
- From
- To
- Functional Class
- Class
- Class Type
- Category
- Shape Length (feet)
- Miles
- Implementation Mechanism
- Edit date/user
- Bidirectional
- Community
- Source

[4] Within the City of San Diego, pedestrian scale lighting as well as other non-standard streetscape and public space enhancements such as landscaping, decorative paving, and street furniture is typically installed and maintained through a Maintenance Assessment District (MAD). These districts are formed by property owners who vote to assess themselves for enhanced services that go beyond the standard level of City maintenance. The scope, funding, and ongoing care of such improvements depend on the specific MAD in which they are located.
For more information about Maintenance Assessment Districts, including formation, services, and district boundaries, please visit the City of San Diego official website: https://www.sandiego.gov/park-and-recreation/general-info/mads

[5] Leading Pedestrian Intervals (LPIs) may be supplemented with blanked out "No Turn on Red" (NTOR) signage. The necessity and extent of such signage will be determined based on conditions evaluated at the project level.

Public Transportation Mobility

The planned transit network for College Area is shown in **Figure 7**. There are five NextGen Rapid bus routes planned to operate in College Area by 2035 per the recommendations of the San Diego Association of Governments (SANDAG) Draft May 2025 Regional Plan (Regional Plan). These include Route 215, under its existing alignment, and four proposed routes: 211, 256, 295, and 625. The Regional Plan also recommends grade separation treatments along at-grade sections of the San Diego Trolley Green Line to ensure plans to increase service frequencies are not overly disruptive to vehicular traffic operations. Since the Green Line is entirely grade separated within the College Area, the grade separation modifications to the right-of-way would take place outside of the community planning area. The Regional Plan recommends no changes to the local bus network.

NextGen Rapids are high-frequency bus routes with some degree of priority over general vehicular traffic. Priority for Next Gen Rapid routes can be provided by transit lanes or with intersection treatments and transit signal priority measures that minimize transit delay at intersections. To provide better operating speed, NextGen Rapids are configured with more consolidated stop spacing than local bus routes (approximately a half-mile apart, whereas a local bus may have several stops in the same distance). Shared bus-bike lanes for the entire extent of El Cajon Boulevard within the College Area are among the Regional Plan's update recommendations.

The existing Rapid Route 215 runs between Downtown San Diego and SDSU and stops at three locations within the community: 54th Street/El Cajon Boulevard, College Avenue/El Cajon Boulevard, and SDSU Transit Center. With the addition of the four Rapid routes, there will be two new locations where Rapids will stop in the community: at Collwood Boulevard/Montezuma Road and at 70th Street/El Cajon Boulevard. These intersections are currently local bus stops. All five Rapid routes will stop at SDSU Transit Center. The transit center will be the terminus for four of the five Rapid routes.

The alignments of the four new Rapid routes are described below:

- Rapid 211 will run between Downtown San Diego and San Diego State University (SDSU) via Uptown, Greater North Park, Normal Heights, and Kensington-Talmadge. This route will stop at Collwood Boulevard/Montezuma and SDSU Transit Center (eastern terminus) in the College Area. Rapid 211 follows the same alignment as local bus Route 11, though with limited stop spacing. This route is phased for implementation by 2035.
- Rapid 256 will run between SDSU and Rancho San Diego/Cuyamaca Community College via East San Diego, Lemon Grove, Spring Valley, and Casa de Oro. This route will stop at SDSU Transit Center (western terminus) and College Avenue/El Cajon Boulevard in the College Area. Rapid 256 generally follows the same alignment as local bus Route 856 (except in Spring Valley which the Rapid alignment bypasses altogether), though with limited stop spacing. This route is phased for implementation by 2035.
- Rapid 295 will run between Clairemont Mesa and Spring Valley via Kearny Mesa, Mission Valley, College Area, and La Mesa. This route will stop at Collwood Boulevard/Montezuma, SDSU Transit Center, and 70th Street/El Cajon Boulevard in the College Area. This route is phased for implementation by 2035.
- Rapid 625 will run between SDSU and Palomar Station in southwest Chula Vista via East San Diego, Encanto, and National City. This route will stop at SDSU Transit Center (northern terminus) and College Avenue/El Cajon Boulevard in the College Area. This route is phased for implementation by 2035.

Figure 7: Planned Transit Network

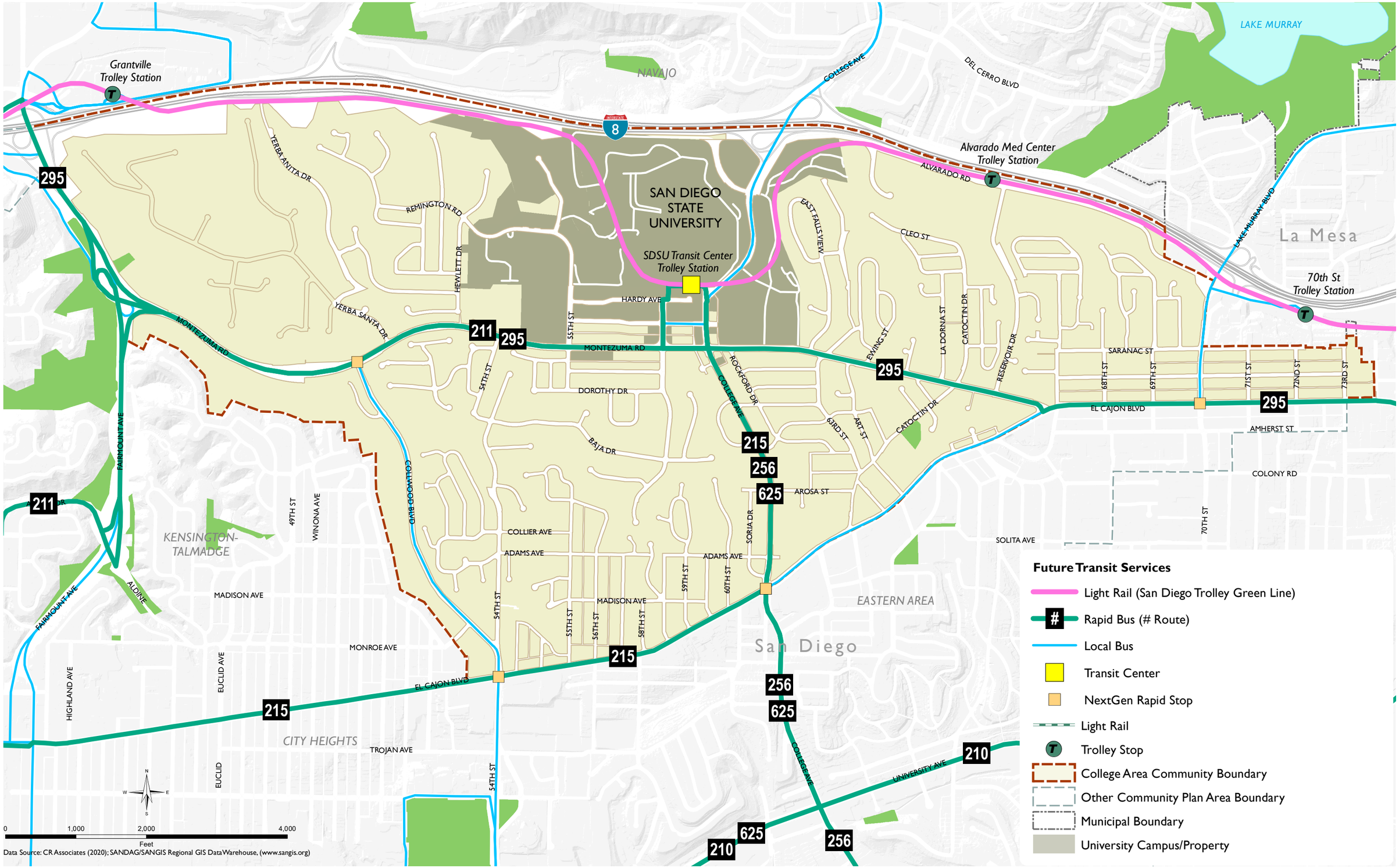


Figure 8 shows quality walkshed ratio at a quarter mile distance from major transit stop locations in the College Area under future conditions, accounting for all improvements assumed for District, Corridor, and Connector pedestrian route types. The total quality walkshed ratio increased for all stop locations except for four locations compared to existing conditions. Three of the four locations where the score did not improve had among the highest ratios under existing conditions (greater than 50%). Two additional stops were analyzed at 70th Street and El Cajon Boulevard, since these are planned NextGen Rapid stops which did not meeting the criteria of "major" transit stop under existing conditions. The quality walkshed ratios at both new stops is approximately 60%.

Figures 9 shows quality bikeshed ratio at a three-quarters of a mile distance from major transit stop locations in the College Area under future conditions, accounting for the buildout of the planned bicycle network. The total quality bikeshed ratio increased significantly for nearly all stop locations compared to existing conditions, especially along the Montezuma Road corridor and at the College Avenue and El Cajon Boulevard intersection. Access to stop locations are improved significantly by the planned Class IV bikeways along many major roads in the community.

Vehicular Mobility

Vehicular Demand

Traffic volumes for the College Area CPU were derived from the Blueprint SD transportation model outputs. As discussed in the introductory section, to ensure local analyses remain consistent with regional trends and do not overstate future roadway demands, traffic volumes derived from the Blueprint SD transportation modeling were conservatively reduced by 10.7%. The model outputs from Blueprint SD were analyzed to estimate the traffic volumes upon buildout of the College Area CPU, utilizing the City of San Diego Mobility Adjustment Tool. This tool offers a structured approach to estimate future average daily traffic volumes to develop intersection turning movements following the methodology outlined in the National Cooperative Highway Research Program Report (NCHRP) 255. These volumes were then adjusted to better match the latest land use assumptions from the Blueprint SD model.

Adjustments to traffic volumes also considered changes in the roadway network layout and capacity, particularly the conversion of two lanes (one in each direction of travel) on El Cajon Boulevard and College Avenue to provide dedicated bus/bike lanes and improve transit operations. The Average Daily Traffic (ADT) under planned conditions for the College Area CPU is displayed in **Figure 10** and the intersection turning movements (ITM) are displayed in **Figure 11**.

Vehicular Performance

This section documents the Level of Service (LOS) results for the College Area CPU under planned conditions. The LOS for each roadway segment was determined utilizing the roadway geometrics displayed in Figure 3, forecasted ADT under planned conditions displayed in Figure 10, and the roadway capacity thresholds per the City of San Diego Transportation Study Manual (TSM). Analysis of intersection operations was performed utilizing the traffic analysis software Synchro, the assumed geometry displayed in Figure 4 and forecasted ITM volumes displayed in Figure 11, adhering to the operational analysis methods for both signalized and unsignalized intersections as specified in the 2022 Highway Capacity Manual (HCM 7). A summary of the analysis methodologies and underlying assumptions can be found in **Attachment E**.

Figure 8: Future Quality Walkshed Ratio from Major Transit Stations

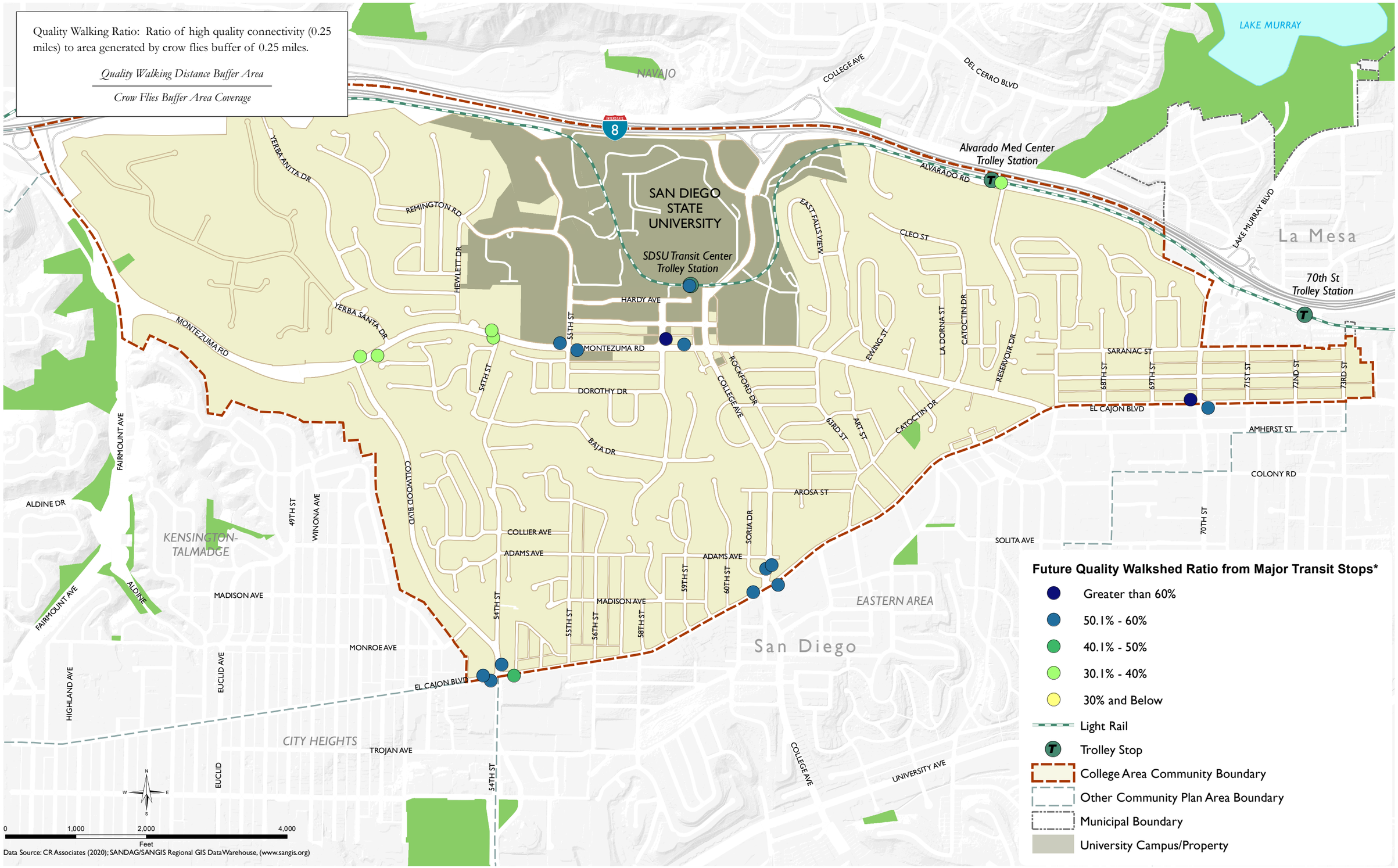


Figure 9: Future Quality Bikeshed Ratio from Major Transit Stations

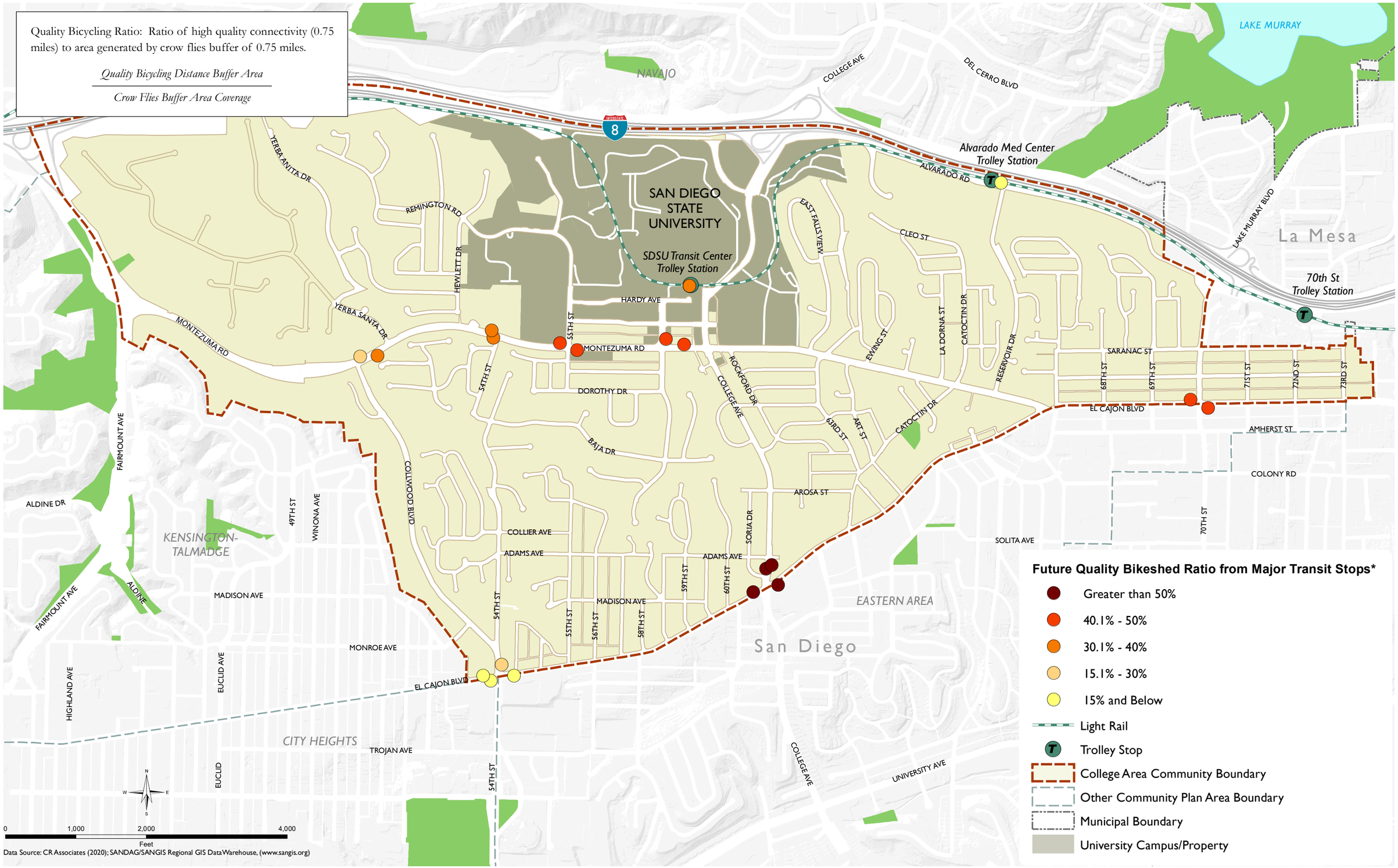
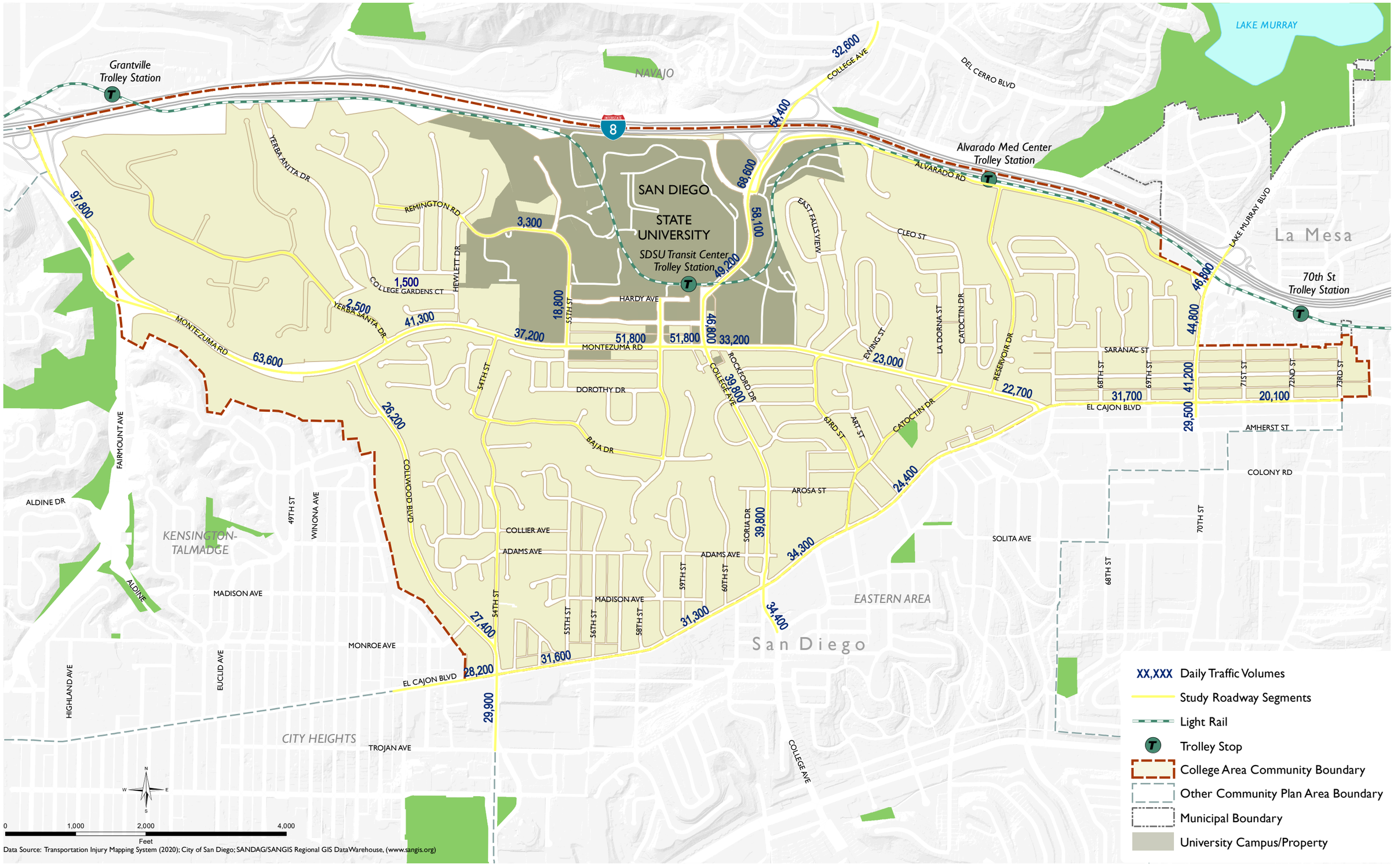
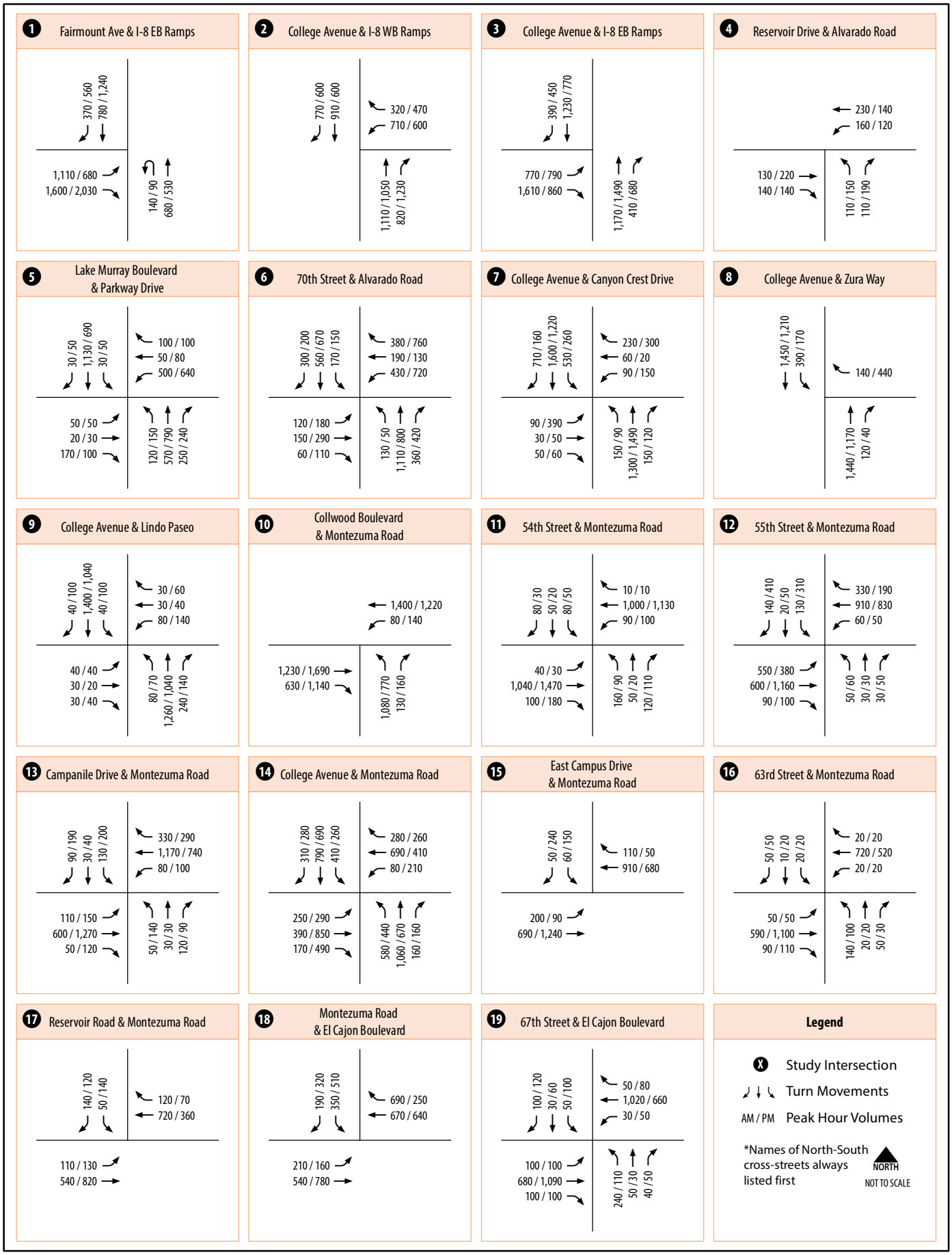


Figure 10: Average Daily Traffic – Planned Conditions

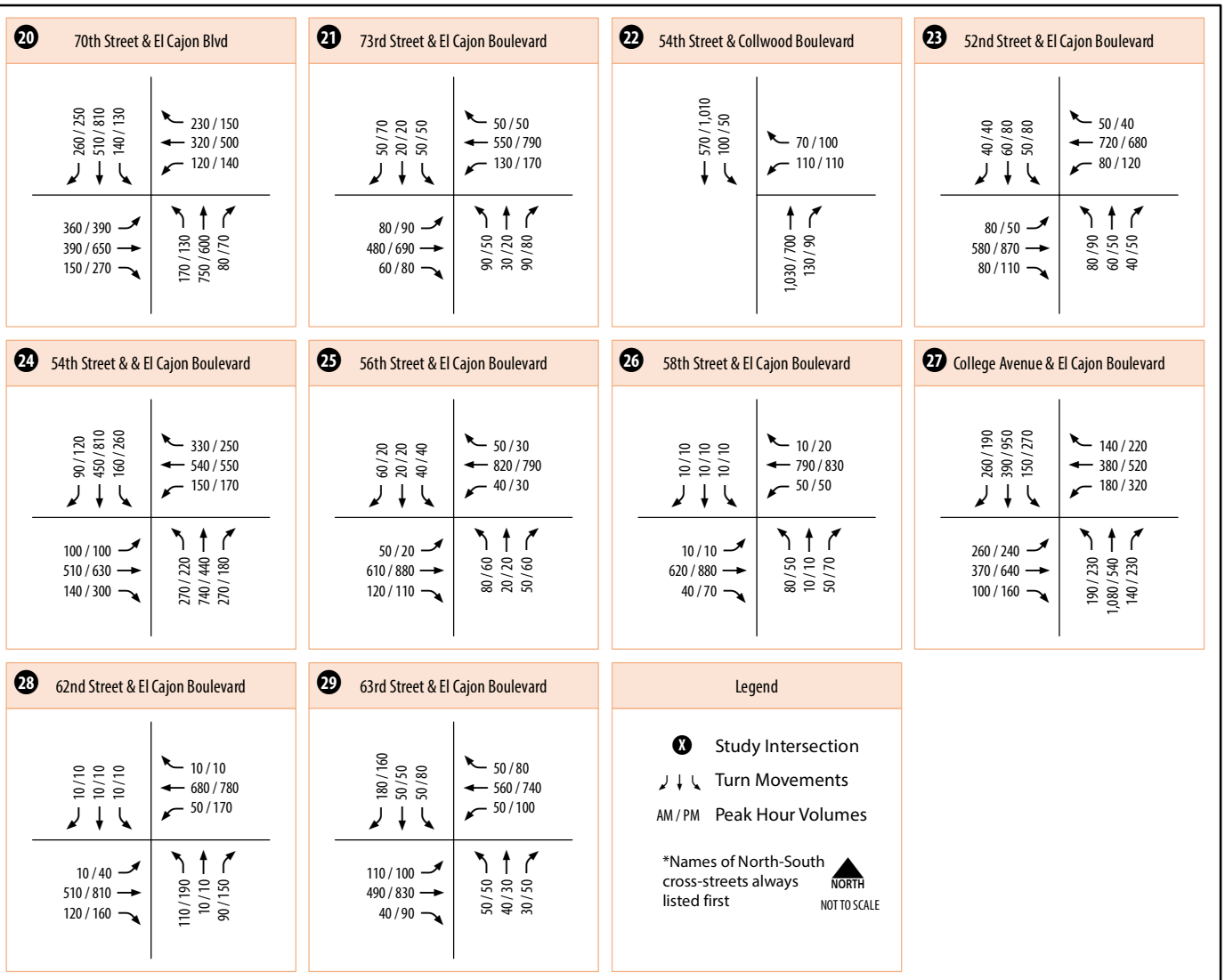


Data Source: Transportation Injury Mapping System (2020); City of San Diego; SANDAG/SANGIS Regional GIS DataWarehouse, (www.sangis.org)



College CPU
Future Conditions Traffic Operation Analysis

Figure 11
Intersection Turning Movements - Planned Conditions (Intersection 1 - 19)



College CPU
Future Conditions Traffic Operation Analysis

Figure 11
Intersection Turning Movements - Planned Conditions (Intersecions 20 - 29)

Roadway Operation Analysis

Table 9 displays the College Area CPU roadway classification designations, capacity thresholds, forecasted average daily traffic, volume to capacity ratios, and resulting levels of service under planned conditions. It should be noted that the planned roadways classified as four-lane major arterials with two general purpose lanes and two transit lanes (4M (2M+2T)) were analyzed operationally as two-lane major arterials for roadway capacity given the transit lanes would not contribute to general vehicle capacity. However, the physical design of the roadway including parkway widths should follow the four-lane major arterials set by the City's Street Design Manual (SDM) and other applicable City codes.

Table 9 - Roadway Segment LOS Results – Planned Conditions

Roadway	Segment	Cross-Section	Capacity (LOS E)[1]	ADT	V/C	LOS
Fairmount Avenue	I-8 Ramps to Montezuma Road	4-Lane Prime Arterial	45,000	97,800	2.173	**F**
Collwood Boulevard	Montezuma Road to 54th Street	2-Lane Collector w/ CLTL	15,000	26,200	1.747	**F**
Collwood Boulevard	54th Street to El Cajon Boulevard	4-Lane Major Arterial	40,000	27,400	0.685	C
Collwood Boulevard	EL Cajon Boulevard to Trojan Avenue	4-Lane Major Arterial	40,000	29,900	0.748	C
Yerba Santa Drive	Yerba Anita Drive to Montezuma Road	2-Lane Collector w/o CLTL – no fronting property (NFP)	10,000	2,500	0.250	A
55th Street	Canyon Crest Drive to Montezuma Road	4-Lane Collector w/o CLTL	15,000	18,800	1.253	**F**
College Avenue	Del Cerro Boulevard to I-8 WB Ramps	4-Lane Major Arterial	40,000	32,600	0.815	D
College Avenue	I-8 WB Ramps to I-8 EB Ramps	4-Lane Major Arterial	40,000	54,400	1.360	**F**
College Avenue	I-8 EB Ramps to Canyon Crest Drive	4-Lane Major Arterial	40,000	68,600	1.715	**F**
College Avenue	Canyon Crest Drive to Zura Way	4-Lane Major Arterial	40,000	58,100	1.453	**F**
College Avenue	Zura Way to Lindo Paseo	4-Lane Major Arterial	40,000	49,200	1.230	**F**
College Avenue	Lindo Paseo to Montezuma Road	4-Lane Major Arterial	40,000	46,800	1.170	**F**
College Avenue	Montezuma Road to El Cajon Boulevard	4-Lane Major Arterial[2]	20,000	39,800	1.990	**F**
College Avenue	El Cajon Boulevard to Acorn Street	4-Lane Major Arterial	40,000	34,400	0.860	D
Lake Murray Boulevard	Wisconsin Avenue / Parkway Drive to Alvarado Road	5-Lane Major Arterial	45,000	46,800	1.040	**F**
70th Street	Alvarado Road to Saranac Street	4-Lane Major Arterial	40,000	44,800	1.120	**F**
70th Street	Saranac Street to El Cajon Boulevard	4-Lane Major Arterial	40,000	41,200	1.030	**F**
70th Street	El Cajon Boulevard to Amherst Street	3-Lane Major Arterial	30,000	29,500	0.983	**E**
Remington Road	Hewlett Drive to 55th Street	2-Lane Collector w/o CLTL	8,000	3,300	0.413	B
College Garden Court	Yerba Anita Way to Hewlett Drive	2-Lane Collector w/o CLTL	8,000	1,500	0.188	A
Montezuma Road	Fairmount Avenue to Collwood Boulevard	4-Lane Major Arterial	40,000	63,600	1.590	**F**

Table 9 - Roadway Segment LOS Results – Planned Conditions

Roadway	Segment	Cross-Section	Capacity (LOS E)[1]	ADT	V/C	LOS
Montezuma Road	Collwood Boulevard to 54th Street	4-Lane Major Arterial	40,000	41,300	1.033	**F**
Montezuma Road	54th Street to 55th Street	4-Lane Major Arterial	40,000	37,200	0.930	**E**
Montezuma Road	55th Street to Campanile Drive	4-Lane Major Arterial	40,000	51,800	1.295	**F**
Montezuma Road	Campanile Drive to College Avenue	4-Lane Major Arterial	40,000	51,800	1.295	**F**
Montezuma Road	College Avenue to East Campus Drive	2-Lane Collector w/ CLTL	15,000	33,200	2.213	**F**
Montezuma Road	East Campus Drive to Reservoir Drive	2-Lane Collector w/ CLTL	15,000	23,000	1.533	**F**
Montezuma Road	Reservoir Drive to El Cajon Boulevard	2-Lane Collector w/ CLTL	15,000	22,700	1.513	**F**
El Cajon Boulevard	52nd Street to 54th Street	4-Lane Major Arterial[2]	20,000	28,200	1.410	**F**
El Cajon Boulevard	54th Street to 58th Street	4-Lane Major Arterial[2]	20,000	31,600	1.580	**F**
El Cajon Boulevard	58th Street to College Avenue	4-Lane Major Arterial[2]	20,000	31,300	1.565	**F**
El Cajon Boulevard	College Avenue to 62nd Street	4-Lane Major Arterial[2]	20,000	34,300	1.715	**F**
El Cajon Boulevard	62nd Street to Montezuma Road	4-Lane Major Arterial[2]	20,000	24,400	1.220	**F**
El Cajon Boulevard	Montezuma Road to 70th Street	4-Lane Major Arterial[2]	20,000	31,700	1.585	**F**
El Cajon Boulevard	70th Street to 73rd Street	4-Lane Major Arterial[2]	20,000	20,100	1.005	**F**

Source: CR Associates (2025)

Notes:
Bold indicates substandard LOS E or F.
[1] Roadway capacity based on number of vehicular travel lanes.
[2] Two vehicular travel lanes and two transit lanes within existing curb-to-curb width.
ADT = Average Daily Traffic
V/C = Volume to Capacity Ratio
CLTL = Continuous Left-Turn-Lane

As shown, the implementation of the College Area CPU preferred land use scenario would result in two (2) roadway segments operating at substandard LOS E and twenty-four (26) roadway segments operating at substandard LOS F. In comparison, under existing conditions, three (3) roadway segments operate at substandard LOS E and five (5) roadway segments operate at substandard LOS F. The roadway segments LOS results for the existing conditions are included in **Attachment F**.

Intersection Operation Analysis

Table 10 displays the traffic control type, peak hour intersection delay, and peak hour LOS for all study area intersections. Intersection LOS calculation worksheets for the planned conditions are provided in **Attachment G**.

Table 10 - Peak Hour Intersection LOS Results – Planned Conditions

#	Intersection	Peak Hour	Control	Delay	LOS
1	Fairmount Avenue & I-8 EB Ramps	AM PM	Signal	24.1 54.6	C D
2	College Avenue & I-8 WB Ramps	AM PM	Signal	13.1 10.0	B B
3	College Avenue & I-8 EB Ramps	AM PM	Signal	45.8 22.7	D C
4	Reservoir Drive & Alvarado Road	AM PM	Signal	12.4 17.7	B B
5	Lake Murray Boulevard & Wisconsin Avenue/Parkway Drive	AM PM	Signal	43.7 41.7	D D
6	70th Street/Lake Murray Boulevard & Alvarado Road	AM PM	Signal	55.6 70.4	**E** **E**
7	College Avenue & Canyon Crest Drive/East Campus Drive	AM PM	Signal	60.6 71.3	**E** **E**
8	College Avenue & Zura Way	AM PM	Signal[1]	22.4 5.7	C A
9	College Avenue & Lindo Paseo	AM PM	Signal	25.8 23.9	C C
10	Collwood Boulevard & Montezuma Road	AM PM	Signal	42.5 50.2	D D
11	54th Street/Hardy Elementary School Driveway & Montezuma Road	AM PM	Signal	24.4 17.6	C B
12	55th Street & Montezuma Road	AM PM	Signal	44.7 62.0	D **E**
13	Campanile Drive & Montezuma Road	AM PM	Signal	58.4 79.2	**E** **E**
14	College Avenue & Montezuma Road[2]	AM PM	Signal	83.9 92.1	**F** **F**
15	Montezuma Road & East Campus Drive	AM PM	Signal	20.7 24.7	C C
16	63rd Street & Montezuma Road	AM PM	Signal	18.8 20.1	B C
17	Montezuma Road & Reservoir Drive	AM PM	Signal	20.7 20.4	C C
18	El Cajon Boulevard & Montezuma Road	AM PM	Signal	38.3 46.6	D D
19	67th Street & El Cajon Boulevard	AM PM	Signal	173.3 41.0	**F** D
20	70th Street & El Cajon Boulevard	AM PM	Signal	50.7 85.3	D **F**
21	73rd Street & El Cajon Boulevard	AM PM	Signal	15.5 23.8	B C
22	54th Street & Collwood Boulevard	AM PM	Signal	11.1 7.8	B A
23	52nd Street & El Cajon Boulevard	AM PM	Signal	18.6 15.3	B B
24	54th Street & El Cajon Boulevard	AM PM	Signal	53.9 63.3	D **E**
25	56th Street & El Cajon Boulevard	AM PM	Signal	30.1 25.2	C C
26	58th Street & El Cajon Boulevard	AM PM	SSSC	BCD BCD	**F** **F**
27	El Cajon Boulevard & College Avenue	AM PM	Signal	52.6 74.2	D **E**

Table 10 - Peak Hour Intersection LOS Results – Planned Conditions

#	Intersection	Peak Hour	Control	Delay	LOS
28	62nd Street & El Cajon Boulevard	AM PM	Signal	24.9 41.4	C D
29	63rd Street & El Cajon Boulevard	AM PM	Signal	49.3 68.7	D **E**

Source: CR Associates (2025)

Note:
Bold indicates substandard LOS E or F; BCD – Beyond Calculable Delay ; SSSC – Side Street Stop Controlled
[1] Improved from a side-street stop-controlled intersection to a signalized intersection. Signal warrant provided in Attachment G.
[2] It is important to note, analysis assumes that the bus only lanes along College Avenue would end and begin just south of the College Avenue and Montezuma intersection.

As shown, the implementation of the College Area CPU preferred land use scenario would result in three (3) intersections operating at substandard LOS E and three (3) intersections at substandard LOS F during the AM peak hour. The PM peak hours would result in seven (7) intersections at substandard LOS E and three (3) intersections at substandard LOS F. In contrast, under existing conditions, one (1) intersection operates at substandard LOS E and one (1) intersection at substandard LOS F during the AM peak hour. For the PM peak hour, under Existing Conditions, four (4) intersections operate at substandard LOS E and no intersections at substandard LOS F. The peak hour intersection LOS results for Existing Conditions are provided in **Attachment H**.

Transit Operation Analysis

College Avenue, Montezuma Road, and El Cajon Boulevard provide vital links for several current and future transit lines serving the College Area community and surrounding areas. Of these roadways, El Cajon Boulevard and College Avenue are planned to be reconfigured as a 4-Lane Major Arterial with two (2) general purpose lanes and two (2) transit only lanes. This improvement focuses on establishing an exclusive transit lane from 52nd Street to 73rd Street in both the eastbound and westbound direction along El Cajon Boulevard. An exclusive transit lane is also planned in the northbound and southbound direction along College Avenue from Montezuma Road to El Cajon Boulevard.

An arterial analysis was conducted to assess the average general vehicle travel speed along College Avenue, Montezuma Road, and El Cajon Boulevard, with the results presented in **Table 11**. The purpose of the arterial analysis is to compare general traffic travel speeds under existing and planned conditions. Transit travel speeds along the corridor can vary by route, depending on factors such as stop frequency, dwell times, and specific operating patterns. Because the Vissim model was not calibrated, transit travel speeds were not explicitly measured. However, it is assumed that transit performance will improve along El Cajon Boulevard and College Avenue as a result of the proposed exclusive transit lanes. The detailed VISSIM results are provided in **Attachment I.**

Table 11 - Average Vehicle Travel Speed

Corridor	Approach	Average Travel Speed (mph)			
		Existing		College CPU	
		AM	PM	AM	PM
College Ave[1]	NB	14.6	16.8	12.5	13.2
	SB	15.1	16.9	14.2	14.6
Montezuma Rd[2]	EB	18.9	18.5	17.0	13.5
	WB	16.9	18.2	13.1	16.7
El Cajon Blvd[3]	EB	13.4	13.8	17.8	12.8
	WB	22.5	21.9	15.0	21.5

Source: CR Associates (2025)

Note:
[1] This represents future conditions (traffic volumes) but assumes existing conditions geometry and signal timing.
[2] Assumes the bus/bike lane would transition to a general purpose lane at approaches to major intersection endpoints at Montezuma Road and El Cajon Boulevard.
[3] Travel speed based on VISSIM model simulation.

As shown in Table 11, travel speeds along College Avenue, Montezuma Road, and El Cajon Boulevard are expected to decrease slightly under planned network conditions compared to existing conditions (see **Attachment J**). This is primarily attributed to projected increases in traffic volumes across the study area. Most speed reductions are minor, with the exception of more noticeable decreases on the eastbound approach of Montezuma Road during the PM peak hour and the westbound approach of El Cajon Boulevard during the AM peak hour. Conversely, travel speeds are anticipated to improve on the eastbound approach of El Cajon Boulevard during the AM peak hour due to improved signal coordination. Detailed arterial analysis worksheets are provided in **Attachment K**.

The proposed transit network is considered a preliminary blueprint, as transit planning and operations require regional assessment, typically overseen by the San Diego Association of Governments (SANDAG) and the San Diego Metropolitan Transit System (SDMTS). Further project level engineering studies are necessary to analyze the feasibility, alternatives, conceptual designs, and change in efficiency of the proposed transit system.

95th Percentile Queue Analysis

A 95th percentile queue analysis was conducted for each study area intersection to assess potential overflow issues at exclusive turn-lanes and closely spaced intersections (all ramp intersections and intersections within a proximity of 500-feet or less from another intersection). The limitations in turn-lane storage capacity could result in vehicles overflowing into adjacent lanes, while excessive queuing (queue length exceeding the distance to the upstream intersection) at closely spaced intersections could negatively affect upstream intersection operations.

Table 12 displays the intersection control, storage length, 95th percentile queue length, and excess queue (if applicable) for each movement at each study area intersection. Intersection queue reports are provided in **Attachment L**. As shown, 70 movements at 24 intersections are forecasted to operate with potential queuing issues during either the AM or PM peak hour under Planned Conditions.

Table 12 - Peak Hour 95th Percentile Queue Analysis – Planned Conditions

#	Intersection	Control	Movement	Storage Length (ft)	AM / PM 95% Queue Length (ft)[1]	AM / PM Excess Queue (ft)
1	Fairmount Avenue & I-8 EB Ramps	Signal	NBL	175	300 / 250	125 / 75
			EBL	920	500 / 275	- / -
			EBR	970	700 / 1,200	- / 230
2	College Avenue & I-8 WB Ramps	Signal	NBT	890	375 / 475	- / -
			WBL	1010	325 / 225	- / -
			WBR	205	300 / 425	95 / 220
3	College Avenue & I-8 EB Ramps	Signal	NBT	560	675 / 650	115 / 90
			SBT	900	825 / 275	- / -
			EBL	730	325 / 425	- / -
			EBR	715	875 / 375	160 / -
4	Reservoir Drive & Alvarado Road	Signal	WBL	200	150 / 175	- / -
5	Lake Murray Boulevard & Wisconsin Avenue / Parkway Drive	Signal	NBL	85	200 / 250	115 / 165
			NBT	635	250 / 400	- / -
			SBL	100	75 / 125	- / 25
			EBR	55	250 / 150	195 / 95
			WBL	270	475 / 550	205 / 280
6	70th Street/Lake Murray Boulevard & Alvarado Road	Signal	NBL	75	200 / 100	125 / 25
			SBL	50	375 / 325	325 / 275
			SBT	660	300 / 325	- / -
			SBR	85	150 / 125	65 / 40
			EBL	125	100 / 150	- / 25
			WBL	155	275 / 525	120 / 370
			WBR	175	175 / 400	- / 225
7	College Avenue & Canyon Crest Drive / East Campus Drive	Signal	NBL	135	325 / 225	190 / 90
			SBL	150	575 / 250	425 / 100
			SBT	570	800 / 450	230 / -
			SBR	30	225 / 25	195 / -
			EBL	680	225 / 625	- / -
			WBR	255	275 / 550	20 / 295
8	College Avenue & Zura Way	Signal	NBR	195	50 / 25	- / -
			SBL	355	475 / 200	120 / -
9	College Avenue & Lindo Paseo	Signal	NBL	80	125 / 100	45 / 20
			NBT	230	750 / 425	520 / 195
			SBL	100	75 / 125	- / 25
10	Collwood Boulevard & Montezuma Road	Signal	NBL	515	800 / 675	285 / 160
			EBR	550	175 / 1,400	- / 850
			WBL	160	200 / 325	40 / 165
11	54th Street/Hardy Elementary School Driveway & Montezuma Road	Signal	NBR	55	125 / 150	70 / 95
			EBL	125	75 / 75	- / -
			WBL	160	125 / 175	- / 15
12	55th Street & Montezuma Road	Signal	SBL	135	150 / 325	15 / 190
			SBR	525	75 / 125	- / -
			EBL	440	350 / 225	- / -
			WBL	100	100 / 125	- / 25
			WBR	310	75 / 75	- / -
13	Campanile Drive & Montezuma Road	Signal	SBR	105	50 / 75	- / -
			EBL	190	300 / 350	110 / 160
			WBL	105	150 / 175	45 / 70

Table 12 - Peak Hour 95th Percentile Queue Analysis – Planned Conditions

#	Intersection	Control	Movement	Storage Length (ft)	AM / PM 95% Queue Length (ft)[1]	AM / PM Excess Queue (ft)
14	College Avenue & Montezuma Road	Signal	NBL	165	475 / 425	310 / 260
			SBL	235	375 / 225	140 / -
			SBT	235	750 / 700	515 / 465
			EBL	185	500 / 275	315 / 90
			WBL	210	150 / 475	- / 265
			WBR	235	175 / 75	- / -
15	Montezuma Road & East Campus Drive	Signal	SBL	285	100 / 250	- / -
			SBR	285	50 / 100	- / -
			EBL	70	350 / 100	280 / 30
16	63rd Street & Montezuma Road	Signal	EBL	150	100 / 75	- / -
			WBL	150	50 / 50	- / -
17	Montezuma Road & Reservoir Drive	Signal	EBL	115	175 / 125	60 / 10
18	El Cajon Boulevard & Montezuma Road	Signal	SBL	340	250 / 325	- / -
			SBR	100	150 / 275	50 / 175
			EBL	190	425 / 225	235 / 35
			WBT	125	50 / 75	- / -
			WBR	125	25 / 50	- / -
19	67th Street & El Cajon Boulevard	Signal	NBL	95	425 / 225	330 / 130
			SBL	75	100 / 150	25 / 75
			EBL	120	100 / 75	- / -
			WBR	75	0 / 25	- / -
			WBL	110	100 / 150	- / 40
20	70th Street & El Cajon Boulevard	Signal	NBL	155	275 / 250	120 / 95
			SBL	210	225 / 200	15 / -
			EBL	240	750 / 575	510 / 335
			EBR	75	125 / 175	50 / 100
			WBL	160	200 / 250	40 / 90
			WBR	75	200 / 50	125 / -
21	73rd Street & El Cajon Boulevard	Signal	EBL	70	100 / 100	30 / 30
			EBR	75	25 / 25	- / -
			WBL	85	125 / 175	40 / 90
			WBR	75	25 / 25	- / -
22	54th Street & Collwood Boulevard	Signal	NBT	330	300 / 175	- / -
			NBR	25	25 / 25	- / -
			SBL	75	125 / 75	50 / -
			WBL	35	75 / 100	40 / 65
23	52nd Street & El Cajon Boulevard	Signal	EBL	95	50 / 50	- / -
			WBL	100	50 / 100	- / -
24	54th Street & El Cajon Boulevard	Signal	NBL	275	175 / 150	- / -
			SBL	55	300 / 325	245 / 270
			SBT	330	225 / 425	- / 95
			SBR	70	50 / 75	- / 5
			EBL	150	150 / 150	- / -
			EBR	110	100 / 250	- / 140
			WBL	190	250 / 250	60 / 60
			WBR	95	250 / 200	155 / 105
25	56th Street & El Cajon Boulevard	Signal	EBL	125	125 / 50	- / -
			EBR	125	75 / 50	- / -
			WBL	125	100 / 75	- / -
			WBR	125	25 / 0	- / -

Table 12 - Peak Hour 95th Percentile Queue Analysis – Planned Conditions

#	Intersection	Control	Movement	Storage Length (ft)	AM / PM 95% Queue Length (ft)[1]	AM / PM Excess Queue (ft)
26	58th Street & El Cajon Boulevard	SSSC	EBR	75	0 / 0	- / -
			WBR	75	0 / 0	- / -
27	El Cajon Boulevard & College Avenue	Signal	NBL	260	275 / 400	15 / 140
			NBR	170	100 / 125	- / -
			SBL	200	275 / 250	75 / 50
			SBR	65	175 / 50	110 / -
			EBL	150	200 / 200	50 / 50
			EBR	75	50 / 125	- / 50
			WBL	175	150 / 275	- / 100
			WBR	75	75 / 125	- / 50
28	62nd Street & El Cajon Boulevard	Signal	NBR	125	50 / 75	- / -
			EBL	50	50 / 50	- / -
			EBR	75	75 / 100	- / 25
			WBL	180	50 / 150	- / -
			WBR	75	0 / 0	- / -
29	63rd Street & El Cajon Boulevard	Signal	EBL	75	150 / 175	75 / 100
			EBR	75	0 / 50	- / -
			WBL	205	100 / 150	- / -
			WBR	75	0 / 25	- / -

Source: CR Associates (2025)

Notes:
[1] Queues are rounded to the nearest 25 feet to represent one vehicle length.

Roundabout Analysis

A feasibility study was conducted to determine the feasibility of roundabouts at the intersection of 63rd Street & Montezuma Road. The recommended roundabout lane configuration for the 63rd Street & Montezuma Road intersection is displayed in **Figure 12**. **Table 13** displays the peak hour intersection delay and peak hour LOS for the three study intersections. Analysis worksheets are included in **Attachment M.**

Table 13 - Peak Hour Intersection Results – Roundabout Feasibility

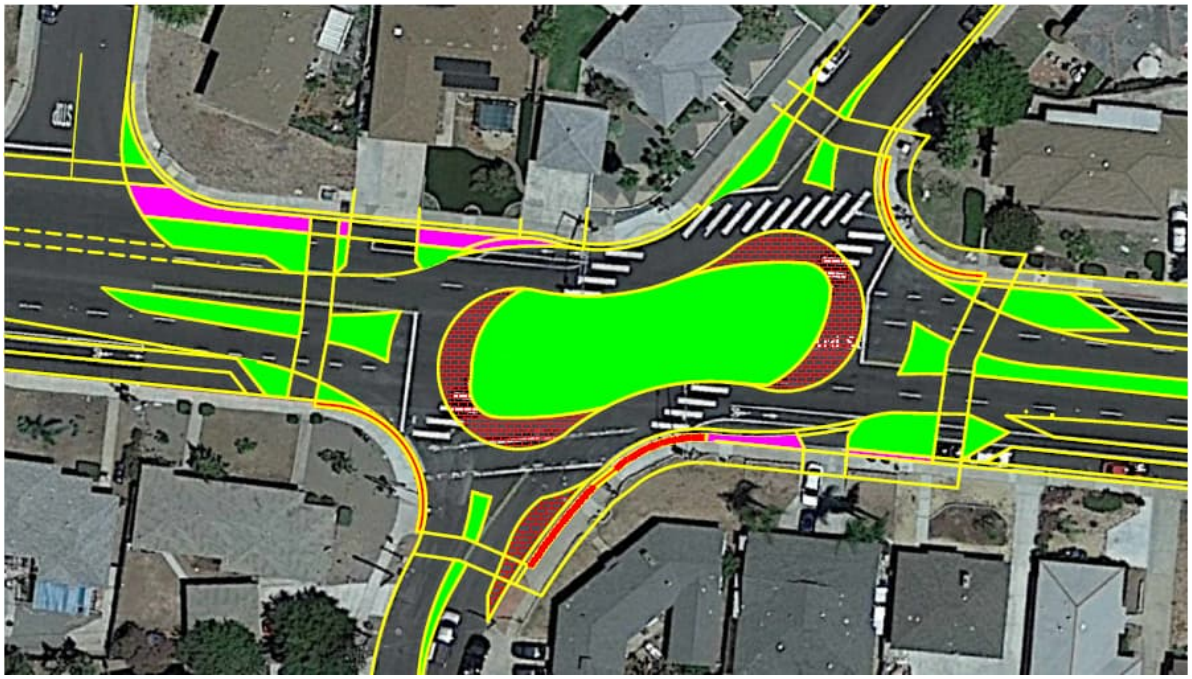
#	Intersection	Peak Hour	Existing Conditions (Signal)		Existing w/ Roundabout Configuration		Delta
			Delay	LOS	Delay	LOS	
16	63rd Street & Montezuma Road	AM	12.7	B	1.4	A	-11.3
		PM	8.0	A	1.2	A	-6.8

Source: CR Associates (2025), Michael Wallwork / Roundabout Expert (2024)

Note:
Bold indicates substandard LOS E or F.

As shown, the intersection at 63rd Street & Montezuma Road would also experience a decrease in delays of 11.3 seconds in the AM peak hour and a decrease of 6.8 seconds in the PM peak hour. It is important to note that the potential roundabout would require further engineering study before any implementation can occur. While the SANDAG Kumeyaay Corridor Comprehensive Multimodal Corridor Plan[6] includes a conceptual roundabout at the 70th Street and I-8 interchanges, additional analysis and engineering evaluation are necessary to determine its actual feasibility. As a result, this recommendation is not included in the College Area CPU at this time.

Figure 12 - Recommended Roundabout Configuration (63rd & Montezuma)



[6] https://www.sandag.org/regional-plan/comprehensive-multimodal-corridor-plans/i-8-kumeyaay-corridor-cmcp

Goods Movement

The efficient movement of goods supports economic development, synergies between local businesses, and convenient access to commercial products. It is therefore essential that the community's roadway network provide adequate access for delivery vehicles.

The College Area is developed with numerous commercial businesses that generate freight vehicle traffic. These commercial businesses are primarily located in three different areas:

- Strip commercial along the El Cajon Boulevard, considered to be the major commercial area within the community
- Small-scale, student-oriented retail development along College Avenue and Montezuma Road
- Commercial and medical offices along Alvarado Road adjacent to Interstate 8

With many small-scale businesses and shopping centers located along the southern edge of the community on El Cajon Boulevard, removed from Interstate 8 and Interstate 15, freight vehicles rely on El Cajon Boulevard, College Avenue, Montezuma Road, 70th Street, and other local roadways to move goods into and out of the community. While these roads are designed to accommodate such vehicles, freight vehicle traffic can generate noise and other emissions that impact nearby properties occupied by businesses, homes, schools, and other uses.

City of San Diego Municipal Code Chapter 8 Article 5 prohibits freight vehicles of a gross weight of two or more tons from utilizing specific street segments designated by appropriate signage. Because these restrictions are implemented through on-street signage rather than a centralized database, a comprehensive map of prohibited routes within the College Area CPU is not currently available at the time of this technical memorandum.

Transportation permits are also required for oversized loads defined by California Vehicle Code §15 and are prohibited ½ hour before and after sunset and peak commute hours between 7AM-9AM and 4PM-6PM. Near the College CPU study area, Interstate 8, Interstate 15, and State Route 94 are designated truck routes for the national network per the Surface Transportation Assistance Act (STAA).

Attachment A - College Area Community Public Facilities Financing Plan (2014), and Planned Cross Sections

This table presents a cross-reference of transportation-related improvements identified in the 2014 College Area Community Public Facilities Financing Plan (PFFP). Each listed project has been evaluated against a set of criteria including applicable planning documents, statewide regulations, the City's General Plan Update, current best practices, and community input to assess whether the improvements remain feasible and appropriate for inclusion in the updated Community Plan.

It is important to note that many of the items listed in both the PFFP are described as "policy assumptions." These types of projects typically represent best practices—such as installing missing sidewalks, implementing ADA-compliant curb ramps, or upgrading signal infrastructure. While these projects are assumed to be included in the Community Plan Update (CPU), they are not expected to significantly affect traffic operations or the modeling results presented in the Traffic Operations Analysis. Furthermore, many of these locations, particularly intersection-specific improvements, fall outside the defined study area. As such, the CPU assumes that these policy-based improvements will be implemented as funding becomes available, without requiring detailed modeling or operational analysis for each.

This cross-reference table reflects which projects have been incorporated into the planned network and provides additional notes clarifying the status and rationale for each item.

Source	Project Title	Description	Estimated Cost	Incorporated in Planned Network	Notes
PFFP	T-1: College Avenue Over I-8 Bridge and Approaches	This project provides for the widening of College Avenue at the I-8 bridge and approaches to a modified six-lane major street. This project also provides Class II bike lanes.	$7,000,000	No	No improvements included due to jurisdiction by Caltrans and replacement by Kumeyaay Corridor CMCP recommendations.
PFFP	T-2: College Avenue and Canyon Crest Drive/Alvarado Road Intersection	This project provides for the improvements of the College Avenue/Canyon Crest Drive/Alvarado Road intersection, the realignment of Alvarado Road for approximately 1,600 feet east of College Avenue, and Class II bicycle lanes on College Avenue/Canyon Crest Drive.	$4,650,000	Partial	Realignment not part of proposed plan; only minor updates (e.g., signal changes) are considered.
PFFP	T-3: Montezuma Road and Collwood Boulevard	This project will provide for the improvements of the Montezuma Road and Collwood Boulevard intersection within the existing right-of-way. These improvements include relocating the raised center median to provide dual left-turn lanes from westbound Montezuma Road to southbound Collwood Boulevard. The bike lane and restricted parking are retained.	$1,100,000	No	Signal optimization is included for this intersection, but no major infrastructure changes.
PFFP	T-4: Traffic Signals – Various Locations	This project consists of the installation of traffic signals at the following locations: Hardy Avenue and Campanile Drive, Lindo Paseo and Campanile Drive, and 55th Street and Lindo Paseo. Hardy Avenue and Campanile Drive - $275,000. Lindo Paseo and Campanile Drive - $275,000. 55th Street and Lindo Paseo - $110,000.	$660,000	Partial	Signal installations at Lindo Paseo and Campanile Drive are included; other locations are not.
PFFP	T-5: Traffic Signal Interconnect	This project provides for the construction of various traffic signal subsystems throughout the community.	$460,000	Yes	Corridor-wide signal coordination and optimization have been assumed as part of the implementation.
PFFP	T-6: El Cajon Boulevard from 68th to 69th Street	This project provides for the modification of the existing raised center median to create left-turn pockets in both directions at two intersections: two turn lanes at 68th Street and one turn lane at 69th Street.	$90,000	No	This is not a study area intersection. Left turn is already provided at 67th Street & El Cajon Boulevard, as well as at 70th Street and El Cajon Boulevard. Thus these left-turn movements may not be necessary. Additional study or observation is recommended.

Source	Project Title	Description	Estimated Cost	Incorporated in Planned Network	Notes
PFFP	T-7: ADA Improvements	This project provides funding for American Disabilities Act (ADA) barrier removal and disability related citizens complaints in the community. Projects may include curb ramps, audible signals, and installation of sidewalks in conjunction with and adjacent to curb ramp improvements.	$1,000,000	Yes	This is a global policy and thus it is included in the assumption.
PFFP	T-9: College Avenue from Lindo Paseo to Canyon Crest Drive	This project provides for widening of College Avenue from Lindo Paseo to Canyon Crest Drive intersection to a modified six lane major street. These improvements include right-of-way acquisition, existing structures removal and pedestrian bridge reconstruction. It also includes Class II bike lanes.	$11,500,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-10: Alvarado Road Widening	This project will widen Alvarado Road to a three-lane collector (52' curb to curb) from 1600' east of College Avenue to 300' west of 70th Street with Class 3 bike lanes. This improvement requires additional right-of-way acquisition.	$4,800,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-11: College Avenue at Montezuma Road and Lindo Paseo Intersections	This project will provide for the improvement of College Avenue at the Montezuma Road and Lindo Paseo intersections. These improvements include right-of-way acquisition, removal of existing structures/buildings, traffic signal modifications and relocating raised center median. These improvements will provide three through lanes, separate right-turn lanes on the north and south legs of College Avenue at both intersections. It also provides Class II bicycle lanes.	$6,000,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-12: College Avenue and El Cajon Boulevard Intersection	This project will provide for the improvement of College Avenue at the Montezuma Road and Lindo Paseo intersections. These improvements include right-of-way acquisition, removal of existing structures/buildings, traffic signal modifications and relocating raised center median. These improvements will provide three through lanes, separate right-turn lanes on the north and south legs of College Avenue at both intersections. It also provides Class II bicycle lanes.	$4,100,000	No	Due to limited right-of-way this recommended is not included.

Source	Project Title	Description	Estimated Cost	Incorporated in Planned Network	Notes
PFFP	T-13: El Cajon Boulevard at 70th Street Intersection	This project will provide for the improvements on El Cajon Boulevard at the 70th Street intersection. These improvements include widening, which requires additional right-of-way, and relocating the raised center median to provide a separate right-turn lane on the west and east legs, dual left-turn lanes on the west leg, and a single left-turn lane on the east leg. It also provides for Class II bicycle lanes.	$1,600,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-14: El Cajon Boulevard from 54th Street to 58th Street	This project provides for the widening of El Cajon Boulevard to a modified four lane major street with Class 3 bike routes from 54th Street to 58th Street.	$1,800,000	No	Due to limited right-of-way and the needs to provide for more efficient transit operation throughout El Cajon Boulevard, as well as the needs to provide an improve bicycle facility, this recommendation is not included.
PFFP	T-15: 70th Street at Alvarado Road and at I-8 Bridge	This project provided for a third northbound through lane on 70th Street from the I-8 bridge to south of the Alvarado Road intersection. These improvements included I-8 bridge widening and right-of-way acquisition at the southeast corner of 70th Street and Alvarado Road intersection.	$1,700,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-16: 55th Street from Montezuma Road to Hardy Avenue	This project provided for the widening of 55th Street to a four-lane collector from Montezuma Road to Hardy Avenue. The widening required right-of-way acquisition and existing structure removal.	$2,400,000	No	Due to limited right-of-way this recommended is not included.

Source	Project Title	Description	Estimated Cost	Incorporated in Planned Network	Notes
PFFP	T-17: Traffic Signal at Montezuma Road and Campanile Road	Modify Existing Traffic Signal at Montezuma Road and Campanile Drive Intersection ($222,000 Total – $115,000 Unfunded, $107,000 TRANSNET). This project will improve College Avenue at the intersections with Montezuma Road and Lindo Paseo. The improvements include acquiring additional right-of-way, removing existing structures or buildings, modifying traffic signals, and relocating the raised center median. The project will provide three through lanes and separate right-turn lanes on the north and south legs of College Avenue at both intersections. It will also include the addition of Class II bicycle lanes.	$222,000	No	Since the adoption of the PFFP, there has been extensive development in this area. Acquiring ROW is no longer feasible, thus this recommendation is not included.
PFFP	T-18: 55th Street and Montezuma Road Intersection Improvements	This project provided for the modification of the existing traffic signal and lane re-striping at the 55th Street and Montezuma Road intersection.	$85,000	Partial	Signal optimization is included for this intersection, but no major infrastructure changes.
PFFP	T-19: Alvarado Road Approach to 70th Street	This project provided for the improvement of the westerly Alvarado Road approach to 70th Street. These improvements included right-of-way acquisition to provide a separate right-turn lane from eastbound Alvarado Road to southbound 70th Street.	$885,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-20: Fairmount Avenue from Montezuma Road to I-8 Improvements	This project provided for widening Fairmount Avenue to six lanes from I-8 to Montezuma Road and widening ramps and the overpass to increase the capacity of the Montezuma Road/Fairmount Avenue interchange.	$9,038,738	No	Due to limited right-of-way this recommended is not included. Additional study is recommended to determine the most optimum configuration that balance between transportation access and traffic calming needs.
PFFP	T-21: El Cajon Boulevard and Montezuma Road Intersection	This project provided for the construction of a left-turn lane from eastbound El Cajon Boulevard to northbound Montezuma Road within the existing right-of-way. It also provided for the modification of the existing traffic signal at the El Cajon Boulevard and Montezuma Road intersection.	$150,000	No	Due to limited right-of-way this recommended is not included.

Source	Project Title	Description	Estimated Cost	Incorporated in Planned Network	Notes
PFFP	T-26: 55th Street from Hardy Avenue to Remington Road	This project provided for the widening of 55th Street to a four-lane collector from Hardy Avenue to Remington Road. The widening required right-of-way acquisition and existing structure removal. The installation of traffic signals at Hardy Avenue and Remington were not included with this project.	$900,000	No	Due to limited right-of-way this recommended is not included.
PFFP	T-27: 55th Street and Remington Road: Traffic Signal	This project provided for the installation of a new traffic signal at 55th Street and Remington Road.	$110,000	Yes	Completed - Intersection is signalized
PFFP	T-28: Mission Valley East LRT Extension	This project provided for the construction of the Mission Valley East Light Rail Transit Line. The SDSU segment, at a cost of $94,000,000, includes a loop alignment through the SDSU campus.	$94,000,000	Yes	Completed

Planned Cross Sections

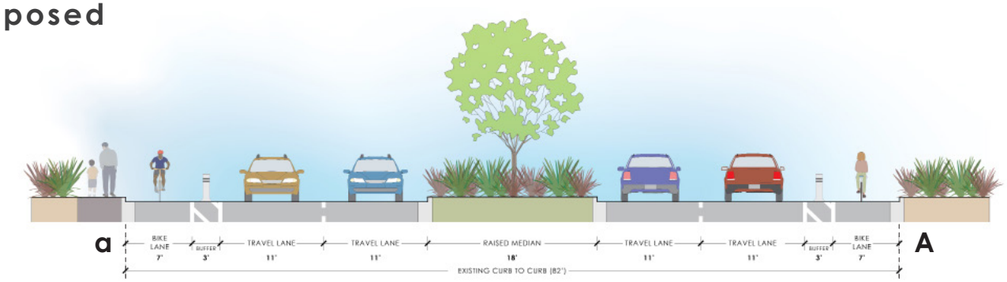
Note: The following are planning level cross-sections. Detailed cross-sections will be developed at the project level.

Montezuma Road

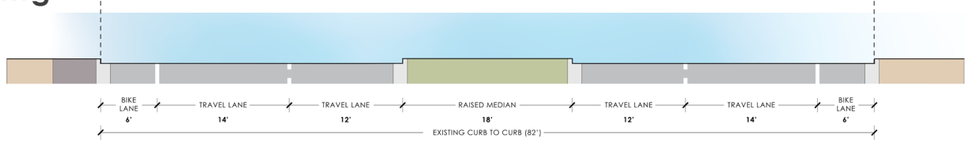
PLAN COLLEGE AREA

A. FAIRMOUNT AVE TO COLLWOOD BL

Proposed

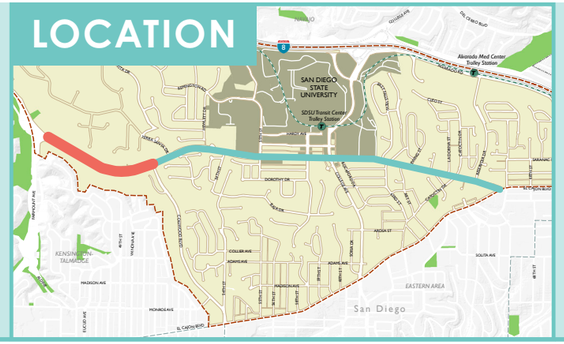


Existing



Proposed Roadway Features:
- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction

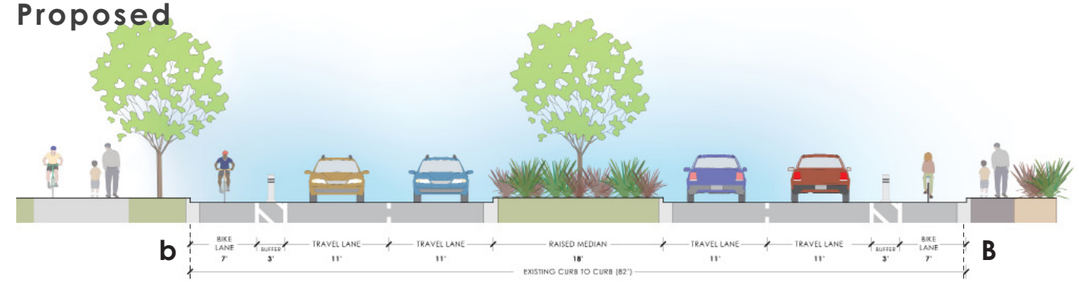
LOCATION



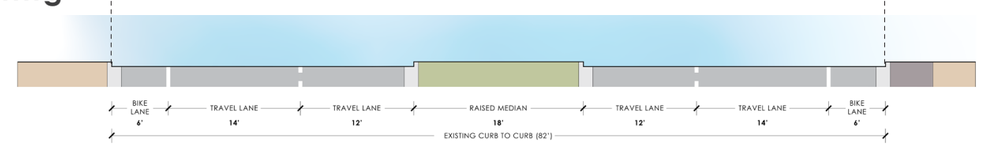
Roadway Modifications:
- Proposed reconfiguration would require:
  - Narrowing of existing travel lanes
  - Adding physical separation between the travel lane and bikeway
  - Transit signal priority

B. COLLWOOD BL TO 55TH ST

Proposed

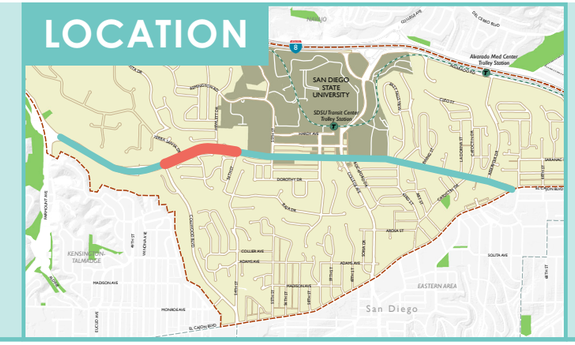


Existing



Proposed Roadway Features:
- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction

LOCATION



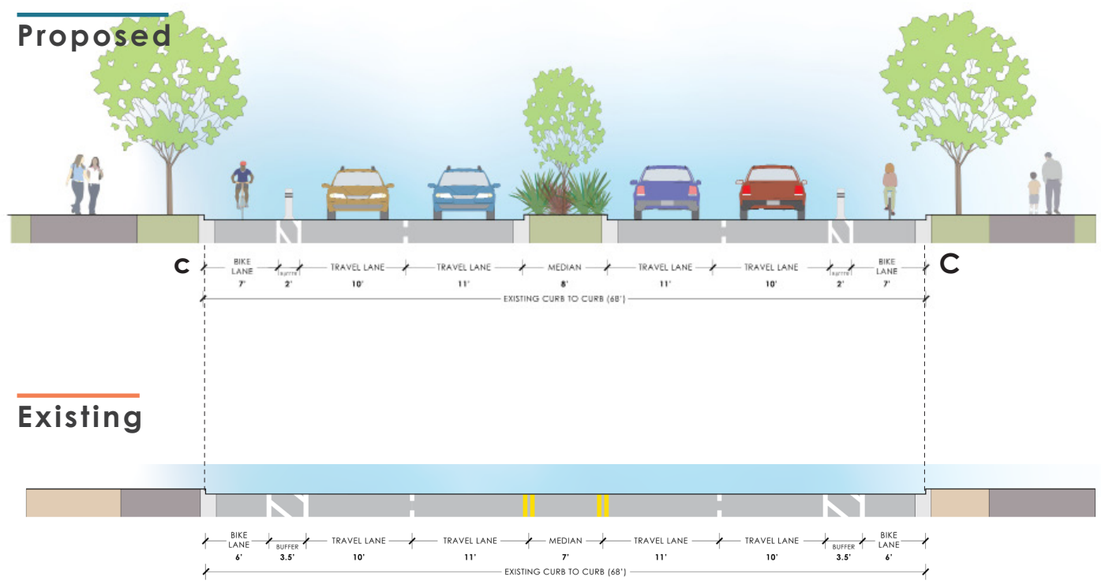
Roadway Modifications:
- Proposed reconfiguration would require:
  - Narrowing of existing travel lanes
  - Widening and retaining wall on the south side of the roadway
  - Adding physical separation between the travel lane and bikeway
  - Transit signal priority

***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

Montezuma Road

PLAN COLLEGE AREA

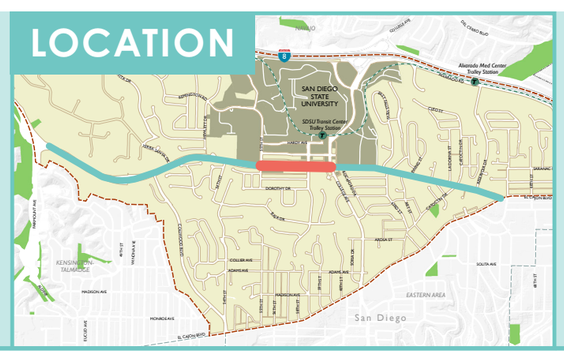
C. 55TH ST TO COLLEGE AVE



Proposed Roadway Features:

- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction

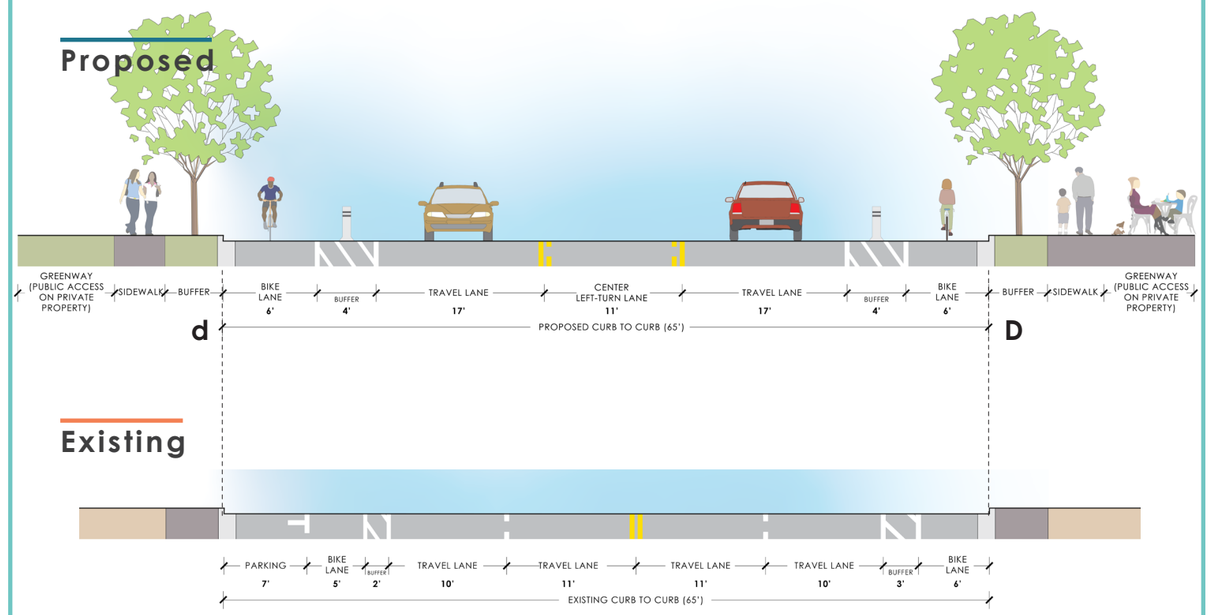
LOCATION



Roadway Modifications:

- Proposed reconfiguration would require:
  - Adjusting the widths of travel lanes and median
  - Adding physical separation between the travel lane and bikeway
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

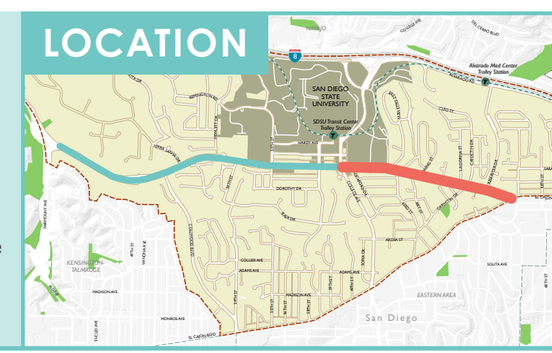
D. COLLEGE AVE TO EL CAJON BL



Proposed Roadway Features:

- One general purpose travel lane in each direction
- Center left-turn lane/ Raised median
- One-way cycle tracks in each direction
- Additional space outside of the right of way for potential Greenway

LOCATION



Roadway Modifications:

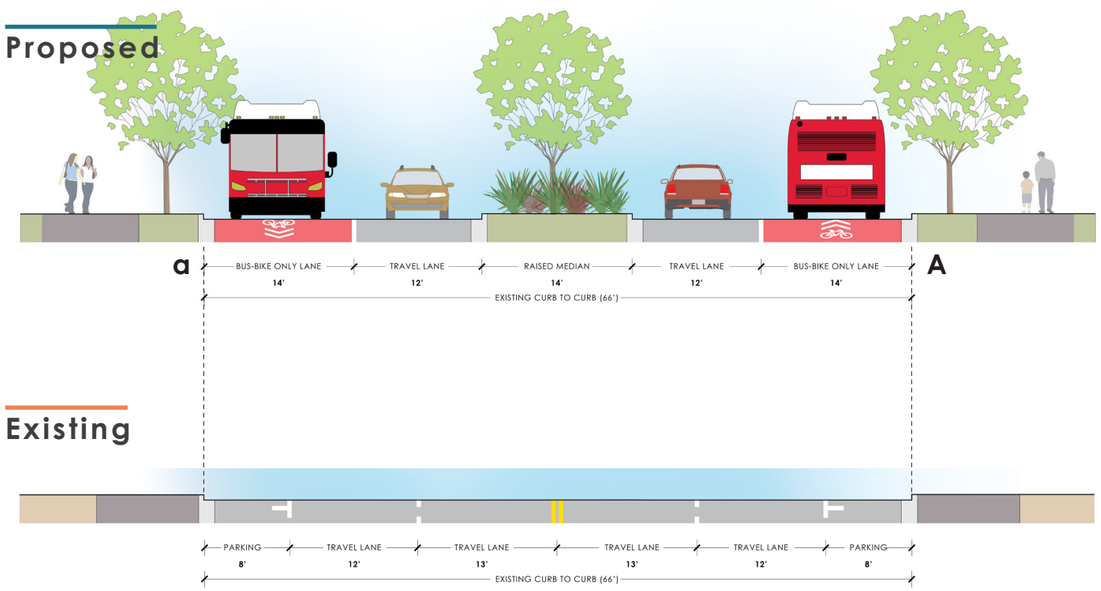
- Proposed reconfiguration would require:
  - Lane repurposing from 4 lanes to 3 lanes
  - Removal of on-street parking
  - Adding physical separation between the travel lane and bikeway
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

El Cajon Boulevard

PLAN COLLEGE AREA

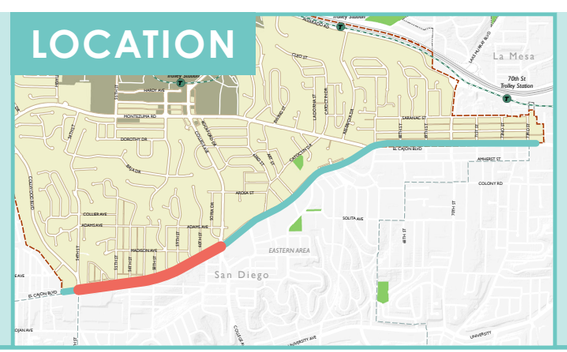
A. 54TH ST TO COLLEGE AVE



Proposed Roadway Features:

- One general purpose travel lane in each direction
- Raised median
- Bus-Bike Only lane in each direction

LOCATION



Roadway Modifications:

- Proposed reconfiguration would require:
  - Lane repurposing from 4 general purpose lanes to 2 general purpose lanes and 2 bus/bike lanes
  - Removal of on-street parking; to be determined at the project level
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

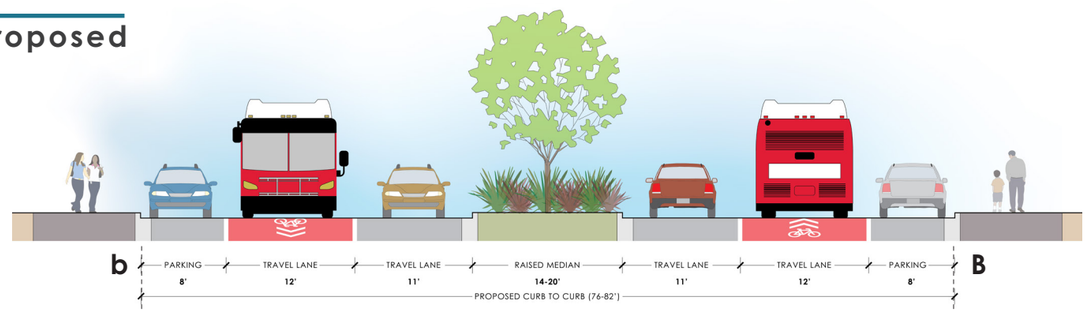
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

El Cajon Boulevard

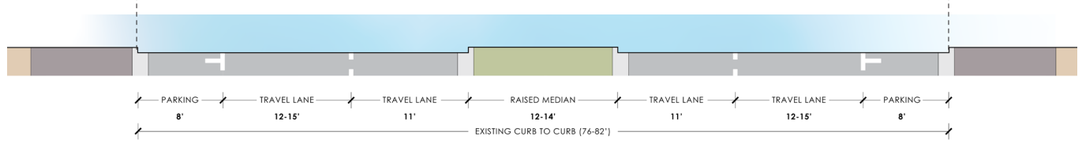
PLAN COLLEGE AREA

B. COLLEGE AVE TO MONTEZUMA RD

Proposed



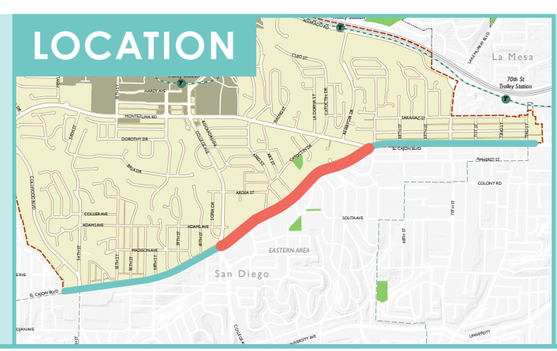
Existing



Proposed Roadway Features:

- One general purpose travel lane in each direction
- Raised median
- Bus-Bike Only lane in each direction
- Additional space outside of the curb for potential linear park or wider sidewalks

LOCATION



Roadway Modifications:

- Proposed reconfiguration would require:
  - Lane repurposing from 4 general purpose lanes to 2 general purpose lanes and 2 bus/bike lanes
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

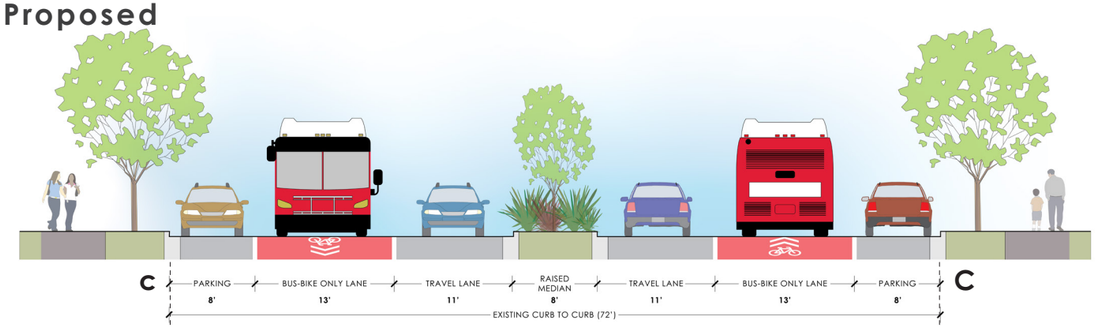
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

El Cajon Boulevard

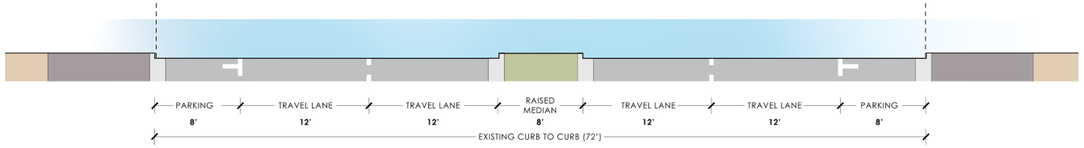
PLAN COLLEGE AREA

C. MONTEZUMA RD TO 73RD ST

Proposed



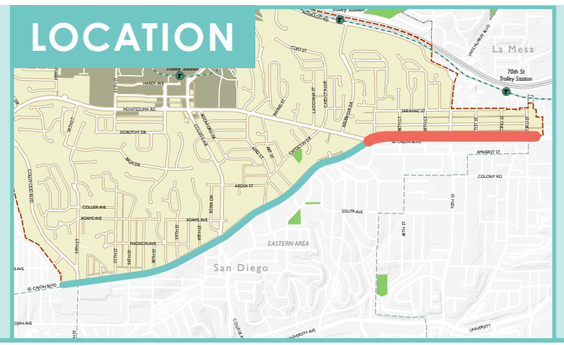
Existing



Proposed Roadway Features:

- One general purpose travel lanes in each direction
- Bus-Bike Only lane in each direction

LOCATION



Roadway Modifications:

- Proposed reconfiguration would require:
  - Narrowing of existing travel lanes
  - Lane re-purposing from 4 general purpose lanes to 2 general purpose lanes and 2 bus/bike lanes
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

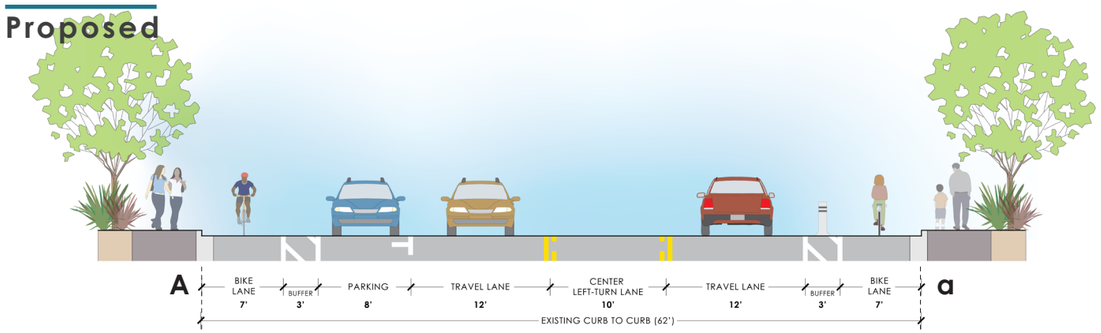
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

Collwood Boulevard/ 54th Street

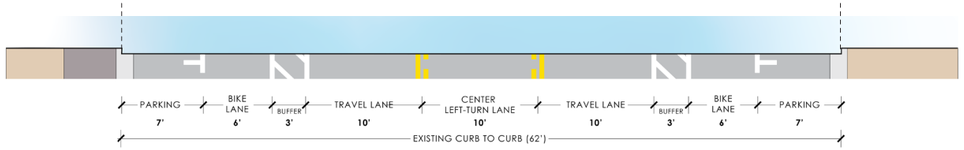
PLAN COLLEGE AREA

A. MONTEZUMA RD TO MONROE AVE

Proposed



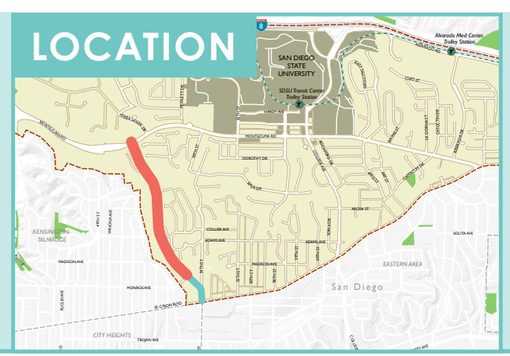
Existing



Proposed Roadway Features:

- One general purpose travel lane in each direction, with two-way center left-turn lane
- One-way cycle tracks in each direction
- Parallel parking on west side

LOCATION

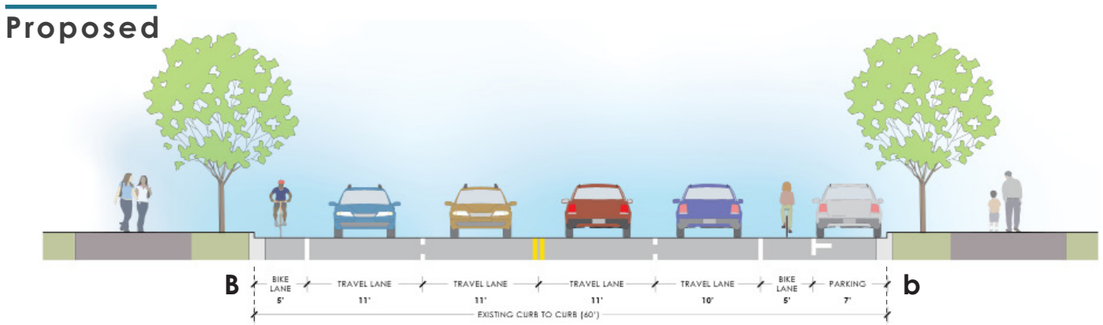


Roadway Modifications:

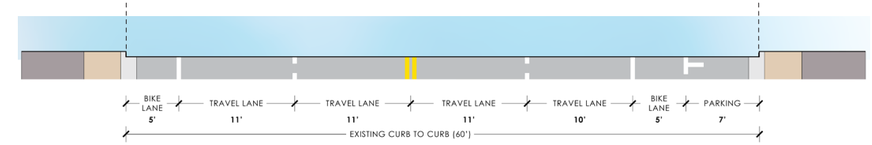
- Proposed reconfiguration would require:
  - Removal of on-street parking on east side of roadway
  - Construction of sidewalk on east side, near bus stops
  - Crossings with Rectangular Rapid Flashing Beacons (RRFB) or Hawk Beacon signals at locations next to bus stops
  - Adding physical separation between the travel lane and bikeway

B. MONROE AVE TO EL CAJON BL

Proposed



Existing



Proposed Roadway Features:

- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction
- Bike boxes at Collwood Rd northbound at Monroe Ave, and at 54th St southbound at El Cajon Bl

LOCATION

Roadway Modifications:

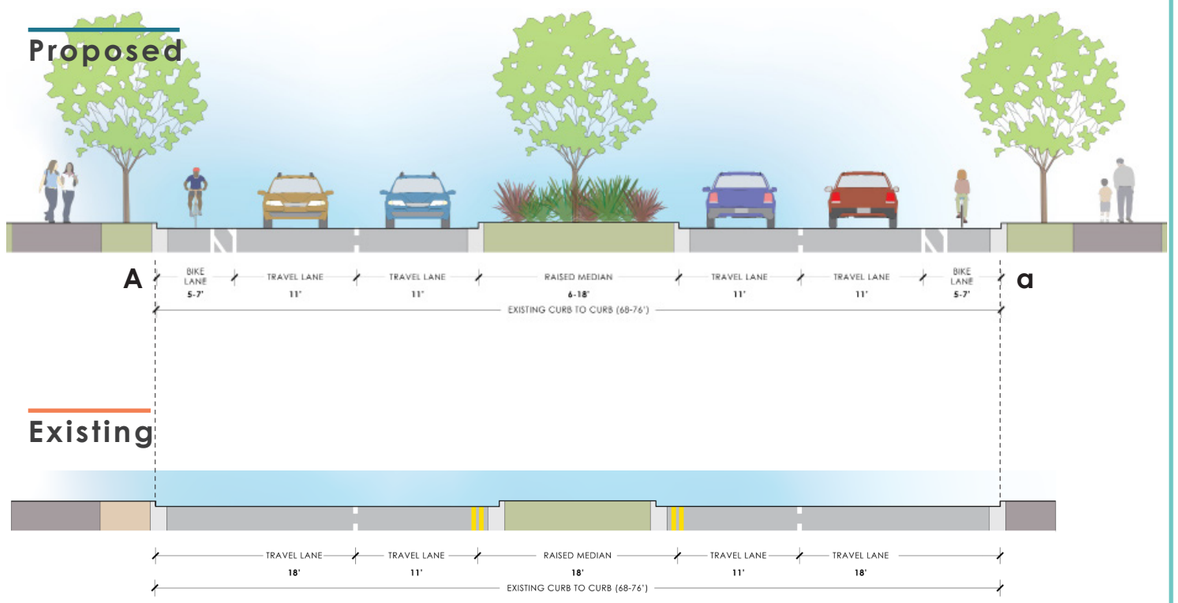
- Corridor could also include potential expansion of right-of-way on each side of roadway through redevelopment
- Roadway widening or right-of-way acquisition may be required to implement One-Way Class IV Cycle Tracks in each direction. Specific configuration is to be determined at the project level.

***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

College Avenue

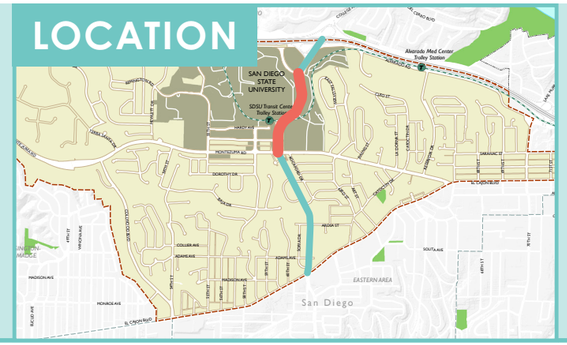
PLAN COLLEGE AREA

A. ALVARADO RD TO MONTEZUMA RD



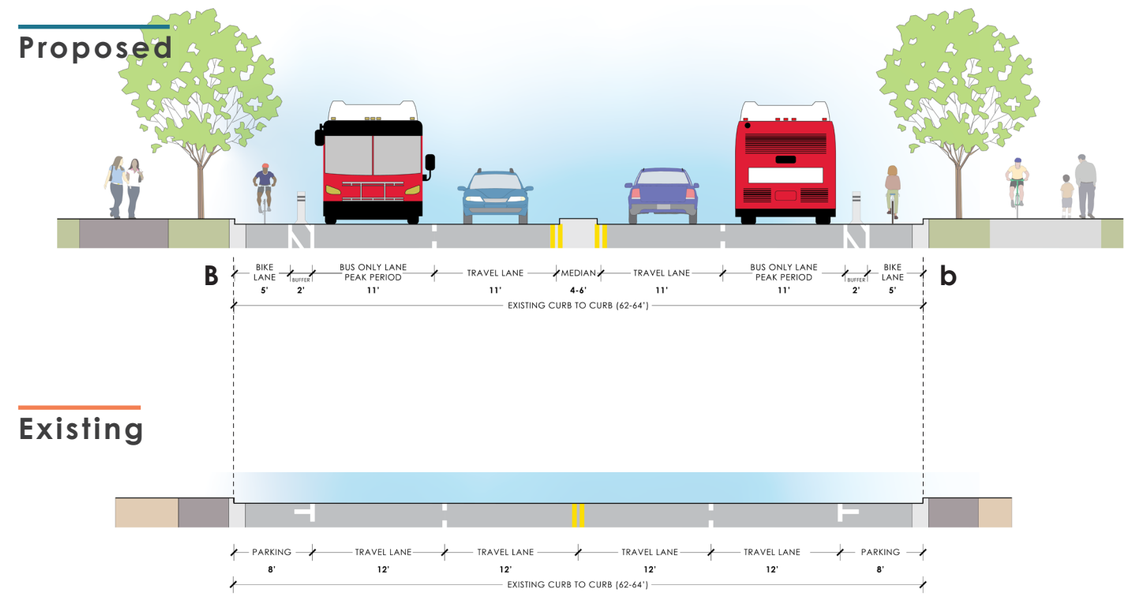
Proposed Roadway Features:
- Two general purpose travel lanes in each direction
- One buffered bike lane in each direction

LOCATION



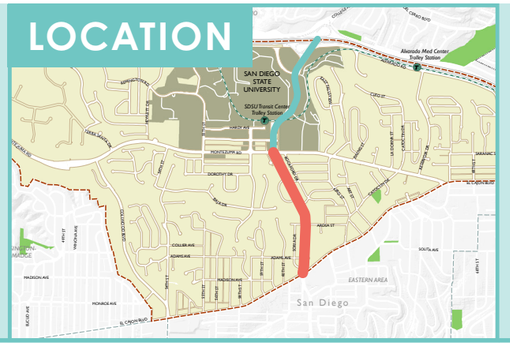
Roadway Modifications:
- Proposed reconfiguration would require:
  - Narrowing of existing travel lanes
  - Transit signal priority
- Corridor could also include potential expansion of right-of-way on the east side of roadway through redevelopment

B. MONTEZUMA RD TO EL CAJON BL



Proposed Roadway Features:
- One general purpose travel lane in each direction
- One-way cycle tracks in each direction
- Bus Only lane in each direction
- Potential multi-use path

LOCATION



Roadway Modifications:
- Proposed reconfiguration would require:
  - Narrowing existing travel lanes
  - Adding physical separation between the travel lane and bikeway
  - Removal of on-street parking
  - Transit signal priority
- Corridor could also include expansion of right-of-way and public access Greenway (outside of the right of way) on each side of the roadway, through redevelopment

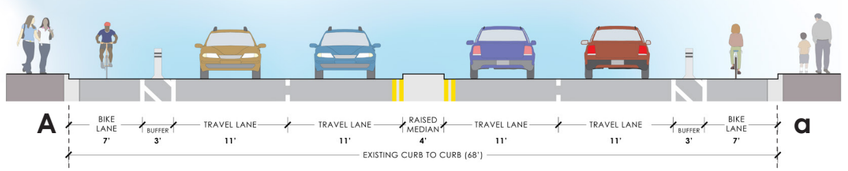
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

70th Street

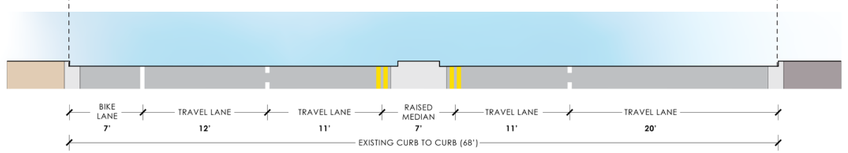
PLAN COLLEGE AREA

A. ALVARADO RD TO SARANAC ST

Proposed

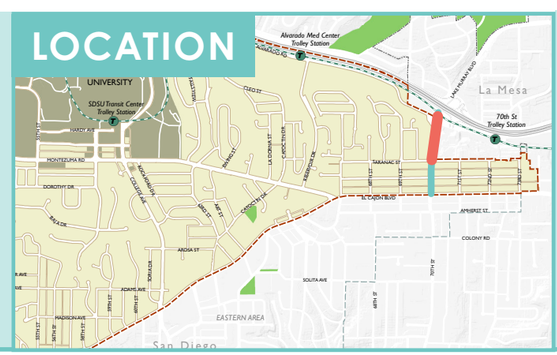


Existing



Proposed Roadway Features:
- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction

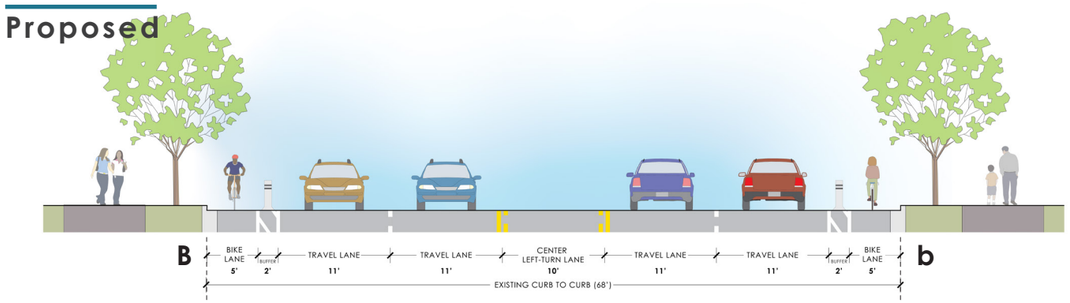
LOCATION



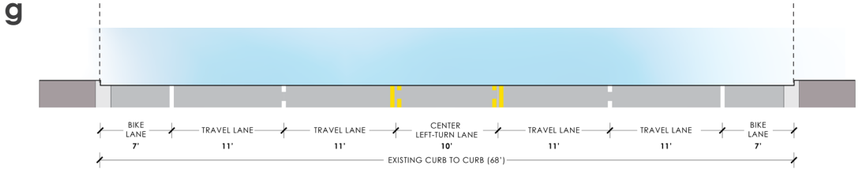
Roadway Modifications:
- Proposed reconfiguration would require:
  - Narrowing of existing travel lanes and median
  - Adding a northbound bike lane
  - Adding physical separation between the travel lane and bikeway
  - Construction of sidewalk on west side

B. SARANAC ST TO EL CAJON BL

Proposed

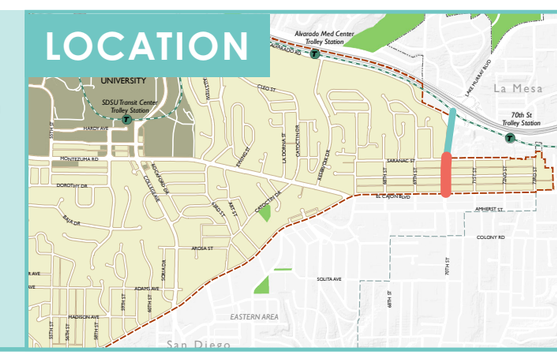


Existing



Proposed Roadway Features:
- Two general purpose travel lanes in each direction
- One-way cycle tracks in each direction

LOCATION



Roadway Modifications:
- Proposed reconfiguration would require:
  - Adding physical separation between the travel lane and bikeway
- Corridor could also include potential expansion of right-of-way on each side of the roadway through redevelopment

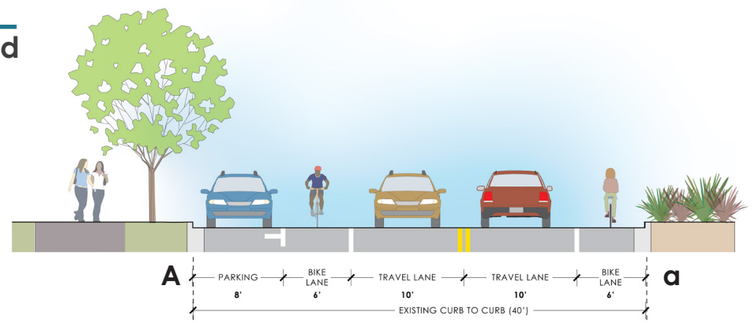
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

Alvarado Road

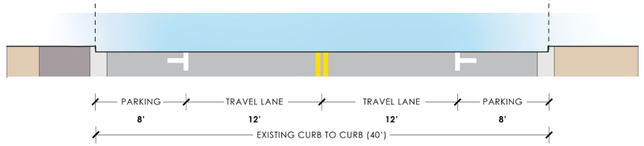
PLAN COLLEGE AREA

A. RESERVOIR DR TO 70TH ST

Proposed



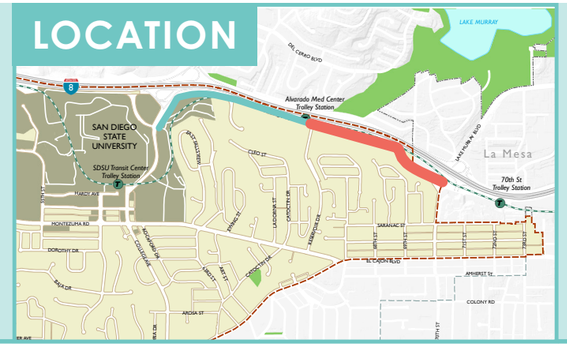
Existing



Proposed Roadway Features:

- One general purpose travel lane in each direction
- One bike lane in each direction
- Parallel parking on one side to be determined at the project level

LOCATION



Roadway Modifications:

- Proposed reconfiguration would require:
  - Removal of on-street parking on one side of the street to be determined at the project level
  - Corridor could also include potential expansion of right-of-way on each side of the roadway through redevelopment

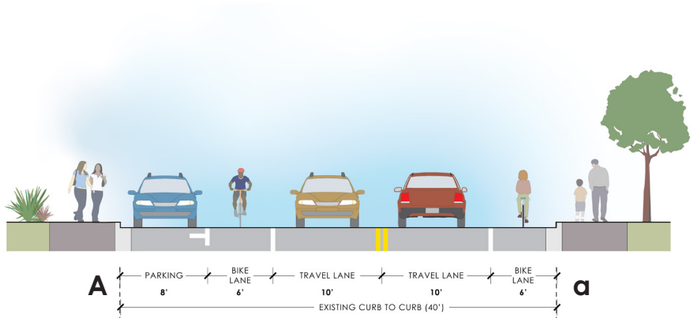
***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

Reservoir Drive

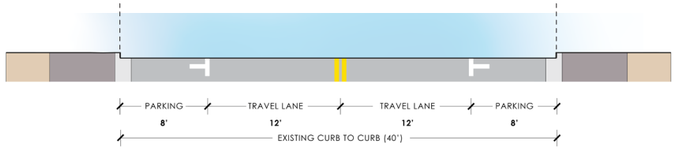
PLAN COLLEGE AREA

A. ALVARADO RD TO MONTEZUMA RD

Proposed



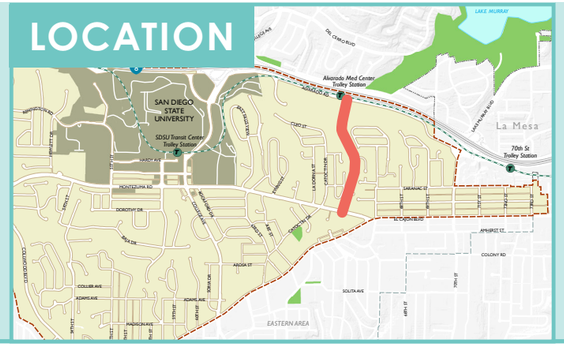
Existing



Proposed Roadway Features:

- One general purpose travel lane in each direction
- One bike lane in each direction
- Parallel parking on one side to be determined at the project level

LOCATION



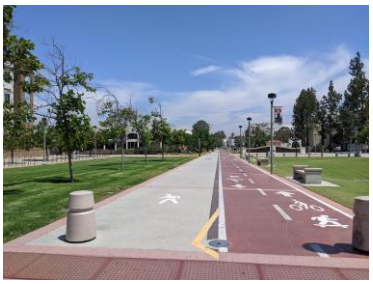
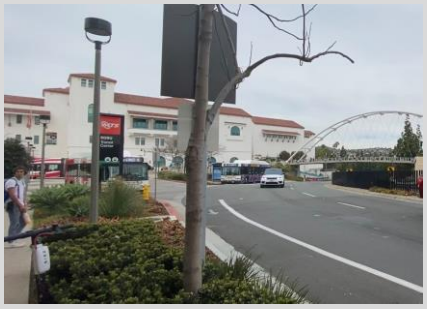
Roadway Modifications:

- Proposed reconfiguration would require:
  - Removal of on-street parking on one side of the street to be determined at the project level

***Notes**: Cross-sections shown are taken at most constrained or complex location within the segment limits. Cross-sections for the remainder of the segment are subject to vary. Dimensions shown are conceptual and used for feasibility assessment only. Landscaping depicted may require the formation of a Maintenance Assessment District (MAD). Lane colors are for illustrative purposes and do not necessarily indicate pavement marking color or pattern. Roadway modifications do not include all elements required which would be determined at the project level and consistent with the City's Street Design Manual.*

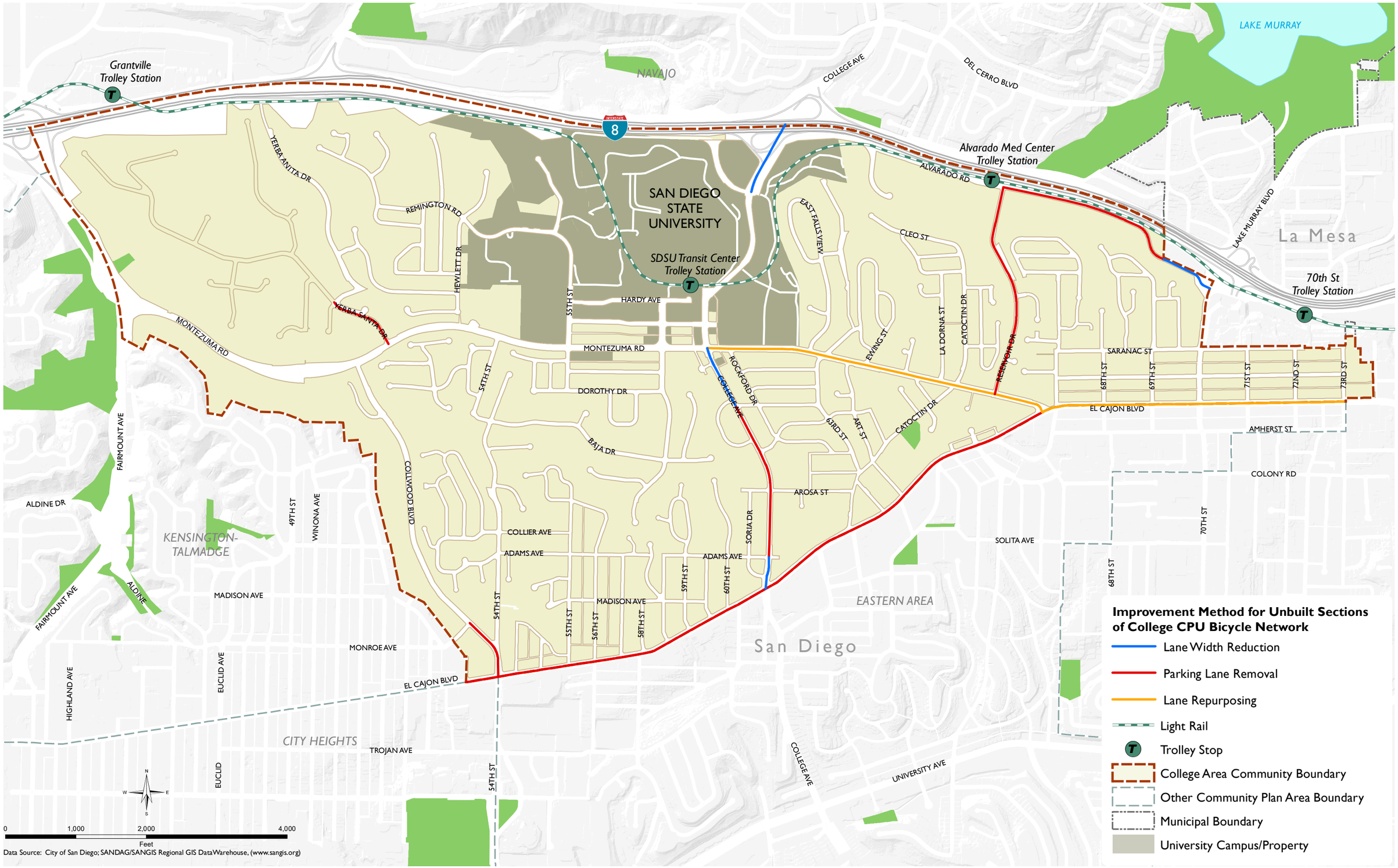
Attachment B - Excerpt from Existing Mobility Assessment for College Area Community Plan Update

Table 2-10 Bicycle Facility Classifications and Existing Network Mileage

Description of Facility	Example	Existing Mileage
Class I Multi-Use Path – Also referred to as bike paths or shared-use paths, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Multi-use paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way multi-use path is eight feet, with a two-foot-wide graded area adjacent to the pavement.	 *SDSU Multi-Use Path*	0.81
Class II Bike Lane – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is five feet.	 *College Avenue*	6.37
Class III Bike Route – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and shared lane markings called "sharrows." Bike routes are best suited for low-speed, low-volume roadways with an outside lane of 14 feet or greater. Bike routes provide network continuity or designate preferred routes through corridors with high demand.	 *Trojan Avenue*	3.56
	TOTAL MILEAGE	10.74

Attachment C - Implementation Method for Unbuilt Sections of College CPU Bicycle Network

Attachment C: Implementation Method for Unbuilt Sections of College CPU Bicycle Network



Attachment D - Planning-Level Mobility Improvements

College Area Community Plan – Recommended Mobility Improvements

Transit and Roadway Recommendations

Transit Priority Improvements: The draft College Area Plan Update envisions the following transit-related improvements to improve the efficiency and reliability of the public transportation investments into the community for both existing and planned services.

Transit Lanes are proposed on El Cajon Boulevard (bus-bike lanes) and College Avenue (transit-only lanes) to improve performance for local and Rapid services. Additional corridor studies are recommended to evaluate alternatives including transit priority treatments at intersections versus exclusive transit lanes.

Intersection Transit Priority Treatments should be considered, analyzed and included in future improvements to intersections along transit routes especially at *El Cajon Boulevard/College Avenue* and *Montezuma Road/College Avenue* intersections.

Ultimate Roadway Classifications: Described below are the ultimate classifications for the Mobility Element roadways for the College Area community as defined in the draft community plan update.

College Avenue is the primary north-south corridor in the College Area community, connecting to Mid-City in the south and providing access to/from Interstate-8 and the Navajo community to the north. Additionally, College Avenue serves as a transit corridor for existing and planned Rapid and local bus services providing access to/from San Diego State University Transit Center/Trolley Station.

College Avenue between Montezuma Road and Alvarado Road/Interstate-8 is planned to be a four-lane major with raised median and Class II bike lanes.

College Avenue between El Cajon Boulevard and Montezuma Road is planned to be a four-lane major with raised median and a general-purpose travel lane and an exclusive bus lane in each direction with one-way Class IV separated bikeways (cycle tracks) in each direction. Transit lanes can be used as emergency lanes when needed. Implementation of this classification would require narrowing of lanes and/or the removal of on-street parking where right-of-way is constricted and for daylighting compliance. Additional corridor-level analysis and outreach to the

community is recommended prior to implementation. Analysis should include evaluation of parking loss and potential offsets.

Montezuma Road is one of the two main east-west corridors for the community providing access to Interstate-8 and the Mission Valley and Navajo communities to the west and the City of La Mesa to the east.

Montezuma Road between the northbound Fairmount Avenue ramps and College Avenue is planned to be a four-lane major with raised median and one-way Class IV separated bikeways (cycle tracks) in each direction.

Montezuma Road between College Avenue and El Cajon Boulevard is planned to be reconfigured from four-lane major to two-lane collector with center left-turn lane and one-way Class IV separated bikeways (cycle tracks) in each direction. The center left-turn lane could be used as an emergency lane when needed. On-street parking removal may be required, and additional corridor analysis may be needed for the reconfiguration.

El Cajon Boulevard is the southernmost boundary of the College Area and serves as one of two main east-west corridors for the community. Additionally, El Cajon Boulevard is a major transit corridor serving existing and planned Rapid and local busses.

El Cajon Boulevard between the western border and Montezuma Road is planned to be a four-lane major with raised median and a general-purpose travel lane and an exclusive bus/bike lane in each direction. Bus/bike lanes could be used as emergency lanes when needed. Implementation of this classification may require removal of on-street parking where right-of-way is constricted, for daylighting compliance, and/or for the addition of left-turn pockets on El Cajon Boulevard at intersections where they currently do not exist. Additional corridor-level analysis and vetting with the community is recommended prior to implementation. Analysis should include evaluation of parking loss and off-sets as well as alternatives including, but not limited to, implementation of roundabouts and transit priority improvements at intersections.

El Cajon Boulevard between Montezuma Road and eastern City boundary is planned to be a four-lane major with raised median and a general-purpose travel

lane and an exclusive bus/bike lane in each direction. Bus/bike lanes could be used as emergency lanes when needed. Additional corridor-level analysis and vetting with the community is recommended prior to implementation. Analysis should include evaluation of parking loss and off-sets as well as alternatives including, but not limited to, roundabouts and transit priority improvements at intersections.

Collwood Boulevard between Montezuma Road and Monroe Avenue is planned to be a two-lane collector with center left-turn lane and one-way Class IV separated bikeways in each direction. **Collwood Boulevard between Monroe Avenue and 54th Street** is planned to be a four-lane major with one-way Class IV separated bikeways (cycle tracks) in each direction.

70th Street between Alvarado Road/Interstate-8 and El Cajon Boulevard is a four-lane major with raised median and planned one-way Class IV separated bikeways (cycle tracks) in each direction.

54th Street between Montezuma Road and Baja Drive is classified as two-lane collector and a Class III bike route. **54th Street between Baja Drive and Collwood Boulevard** is classified as a two-lane collector with planned designation as a Class III bike route. At the time of implementation of the bike facility additional analysis is recommended to evaluate alternatives including asymmetric facilities such bike lanes on uphill segments including evaluation of associated parking impacts. **54th Street between Collwood Boulevard and El Cajon Boulevard** is a four-lane major with planned one-way Class IV separated bikeways (cycle tracks) in each direction.

55th Street between Montezuma Road and Remington Road is a four-lane collector with Class II bike lanes.

Remington Road between Drover Drive and 55th Street is a two-lane collector with Class II bike lanes.

Baja Drive between 54th Street and Campanile Drive is a two-lane collector with Class III bike route designation.

Campanile Mall Drive between Hardy Avenue and Montezuma Road is a four-lane collector with Class III bike route designation.

63rd Street between Montezuma Road and El Cajon Boulevard is a two-lane collector with a planned designation as a Class III bike route.

Catoctin Drive between 63rd Street and Montezuma Road is a two-lane collector with Class III bike route designation.

Reservoir Drive between Alvarado Road and Montezuma Road is a two-lane collector with planned Class II bike lanes. Implementation of the bike facility would require the removal of on-street parking on one side of the street, therefore, additional analysis is recommended prior to implementation to evaluate alternatives including asymmetric facilities such bike lanes on uphill segments only, to evaluate the parking impacts, and to vet alternatives with the community.

Alvarado Road between College Avenue and Reservoir Drive is a two-lane collector with Class II bike lanes. **Alvarado Road between Reservoir Drive and 70th Street** is a two-lane collector with planned Class II bike lanes. Implementation of the bike facility would require the removal of on-street parking on one side of the street. Additional analysis is recommended to evaluate alternatives including asymmetric facilities such bike lanes on uphill segments only, to evaluate the parking impacts, and to vet alternatives with the community.

Yerba Santa Drive between Mesquite Road and Montezuma Road is a two-lane collector with no fronting property and planned Class II bike lanes.

Campanile Drive between Montezuma Road and Baja Drive is a two-lane collector with a planned Class III bike route designation.

Planned Bicycle Network

Street	From	To	Existing Bike Facility (as of 8/14/25)	Planned Bike Facility	Notes
Montezuma Rd.	Fairmount Av. NB Ramps	Collwood Bl.	Class IV	Class IV	
	Collwood Bl.	Yerba Santa Dr.	Class II	Class IV	
	Yerba Santa Dr.	54th St.	Class IV	Class IV	
	54th St.	55th St.	Class II (southside only)	Class IV	
	55th St.	College Av.	Class IV	Class IV	
	College Av.	El Cajon Bl.	Class II	Class IV	Planned change of roadway class from 4M to 2C w CLTL. Potential removal of on-street parking. Additional analysis required at the time of implementation.
El Cajon Bl.	College Area west boundary	Montezuma Rd.	None	Bus/Bike Lane	Repurpose one existing lane in each direction for exclusive bus/bike lane in each direction. Potential removal of on-street parking. Additional analysis required at the time of implementation.
	Montezuma Rd.	67th St.	Class II	Bus/Bike Lane	Repurpose one existing lane in each direction for exclusive bus/bike lane in each direction. Potential removal of on-street parking. Additional analysis required at the time of implementation.
	67th St.	College Area east boundary	Class III	Bus/Bike Lane	Repurpose one existing lane in each direction for exclusive bus/bike lane in each direction. Potential removal of on-street parking. Additional analysis required at the time of implementation.
Collwood Bl.	Montezuma Rd.	54th St.	Class II	Class IV	
54th St.	Montezuma Rd.	Collwood Bl.	None	Class III	Evaluate alternatives including asysmmetric facilities to provide Class II on uphill segments and impacts to parking.
	Collwood Bl.	El Cajon Bl.	Class II	Class IV	

55th St.	Remington Rd.	Montezuma Rd.	Class II	Class II	
Remington Rd.	Hewlett Dr.	55th St.	Class II	Class II	
Yerba Santa Dr.	Mesquite Rd.	Montezuma Rd.	None	Class II	Potential removal of on-street parking. Additional analysis required at the time of implementation.
College Av.	Interstate 8	Alvarado Rd.	Class II (eastside only)	Class II	
	Alvarado Rd.	Montezuma Rd.	Class II	Class II	
	Montezuma Rd.	El Cajon Bl.	None	Class IV	Repurpose one existing lane in each direction for exclusive bus lane in each direction. Potential removal of on-street parking. Additional analysis required at the time of implementation.
63rd. St.	Montezuma Rd.	El Cajon Bl.	None	Class III	
Reservoir Dr.	Alvarado Rd.	Montezuma Rd.	None	Class II	Removal of on-street parking on one-side of the street. Additional analysis required at the time of implementation.
Alvarado Rd.	College Av.	Reservoir Dr.	Class II	Class II	
	Reservoir Dr.	70th St.	None	Class II	Removal of on-street parking on one-side of the street. Additional analysis required at the time of implementation.
Baja Dr.	54th St.	Tierra Baja Wy.	None	Class III	
Campanile Mall Dr.	Hardy Av.	Montezuma Rd.	None	Class III	
Campanile Dr.	Montezuma Rd.	Baja Dr.	None	Class III	
Catoctin Dr.	63rd St.	Montezuma Rd.	None	Class III	
Mohawk St.	67th St.	73rd. St.	None	Class III	
67th St.	Mohawk St.	Montezuma Rd.	None	Class III	
73rd St.	Mohawk St.	Montezuma Rd.	None	Class III	
Esther St.	Adams Av.	El Cajon Bl.	None	Class III	
70th St.	Alvarado Rd./I-8	El Cajon Bl.	Class II	Class IV	

Pedestrian Improvements

The recommended pedestrian improvements are intended to improve the quality and experience for pedestrians within the College Area. Although specific improvements are recommended at the planning level, project level implementation should evaluate alternatives that achieve the desired effect. For example, intersections recommended for "Bulbout" (curb extension) treatments are intended to improve the visibility of pedestrians, reduce their crossing distance and conflicts with vehicles, alternatives could include roundabouts with pedestrian islands/refuges. Additionally, recommendations are based on analysis done in the College Area Existing Conditions Mobility Assessment[1] finalized in February 2023 which since then some pedestrian improvements could have been implemented at the time of this report.

Pedestrian Segment Improvements are intended improve the quality and experience of walking/socializing next to the roadway. The following is a list of pedestrian segment improvements and their approximate locations. Although there are recommended improvement types, at the project level, site specific characteristics should be considered, and alternative improvements should be evaluated that would achieve the desired effects. Note: the same segments may be listed under multiple improvement recommendation types.

Sidewalk Infill: Fill in sidewalk gaps on the following segments:

Roadway	To	From
70th Street	Alvarado Road	Interstate 8
70th Street	Saranac Street	Alvarado Road
70th Street	Interstate 8	Parkway Drive
College Avenue	I-8 WB Ramps	Del Cerro Boulevard
College Avenue	I-8 EB Ramps	I-8 WB Ramps
College Avenue	Canyon Crest Drive	I-8 EB Ramps
College Avenue	Zura Way	Canyon Crest Drive
College Avenue	Aztec Walk	Zura Way
Collwood Boulevard	Adams Avenue	Collwood Lane
Collwood Boulevard	Collwood Lane	Collwood Villas
Montezuma Road	54th Street	Collwood Boulevard
Montezuma Road	55th Street	54th Street
Montezuma Road	Fairmount Avenue Expressway	College Area Boundary

[1] https://www.sandiego.gov/sites/default/files/2025-08/college_existing-mobility-assessment_040423.pdf

Montezuma Road	Collwood Boulevard	Fairmount Avenue Expressway
Montezuma Road	Fairmount Avenue Expressway	College Area Boundary
Montezuma Road	Yerba Santa Drive	Collwood Boulevard
Yerba Santa Drive	Montezuma Road	Mesquite Road

Widen Sidewalk: Widening of existing sidewalk recommended on the following segments:

Roadway	**To**	**From**
Collwood Boulevard	El Cajon Boulevard	Monroe Avenue
Montezuma Road	El Cajon Boulevard	Reservoir Drive

Add Vertical Buffers: Provide vertical elements between the sidewalk and the roadway. Common examples are street trees separating moving vehicles from the sidewalk. Additions of vertical buffers are recommended on the following segments:

Roadway	**To**	**From**
70th Street	Saranac Street	Alvarado Road
College Avenue	Montezuma Road	Zura Way
College Avenue	Mesita Drive	Montezuma Road
College Avenue	Aztec Walk	Zura Way
El Cajon Boulevard	54th Street	College Area Boundary
Montezuma Road	Collwood Boulevard	Fairmount Avenue Expressway
Montezuma Road	54th Street	Collwood Boulevard
Montezuma Road	Reservoir Drive	East Campus Drive
Montezuma Road	Collwood Boulevard	Fairmount Avenue Expressway
Montezuma Road	54th Street	Yerba Santa Drive
Montezuma Road	Reservoir Drive	East Campus Drive
Montezuma Road	Yerba Santa Drive	Collwood Boulevard

Increase Horizontal Buffer: Move the sidewalk further from vehicular travel lanes on the following segments:

Roadway	**To**	**From**
Montezuma Road	55th Street	54th Street

Addition of "Pedestrian Scale Lighting"[2]: Provision of additional illumination next to sidewalks and other pedestrian oriented walkways are recommended on the following segments.

Roadway	**To**	**From**
55th Street	Montezuma Road	55th Street
College Avenue	Montezuma Road	Zura Way
College Avenue	Mesita Drive	Montezuma Road
College Avenue	El Cajon Boulevard	Mesita Drive
College Avenue	Aztec Walk	Zura Way
Collwood Boulevard	El Cajon Boulevard	Monroe Avenue
El Cajon Boulevard	58th Street	54th Street
El Cajon Boulevard	College Avenue	58th Street
El Cajon Boulevard	Montezuma Road	College Avenue
El Cajon Boulevard	70th Street	Montezuma Road
El Cajon Boulevard	73rd Street	70th Street
El Cajon Boulevard	58th Street	54th Street
El Cajon Boulevard	College Avenue	58th Street
Montezuma Road	College Avenue	54th Street
Montezuma Road	Reservoir Drive	East Campus Drive
Montezuma Road	El Cajon Boulevard	Reservoir Drive

Pedestrian Intersection Improvements are recommended to improve the quality of experience for pedestrians crossing roadways at intersections by improving their visibility to drivers and by reducing their crossing distance and conflicts with vehicles. Although there are recommended improvement types, at the project level, site specific characteristics should be considered, and alternative improvements should be evaluated that would achieve the desired effects. Note: the same intersections may be listed under multiple improvement recommendation types.

ADA: Installations/Upgrades for Americans with Disabilities Act (ADA) are recommended at the following intersections:

Intersection
College Avenue / Canyon Crest Drive
Collwood Boulevard / Monroe Avenue
62nd Street / El Cajon Boulevard

[2] "Pedestrian Scale Lighting" is not Street Lighting and is intended to supplement standard Street Lighting. Standards and requirements for Street Lighting are found in the City of San Diego Street Design Manual. "Pedestrian Scale Lighting" is typically privately installed and maintained through a Maintenance Assessment District.

Art Street / El Cajon Boulevard
73rd Street / El Cajon Boulevard
70th Street / Alvarado Road
Reservoir Drive / Montezuma Road

Advanced Stop Bar: Striped stop bars for vehicles set-backed from pedestrian crosswalks are recommended at the following intersections:

Intersection
College Avenue / Canyon Crest Drive
College Avenue / Zura Way
55th Street / Hardy Avenue
Collwood Boulevard / Collwood Way
Collwood Boulevard / Monroe Avenue
College Avenue / Adams Avenue
Art Street / El Cajon Boulevard
Montezuma Road / El Cajon Boulevard
70th Street / El Cajon Boulevard
73rd Street / El Cajon Boulevard
70th Street / Alvarado Road
63rd Street / Montezuma Road
East Campus Drive / Montezuma Road
College Avenue / Adams Avenue

Bulbouts: Curb-extensions that improve the visibility of pedestrians, reduce their crossing distance and conflicts with vehicles are recommended at the intersections below. At the project level, alternatives should be considered that achieve the desired effect that take into account corridor-wide improvements including but not limited to roundabouts.

Intersection
College Avenue / Lindo Paseo
College Avenue / Montezuma Road
Campanile Drive / Montezuma Road
55th Street / Montezuma Road
55th Street / Hardy Avenue
Collwood Boulevard / 54th Street
Collwood Boulevard / El Cajon Boulevard
Dayton Street / El Cajon Boulevard
College Avenue / El Cajon Boulevard
62nd Street / El Cajon Boulevard
63rd Street / El Cajon Boulevard

Art Street / El Cajon Boulevard
Rolando Boulevard / El Cajon Boulevard
College Avenue / Adams Avenue
Montezuma Road / El Cajon Boulevard
Reservoir Drive / Montezuma Road
55th Street / Aztec Walk

High-Visibility Crosswalks: Continental crosswalks (crosswalks striped with vertical bars) are recommended at the following intersections:

Intersection
College Avenue / Canyon Crest Drive
College Avenue / Zura Way
55th Street / Hardy Avenue
Collwood Boulevard / Collwood Way
Collwood Boulevard / Monroe Avenue
Collwood Boulevard / El Cajon Boulevard
Art Street / El Cajon Boulevard
Montezuma Road / El Cajon Boulevard
70th Street / El Cajon Boulevard
73rd Street / El Cajon Boulevard
70th Street / Alvarado Road
63rd Street / Montezuma Road
East Campus Drive / Montezuma Road
College Avenue / Adams Avenue

Lead Pedestrian Intervals: Signal timing modifications that provide pedestrians crossing time while conflicting vehicle movements are stopped are recommended at the intersections below. Site-specific analysis should be conducted to determine if a location is appropriate for LPI installation and if supplementary improvements such as No-Right-Turn-On-Red blank-out signs are also recommended.

Intersection
54th Street / Montezuma Road
56th Street / El Cajon Boulevard
59th Street / El Cajon Boulevard
70th Street / El Cajon Boulevard
73rd Street / El Cajon Boulevard
College Avenue / Arosa Street
College Avenue / Lindo Paseo
College Avenue / Montezuma Road

Campanile Drive / Montezuma Road
55th Street / Montezuma Road
55th Street / Hardy Avenue
Collwood Boulevard / 54th Street
Collwood Boulevard / El Cajon Boulevard
Dayton Street / El Cajon Boulevard
College Avenue / El Cajon Boulevard
College Avenue / Adams Avenue
62nd Street / El Cajon Boulevard
63rd Street / El Cajon Boulevard
Art Street / El Cajon Boulevard
Rolando Boulevard / El Cajon Boulevard
Montezuma Road / El Cajon Boulevard
67th Street / El Cajon Boulevard
Reservoir Drive / Montezuma Road
Catoctin Drive / Montezuma Road
63rd Street / Montezuma Road
East Campus Drive / Montezuma Road
55th Street / Aztec Walk

Pedestrian Signage: Additional signage that promote driver awareness that pedestrians are nearby and/or crossing the street are recommended at the intersections listed below. Site-specific analysis should be conducted at the project level to determine if a location is appropriate for signage and to evaluate for recommended signage consistent with the California Manual of Uniform Traffic Control Devices (CAMUTCD).

Intersection
54th Street / Montezuma Road
Yerba Santa Drive / Montezuma Road
Collwood Boulevard / Collwood Way
College Avenue / Canyon Crest Drive
College Avenue / Zura Way
College Avenue / Lindo Paseo
College Avenue / Montezuma Road
Campanile Drive / Montezuma Road
55th Street / Montezuma Road
55th Street / Hardy Avenue
55th Street @ Peterson Gym
Canyon Crest Drive / Remington Road / 55th Street
Collwood Boulevard / Montezuma Road
Collwood Boulevard / Monroe Avenue

Collwood Boulevard / 54th Street
Collwood Boulevard / El Cajon Boulevard
Dayton Street / El Cajon Boulevard
56th Street / El Cajon Boulevard
59th Street / El Cajon Boulevard
College Avenue / El Cajon Boulevard
College Avenue / Adams Avenue
College Avenue / Arosa Street
62nd Street / El Cajon Boulevard
63rd Street / El Cajon Boulevard
Art Street / El Cajon Boulevard
Rolando Boulevard / El Cajon Boulevard
Montezuma Road / El Cajon Boulevard
67th Street / El Cajon Boulevard
70th Street / El Cajon Boulevard
73rd Street / El Cajon Boulevard
70th Street / Alvarado Road
Reservoir Drive / Montezuma Road
Catoctin Drive / Montezuma Road
63rd Street / Montezuma Road
East Campus Drive / Montezuma Road
55th Street / Aztec Walk

Attachment E - Analysis Methodology

Level of Service (LOS) Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 1 - LOS Definitions

LOS	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Roadway Segment LOS Standards and Thresholds

Roadway segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast average daily traffic (ADT) volumes. **Table 2** displays the City of San Diego Roadway Capacity and LOS standards

Table 2 - City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Lanes	Level of Service				
		A	B	C	D	E
Freeway	8	60,000	84,000	120,000	140,000	150,000
Freeway	6	45,000	63,000	90,000	110,000	120,000
Freeway	4	30,000	42,000	60,000	70,000	80,000
Expressway	6	30,000	42,000	60,000	70,000	80,000
Prime Arterial	8	35,000	50,000	70,000	75,000	80,000
Prime Arterial	6	25,000	35,000	50,000	55,000	60,000
Prime Arterial	4	17,500	24,500	35,000	40,000	45,000
Major Arterial	7	22,500	31,500	45,000	50,000	55,000
Major Arterial	6	20,000	28,000	40,000	45,000	50,000
Major Arterial	5	17,500	24,500	35,000	40,000	45,000
Major Arterial	4	15,000	21,000	30,000	35,000	40,000
Major Arterial	3	11,250	15,750	22,500	26,250	30,000
Major Arterial	2	7,500	10,500	15,000	17,500	20,000
Major Arterial (one-way)	3	12,500	16,500	22,500	25,000	27,500
Major Arterial (one-way)	2	10,000	13,000	17,500	20,000	22,500
Collector (w/ two-way left-turn lane)	4	10,000	14,000	20,000	25,000	30,000
Collector (w/ two-way left-turn lane)	3	7,500	10,500	15,000	18,750	22,500
Collector (w/ two-way left-turn lane)	2	5,000	7,000	10,000	13,000	15,000
Collector (w/o two-way left-turn lane)	4	5,000	7,000	10,000	13,000	15,000
Collector (w/o two-way left-turn lane)	3	4,000	5,000	7,500	10,000	11,000
Collector (w/o two-way left-turn lane)	2	2,500	3,500	5,000	6,500	8,000
Collector (w/o two-way left-turn lane) – no fronting property	2	4,000	5,500	7,500	9,000	10,000
Collector (one-way)	3	11,000	14,000	19,000	22,500	26,000
Collector (one-way)	2	7,500	9,500	12,500	15,500	17,500
Collector (one-way)	1	2,500	3,500	5,000	6,500	7,500
Sub-Collector (single-family)	2	-	-	2,200	-	-

Source: City of San Diego TSM

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in the *2022 Highway Capacity Manual* (HCM 7). This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The HCM 7 methodology sets 1,900 passenger-cars per hour per land (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g., through and right-turn movements sharing the same lane). The computerized analysis of intersection operations was performed utilizing Synchro 12 traffic analysis software by Trafficware.

The following assumptions were utilized in conducting all intersection LOS analyses:

- Each signalized intersection assumed 10 pedestrian crossing signal activations per leg/signal phase per hour, an estimate that is more conservative than the default Synchro 12 value of 5.
- A 3% heavy vehicle factor was applied for all study area intersections. 3% is a standard assumption in HCM methodologies.
- A Peak Hour Factor (PHF) of 0.95 was utilized for all study area intersections.
- Signal timings were optimized by adjusting cycle lengths and splits.

Table 3 presents the signalized intersection average control delay per vehicle thresholds and describes the operational characteristics of each LOS category.

Table 3 - Signalized Intersection Level of Service HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board (2010)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the HCM 7 unsignalized intersection analysis methodology, and utilizing the Synchro 12 traffic analysis software. The LOS for an all-way stop-controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. For side-street stop-controlled (SSSC) intersections, LOS is determined by the computed or measured control delay and is defined for each minor movement. Control delay and LOS for the "worst" movement are reported, as opposed to average intersection LOS and delay. **Table 4** presents the level of service operations thresholds for unsignalized intersections.

Table 4 - Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual, Transportation Research Board (2010)

Bike Phase Crossing Times

Since the College CPU Mobility Element network includes protected bike phases at several signalized study intersections, the protected bike phases would occur with the Lead Pedestrian Interval (LPI) and hold any conflicting movements. At locations where there are exclusive turn lanes, only the exclusive turn lane is held, whereas locations where there are shared turn lanes (shared through-right or shared through-left) both through and the-turning traffic is held.

Due to Synchro software limitations related to HCM 7, exclusive and protected bike phases are not coded directly into the signal timings of the intersections. Instead, bike phases are accounted for by applying reductions to the saturation flow rates (vehicles per lane per hour) of the affected movements based on how much time per hour is dedicated to the corresponding bike phases. Bike crossing times are calculated utilizing the following formula from the California Manual on Uniform Traffic Control Devices (CA MUTCD) Section 4D.105(CA):

$$Minimum\ Bike\ Crossing\ Time = 6\ seconds + \frac{6\ feet\ +\ Bike\ Crossing\ Distance}{14.7\ {}^{feet}/_{second}}$$

For example, if the bike crossing distance is approximately 77 feet, the minimum bike crossing time would be 12 seconds. Based on a cycle length of 80 seconds, and assuming the bike phase gets activated every cycle, the total amount of time dedicated to this bike phase during the peak hour would be 540 seconds, or 15% of the hour. Therefore, the saturation flow rate for the affected movements (the movements that receive the no-turn-on-red blank out sign) would be reduced by 15% from the standard rate of 1,900. Detailed equations and calculations for all study intersections are included below.

Bike Phasing Reductions

ID	Intersection	Movement	Peak Hour	Bike Clearing Distance (ft)	Bike Phase Time (sec)	Cycle Length (sec)	Cycles per Hour	Time Loss per Hour (sec)	Capacity Percent Loss	Reduced Capacity (veh / hr / ln)
6	70th Street & Alvarado Road	NB Approach	AM	165	17.6	150	8	141	4%	1826
			PM	165	17.6	140	9	151	4%	1821
10	Collwood Boulevard & Montezuma Road	NB Approach	AM	130	15.3	90	13	204	6%	1793
			PM	130	15.3	150	8	122	3%	1836
		EB Approach	AM	95	12.9	90	13	172	5%	1810
			PM	95	12.9	150	8	103	3%	1846
		WB Approach	AM	105	13.6	90	13	181	5%	1805
			PM	105	13.6	150	8	109	3%	1843
11	54th Street & Montezuma Road	EB Approach	AM	90	12.5	150	8	100	3%	1843
			PM	90	12.5	140	9	107	3%	1844
12	55th Street & Montezuma Road	WB Approach	AM	105	13.6	150	8	109	3%	1843
			PM	105	13.6	140	9	117	3%	1839
13	Campanile Drive & Montezuma Road	EB Approach	AM	105	13.6	150	8	109	3%	1843
			PM	105	13.6	150	8	109	3%	1843
		WB Approach	AM	120	14.6	150	8	117	3%	1839
			PM	120	14.6	150	8	117	3%	1839
14	College Avenue & Montezuma Road	EB Approach	AM	125	14.9	150	8	119	3%	1838
			PM	125	14.9	150	8	119	3%	1838
15	East Campus Drive & Montezuma Road	WB Approach	AM	80	11.9	130	9	110	3%	1843
			PM	80	11.9	150	8	95	3%	1850
16	63rd Street & Montezuma Road	EB Approach	AM	110	13.9	130	9	128	4%	1833
			PM	110	13.9	150	8	111	3%	1842
		WB Approach	AM	100	13.2	130	9	122	3%	1836
			PM	100	13.2	150	8	106	3%	1845

ID	Intersection	Movement	Peak Hour	Bike Clearing Distance (ft)	Bike Phase Time (sec)	Cycle Length (sec)	Cycles per Hour	Time Loss per Hour (sec)	Capacity Percent Loss	Reduced Capacity (veh / hr / ln)
17	Reservoir Road & Montezuma Road	EB Approach	AM	60	10.5	130	9	97	3%	1849
			PM	60	10.5	150	8	84	2%	1856
		WB Approach	AM	70	11.2	130	9	103	3%	1846
			PM	70	11.2	150	90	2	2%	1853
18	Montezuma Road & El Cajon Boulevard	SB Approach	AM	100	13.2	150	8	106	3%	1845
			PM	100	13.2	140	9	113	3%	1841
		EB Approach	AM	95	12.9	150	8	103	3%	1846
			PM	95	12.9	140	9	111	3%	1842
		WB Approach	AM	95	12.9	150	8	103	3%	1846
			PM	95	12.9	140	9	111	3%	1842
19	67th Street & El Cajon Boulevard	EB Approach	AM	70	11.2	150	8	90	2%	1853
			PM	70	11.2	140	9	96	3%	1850
		WB Approach	AM	90	12.5	150	8	100	3%	1848
			PM	90	12.5	140	9	107	3%	1844
20	70th Street & El Cajon Boulevard	EB Approach	AM	95	12.9	150	8	103	3%	1846
			PM	95	12.9	120	10	129	4%	1832
		WB Approach	AM	95	12.9	150	8	103	3%	1846
			PM	95	12.9	120	10	129	4%	1832
21	73rd Street & El Cajon Boulevard	EB Approach	AM	70	11.2	90	13	149	4%	1822
			PM	70	11.2	90	13	149	4%	1822
		WB Approach	AM	70	11.2	90	13	149	4%	1822
			PM	70	11.2	90	13	149	4%	1822

ID	Intersection	Movement	Peak Hour	Bike Clearing Distance (ft)	Bike Phase Time (sec)	Cycle Length (sec)	Cycles per Hour	Time Loss per Hour (sec)	Capacity Percent Loss	Reduced Capacity (veh / hr / ln)
27	College Avenue & El Cajon Boulevard	EB Approach	AM	145	16.3	140	9	140	4%	1827
			PM	145	16.3	150	8	130	4%	1832
		WB Approach	AM	140	15.9	140	9	136	4%	1829
			PM	140	15.9	150	8	127	4%	1833
28	62nd Street & El Cajon Boulevard	EB Approach	AM	120	14.6	130	9	135	4%	1829
			PM	120	14.6	150	8	117	3%	1839
		WB Approach	AM	140	15.9	130	9	147	4%	1823
			PM	140	14.9	150	8	127	4%	1833
29	63rd Street & El Cajon Boulevard	EB Approach	AM	100	13.2	130	9	122	3%	1836
			PM	100	13.2	150	8	106	3%	1845
		WB Approach	AM	105	13.6	130	9	126	3%	1834
			PM	105	13.6	150	8	109	3%	1843

Source: CR Associates (2025)

Attachment F - Roadway Segment LOS Results – Existing Conditions

Roadway Segment LOS Results – Existing Conditions

Roadway	Segment	College CPU				
		Cross-Section	Capacity (LOS E)[1]	ADT	V/C	LOS
Fairmount Avenue	I-8 Ramps to Montezuma Road	4-Lane Prime Arterial	40,000	83,000	2.075	**F**
Collwood Boulevard	Montezuma Road to 54th Street	2-Lane Collector w/ CLTL	15,000	23,600	1.573	**F**
Collwood Boulevard	54th Street to El Cajon Boulevard	4-Lane Major Arterial	40,000	23,800	0.595	C
Collwood Boulevard	EL Cajon Boulevard to Trojan Avenue	4-Lane Major Arterial	40,000	14,800	0.648	C
Yerba Santa Drive	Yerba Anita Drive to Montezuma Road	2-Lane Collector w/o CLTL – no fronting property (NFP)	10,000	2,600	0.260	A
55th Street	Canyon Crest Drive to Montezuma Road	4-Lane Collector w/o CLTL	15,000	17,500	1.167	**F**
College Avenue	Del Cerro Boulevard to I-8 WB Ramps	4-Lane Major Arterial	40,000	29,600	0.740	C
College Avenue	I-8 WB Ramps to I-8 EB Ramps	4-Lane Major Arterial	40,000	38,000	0.95	**E**
College Avenue	I-8 EB Ramps to Canyon Crest Drive	4-Lane Major Arterial	40,000	48,800	1.220	**F**
College Avenue	Canyon Crest Drive to Zura Way	4-Lane Major Arterial	40,000	37,800	0.945	**E**
College Avenue	Zura Way to Lindo Paseo	4-Lane Major Arterial	40,000	29,800	.0756	C
College Avenue	Lindo Paseo to Montezuma Road	4-Lane Major Arterial	40,000	29,800	0.756	C
College Avenue	Montezuma Road to El Cajon Boulevard	4-Lane Major Arterial	40,000	28,250	0.706	C
College Avenue	El Cajon Boulevard to Acorn Street	4-Lane Major Arterial	40,000	24,500	0.613	C
Lake Murray Boulevard	Wisconsin Avenue/Parkway Drive to Alvarado Road	5-Lane Major Arterial	45,000	37,700	0.838	D
70th Street	Alvarado Road to Saranac Street	4-Lane Major Arterial	40,000	35,100	0.878	**E**
70th Street	Saranac Street to El Cajon Boulevard	4-Lane Major Arterial	40,000	31,300	0.783	D
70th Street	El Cajon Boulevard to Amherst Street	3-Lane Major Arterial	30,000	24,600	0.820	D
Remington Road	Hewlett Drive to 55th Street	2-Lane Collector w/o CLTL	8,000	3,000	0.375	B
College Garden Court	Yerba Anita Way to Hewlett Drive	2-Lane Collector w/o CLTL	8,000	1,400	0.175	A
Montezuma Road	Fairmount Avenue to Collwood Boulevard	4-Lane Major Arterial	40,000	48,700	1.218	**F**
Montezuma Road	Collwood Boulevard to 54th Street	4-Lane Major Arterial	40,000	29,000	0.725	C
Montezuma Road	54th Street to 55th Street	4-Lane Major Arterial	40,000	24,800	0.620	C
Montezuma Road	55th Street to Campanile Drive	4-Lane Major Arterial	40,000	32,500	0.813	D
Montezuma Road	Campanile Drive to College Avenue	4-Lane Major Arterial	40,000	32,500	0.813	D
Montezuma Road	College Avenue to East Campus Drive	4-Lane Major Arterial	40,000	21,300	0.533	C
Montezuma Road	East Campus Drive to Reservoir Drive	4-Lane Major Arterial	40,000	12,500	0.313	A

Roadway Segment LOS Results – Existing Conditions

Roadway	Segment	College CPU				
		Cross-Section	Capacity (LOS E)[1]	ADT	V/C	LOS
Montezuma Road	Reservoir Drive to El Cajon Boulevard	4-Lane Major Arterial	40,000	12,900	0.323	A
El Cajon Boulevard	52nd Street to 54th Street	4-Lane Major Arterial	40,000	22,100	0.553	C
El Cajon Boulevard	54th Street to 58th Street	4-Lane Major Arterial	40,000	24,000	0.600	C
El Cajon Boulevard	58th Street to College Avenue	4-Lane Major Arterial	40,000	21,200	0.530	C
El Cajon Boulevard	College Avenue to 62nd Street	4-Lane Major Arterial	40,000	25,500	0.638	C
El Cajon Boulevard	62nd Street to Montezuma Road	4-Lane Major Arterial	40,000	16,500	0.413	B
El Cajon Boulevard	Montezuma Road to 70th Street	4-Lane Major Arterial	40,000	20,900	0.523	B
El Cajon Boulevard	70th Street to 73rd Street	4-Lane Major Arterial	40,000	15,900	0.398	B

Source: CR Associates (2023)

Attachment G - Peak Hour Intersection LOS Calculation Worksheets – College CPU Planned Conditions

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1110	1600	140	680	780	370
Future Volume (veh/h)	1110	1600	140	680	780	370
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1247	1626	146	708	839	0
Peak Hour Factor	0.89	0.89	0.96	0.96	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1757	1838	237	1358	1952	
Arrive On Green	0.51	0.51	0.39	0.39	0.39	0.00
Sat Flow, veh/h	3428	3585	650	3618	5233	1572
Grp Volume(v), veh/h	1247	1626	146	708	839	0
Grp Sat Flow(s),veh/h/ln	1714	1195	650	1763	1689	1572
Q Serve(g_s), s	30.3	44.0	23.2	16.8	13.3	0.0
Cycle Q Clear(g_c), s	30.3	44.0	36.4	16.8	13.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1757	1838	237	1358	1952	
V/C Ratio(X)	0.71	0.88	0.61	0.52	0.43	
Avail Cap(c_a), veh/h	2962	3098	324	1826	1952	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.3	23.6	38.0	25.7	24.6	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	11.0	3.5	6.5	5.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.5	24.6	39.0	25.8	24.7	0.0
LnGrp LOS	C	C	D	C	C	
Approach Vol, veh/h	2873			854	839	
Approach Delay, s/veh	22.8			28.1	24.7	
Approach LOS	C			C	C	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		47.9		60.8		47.9
Change Period (Y+Rc), s		6.0		5.1		* 6
Max Green Setting (Gmax), s		32.0		93.9		* 56
Max Q Clear Time (g_c+I1), s		15.3		46.0		38.4
Green Ext Time (p_c), s		3.6		9.7		3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	710	0	320	0	1110	820	0	910	770
Future Volume (veh/h)	0	0	0	710	0	320	0	1110	820	0	910	770
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	0	1856	0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				740	0	0	0	1423	0	0	1058	0
Peak Hour Factor				0.96	0.96	0.96	0.78	0.78	0.78	0.86	0.86	0.86
Percent Heavy Veh, %				3	0	3	0	3	3	0	3	3
Cap, veh/h				947	0		0	1978		0	1978	
Arrive On Green				0.28	0.00	0.00	0.00	0.56	0.00	0.00	0.56	0.00
Sat Flow, veh/h				3428	0	1572	0	3618	1572	0	3618	1572
Grp Volume(v), veh/h				740	0	0	0	1423	0	0	1058	0
Grp Sat Flow(s),veh/h/ln				1714	0	1572	0	1763	1572	0	1763	1572
Q Serve(g_s), s				12.9	0.0	0.0	0.0	19.2	0.0	0.0	12.2	0.0
Cycle Q Clear(g_c), s				12.9	0.0	0.0	0.0	19.2	0.0	0.0	12.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				947	0		0	1978		0	1978	
V/C Ratio(X)				0.78	0.00		0.00	0.72		0.00	0.53	
Avail Cap(c_a), veh/h				2383	0		0	4071		0	4088	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.6	0.0	0.0	0.0	10.4	0.0	0.0	8.9	0.0
Incr Delay (d2), s/veh				1.4	0.0	0.0	0.0	0.5	0.0	0.0	0.2	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.0	0.0	0.0	0.0	5.5	0.0	0.0	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				23.0	0.0	0.0	0.0	10.9	0.0	0.0	9.1	0.0
LnGrp LOS				C				B			A	
Approach Vol, veh/h					740			1423			1058	
Approach Delay, s/veh					23.0			10.9			9.1	
Approach LOS					C			B			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	41.7	23.0	41.7
Change Period (Y+Rc), s	5.4	5.1	* 5.4
Max Green Setting (Gmax), s	74.6	44.9	* 75
Max Q Clear Time (g_c+I1), s	21.2	14.9	14.2
Green Ext Time (p_c), s	15.1	3.0	9.3

Intersection Summary	
HCM 7th Control Delay, s/veh	13.1
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	0	1610	0	0	0	0	1170	410	0	1230	390
Future Volume (veh/h)	770	0	1610	0	0	0	0	1170	410	0	1230	390
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	846	0	1769				0	1245	0	0	1367	0
Peak Hour Factor	0.91	0.91	0.91				0.94	0.94	0.94	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	3				0	3	3	0	3	3
Cap, veh/h	1744	0	1824				0	1425		0	1425	
Arrive On Green	0.51	0.00	0.51				0.00	0.40	0.00	0.00	0.40	0.00
Sat Flow, veh/h	3428	0	3585				0	3618	1572	0	3618	1572
Grp Volume(v), veh/h	846	0	1769				0	1245	0	0	1367	0
Grp Sat Flow(s),veh/h/ln	1714	0	1195				0	1763	1572	0	1763	1572
Q Serve(g_s), s	23.1	0.0	68.7				0.0	46.7	0.0	0.0	54.2	0.0
Cycle Q Clear(g_c), s	23.1	0.0	68.7				0.0	46.7	0.0	0.0	54.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1744	0	1824				0	1425		0	1425	
V/C Ratio(X)	0.48	0.00	0.97				0.00	0.87		0.00	0.96	
Avail Cap(c_a), veh/h	1765	0	1846				0	1439		0	1439	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	23.0	0.0	34.2				0.0	39.4	0.0	0.0	41.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	14.3				0.0	6.2	0.0	0.0	15.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	21.9				0.0	20.9	0.0	0.0	25.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.1	0.0	48.4				0.0	45.6	0.0	0.0	56.7	0.0
LnGrp LOS	C		D					D			E	
Approach Vol, veh/h		2615						1245			1367	
Approach Delay, s/veh		40.2						45.6			56.7	
Approach LOS		D						D			E	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				64.4		79.1		64.4				
Change Period (Y+Rc), s				6.4		6.1		6.4				
Max Green Setting (Gmax), s				58.6		73.9		58.6				
Max Q Clear Time (g_c+I1), s				48.7		70.7		56.2				
Green Ext Time (p_c), s				5.7		2.4		1.8				

Intersection Summary												
HCM 7th Control Delay, s/veh			45.8									
HCM 7th LOS			D									

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	130	140	160	230	110	110
Future Volume (veh/h)	130	140	160	230	110	110
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	144	139	180	258	139	124
Peak Hour Factor	0.90	0.90	0.89	0.89	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	224	216	237	950	185	165
Arrive On Green	0.26	0.26	0.13	0.51	0.21	0.21
Sat Flow, veh/h	866	836	1767	1856	871	777
Grp Volume(v), veh/h	0	283	180	258	264	0
Grp Sat Flow(s),veh/h/ln	0	1701	1767	1856	1654	0
Q Serve(g_s), s	0.0	5.5	3.6	2.9	5.5	0.0
Cycle Q Clear(g_c), s	0.0	5.5	3.6	2.9	5.5	0.0
Prop In Lane		0.49	1.00		0.53	0.47
Lane Grp Cap(c), veh/h	0	440	237	950	351	0
V/C Ratio(X)	0.00	0.64	0.76	0.27	0.75	0.00
Avail Cap(c_a), veh/h	0	2353	1559	4404	2109	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.2	15.4	5.1	13.6	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.9	0.1	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.4	0.7	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	13.6	17.3	5.3	14.9	0.0
LnGrp LOS		B	B	A	B	
Approach Vol, veh/h	283			438	264	
Approach Delay, s/veh	13.6			10.2	14.9	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.4	14.9				24.2	12.7
Change Period (Y+Rc), s	4.4	* 5.3				5.3	4.9
Max Green Setting (Gmax), s	32.6	* 51				87.7	47.1
Max Q Clear Time (g_c+I1), s	5.6	7.5				4.9	7.5
Green Ext Time (p_c), s	0.3	1.7				1.6	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.4
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	50	20	170	500	50	100	120	570	250	30	1130	30
Future Volume (veh/h)	50	20	170	500	50	100	120	570	250	30	1130	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	58	23	198	390	369	109	152	722	281	34	1284	31
Peak Hour Factor	0.86	0.86	0.86	0.82	0.82	0.82	0.79	0.79	0.79	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	105	42	285	556	433	128	178	1311	503	87	1604	39
Arrive On Green	0.08	0.08	0.08	0.31	0.31	0.31	0.10	0.37	0.37	0.05	0.32	0.32
Sat Flow, veh/h	1283	509	1549	1767	1375	406	1767	3575	1371	1767	5083	123
Grp Volume(v), veh/h	81	0	198	390	0	478	152	682	321	34	853	462
Grp Sat Flow(s),veh/h/ln	1791	0	1549	1767	0	1781	1767	1689	1569	1767	1689	1829
Q Serve(g_s), s	5.5	0.0	10.4	24.7	0.0	32.0	10.8	20.4	20.7	2.4	29.4	29.4
Cycle Q Clear(g_c), s	5.5	0.0	10.4	24.7	0.0	32.0	10.8	20.4	20.7	2.4	29.4	29.4
Prop In Lane	0.72		1.00	1.00		0.23	1.00		0.87	1.00		0.07
Lane Grp Cap(c), veh/h	147	0	285	556	0	560	178	1239	575	87	1066	577
V/C Ratio(X)	0.55	0.00	0.69	0.70	0.00	0.85	0.85	0.55	0.56	0.39	0.80	0.80
Avail Cap(c_a), veh/h	147	0	285	638	0	643	268	1623	754	126	1344	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	0.0	48.7	38.3	0.0	40.8	56.3	31.9	32.1	58.6	39.8	39.8
Incr Delay (d2), s/veh	4.4	0.0	7.1	4.3	0.0	11.5	10.4	0.4	0.9	1.0	2.8	5.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	6.4	11.2	0.0	15.6	5.3	8.3	7.9	1.1	12.4	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.6	0.0	55.8	42.6	0.0	52.3	66.6	32.3	32.9	59.6	42.6	44.9
LnGrp LOS	E		E	D		D	E	C	C	E	D	D
Approach Vol, veh/h		279			868			1155			1349	
Approach Delay, s/veh		57.2			47.9			37.0			43.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	53.0		16.0	18.5	46.5		46.1
Change Period (Y+Rc), s	5.7	* 6.4		5.6	5.7	6.4		6.1
Max Green Setting (Gmax), s	9.1	* 61		10.4	19.3	50.6		45.9
Max Q Clear Time (g_c+I1), s	4.4	22.7		12.4	12.8	31.4		34.0
Green Ext Time (p_c), s	0.0	8.2		0.0	0.1	8.7		6.1

Intersection Summary	
HCM 7th Control Delay, s/veh	43.7
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	120	150	60	430	190	380	130	1110	360	170	560	300
Future Volume (veh/h)	120	150	60	430	190	380	130	1110	360	170	560	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1783	1783	1856	1856	1856
Adj Flow Rate, veh/h	126	158	56	453	200	317	135	1156	335	179	589	247
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.96	0.96	0.96	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	305	215	73	523	274	684	160	1189	340	176	1645	711
Arrive On Green	0.09	0.08	0.08	0.15	0.15	0.15	0.09	0.46	0.46	0.10	0.47	0.47
Sat Flow, veh/h	3428	2562	870	3428	1856	2768	1767	2600	743	1767	3526	1524
Grp Volume(v), veh/h	126	107	107	453	200	317	135	747	744	179	589	247
Grp Sat Flow(s),veh/h/ln	1714	1763	1669	1714	1856	1384	1767	1694	1650	1767	1763	1524
Q Serve(g_s), s	4.6	7.9	8.4	17.2	13.8	13.0	10.1	57.3	59.5	13.3	14.3	13.8
Cycle Q Clear(g_c), s	4.6	7.9	8.4	17.2	13.8	13.0	10.1	57.3	59.5	13.3	14.3	13.8
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	305	148	140	523	274	684	160	775	754	176	1645	711
V/C Ratio(X)	0.41	0.72	0.77	0.87	0.73	0.46	0.85	0.96	0.99	1.02	0.36	0.35
Avail Cap(c_a), veh/h	308	264	250	729	500	1021	270	775	754	176	1645	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	59.7	59.9	55.3	54.4	42.8	59.9	35.2	35.8	60.2	22.8	22.7
Incr Delay (d2), s/veh	0.3	6.4	8.5	8.0	3.7	0.5	4.7	24.0	29.1	72.5	0.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.8	3.9	8.0	6.7	4.5	4.7	28.0	29.2	9.5	5.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.9	66.1	68.4	63.2	58.1	43.3	64.5	59.2	65.0	132.7	23.0	23.0
LnGrp LOS	E	E	E	E	E	D	E	E	E	F	C	C
Approach Vol, veh/h		340			970			1626			1015	
Approach Delay, s/veh		63.8			55.7			62.3			42.3	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	68.2	27.5	17.9	18.8	69.4	18.6	26.8
Change Period (Y+Rc), s	6.7	7.1	7.1	* 6.7	6.7	7.1	6.7	7.1
Max Green Setting (Gmax), s	13.3	61.1	28.4	* 20	20.4	54.0	12.0	36.0
Max Q Clear Time (g_c+I1), s	15.3	61.5	19.2	10.4	12.1	16.3	6.6	15.8
Green Ext Time (p_c), s	0.0	0.0	1.2	0.8	0.1	5.4	0.1	2.3

Intersection Summary	
HCM 7th Control Delay, s/veh	55.6
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th 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)	90	30	50	90	60	230	150	1300	150	530	1600	710
Future Volume (veh/h)	90	30	50	90	60	230	150	1300	150	530	1600	710
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.87	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	99	48	54	118	79	237	158	1368	151	616	1860	593
Peak Hour Factor	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	239	99	112	129	86	485	175	1469	161	649	2791	1900
Arrive On Green	0.14	0.14	0.14	0.12	0.12	0.12	0.10	0.46	0.46	0.19	0.55	0.55
Sat Flow, veh/h	1767	733	825	1079	722	1572	1767	3203	351	3428	5066	2768
Grp Volume(v), veh/h	99	0	102	197	0	237	158	749	770	616	1860	593
Grp Sat Flow(s),veh/h/ln	1767	0	1558	1802	0	1572	1767	1763	1792	1714	1689	1384
Q Serve(g_s), s	11.1	0.0	13.2	23.5	0.0	25.9	19.2	87.0	88.6	38.6	56.6	18.6
Cycle Q Clear(g_c), s	11.1	0.0	13.2	23.5	0.0	25.9	19.2	87.0	88.6	38.6	56.6	18.6
Prop In Lane	1.00		0.53	0.60		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	239	0	211	215	0	485	175	808	822	649	2791	1900
V/C Ratio(X)	0.41	0.00	0.48	0.92	0.00	0.49	0.90	0.93	0.94	0.95	0.67	0.31
Avail Cap(c_a), veh/h	266	0	234	215	0	485	285	861	875	696	2791	1900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	86.0	0.0	86.9	94.6	0.0	61.2	96.8	55.4	55.8	87.0	34.6	13.6
Incr Delay (d2), s/veh	0.4	0.0	0.6	38.6	0.0	0.3	19.7	15.3	16.7	21.2	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	5.4	13.4	0.0	10.8	9.8	41.7	43.4	19.0	23.5	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	86.4	0.0	87.5	133.3	0.0	61.4	116.6	70.7	72.5	108.3	35.3	13.8
LnGrp LOS	F		F	F		E	F	E	E	F	D	B
Approach Vol, veh/h		201			434			1677			3069	
Approach Delay, s/veh		87.0			94.0			75.9			45.8	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	46.0	105.7		34.3	25.9	125.8		31.2
Change Period (Y+Rc), s	4.9	6.1		4.9	4.4	* 6.1		5.3
Max Green Setting (Gmax), s	44.1	106.1		32.7	35.0	1.2E+02		25.9
Max Q Clear Time (g_c+I1), s	40.6	90.6		15.2	21.2	58.6		27.9
Green Ext Time (p_c), s	0.5	9.0		0.5	0.3	45.4		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	60.6
HCM 7th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	140	1440	120	390	1450
Future Volume (veh/h)	0	140	1440	120	390	1450
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	133	1582	106	438	1629
Peak Hour Factor	0.81	0.81	0.91	0.91	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	0	2292	1019	466	3362
Arrive On Green	0.00	0.00	0.21	0.21	0.26	0.95
Sat Flow, veh/h	0		3618	1568	1767	3618
Grp Volume(v), veh/h	0.0		1582	106	438	1629
Grp Sat Flow(s),veh/h/ln			1763	1568	1767	1763
Q Serve(g_s), s			45.5	6.0	26.7	4.4
Cycle Q Clear(g_c), s			45.5	6.0	26.7	4.4
Prop In Lane				1.00	1.00	
Lane Grp Cap(c), veh/h			2292	1019	466	3362
V/C Ratio(X)			0.69	0.10	0.94	0.48
Avail Cap(c_a), veh/h			2292	1019	524	3362
HCM Platoon Ratio			0.33	0.33	1.00	1.00
Upstream Filter(I)			0.57	0.57	1.00	1.00
Uniform Delay (d), s/veh			33.0	17.5	39.7	0.2
Incr Delay (d2), s/veh			1.0	0.1	22.9	0.5
Initial Q Delay(d3), s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			21.6	5.8	14.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh			34.0	17.6	62.6	0.7
LnGrp LOS			C	B	E	A
Approach Vol, veh/h			1688			2067
Approach Delay, s/veh			33.0			13.8
Approach LOS			C			B

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	33.4	76.6				110.0
Change Period (Y+Rc), s	4.4	5.1				5.1
Max Green Setting (Gmax), s	32.6	58.7				95.7
Max Q Clear Time (g_c+I1), s	28.7	47.5				6.4
Green Ext Time (p_c), s	0.3	8.6				27.6

Intersection Summary	
HCM 7th Control Delay, s/veh	22.4
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	30	30	80	30	30	80	1260	240	40	1400	40
Future Volume (veh/h)	40	30	30	80	30	30	80	1260	240	40	1400	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.92		0.92	0.95		0.88	1.00		0.88	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	59	44	40	101	38	34	86	1355	230	43	1505	40
Peak Hour Factor	0.68	0.68	0.68	0.79	0.79	0.79	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	120	92	219	81	61	109	1814	301	55	2041	54
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.06	0.61	0.61	0.02	0.39	0.39
Sat Flow, veh/h	525	534	411	743	360	270	1767	2959	492	1767	3506	93
Grp Volume(v), veh/h	143	0	0	173	0	0	86	795	790	43	755	790
Grp Sat Flow(s),veh/h/ln	1470	0	0	1373	0	0	1767	1763	1688	1767	1763	1836
Q Serve(g_s), s	0.0	0.0	0.0	3.5	0.0	0.0	5.3	35.0	37.4	2.7	40.3	40.5
Cycle Q Clear(g_c), s	8.7	0.0	0.0	12.2	0.0	0.0	5.3	35.0	37.4	2.7	40.3	40.5
Prop In Lane	0.41		0.28	0.58		0.20	1.00		0.29	1.00		0.05
Lane Grp Cap(c), veh/h	377	0	0	361	0	0	109	1081	1035	55	1027	1069
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00	0.00	0.79	0.74	0.76	0.78	0.74	0.74
Avail Cap(c_a), veh/h	462	0	0	442	0	0	259	1081	1035	259	1027	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.32	0.32	0.32	0.83	0.83	0.83
Uniform Delay (d), s/veh	36.3	0.0	0.0	37.6	0.0	0.0	50.9	15.0	15.5	53.5	26.3	26.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	1.5	1.5	1.8	7.2	3.9	3.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	4.2	0.0	0.0	2.3	12.7	13.1	1.3	18.5	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.5	0.0	0.0	38.0	0.0	0.0	52.4	16.5	17.2	60.7	30.2	30.2
LnGrp LOS	D			D			D	B	B	E	C	C
Approach Vol, veh/h		143			173			1671			1588	
Approach Delay, s/veh		36.5			38.0			18.7			31.0	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	72.5		29.6	11.2	69.2		29.6
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	5.1		4.9
Max Green Setting (Gmax), s	16.1	48.2		31.3	16.1	48.2		31.3
Max Q Clear Time (g_c+I1), s	4.7	39.4		10.7	7.3	42.5		14.2
Green Ext Time (p_c), s	0.0	6.8		0.5	0.1	4.5		0.6

Intersection Summary		
HCM 7th Control Delay, s/veh		25.8
HCM 7th LOS		C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1230	630	80	1400	1080	130
Future Volume (veh/h)	1230	630	80	1400	1080	130
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1768	1768	1856	1763	1751	1751
Adj Flow Rate, veh/h	1295	663	84	1474	1254	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1382	1207	104	1699	1343	597
Arrive On Green	0.41	0.41	0.06	0.51	0.40	0.00
Sat Flow, veh/h	3447	1467	1767	3437	3335	1484
Grp Volume(v), veh/h	1295	663	84	1474	1254	0
Grp Sat Flow(s),veh/h/ln	1679	1467	1767	1675	1668	1484
Q Serve(g_s), s	54.0	22.4	6.9	56.7	52.6	0.0
Cycle Q Clear(g_c), s	54.0	22.4	6.9	56.7	52.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1382	1207	104	1699	1343	597
V/C Ratio(X)	0.94	0.55	0.81	0.87	0.93	0.00
Avail Cap(c_a), veh/h	1391	1211	109	1711	1416	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.2	4.6	68.0	31.7	41.8	0.0
Incr Delay (d2), s/veh	12.3	0.7	31.5	5.5	11.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	25.0	4.0	23.0	23.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.5	5.3	99.5	37.2	53.3	0.0
LnGrp LOS	D	A	F	D	D	
Approach Vol, veh/h	1958			1558	1254	
Approach Delay, s/veh	37.2			40.6	53.3	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.0	67.5			81.5	64.8
Change Period (Y+Rc), s	5.4	* 7.3			7.3	5.9
Max Green Setting (Gmax), s	9.0	* 61			74.7	62.1
Max Q Clear Time (g_c+I1), s	8.9	56.0			58.7	54.6
Green Ext Time (p_c), s	0.0	4.2			13.1	4.2

Intersection Summary	
HCM 7th Control Delay, s/veh	42.5
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	40	1040	100	90	1000	10	160	50	120	80	50	80
Future Volume (veh/h)	40	1040	100	90	1000	10	160	50	120	80	50	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.96
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	1856	1805	1805	1856	1805	1805	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	1095	93	95	1053	10	168	53	126	84	53	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	53	1501	127	118	1764	17	267	67	480	94	61	60
Arrive On Green	0.03	0.47	0.47	0.13	1.00	1.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	3190	271	1767	3479	33	657	209	1504	152	192	188
Grp Volume(v), veh/h	42	588	600	95	519	544	221	0	126	212	0	0
Grp Sat Flow(s),veh/h/ln	1767	1715	1746	1767	1715	1798	866	0	1504	532	0	0
Q Serve(g_s), s	2.6	30.4	30.5	5.7	0.0	0.0	0.0	0.0	6.8	9.5	0.0	0.0
Cycle Q Clear(g_c), s	2.6	30.4	30.5	5.7	0.0	0.0	25.6	0.0	6.8	35.1	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.02	0.76		1.00	0.40		0.35
Lane Grp Cap(c), veh/h	53	807	822	118	869	911	334	0	480	216	0	0
V/C Ratio(X)	0.79	0.73	0.73	0.81	0.60	0.60	0.66	0.00	0.26	0.98	0.00	0.00
Avail Cap(c_a), veh/h	96	807	822	170	869	911	334	0	480	216	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.17	0.17	0.17	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.0	23.5	23.5	47.0	0.0	0.0	34.2	0.0	27.8	44.7	0.0	0.0
Incr Delay (d2), s/veh	1.7	1.0	1.0	7.1	2.0	1.9	3.9	0.0	0.1	56.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.7	12.0	2.5	0.5	0.5	5.7	0.0	2.5	9.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.6	24.5	24.5	54.1	2.0	1.9	38.1	0.0	27.9	101.0	0.0	0.0
LnGrp LOS	D	C	C	D	A	A	D		C	F		
Approach Vol, veh/h		1230			1158			347			212	
Approach Delay, s/veh		25.5			6.2			34.4			101.0	
Approach LOS		C			A			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	58.3		40.0	7.7	62.3		40.0
Change Period (Y+Rc), s	4.4	* 6.5		4.9	4.4	6.5		4.9
Max Green Setting (Gmax), s	10.6	* 49		35.1	6.0	53.1		35.1
Max Q Clear Time (g_c+I1), s	7.7	32.5		37.1	4.6	2.0		27.6
Green Ext Time (p_c), s	0.0	6.1		0.0	0.0	8.1		0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	24.4
HCM 7th LOS	C

Notes

* HCM 7th 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)	550	600	90	60	910	330	50	30	30	130	20	140
Future Volume (veh/h)	550	600	90	60	910	330	50	30	30	130	20	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.86	1.00		0.99
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	1856	1800	1800	1856	1800	1800	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	579	632	84	63	958	271	53	32	29	152	0	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	564	1471	195	81	1242	543	182	110	99	202	0	90
Arrive On Green	0.27	0.81	0.81	0.05	0.36	0.36	0.23	0.23	0.23	0.06	0.00	0.06
Sat Flow, veh/h	3428	3024	401	1767	3420	1494	773	467	423	3534	0	1564
Grp Volume(v), veh/h	579	357	359	63	958	271	114	0	0	152	0	113
Grp Sat Flow(s),veh/h/ln	1714	1710	1715	1767	1710	1494	1663	0	0	1767	0	1564
Q Serve(g_s), s	18.1	6.6	6.6	3.9	27.3	15.5	6.2	0.0	0.0	4.7	0.0	6.3
Cycle Q Clear(g_c), s	18.1	6.6	6.6	3.9	27.3	15.5	6.2	0.0	0.0	4.7	0.0	6.3
Prop In Lane	1.00		0.23	1.00		1.00	0.46		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	564	832	834	81	1242	543	391	0	0	202	0	90
V/C Ratio(X)	1.03	0.43	0.43	0.78	0.77	0.50	0.29	0.00	0.00	0.75	0.00	1.26
Avail Cap(c_a), veh/h	564	832	834	164	1242	543	453	0	0	202	0	90
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.15	0.15	0.15	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	5.9	5.9	51.9	31.0	27.2	34.6	0.0	0.0	51.1	0.0	51.9
Incr Delay (d2), s/veh	39.5	1.2	1.2	0.9	0.7	0.5	0.2	0.0	0.0	15.6	0.0	180.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	2.0	2.0	1.7	11.0	5.5	2.5	0.0	0.0	2.5	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.4	7.1	7.1	52.9	31.7	27.7	34.7	0.0	0.0	66.6	0.0	232.5
LnGrp LOS	F	A	A	D	C	C	C			E		F
Approach Vol, veh/h		1295			1292			114			265	
Approach Delay, s/veh		39.4			31.9			34.7			137.4	
Approach LOS		D			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	59.1		11.2	23.0	45.6		30.2
Change Period (Y+Rc), s	4.4	5.6		4.9	4.9	* 5.6		4.4
Max Green Setting (Gmax), s	10.2	44.2		6.3	18.1	* 37		30.0
Max Q Clear Time (g_c+I1), s	5.9	8.6		8.3	20.1	29.3		8.2
Green Ext Time (p_c), s	0.0	9.3		0.0	0.0	4.2		0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	44.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	600	50	80	1170	330	50	30	120	130	30	90
Future Volume (veh/h)	110	600	50	80	1170	330	50	30	120	130	30	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.93	1.00		0.90
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	1856	1800	1800	1856	1796	1796	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	632	47	84	1232	319	53	32	113	137	32	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	1438	107	104	1218	310	72	44	154	285	67	358
Arrive On Green	0.05	0.45	0.45	0.06	0.45	0.45	0.17	0.17	0.17	0.20	0.20	0.20
Sat Flow, veh/h	1767	3218	239	1767	2677	681	426	257	908	1446	338	1410
Grp Volume(v), veh/h	116	335	344	84	777	774	198	0	0	169	0	74
Grp Sat Flow(s),veh/h/ln	1767	1710	1747	1767	1706	1652	1591	0	0	1783	0	1410
Q Serve(g_s), s	7.6	20.2	20.3	7.0	68.2	68.2	17.7	0.0	0.0	12.6	0.0	6.2
Cycle Q Clear(g_c), s	7.6	20.2	20.3	7.0	68.2	68.2	17.7	0.0	0.0	12.6	0.0	6.2
Prop In Lane	1.00		0.14	1.00		0.41	0.27		0.57	0.81		1.00
Lane Grp Cap(c), veh/h	90	764	781	104	776	751	270	0	0	352	0	358
V/C Ratio(X)	1.30	0.44	0.44	0.81	1.00	1.03	0.73	0.00	0.00	0.48	0.00	0.21
Avail Cap(c_a), veh/h	90	764	781	185	776	751	329	0	0	404	0	399
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)	0.92	0.92	0.92	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.2	28.6	28.6	69.8	40.9	40.9	59.0	0.0	0.0	53.4	0.0	44.8
Incr Delay (d2), s/veh	189.8	1.7	1.7	0.5	10.0	18.9	4.7	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	8.7	8.9	3.2	30.1	31.0	7.6	0.0	0.0	5.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	261.0	30.2	30.2	70.3	50.8	59.8	63.8	0.0	0.0	53.8	0.0	44.9
LnGrp LOS	F	C	C	E	F	F	E			D		D
Approach Vol, veh/h		795			1635			198			243	
Approach Delay, s/veh		63.9			56.1			63.8			51.0	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	71.9		34.5	12.0	73.1		30.4
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	15.7	50.2		34.0	7.6	58.3		31.0
Max Q Clear Time (g_c+I1), s	9.0	22.3		14.6	9.6	70.2		19.7
Green Ext Time (p_c), s	0.0	11.1		0.8	0.0	0.0		0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	58.4
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	390	170	80	690	280	580	1060	160	410	790	310
Future Volume (veh/h)	250	390	170	80	690	280	580	1060	160	410	790	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.95	1.00		0.92
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	1856	1795	1795	1856	1795	1795	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	263	411	141	84	726	230	611	1116	154	432	832	289
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	734	248	104	750	319	562	1256	173	379	886	307
Arrive On Green	0.14	0.30	0.30	0.06	0.22	0.22	0.16	0.41	0.41	0.11	0.35	0.35
Sat Flow, veh/h	1767	2457	830	1767	3410	1452	3428	3088	425	3428	2508	869
Grp Volume(v), veh/h	263	283	269	84	726	230	611	636	634	432	584	537
Grp Sat Flow(s),veh/h/ln	1767	1705	1582	1767	1705	1452	1714	1763	1750	1714	1763	1614
Q Serve(g_s), s	20.6	21.0	21.5	7.0	31.6	22.0	24.6	50.2	50.6	16.6	48.1	48.3
Cycle Q Clear(g_c), s	20.6	21.0	21.5	7.0	31.6	22.0	24.6	50.2	50.6	16.6	48.1	48.3
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.24	1.00		0.54
Lane Grp Cap(c), veh/h	243	509	472	104	750	319	562	717	712	379	623	570
V/C Ratio(X)	1.08	0.56	0.57	0.81	0.97	0.72	1.09	0.89	0.89	1.14	0.94	0.94
Avail Cap(c_a), veh/h	243	509	472	181	750	319	562	717	712	379	623	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	44.2	44.4	69.8	58.0	54.2	62.7	41.3	41.4	66.7	46.9	47.0
Incr Delay (d2), s/veh	81.8	2.8	3.2	5.5	25.6	11.4	63.6	15.1	15.7	89.5	23.7	25.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	9.3	8.9	3.3	16.2	9.0	15.6	24.5	24.6	11.9	24.7	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	146.5	47.1	47.7	75.3	83.6	65.6	126.3	56.4	57.1	156.2	70.6	72.6
LnGrp LOS	F	D	D	E	F	E	F	E	E	F	E	E
Approach Vol, veh/h		815			1040			1881			1553	
Approach Delay, s/veh		79.4			78.9			79.4			95.1	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	66.1	13.2	49.7	29.0	58.1	25.0	37.9
Change Period (Y+Rc), s	4.4	5.1	4.4	4.9	4.4	5.1	4.4	4.9
Max Green Setting (Gmax), s	16.6	61.0	15.4	38.2	24.6	53.0	20.6	33.0
Max Q Clear Time (g_c+I1), s	18.6	52.6	9.0	23.5	26.6	50.3	22.6	33.6
Green Ext Time (p_c), s	0.0	5.9	0.0	5.5	0.0	1.9	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	83.9
HCM 7th LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	200	690	910	110	60	50
Future Volume (veh/h)	200	690	910	110	60	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1800	1800	1856	1856
Adj Flow Rate, veh/h	211	726	958	108	63	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	226	1624	1128	127	89	79
Arrive On Green	0.13	0.88	0.71	0.71	0.05	0.05
Sat Flow, veh/h	1767	1856	1581	178	1767	1572
Grp Volume(v), veh/h	211	726	0	1066	63	42
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1759	1767	1572
Q Serve(g_s), s	15.4	10.4	0.0	57.2	4.6	3.4
Cycle Q Clear(g_c), s	15.4	10.4	0.0	57.2	4.6	3.4
Prop In Lane	1.00			0.10	1.00	1.00
Lane Grp Cap(c), veh/h	226	1624	0	1255	89	79
V/C Ratio(X)	0.94	0.45	0.00	0.85	0.71	0.53
Avail Cap(c_a), veh/h	226	1624	0	1255	299	266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.00	0.54	1.00	1.00
Uniform Delay (d), s/veh	56.2	1.7	0.0	13.5	60.8	60.2
Incr Delay (d2), s/veh	22.7	0.4	0.0	4.1	3.9	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.8	0.0	21.0	2.2	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	78.9	2.0	0.0	17.6	64.7	62.3
LnGrp LOS	E	A		B	E	E
Approach Vol, veh/h		937	1066		105	
Approach Delay, s/veh		19.3	17.6		63.7	
Approach LOS		B	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		119.1		10.9	21.0	98.1
Change Period (Y+Rc), s		5.3		4.4	4.4	5.3
Max Green Setting (Gmax), s		98.3		22.0	16.6	77.3
Max Q Clear Time (g_c+I1), s		12.4		6.6	17.4	59.2
Green Ext Time (p_c), s		9.5		0.1	0.0	11.3

Intersection Summary	
HCM 7th Control Delay, s/veh	20.7
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	590	90	20	720	20	140	20	50	20	10	50
Future Volume (veh/h)	50	590	90	20	720	20	140	20	50	20	10	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.97	0.98		0.97
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	1856	1790	1790	1856	1793	1793	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	621	84	21	758	19	147	21	48	21	11	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	963	130	40	1059	27	253	33	63	107	68	187
Arrive On Green	0.04	0.63	0.63	0.02	0.61	0.61	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	1535	208	1767	1739	44	970	175	327	297	355	977
Grp Volume(v), veh/h	53	0	705	21	0	777	216	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1743	1767	0	1783	1472	0	0	1628	0	0
Q Serve(g_s), s	2.7	0.0	22.8	1.1	0.0	27.2	8.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	0.0	22.8	1.1	0.0	27.2	12.2	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.02	0.68		0.22	0.26		0.60
Lane Grp Cap(c), veh/h	72	0	1093	40	0	1086	349	0	0	362	0	0
V/C Ratio(X)	0.74	0.00	0.64	0.52	0.00	0.72	0.62	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	98	0	1093	98	0	1086	608	0	0	641	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.00	0.89	0.63	0.00	0.63	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	10.5	43.5	0.0	12.2	34.1	0.0	0.0	30.9	0.0	0.0
Incr Delay (d2), s/veh	15.2	0.0	2.6	6.5	0.0	2.6	0.7	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	8.2	0.5	0.0	9.9	4.4	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.9	0.0	13.1	50.0	0.0	14.8	34.7	0.0	0.0	31.1	0.0	0.0
LnGrp LOS	E		B	D		B	C			C		
Approach Vol, veh/h		758			798			216			80	
Approach Delay, s/veh		16.3			15.7			34.7			31.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	61.3		22.1	8.2	59.7		22.1
Change Period (Y+Rc), s	4.5	4.9		4.9	4.5	4.9		4.9
Max Green Setting (Gmax), s	5.0	36.7		34.0	5.0	36.7		34.0
Max Q Clear Time (g_c+I1), s	3.1	24.8		14.2	4.7	29.2		5.7
Green Ext Time (p_c), s	0.0	3.9		0.8	0.0	3.2		0.3

Intersection Summary			
HCM 7th Control Delay, s/veh			18.8
HCM 7th LOS			B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	540	720	120	50	140
Future Volume (veh/h)	110	540	720	120	50	140
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1806	1856	1803	1856	1856
Adj Flow Rate, veh/h	116	568	758	114	53	130
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	140	1433	1067	160	60	147
Arrive On Green	0.08	0.79	0.68	0.68	0.13	0.13
Sat Flow, veh/h	1767	1806	1568	236	468	1148
Grp Volume(v), veh/h	116	568	0	872	184	0
Grp Sat Flow(s),veh/h/ln	1767	1806	0	1803	1625	0
Q Serve(g_s), s	8.4	12.3	0.0	38.9	14.5	0.0
Cycle Q Clear(g_c), s	8.4	12.3	0.0	38.9	14.5	0.0
Prop In Lane	1.00			0.13	0.29	0.71
Lane Grp Cap(c), veh/h	140	1433	0	1228	208	0
V/C Ratio(X)	0.83	0.40	0.00	0.71	0.89	0.00
Avail Cap(c_a), veh/h	185	1433	0	1228	289	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.00	0.18	1.00	0.00
Uniform Delay (d), s/veh	59.0	4.0	0.0	12.8	55.8	0.0
Incr Delay (d2), s/veh	11.9	0.6	0.0	0.6	16.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.8	0.0	14.4	6.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	70.9	4.6	0.0	13.5	72.6	0.0
LnGrp LOS	E	A		B	E	
Approach Vol, veh/h		684	872		184	
Approach Delay, s/veh		15.9	13.5		72.6	
Approach LOS		B	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		108.5		21.5	14.7	93.8
Change Period (Y+Rc), s		5.3		4.9	4.4	5.3
Max Green Setting (Gmax), s		96.7		23.1	13.6	78.7
Max Q Clear Time (g_c+I1), s		14.3		16.5	10.4	40.9
Green Ext Time (p_c), s		7.0		0.2	0.0	14.9

Intersection Summary	
HCM 7th Control Delay, s/veh	20.7
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	540	670	690	350	190
Future Volume (vph)	210	540	670	690	350	190
Ideal Flow (vphpl)	1900	1846	1900	1846	1900	1845
Total Lost time (s)	4.4	4.9	4.9	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1792	1845	1482	3400	1492
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1792	1845	1482	3400	1492
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	221	568	705	726	368	200
RTOR Reduction (vph)	0	0	0	264	0	127
Lane Group Flow (vph)	221	568	705	462	368	73
Confl. Peds. (#/hr)				1		5
Confl. Bikes (#/hr)				4		
Turn Type	Prot	NA	NA	custom	Prot	Perm
Protected Phases	5	2	6 8		7	
Permitted Phases				6		7
Actuated Green, G (s)	17.6	64.4	86.2	50.3	22.0	22.0
Effective Green, g (s)	17.6	64.4	86.2	50.3	22.0	22.0
Actuated g/C Ratio	0.12	0.44	0.59	0.35	0.15	0.15
Clearance Time (s)	4.4	4.9		4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.0		3.0	2.5	2.5
Lane Grp Cap (vph)	212	796	1097	514	516	226
v/s Ratio Prot	c0.13	0.32	c0.38		c0.11	
v/s Ratio Perm				c0.31		0.05
v/c Ratio	1.04	0.71	0.64	0.90	0.71	0.32
Uniform Delay, d1	63.7	32.7	19.2	44.9	58.4	54.8
Progression Factor	1.00	1.00	0.42	0.44	1.00	1.00
Incremental Delay, d2	73.4	3.0	0.1	2.2	4.3	0.6
Delay (s)	137.0	35.8	8.3	22.1	62.8	55.4
Level of Service	F	D	A	C	E	E
Approach Delay (s/veh)		64.2	15.3		60.2	
Approach LOS		E	B		E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	19.1
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	680	100	30	1020	50	240	50	40	50	30	100
Future Volume (vph)	100	680	100	30	1020	50	240	50	40	50	30	100
Ideal Flow (vphpl)	1900	1853	1853	1900	1848	1848	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9	4.9	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.93		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3322		1752	1794	1431	1752	1683		1692	1616	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.59	1.00		0.67	1.00	
Satd. Flow (perm)	1752	3322		1752	1794	1431	1095	1683		1198	1616	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	716	105	32	1074	53	253	53	42	53	32	105
RTOR Reduction (vph)	0	8	0	0	0	35	0	19	0	0	79	0
Lane Group Flow (vph)	105	813	0	32	1074	18	253	76	0	53	58	0
Confl. Peds. (#/hr)			11			12			25	25		
Confl. Bikes (#/hr)			5			6			1			1
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5 7	2 7		1	6			8			8	
Permitted Phases						6	8			8		
Actuated Green, G (s)	39.6	91.3		3.5	50.3	50.3	35.9	35.9		35.9	35.9	
Effective Green, g (s)	39.6	91.3		3.5	50.3	50.3	35.9	35.9		35.9	35.9	
Actuated g/C Ratio	0.27	0.63		0.02	0.35	0.35	0.25	0.25		0.25	0.25	
Clearance Time (s)				4.4	4.9	4.9	4.9	4.9		4.9	4.9	
Vehicle Extension (s)				2.0	3.0	3.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	478	2093		42	622	496	271	416		296	400	
v/s Ratio Prot	0.06	c0.24		c0.02	c0.60			0.05			0.04	
v/s Ratio Perm						0.01	c0.23			0.04		
v/c Ratio	0.22	0.39		0.76	1.73	0.04	0.93	0.18		0.18	0.15	
Uniform Delay, d1	40.7	13.1		70.3	47.3	31.3	53.3	42.9		42.9	42.5	
Progression Factor	1.02	0.04		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		51.8	333.7	0.0	36.7	0.1		0.1	0.1	
Delay (s)	41.6	0.6		122.1	381.0	31.3	90.0	43.0		43.0	42.6	
Level of Service	D	A		F	F	C	F	D		D	D	
Approach Delay (s/veh)		5.2			357.9			77.2			42.7	
Approach LOS		A			F			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	173.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	19.1
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	390	150	120	320	230	170	750	80	140	510	260
Future Volume (veh/h)	360	390	150	120	320	230	170	750	80	140	510	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.97	1.00		0.97
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	1856	1803	1803	1856	1803	1803	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	379	411	140	126	337	216	179	789	76	147	537	243
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	313	599	495	156	439	355	212	942	91	178	635	286
Arrive On Green	0.18	0.33	0.33	0.09	0.24	0.24	0.12	0.29	0.29	0.10	0.27	0.27
Sat Flow, veh/h	1767	1803	1491	1767	1803	1458	1767	3239	312	1767	2335	1053
Grp Volume(v), veh/h	379	411	140	126	337	216	179	429	436	147	405	375
Grp Sat Flow(s),veh/h/ln	1767	1803	1491	1767	1803	1458	1767	1763	1788	1767	1763	1625
Q Serve(g_s), s	17.6	19.6	6.9	7.0	17.3	13.1	9.9	22.7	22.7	8.1	21.6	21.7
Cycle Q Clear(g_c), s	17.6	19.6	6.9	7.0	17.3	13.1	9.9	22.7	22.7	8.1	21.6	21.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.65
Lane Grp Cap(c), veh/h	313	599	495	156	439	355	212	513	520	178	479	442
V/C Ratio(X)	1.21	0.69	0.28	0.81	0.77	0.61	0.84	0.84	0.84	0.82	0.85	0.85
Avail Cap(c_a), veh/h	313	1000	828	295	984	796	355	751	762	304	700	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	28.7	24.5	44.5	35.0	33.4	42.9	33.1	33.1	43.9	34.2	34.3
Incr Delay (d2), s/veh	121.3	1.8	0.4	3.8	3.5	2.1	3.8	3.6	3.6	3.6	4.3	4.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	8.6	2.4	3.2	7.8	4.7	4.5	9.9	10.0	3.7	9.5	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	162.3	30.5	24.9	48.3	38.6	35.5	46.7	36.7	36.7	47.5	38.6	39.2
LnGrp LOS	F	C	C	D	D	D	D	D	D	D	D	D
Approach Vol, veh/h		930			679			1044			927	
Approach Delay, s/veh		83.4			39.4			38.4			40.2	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	38.0	16.3	31.9	22.0	29.2	14.4	33.8
Change Period (Y+Rc), s	4.4	5.0	4.4	4.9	4.4	* 5	4.4	4.9
Max Green Setting (Gmax), s	16.6	55.2	20.0	39.5	17.6	* 54	17.1	42.4
Max Q Clear Time (g_c+I1), s	9.0	21.6	11.9	23.7	19.6	19.3	10.1	24.7
Green Ext Time (p_c), s	0.1	4.3	0.1	3.0	0.0	3.8	0.1	3.3

Intersection Summary	
HCM 7th Control Delay, s/veh	50.7
HCM 7th LOS	D

Notes

* HCM 7th 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)	80	480	60	130	550	50	90	30	90	50	20	50
Future Volume (veh/h)	80	480	60	130	550	50	90	30	90	50	20	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.99		0.96	0.99		0.96
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	1856	1779	1779	1856	1779	1779	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	505	56	137	579	48	95	32	84	53	21	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	667	558	178	739	606	231	79	131	222	99	136
Arrive On Green	0.06	0.37	0.37	0.10	0.42	0.42	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1767	1779	1488	1767	1779	1460	555	367	609	521	459	636
Grp Volume(v), veh/h	84	505	56	137	579	48	211	0	0	122	0	0
Grp Sat Flow(s),veh/h/ln	1767	1779	1488	1767	1779	1460	1531	0	0	1615	0	0
Q Serve(g_s), s	2.2	11.6	1.1	3.5	13.2	0.9	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.2	11.6	1.1	3.5	13.2	0.9	5.6	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.45		0.40	0.43		0.39
Lane Grp Cap(c), veh/h	106	667	558	178	739	606	440	0	0	457	0	0
V/C Ratio(X)	0.79	0.76	0.10	0.77	0.78	0.08	0.48	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	438	1069	894	627	1248	1024	1093	0	0	1101	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.7	12.8	9.5	20.5	11.9	8.3	16.5	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	4.8	1.3	0.1	2.7	2.2	0.1	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.8	0.3	1.4	4.3	0.2	1.9	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.5	14.1	9.6	23.2	14.0	8.3	16.8	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	C	B	A	C	B	A	B			B		
Approach Vol, veh/h		645			764			211			122	
Approach Delay, s/veh		15.3			15.3			16.8			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	22.7		14.9	7.2	24.6		14.9
Change Period (Y+Rc), s	4.4	* 5.2		4.9	4.4	5.2		4.9
Max Green Setting (Gmax), s	16.6	* 28		31.1	11.6	32.8		31.1
Max Q Clear Time (g_c+I1), s	5.5	13.6		4.8	4.2	15.2		7.6
Green Ext Time (p_c), s	0.1	2.3		0.5	0.0	4.2		0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	15.5
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	110	70	1030	130	100	570
Future Volume (veh/h)	110	70	1030	130	100	570
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	139	71	1226	122	118	671
Peak Hour Factor	0.79	0.79	0.84	0.84	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	189	168	2135	1114	149	2655
Arrive On Green	0.11	0.11	0.61	0.61	0.08	0.75
Sat Flow, veh/h	1767	1572	3618	1562	1767	3618
Grp Volume(v), veh/h	139	71	1226	122	118	671
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1562	1767	1763
Q Serve(g_s), s	5.3	3.0	14.7	1.7	4.6	4.1
Cycle Q Clear(g_c), s	5.3	3.0	14.7	1.7	4.6	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	189	168	2135	1114	149	2655
V/C Ratio(X)	0.74	0.42	0.57	0.11	0.79	0.25
Avail Cap(c_a), veh/h	555	494	2135	1114	151	2655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.42	0.42	1.00	1.00
Uniform Delay (d), s/veh	30.3	29.2	8.3	3.1	31.4	2.6
Incr Delay (d2), s/veh	2.1	0.6	0.5	0.1	21.8	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.1	4.2	0.4	2.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	32.4	29.9	8.8	3.2	53.2	2.9
LnGrp LOS	C	C	A	A	D	A
Approach Vol, veh/h	210		1348			789
Approach Delay, s/veh	31.5		8.3			10.4
Approach LOS	C		A			B

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.3	47.3				57.6	12.4
Change Period (Y+Rc), s	4.4	4.9				4.9	4.9
Max Green Setting (Gmax), s	6.0	27.8				38.2	22.0
Max Q Clear Time (g_c+I1), s	6.6	16.7				6.1	7.3
Green Ext Time (p_c), s	0.0	7.3				6.2	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	11.1
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	580	80	80	720	50	80	60	40	50	60	40
Future Volume (veh/h)	80	580	80	80	720	50	80	60	40	50	60	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.96	0.99		0.96
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	88	637	78	96	867	53	113	85	50	81	97	59
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.71	0.71	0.71	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	416	2210	270	512	2364	145	152	101	54	127	141	77
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	602	3147	385	728	3366	206	502	456	242	404	636	345
Grp Volume(v), veh/h	88	356	359	96	454	466	248	0	0	237	0	0
Grp Sat Flow(s),veh/h/ln	602	1763	1769	728	1763	1809	1200	0	0	1386	0	0
Q Serve(g_s), s	8.9	9.8	9.8	7.4	13.4	13.4	6.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	22.4	9.8	9.8	17.2	13.4	13.4	26.8	0.0	0.0	20.7	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.11	0.46		0.20	0.34		0.25
Lane Grp Cap(c), veh/h	416	1238	1242	512	1238	1270	307	0	0	345	0	0
V/C Ratio(X)	0.21	0.29	0.29	0.19	0.37	0.37	0.81	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	416	1238	1242	512	1238	1270	309	0	0	348	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.47	0.47	0.47	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.2	7.2	7.2	10.4	7.8	7.8	50.0	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.6	0.6	0.0	0.0	0.0	13.5	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.6	3.6	1.2	4.7	4.8	9.2	0.0	0.0	7.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	7.8	7.8	10.5	7.8	7.8	63.5	0.0	0.0	51.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	E			D		
Approach Vol, veh/h		803			1016			248			237	
Approach Delay, s/veh		8.4			8.0			63.5			51.6	
Approach LOS		A			A			E			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	96.2	33.8	96.2	33.8
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	91.1	29.1	91.1	29.1
Max Q Clear Time (g_c+I1), s	24.4	28.8	19.2	22.7
Green Ext Time (p_c), s	1.9	0.0	2.3	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.6
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	510	140	150	540	330	270	740	270	160	450	90
Future Volume (veh/h)	100	510	140	150	540	330	270	740	270	160	450	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.99	1.00		0.95
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	537	115	158	568	271	284	779	252	168	474	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	130	561	458	185	619	506	343	860	278	177	1163	495
Arrive On Green	0.07	0.30	0.30	0.10	0.33	0.33	0.10	0.33	0.33	0.10	0.33	0.33
Sat Flow, veh/h	1767	1856	1515	1767	1856	1516	3428	2610	844	1767	3526	1501
Grp Volume(v), veh/h	105	537	115	158	568	271	284	526	505	168	474	74
Grp Sat Flow(s),veh/h/ln	1767	1856	1515	1767	1856	1516	1714	1763	1692	1767	1763	1501
Q Serve(g_s), s	6.8	32.8	6.6	10.2	34.0	16.8	9.4	33.0	33.0	10.9	12.0	4.0
Cycle Q Clear(g_c), s	6.8	32.8	6.6	10.2	34.0	16.8	9.4	33.0	33.0	10.9	12.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	130	561	458	185	619	506	343	581	558	177	1163	495
V/C Ratio(X)	0.81	0.96	0.25	0.85	0.92	0.54	0.83	0.91	0.91	0.95	0.41	0.15
Avail Cap(c_a), veh/h	177	563	460	208	619	506	436	625	600	177	1163	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	39.6	30.4	50.9	37.0	31.2	51.0	37.0	37.0	51.7	30.0	27.3
Incr Delay (d2), s/veh	12.7	27.4	0.4	23.3	18.7	1.2	8.1	16.1	16.7	51.7	0.4	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	18.9	2.4	5.6	18.2	6.1	4.3	16.2	15.7	7.3	5.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.5	67.0	30.8	74.2	55.6	32.4	59.2	53.1	53.7	103.4	30.3	27.5
LnGrp LOS	E	E	C	E	E	C	E	D	D	F	C	C
Approach Vol, veh/h		757			997			1315			716	
Approach Delay, s/veh		61.3			52.3			54.7			47.2	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	40.0	16.0	43.1	12.9	43.6	16.0	43.1
Change Period (Y+Rc), s	4.4	* 5	4.4	* 5	4.4	5.0	4.4	5.0
Max Green Setting (Gmax), s	13.6	* 35	14.7	* 38	11.6	37.0	11.6	41.0
Max Q Clear Time (g_c+I1), s	12.2	34.8	11.4	14.0	8.8	36.0	12.9	35.0
Green Ext Time (p_c), s	0.0	0.1	0.2	5.1	0.0	0.6	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	53.9
HCM 7th LOS	D

Notes

* HCM 7th 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)	50	610	120	40	820	50	80	20	50	40	20	60
Future Volume (veh/h)	50	610	120	40	820	50	80	20	50	40	20	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	642	99	42	863	42	84	21	48	42	21	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	59	1095	905	54	1089	901	107	27	61	62	31	83
Arrive On Green	0.03	0.59	0.59	0.03	0.59	0.59	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	1856	1533	1767	1856	1534	934	234	534	588	294	785
Grp Volume(v), veh/h	53	642	99	42	863	42	153	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1533	1767	1856	1534	1702	0	0	1667	0	0
Q Serve(g_s), s	3.6	26.0	3.4	2.8	43.1	1.4	10.5	0.0	0.0	8.2	0.0	0.0
Cycle Q Clear(g_c), s	3.6	26.0	3.4	2.8	43.1	1.4	10.5	0.0	0.0	8.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.55		0.31	0.35		0.47
Lane Grp Cap(c), veh/h	59	1095	905	54	1089	901	195	0	0	177	0	0
V/C Ratio(X)	0.90	0.59	0.11	0.78	0.79	0.05	0.79	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	59	1095	905	59	1089	901	369	0	0	361	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.8	15.4	10.8	57.8	19.1	10.5	51.7	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	80.4	2.3	0.2	40.5	5.9	0.1	2.6	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.1	1.2	1.9	19.0	0.5	4.7	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	138.2	17.7	11.0	98.3	25.0	10.6	54.3	0.0	0.0	53.3	0.0	0.0
LnGrp LOS	F	B	B	F	C	B	D			D		
Approach Vol, veh/h		794			947			153			119	
Approach Delay, s/veh		24.9			27.7			54.3			53.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	75.7		18.6	8.4	75.4		17.6
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	4.0	44.9		26.0	4.0	44.9		26.0
Max Q Clear Time (g_c+I1), s	4.8	28.0		12.5	5.6	45.1		10.2
Green Ext Time (p_c), s	0.0	7.8		0.5	0.0	0.0		0.4

Intersection Summary		
HCM 7th Control Delay, s/veh		30.1
HCM 7th LOS		C

Intersection	
Int Delay, s/veh	80.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	620	40	50	790	10	80	10	50	10	10	10
Future Vol, veh/h	10	620	40	50	790	10	80	10	50	10	10	10
Conflicting Peds, #/hr	9	0	7	7	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	97	97	97	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	653	42	53	832	11	82	10	52	11	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	851	0	0	702	0	0	1623	1637	660	1625	1669	841
Stage 1	-	-	-	-	-	-	681	681	-	946	946	-
Stage 2	-	-	-	-	-	-	942	956	-	679	723	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	783	-	-	835	-	-	~ 50	61	528	50	57	363
Stage 1	-	-	-	-	-	-	486	455	-	313	339	-
Stage 2	-	-	-	-	-	-	314	335	-	488	427	-
Platoon blocked, %		-	-	0	-	-	0	0	0	0	0	
Mov Cap-1 Maneuver	776	-	-	829	-	-	~ 34	52	525	32	49	360
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 34	52	-	32	49	-
Stage 1	-	-	-	-	-	-	472	442	-	273	296	-
Stage 2	-	-	-	-	-	-	259	292	-	420	415	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.14	0.57	$ 958.36	137.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	52	29	-	-	107	-	-	55
HCM Lane V/C Ratio	2.752	0.014	-	-	0.063	-	-	0.579
HCM Ctrl Dly (s/v)	$ 958.4	9.7	0	-	9.6	0	-	137.9
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	15.1	0	-	-	0.2	-	-	2.3

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)	260	370	100	180	380	140	190	1080	140	150	390	260
Future Volume (veh/h)	260	370	100	180	380	140	190	1080	140	150	390	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.97
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	1856	1784	1784	1856	1786	1786	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	274	389	93	189	400	130	200	1137	115	158	411	213
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	320	609	502	237	567	465	225	1238	543	181	1151	497
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.13	0.35	0.35	0.10	0.33	0.33
Sat Flow, veh/h	3428	1784	1469	3428	1786	1464	1767	3526	1546	1767	3526	1523
Grp Volume(v), veh/h	274	389	93	189	400	130	200	1137	115	158	411	213
Grp Sat Flow(s),veh/h/ln	1714	1784	1469	1714	1786	1464	1767	1763	1546	1767	1763	1523
Q Serve(g_s), s	11.0	25.7	6.2	7.6	27.6	9.3	15.6	43.2	7.3	12.3	12.4	15.3
Cycle Q Clear(g_c), s	11.0	25.7	6.2	7.6	27.6	9.3	15.6	43.2	7.3	12.3	12.4	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	320	609	502	237	567	465	225	1238	543	181	1151	497
V/C Ratio(X)	0.86	0.64	0.19	0.80	0.71	0.28	0.89	0.92	0.21	0.87	0.36	0.43
Avail Cap(c_a), veh/h	333	609	502	304	567	465	360	1284	563	197	1151	497
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)	0.91	0.91	0.91	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	38.8	32.4	64.2	42.0	35.8	60.1	43.5	31.8	61.9	35.9	36.9
Incr Delay (d2), s/veh	16.4	4.6	0.7	6.3	5.4	1.1	10.0	10.5	0.2	28.9	0.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.0	2.3	3.5	12.9	3.5	7.6	20.4	2.8	7.0	5.4	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.0	43.4	33.1	70.5	47.4	36.9	70.1	54.0	32.1	90.9	36.1	37.4
LnGrp LOS	E	D	C	E	D	D	E	D	C	F	D	D
Approach Vol, veh/h		756			719			1452			782	
Approach Delay, s/veh		55.0			51.6			54.5			47.5	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	52.8	22.2	50.9	17.5	49.4	18.7	54.4
Change Period (Y+Rc), s	4.4	5.0	4.4	5.2	4.4	* 5	4.4	* 5.2
Max Green Setting (Gmax), s	12.4	42.2	28.5	37.9	13.6	* 41	15.6	* 51
Max Q Clear Time (g_c+I1), s	9.6	27.7	17.6	17.3	13.0	29.6	14.3	45.2
Green Ext Time (p_c), s	0.1	2.5	0.2	2.9	0.0	2.8	0.0	3.9

Intersection Summary	
HCM 7th Control Delay, s/veh	52.6
HCM 7th LOS	D

Notes

* HCM 7th 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)	10	510	120	50	680	10	110	0	90	0	0	10
Future Volume (veh/h)	10	510	120	50	680	10	110	0	90	0	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.99	1.00		0.99
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	1856	1786	1786	1856	1780	1780	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	537	112	53	716	10	116	0	74	0	0	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	18	867	717	477	1101	913	412	0	409	0	0	409
Arrive On Green	0.01	0.49	0.49	0.14	0.62	0.62	0.26	0.00	0.26	0.00	0.00	0.26
Sat Flow, veh/h	1767	1786	1478	3428	1780	1477	1358	0	1561	0	0	1560
Grp Volume(v), veh/h	11	537	112	53	716	10	116	0	74	0	0	10
Grp Sat Flow(s),veh/h/ln	1767	1786	1478	1714	1780	1477	1358	0	1561	0	0	1561
Q Serve(g_s), s	0.8	28.8	5.5	1.8	33.4	0.3	8.8	0.0	4.8	0.0	0.0	0.6
Cycle Q Clear(g_c), s	0.8	28.8	5.5	1.8	33.4	0.3	9.5	0.0	4.8	0.0	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	18	867	717	477	1101	913	412	0	409	0	0	409
V/C Ratio(X)	0.62	0.62	0.16	0.11	0.65	0.01	0.28	0.00	0.18	0.00	0.00	0.02
Avail Cap(c_a), veh/h	117	867	717	491	1101	913	412	0	409	0	0	409
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)	0.75	0.75	0.75	0.55	0.55	0.55	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	64.1	24.6	18.6	48.9	15.8	9.5	39.1	0.0	37.1	0.0	0.0	35.6
Incr Delay (d2), s/veh	23.2	2.5	0.3	0.1	1.7	0.0	1.7	0.0	1.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	12.5	1.9	0.8	13.3	0.1	3.3	0.0	2.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	87.3	27.1	19.0	49.0	17.5	9.5	40.8	0.0	38.1	0.0	0.0	35.6
LnGrp LOS	F	C	B	D	B	A	D		D			D
Approach Vol, veh/h		660			779			190			10	
Approach Delay, s/veh		26.7			19.5			39.8			35.6	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.0	68.0		39.0	5.7	85.3		39.0
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	18.6	* 63		34.1	8.6	73.1		34.1
Max Q Clear Time (g_c+I1), s	3.8	30.8		2.6	2.8	35.4		11.5
Green Ext Time (p_c), s	0.1	3.9		0.0	0.0	5.5		0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	24.9
HCM 7th LOS	C

Notes

* HCM 7th 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)	110	490	40	50	560	50	50	40	30	50	50	180
Future Volume (veh/h)	110	490	40	50	560	50	50	40	30	50	50	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	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	1856	1793	1793	1856	1791	1791	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	516	34	53	589	47	53	42	29	53	53	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	141	993	806	68	918	756	79	62	43	46	46	145
Arrive On Green	0.08	0.55	0.55	0.04	0.51	0.51	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1767	1793	1456	1767	1791	1475	741	587	406	320	320	1016
Grp Volume(v), veh/h	116	516	34	53	589	47	124	0	0	274	0	0
Grp Sat Flow(s),veh/h/ln	1767	1793	1456	1767	1791	1475	1734	0	0	1657	0	0
Q Serve(g_s), s	7.8	21.6	1.3	3.6	28.7	1.9	8.3	0.0	0.0	17.1	0.0	0.0
Cycle Q Clear(g_c), s	7.8	21.6	1.3	3.6	28.7	1.9	8.3	0.0	0.0	17.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.23	0.19		0.61
Lane Grp Cap(c), veh/h	141	993	806	68	918	756	184	0	0	236	0	0
V/C Ratio(X)	0.82	0.52	0.04	0.78	0.64	0.06	0.67	0.00	0.00	1.16	0.00	0.00
Avail Cap(c_a), veh/h	208	993	806	119	918	756	406	0	0	236	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.4	16.8	12.2	57.2	21.3	14.7	51.7	0.0	0.0	51.5	0.0	0.0
Incr Delay (d2), s/veh	8.3	1.6	0.1	7.0	3.4	0.2	1.6	0.0	0.0	108.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	9.0	0.4	1.7	12.4	0.7	3.7	0.0	0.0	14.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.7	18.4	12.3	64.2	24.7	14.9	53.3	0.0	0.0	160.3	0.0	0.0
LnGrp LOS	E	B	B	E	C	B	D			F		
Approach Vol, veh/h		666			689			124			274	
Approach Delay, s/veh		25.8			27.1			53.3			160.3	
Approach LOS		C			C			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	71.4		22.0	14.0	66.4		17.6
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	8.1	47.6		17.1	14.1	41.6		28.1
Max Q Clear Time (g_c+I1), s	5.6	23.6		19.1	9.8	30.7		10.3
Green Ext Time (p_c), s	0.0	7.6		0.0	0.0	5.1		0.4

Intersection Summary		
HCM 7th Control Delay, s/veh		49.3
HCM 7th LOS		D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	680	2030	90	530	1240	560
Future Volume (veh/h)	680	2030	90	530	1240	560
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	723	2124	100	589	1393	0
Peak Hour Factor	0.94	0.94	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1932	2020	94	1296	1862	
Arrive On Green	0.56	0.56	0.37	0.37	0.37	0.00
Sat Flow, veh/h	3428	3585	385	3618	5233	1572
Grp Volume(v), veh/h	723	2124	100	589	1393	0
Grp Sat Flow(s),veh/h/ln	1714	1195	385	1763	1689	1572
Q Serve(g_s), s	18.8	90.9	20.6	20.5	38.7	0.0
Cycle Q Clear(g_c), s	18.8	90.9	59.3	20.5	38.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1932	2020	94	1296	1862	
V/C Ratio(X)	0.37	1.05	1.07	0.45	0.75	
Avail Cap(c_a), veh/h	1932	2020	94	1296	1862	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.5	35.2	75.2	38.7	44.5	0.0
Incr Delay (d2), s/veh	0.0	35.1	112.0	0.1	1.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	30.9	6.7	8.6	16.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.5	70.3	187.2	38.8	46.0	0.0
LnGrp LOS	B	F	F	D	D	
Approach Vol, veh/h	2847			689	1393	
Approach Delay, s/veh	57.4			60.4	46.0	
Approach LOS	E			E	D	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		65.3		96.0		65.3
Change Period (Y+Rc), s		6.0		5.1		* 6
Max Green Setting (Gmax), s		44.0		90.9		* 59
Max Q Clear Time (g_c+I1), s		40.7		92.9		61.3
Green Ext Time (p_c), s		2.1		0.0		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	54.6
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	600	350	470	0	1050	1230	0	600	600
Future Volume (veh/h)	0	0	0	600	350	470	0	1050	1230	0	600	600
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				645	376	0	0	1071	0	0	632	0
Peak Hour Factor				0.93	0.93	0.93	0.98	0.98	0.98	0.95	0.95	0.95
Percent Heavy Veh, %				3	3	3	0	3	3	0	3	3
Cap, veh/h				939	0		0	1708		0	1708	
Arrive On Green				0.27	0.27	0.00	0.00	0.48	0.00	0.00	0.48	0.00
Sat Flow, veh/h				3428	0	1572	0	3618	1572	0	3618	1572
Grp Volume(v), veh/h				645	0	0	0	1071	0	0	632	0
Grp Sat Flow(s),veh/h/ln				1714	0	1572	0	1763	1572	0	1763	1572
Q Serve(g_s), s				7.3	0.0	0.0	0.0	9.8	0.0	0.0	4.9	0.0
Cycle Q Clear(g_c), s				7.3	0.0	0.0	0.0	9.8	0.0	0.0	4.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				939	0		0	1708		0	1708	
V/C Ratio(X)				0.69	0.00		0.00	0.63		0.00	0.37	
Avail Cap(c_a), veh/h				4853	0		0	4707		0	4731	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				14.1	0.0	0.0	0.0	8.3	0.0	0.0	7.0	0.0
Incr Delay (d2), s/veh				0.9	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	0.0	0.0	2.3	0.0	0.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				15.0	0.0	0.0	0.0	8.7	0.0	0.0	7.2	0.0
LnGrp LOS				B				A			A	
Approach Vol, veh/h					645			1071			632	
Approach Delay, s/veh					15.0			8.7			7.2	
Approach LOS					B			A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	26.5	17.0	26.5
Change Period (Y+Rc), s	5.4	5.1	* 5.4
Max Green Setting (Gmax), s	58.0	61.5	* 58
Max Q Clear Time (g_c+I1), s	11.8	9.3	6.9
Green Ext Time (p_c), s	9.3	2.6	4.6

Intersection Summary	
HCM 7th Control Delay, s/veh	10.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	790	0	860	0	0	0	0	1490	680	0	770	450
Future Volume (veh/h)	790	0	860	0	0	0	0	1490	680	0	770	450
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	849	0	925				0	1602	0	0	846	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.91	0.91	0.91
Percent Heavy Veh, %	3	0	3				0	3	3	0	3	3
Cap, veh/h	1058	0	1107				0	1974		0	1974	
Arrive On Green	0.31	0.00	0.31				0.00	0.56	0.00	0.00	0.56	0.00
Sat Flow, veh/h	3428	0	3585				0	3618	1572	0	3618	1572
Grp Volume(v), veh/h	849	0	925				0	1602	0	0	846	0
Grp Sat Flow(s),veh/h/ln	1714	0	1195				0	1763	1572	0	1763	1572
Q Serve(g_s), s	21.6	0.0	22.9				0.0	34.9	0.0	0.0	13.2	0.0
Cycle Q Clear(g_c), s	21.6	0.0	22.9				0.0	34.9	0.0	0.0	13.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1058	0	1107				0	1974		0	1974	
V/C Ratio(X)	0.80	0.00	0.84				0.00	0.81		0.00	0.43	
Avail Cap(c_a), veh/h	1582	0	1655				0	2728		0	2728	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	30.6				0.0	16.9	0.0	0.0	12.1	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.5				0.0	1.4	0.0	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	6.5				0.0	12.5	0.0	0.0	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.2	0.0	32.2				0.0	18.2	0.0	0.0	12.3	0.0
LnGrp LOS	C		C					B			B	
Approach Vol, veh/h		1774						1602			846	
Approach Delay, s/veh		31.7						18.2			12.3	
Approach LOS		C						B			B	

Timer - Assigned Phs			4		6		8					
Phs Duration (G+Y+Rc), s			59.7		35.5		59.7					
Change Period (Y+Rc), s			6.4		6.1		6.4					
Max Green Setting (Gmax), s			73.6		43.9		73.6					
Max Q Clear Time (g_c+I1), s			36.9		24.9		15.2					
Green Ext Time (p_c), s			16.4		4.5		6.7					

Intersection Summary												
HCM 7th Control Delay, s/veh			22.7									
HCM 7th LOS			C									

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	140	120	140	150	190
Future Volume (veh/h)	220	140	120	140	150	190
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	268	151	164	192	188	213
Peak Hour Factor	0.82	0.82	0.73	0.73	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	346	195	212	964	219	249
Arrive On Green	0.32	0.32	0.12	0.52	0.29	0.29
Sat Flow, veh/h	1098	619	1767	1856	769	871
Grp Volume(v), veh/h	0	419	164	192	402	0
Grp Sat Flow(s),veh/h/ln	0	1716	1767	1856	1644	0
Q Serve(g_s), s	0.0	11.6	4.7	2.9	12.1	0.0
Cycle Q Clear(g_c), s	0.0	11.6	4.7	2.9	12.1	0.0
Prop In Lane		0.36	1.00		0.47	0.53
Lane Grp Cap(c), veh/h	0	542	212	964	469	0
V/C Ratio(X)	0.00	0.77	0.77	0.20	0.86	0.00
Avail Cap(c_a), veh/h	0	1874	764	2970	1607	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	16.2	22.3	6.7	17.7	0.0
Incr Delay (d2), s/veh	0.0	2.2	2.3	0.1	1.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	2.0	1.0	4.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	18.4	24.6	6.8	19.5	0.0
LnGrp LOS		B	C	A	B	
Approach Vol, veh/h	419			356	402	
Approach Delay, s/veh	18.4			15.0	19.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.7	21.8				32.5	19.8
Change Period (Y+Rc), s	4.4	* 5.3				5.3	4.9
Max Green Setting (Gmax), s	22.6	* 57				83.7	51.1
Max Q Clear Time (g_c+I1), s	6.7	13.6				4.9	14.1
Green Ext Time (p_c), s	0.2	2.7				1.2	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	17.7
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	50	30	100	640	80	100	150	790	240	50	690	50
Future Volume (veh/h)	50	30	100	640	80	100	150	790	240	50	690	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	37	123	435	440	96	160	840	226	55	758	48
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.94	0.94	0.94	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	59	306	654	546	119	188	1099	294	113	1136	72
Arrive On Green	0.09	0.09	0.09	0.37	0.37	0.37	0.11	0.28	0.28	0.06	0.23	0.23
Sat Flow, veh/h	1127	672	1572	1767	1475	322	1767	3978	1063	1767	4862	306
Grp Volume(v), veh/h	99	0	123	435	0	536	160	712	354	55	525	281
Grp Sat Flow(s),veh/h/ln	1799	0	1572	1767	0	1797	1767	1689	1664	1767	1689	1792
Q Serve(g_s), s	6.3	0.0	8.1	24.2	0.0	31.5	10.5	22.8	23.0	3.5	16.6	16.8
Cycle Q Clear(g_c), s	6.3	0.0	8.1	24.2	0.0	31.5	10.5	22.8	23.0	3.5	16.6	16.8
Prop In Lane	0.63		1.00	1.00		0.18	1.00		0.64	1.00		0.17
Lane Grp Cap(c), veh/h	158	0	306	654	0	665	188	933	460	113	789	418
V/C Ratio(X)	0.63	0.00	0.40	0.67	0.00	0.81	0.85	0.76	0.77	0.49	0.67	0.67
Avail Cap(c_a), veh/h	205	0	347	839	0	853	350	1374	677	140	963	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	41.5	31.0	0.0	33.3	51.7	39.1	39.2	53.3	41.0	41.0
Incr Delay (d2), s/veh	4.1	0.0	0.9	2.6	0.0	6.3	4.1	1.5	3.2	1.2	1.3	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2	10.6	0.0	14.5	4.8	9.5	9.6	1.6	7.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.9	0.0	42.3	33.6	0.0	39.6	55.8	40.6	42.3	54.5	42.3	43.5
LnGrp LOS	E		D	C		D	E	D	D	D	D	D
Approach Vol, veh/h		222			971			1226			861	
Approach Delay, s/veh		48.4			36.9			43.1			43.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	39.0		15.9	18.3	33.9		49.7
Change Period (Y+Rc), s	5.7	* 6.4		5.6	5.7	6.4		6.1
Max Green Setting (Gmax), s	9.3	* 48		13.4	23.3	33.6		55.9
Max Q Clear Time (g_c+I1), s	5.5	25.0		10.1	12.5	18.8		33.5
Green Ext Time (p_c), s	0.0	7.6		0.3	0.1	4.5		10.0

Intersection Summary	
HCM 7th Control Delay, s/veh	41.7
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	180	290	110	720	130	760	50	800	420	150	670	200
Future Volume (veh/h)	180	290	110	720	130	760	50	800	420	150	670	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1778	1778	1856	1856	1856
Adj Flow Rate, veh/h	189	305	104	758	137	712	53	842	394	158	705	165
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	293	324	108	750	481	960	88	831	386	155	1442	623
Arrive On Green	0.09	0.13	0.13	0.22	0.26	0.26	0.05	0.37	0.37	0.09	0.41	0.41
Sat Flow, veh/h	3428	2572	856	3428	1856	2768	1767	2239	1042	1767	3526	1525
Grp Volume(v), veh/h	189	207	202	758	137	712	53	634	602	158	705	165
Grp Sat Flow(s),veh/h/ln	1714	1763	1665	1714	1856	1384	1767	1689	1591	1767	1763	1525
Q Serve(g_s), s	7.5	16.3	17.0	30.7	8.3	31.8	4.1	52.1	52.1	12.3	20.7	10.1
Cycle Q Clear(g_c), s	7.5	16.3	17.0	30.7	8.3	31.8	4.1	52.1	52.1	12.3	20.7	10.1
Prop In Lane	1.00		0.51	1.00		1.00	1.00		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	293	222	210	750	481	960	88	627	590	155	1442	623
V/C Ratio(X)	0.65	0.93	0.96	1.01	0.28	0.74	0.60	1.01	1.02	1.02	0.49	0.26
Avail Cap(c_a), veh/h	293	222	210	750	481	960	125	627	590	155	1442	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.1	60.7	61.0	54.8	41.6	40.3	65.3	44.1	44.2	64.0	30.7	27.5
Incr Delay (d2), s/veh	3.8	41.5	51.6	35.7	0.3	3.1	2.5	38.8	42.0	77.8	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	9.9	10.2	16.8	3.9	11.1	1.9	28.1	27.0	8.9	8.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.9	102.2	112.6	90.5	41.9	43.4	67.8	83.0	86.2	141.9	30.9	27.7
LnGrp LOS	E	F	F	F	D	D	E	F	F	F	C	C
Approach Vol, veh/h		598			1607			1289			1028	
Approach Delay, s/veh		94.3			65.5			83.9			47.5	
Approach LOS		F			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	59.2	37.8	24.4	13.7	64.5	18.7	43.5
Change Period (Y+Rc), s	6.7	7.1	7.1	* 6.7	6.7	7.1	6.7	7.1
Max Green Setting (Gmax), s	12.3	52.1	30.7	* 18	9.9	54.5	12.0	36.0
Max Q Clear Time (g_c+I1), s	14.3	54.1	32.7	19.0	6.1	22.7	9.5	33.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.9	0.1	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	70.4
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th 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)	390	50	60	150	20	300	90	1490	120	260	1220	160
Future Volume (veh/h)	390	50	60	150	20	300	90	1490	120	260	1220	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		1.00	1.00		1.00	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	271	276	58	181	24	310	96	1585	122	268	1258	119
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.94	0.94	0.94	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	329	272	57	166	22	306	113	1700	130	304	2732	1977
Arrive On Green	0.19	0.19	0.19	0.11	0.11	0.11	0.06	0.51	0.51	0.09	0.54	0.54
Sat Flow, veh/h	1767	1460	307	1569	208	1572	1767	3319	254	3428	5066	2708
Grp Volume(v), veh/h	271	0	334	205	0	310	96	836	871	268	1258	119
Grp Sat Flow(s),veh/h/ln	1767	0	1767	1777	0	1572	1767	1763	1810	1714	1689	1354
Q Serve(g_s), s	29.3	0.0	37.1	21.1	0.0	21.1	10.7	87.6	90.0	15.4	30.3	2.5
Cycle Q Clear(g_c), s	29.3	0.0	37.1	21.1	0.0	21.1	10.7	87.6	90.0	15.4	30.3	2.5
Prop In Lane	1.00		0.17	0.88		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	329	0	329	188	0	306	113	903	927	304	2732	1977
V/C Ratio(X)	0.82	0.00	1.01	1.09	0.00	1.01	0.85	0.93	0.94	0.88	0.46	0.06
Avail Cap(c_a), veh/h	329	0	329	188	0	306	192	947	972	408	2808	2017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.8	0.0	80.9	88.9	0.0	80.1	92.2	45.0	45.6	89.6	28.1	7.8
Incr Delay (d2), s/veh	14.4	0.0	53.1	91.0	0.0	54.6	15.6	14.3	15.9	13.0	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	0.0	22.0	14.5	0.0	20.4	5.4	41.2	43.8	7.4	12.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	92.2	0.0	134.0	179.9	0.0	134.7	107.7	59.3	61.5	102.6	28.3	7.8
LnGrp LOS	F		F	F		F	F	E	E	F	C	A
Approach Vol, veh/h		605			515			1803			1645	
Approach Delay, s/veh		115.3			152.7			62.9			38.9	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.5	108.0		42.0	17.2	113.4		26.4
Change Period (Y+Rc), s	4.9	6.1		4.9	4.4	* 6.1		5.3
Max Green Setting (Gmax), s	23.7	106.9		37.1	21.6	* 1.1E+02		21.1
Max Q Clear Time (g_c+I1), s	17.4	92.0		39.1	12.7	32.3		23.1
Green Ext Time (p_c), s	0.3	9.9		0.0	0.1	24.5		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	71.3
HCM 7th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	440	1170	40	170	1210
Future Volume (veh/h)	0	440	1170	40	170	1210
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	360	1245	34	185	1315
Peak Hour Factor	0.95	0.95	0.94	0.94	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	0	2697	1202	220	3316
Arrive On Green	0.00	0.00	0.76	0.76	0.12	0.94
Sat Flow, veh/h	0		3618	1571	1767	3618
Grp Volume(v), veh/h	0.0		1245	34	185	1315
Grp Sat Flow(s),veh/h/ln			1763	1571	1767	1763
Q Serve(g_s), s			11.0	0.4	8.8	3.0
Cycle Q Clear(g_c), s			11.0	0.4	8.8	3.0
Prop In Lane				1.00	1.00	
Lane Grp Cap(c), veh/h			2697	1202	220	3316
V/C Ratio(X)			0.46	0.03	0.84	0.40
Avail Cap(c_a), veh/h			2697	1202	259	3316
HCM Platoon Ratio			1.00	1.00	1.00	1.00
Upstream Filter(I)			0.68	0.68	1.00	1.00
Uniform Delay (d), s/veh			3.7	2.4	36.8	0.2
Incr Delay (d2), s/veh			0.4	0.0	16.6	0.4
Initial Q Delay(d3), s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			2.4	1.0	4.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh			4.1	2.5	53.4	0.6
LnGrp LOS			A	A	D	A
Approach Vol, veh/h			1279			1500
Approach Delay, s/veh			4.0			7.1
Approach LOS			A			A

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	15.1	70.9				86.0
Change Period (Y+Rc), s	4.4	5.1				5.1
Max Green Setting (Gmax), s	12.6	40.2				57.2
Max Q Clear Time (g_c+I1), s	10.8	13.0				5.0
Green Ext Time (p_c), s	0.0	12.1				16.3

Intersection Summary	
HCM 7th Control Delay, s/veh	5.7
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	20	40	140	40	60	70	1040	140	100	1040	100
Future Volume (veh/h)	40	20	40	140	40	60	70	1040	140	100	1040	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.71	0.78		0.51	1.00		0.79	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	48	24	44	151	43	60	73	1083	131	106	1106	94
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.96	0.96	0.96	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	77	112	180	40	52	94	1812	218	132	2014	171
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.59	0.59	0.07	0.61	0.61
Sat Flow, veh/h	525	379	553	630	196	255	1767	3064	369	1767	3283	279
Grp Volume(v), veh/h	116	0	0	254	0	0	73	621	593	106	593	607
Grp Sat Flow(s),veh/h/ln	1457	0	0	1082	0	0	1767	1763	1670	1767	1763	1799
Q Serve(g_s), s	0.0	0.0	0.0	14.8	0.0	0.0	4.5	24.5	24.7	6.5	21.6	21.6
Cycle Q Clear(g_c), s	7.5	0.0	0.0	22.3	0.0	0.0	4.5	24.5	24.7	6.5	21.6	21.6
Prop In Lane	0.41		0.38	0.59		0.24	1.00		0.22	1.00		0.15
Lane Grp Cap(c), veh/h	342	0	0	271	0	0	94	1043	988	132	1081	1104
V/C Ratio(X)	0.34	0.00	0.00	0.94	0.00	0.00	0.78	0.60	0.60	0.80	0.55	0.55
Avail Cap(c_a), veh/h	342	0	0	271	0	0	275	1043	988	275	1081	1104
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	0.55	0.55	0.55	0.84	0.84	0.84
Uniform Delay (d), s/veh	38.0	0.0	0.0	45.1	0.0	0.0	51.4	14.2	14.2	50.1	12.4	12.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	37.2	0.0	0.0	2.9	1.4	1.5	3.6	1.7	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	9.9	0.0	0.0	2.0	9.2	8.8	2.9	8.1	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.2	0.0	0.0	82.3	0.0	0.0	54.4	15.6	15.7	53.7	14.1	14.1
LnGrp LOS	D			F			D	B	B	D	B	B
Approach Vol, veh/h		116			254			1287			1306	
Approach Delay, s/veh		38.2			82.3			17.8			17.3	
Approach LOS		D			F			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	70.2		27.2	10.2	72.6		27.2
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	5.1		4.9
Max Green Setting (Gmax), s	17.1	56.2		22.3	17.1	56.2		22.3
Max Q Clear Time (g_c+I1), s	8.5	26.7		9.5	6.5	23.6		24.3
Green Ext Time (p_c), s	0.1	11.4		0.4	0.0	11.4		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	23.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1690	1140	140	1220	770	160
Future Volume (veh/h)	1690	1140	140	1220	770	160
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1803	1803	1856	1800	1793	1793
Adj Flow Rate, veh/h	1779	1200	147	1284	950	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1738	1220	137	2123	994	442
Arrive On Green	0.51	0.51	0.08	0.62	0.29	0.00
Sat Flow, veh/h	3515	1528	1767	3510	3415	1520
Grp Volume(v), veh/h	1779	1200	147	1284	950	0
Grp Sat Flow(s),veh/h/ln	1713	1528	1767	1710	1708	1520
Q Serve(g_s), s	76.0	76.0	11.6	34.1	40.9	0.0
Cycle Q Clear(g_c), s	76.0	76.0	11.6	34.1	40.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1738	1220	137	2123	994	442
V/C Ratio(X)	1.02	0.98	1.07	0.60	0.96	0.00
Avail Cap(c_a), veh/h	1738	1220	137	2123	1006	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.9	10.7	69.1	17.2	52.2	0.0
Incr Delay (d2), s/veh	27.8	21.9	98.1	0.8	18.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.0	53.3	8.9	12.8	19.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	64.7	32.6	167.2	18.0	70.8	0.0
LnGrp LOS	F	C	F	B	E	
Approach Vol, veh/h	2979			1431	950	
Approach Delay, s/veh	51.8			33.4	70.8	
Approach LOS	D			C	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.0	83.3			100.3	49.5
Change Period (Y+Rc), s	5.4	* 7.3			7.3	5.9
Max Green Setting (Gmax), s	11.6	* 76			92.7	44.1
Max Q Clear Time (g_c+I1), s	13.6	78.0			36.1	42.9
Green Ext Time (p_c), s	0.0	0.0			27.6	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	50.2
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th 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)	30	1470	180	100	1130	10	90	20	110	50	20	30
Future Volume (veh/h)	30	1470	180	100	1130	10	90	20	110	50	20	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.99		0.98	0.99		0.98
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	1856	1797	1797	1856	1797	1797	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	32	1547	170	104	1177	9	95	21	116	53	21	29
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	40	1965	214	125	2363	18	205	40	268	97	40	37
Arrive On Green	0.02	0.63	0.63	0.14	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1767	3106	338	1767	3472	27	882	231	1535	312	228	212
Grp Volume(v), veh/h	32	843	874	104	579	607	116	0	116	103	0	0
Grp Sat Flow(s),veh/h/ln	1767	1707	1736	1767	1707	1791	1113	0	1535	752	0	0
Q Serve(g_s), s	2.3	46.6	48.5	7.4	0.0	0.0	0.0	0.0	8.8	7.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	46.6	48.5	7.4	0.0	0.0	12.9	0.0	8.8	19.9	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.01	0.82		1.00	0.51		0.28
Lane Grp Cap(c), veh/h	40	1080	1098	125	1162	1219	245	0	268	174	0	0
V/C Ratio(X)	0.79	0.78	0.80	0.83	0.50	0.50	0.47	0.00	0.43	0.59	0.00	0.00
Avail Cap(c_a), veh/h	91	1080	1098	144	1162	1219	294	0	322	223	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.71	0.71	0.71	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	63.2	17.3	17.7	55.0	0.0	0.0	49.4	0.0	47.9	54.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.5	0.6	19.3	1.1	1.0	0.5	0.0	0.4	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	16.7	17.7	3.7	0.4	0.4	3.6	0.0	3.4	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.4	17.9	18.2	74.3	1.1	1.0	50.0	0.0	48.3	56.1	0.0	0.0
LnGrp LOS	E	B	B	E	A	A	D		D	E		
Approach Vol, veh/h		1749			1290			232			103	
Approach Delay, s/veh		18.9			7.0			49.1			56.1	
Approach LOS		B			A			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	88.7		27.6	7.4	95.0		27.6
Change Period (Y+Rc), s	4.4	* 6.5		4.9	4.4	6.5		4.9
Max Green Setting (Gmax), s	10.6	* 77		27.3	6.7	80.2		27.3
Max Q Clear Time (g_c+I1), s	9.4	50.5		21.9	4.3	2.0		14.9
Green Ext Time (p_c), s	0.0	12.6		0.1	0.0	9.8		0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	17.6
HCM 7th LOS	B

Notes

* HCM 7th 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)	380	1160	100	50	830	190	60	30	50	310	50	410
Future Volume (veh/h)	380	1160	100	50	830	190	60	30	50	310	50	410
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.77	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	1856	1796	1796	1856	1796	1796	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	400	1221	96	53	874	158	63	32	48	364	0	337
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	446	1455	114	68	1227	530	153	78	116	470	0	209
Arrive On Green	0.26	0.91	0.91	0.04	0.36	0.36	0.22	0.22	0.22	0.13	0.00	0.13
Sat Flow, veh/h	3428	3196	251	1767	3412	1474	679	345	518	3534	0	1572
Grp Volume(v), veh/h	400	651	666	53	874	158	143	0	0	364	0	337
Grp Sat Flow(s),veh/h/ln	1714	1706	1740	1767	1706	1474	1542	0	0	1767	0	1572
Q Serve(g_s), s	14.6	18.7	19.0	3.9	28.7	10.0	10.3	0.0	0.0	12.9	0.0	17.3
Cycle Q Clear(g_c), s	14.6	18.7	19.0	3.9	28.7	10.0	10.3	0.0	0.0	12.9	0.0	17.3
Prop In Lane	1.00		0.14	1.00		1.00	0.44		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	446	777	792	68	1227	530	347	0	0	470	0	209
V/C Ratio(X)	0.90	0.84	0.84	0.78	0.71	0.30	0.41	0.00	0.00	0.77	0.00	1.61
Avail Cap(c_a), veh/h	525	777	792	71	1227	530	356	0	0	470	0	209
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.56	0.51	0.51	0.51	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.2	4.0	4.0	62.0	35.8	29.9	43.1	0.0	0.0	54.5	0.0	56.3
Incr Delay (d2), s/veh	9.2	6.2	6.2	21.3	1.8	0.7	0.3	0.0	0.0	8.4	0.0	295.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	3.2	3.3	2.1	12.1	3.6	4.0	0.0	0.0	6.4	0.0	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.4	10.2	10.2	83.2	37.7	30.6	43.4	0.0	0.0	62.8	0.0	352.1
LnGrp LOS	E	B	B	F	D	C	D			E		F
Approach Vol, veh/h		1717			1085			143			701	
Approach Delay, s/veh		21.0			38.8			43.4			201.9	
Approach LOS		C			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	64.8		22.2	21.8	52.4		33.6
Change Period (Y+Rc), s	4.4	5.6		4.9	4.9	* 5.6		4.4
Max Green Setting (Gmax), s	5.2	58.2		17.3	19.9	* 44		30.0
Max Q Clear Time (g_c+I1), s	5.9	21.0		19.3	16.6	30.7		12.3
Green Ext Time (p_c), s	0.0	21.1		0.0	0.3	5.5		0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	62.0
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1270	120	100	740	290	140	30	90	200	40	190
Future Volume (veh/h)	150	1270	120	100	740	290	140	30	90	200	40	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.92	1.00		0.84	1.00		0.79
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	1856	1800	1800	1856	1796	1796	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	158	1337	118	105	779	271	147	32	84	211	42	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	137	1248	110	90	893	310	182	40	104	333	66	400
Arrive On Green	0.08	0.40	0.40	0.05	0.37	0.37	0.20	0.20	0.20	0.22	0.22	0.22
Sat Flow, veh/h	1767	3156	277	1767	2421	842	897	195	512	1486	296	1242
Grp Volume(v), veh/h	158	721	734	105	549	501	263	0	0	253	0	156
Grp Sat Flow(s),veh/h/ln	1767	1710	1723	1767	1706	1557	1604	0	0	1781	0	1242
Q Serve(g_s), s	11.6	59.3	59.3	7.6	44.9	45.0	23.4	0.0	0.0	19.3	0.0	15.1
Cycle Q Clear(g_c), s	11.6	59.3	59.3	7.6	44.9	45.0	23.4	0.0	0.0	19.3	0.0	15.1
Prop In Lane	1.00		0.16	1.00		0.54	0.56		0.32	0.83		1.00
Lane Grp Cap(c), veh/h	137	676	681	90	629	574	325	0	0	399	0	400
V/C Ratio(X)	1.16	1.07	1.08	1.17	0.87	0.87	0.81	0.00	0.00	0.63	0.00	0.39
Avail Cap(c_a), veh/h	137	676	681	90	629	574	332	0	0	404	0	403
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)	0.57	0.57	0.57	0.28	0.28	0.28	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	69.2	45.3	45.3	71.2	44.1	44.1	57.0	0.0	0.0	52.6	0.0	41.9
Incr Delay (d2), s/veh	106.8	45.7	49.6	105.8	5.0	5.5	12.6	0.0	0.0	2.4	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	33.3	34.3	6.1	19.6	18.0	10.7	0.0	0.0	9.0	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	176.0	91.1	94.9	177.0	49.1	49.6	69.7	0.0	0.0	55.1	0.0	42.1
LnGrp LOS	F	F	F	F	D	D	E			E		D
Approach Vol, veh/h		1613			1155			263			409	
Approach Delay, s/veh		101.2			60.9			69.7			50.1	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	64.2		38.5	16.0	60.2		35.3
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	7.6	58.3		34.0	11.6	54.3		31.0
Max Q Clear Time (g_c+I1), s	9.6	61.3		21.3	13.6	47.0		25.4
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	3.8		0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	79.2
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	850	490	210	410	260	440	670	160	260	690	280
Future Volume (veh/h)	290	850	490	210	410	260	440	670	160	260	690	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.88	1.00		0.87	1.00		0.78
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	1856	1795	1795	1856	1795	1795	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	305	895	420	219	427	211	463	705	149	274	726	261
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	322	800	370	160	917	361	357	932	197	315	749	269
Arrive On Green	0.36	0.72	0.72	0.03	0.09	0.09	0.10	0.33	0.33	0.09	0.32	0.32
Sat Flow, veh/h	1767	2218	1027	1767	3410	1343	3428	2813	594	3428	2346	843
Grp Volume(v), veh/h	305	685	630	219	427	211	463	442	412	274	545	442
Grp Sat Flow(s),veh/h/ln	1767	1705	1539	1767	1705	1343	1714	1763	1644	1714	1763	1427
Q Serve(g_s), s	25.1	54.1	54.1	13.6	17.9	22.7	15.6	33.5	33.6	11.8	45.8	45.8
Cycle Q Clear(g_c), s	25.1	54.1	54.1	13.6	17.9	22.7	15.6	33.5	33.6	11.8	45.8	45.8
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.36	1.00		0.59
Lane Grp Cap(c), veh/h	322	615	555	160	917	361	357	584	545	315	563	456
V/C Ratio(X)	0.95	1.11	1.13	1.37	0.47	0.58	1.30	0.76	0.76	0.87	0.97	0.97
Avail Cap(c_a), veh/h	379	615	555	160	917	361	357	584	545	315	563	456
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.74	0.74	0.74	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	46.9	20.9	20.9	72.8	58.1	60.3	67.2	44.7	44.8	67.2	50.3	50.3
Incr Delay (d2), s/veh	4.8	53.9	62.8	191.7	0.9	4.0	153.6	8.8	9.5	17.3	26.7	30.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	21.1	20.4	15.0	8.3	8.6	14.4	16.0	15.1	5.9	23.9	19.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.7	74.8	83.7	264.5	59.0	64.3	220.8	53.6	54.2	84.5	77.1	80.7
LnGrp LOS	D	F	F	F	E	E	F	D	D	F	E	F
Approach Vol, veh/h		1620			857			1317			1261	
Approach Delay, s/veh		73.9			112.8			112.6			79.9	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	54.8	18.0	59.0	20.0	53.0	31.7	45.3
Change Period (Y+Rc), s	4.4	5.1	4.4	4.9	4.4	5.1	4.4	4.9
Max Green Setting (Gmax), s	13.8	49.7	13.6	54.1	15.6	47.9	32.2	35.5
Max Q Clear Time (g_c+I1), s	13.8	35.6	15.6	56.1	17.6	47.8	27.1	24.7
Green Ext Time (p_c), s	0.0	6.0	0.0	0.0	0.0	0.1	0.2	5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	92.1
HCM 7th LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	1240	680	50	150	240
Future Volume (veh/h)	90	1240	680	50	150	240
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1807	1807	1856	1856
Adj Flow Rate, veh/h	95	1305	716	49	158	202
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	116	1475	1166	80	248	221
Arrive On Green	0.07	0.79	0.70	0.70	0.14	0.14
Sat Flow, veh/h	1767	1856	1665	114	1767	1572
Grp Volume(v), veh/h	95	1305	0	765	158	202
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1779	1767	1572
Q Serve(g_s), s	8.0	73.0	0.0	33.9	12.7	19.0
Cycle Q Clear(g_c), s	8.0	73.0	0.0	33.9	12.7	19.0
Prop In Lane	1.00			0.06	1.00	1.00
Lane Grp Cap(c), veh/h	116	1475	0	1246	248	221
V/C Ratio(X)	0.82	0.88	0.00	0.61	0.64	0.91
Avail Cap(c_a), veh/h	185	1475	0	1246	259	231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.89	1.00	1.00
Uniform Delay (d), s/veh	69.2	10.6	0.0	11.8	60.8	63.6
Incr Delay (d2), s/veh	0.7	0.8	0.0	2.0	3.5	35.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	24.3	0.0	13.3	6.0	17.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	69.9	11.5	0.0	13.9	64.3	98.6
LnGrp LOS	E	B		B	E	F
Approach Vol, veh/h		1400	765		360	
Approach Delay, s/veh		15.4	13.9		83.5	
Approach LOS		B	B		F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		124.5		25.5	14.2	110.3
Change Period (Y+Rc), s		5.3		4.4	4.4	5.3
Max Green Setting (Gmax), s		118.3		22.0	15.7	98.2
Max Q Clear Time (g_c+I1), s		75.0		21.0	10.0	35.9
Green Ext Time (p_c), s		27.3		0.1	0.0	10.8

Intersection Summary	
HCM 7th Control Delay, s/veh	24.7
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1100	110	20	520	20	100	20	30	20	20	50
Future Volume (veh/h)	50	1100	110	20	520	20	100	20	30	20	20	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	0.96		0.95	0.97		0.95
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	1856	1799	1799	1856	1802	1802	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	1158	109	21	547	19	105	21	30	21	21	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	68	1172	110	34	1224	43	177	34	41	73	76	136
Arrive On Green	0.08	1.00	1.00	0.02	0.71	0.71	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1611	152	1767	1728	60	869	215	258	275	478	861
Grp Volume(v), veh/h	53	0	1267	21	0	566	156	0	0	90	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1763	1767	0	1788	1342	0	0	1614	0	0
Q Serve(g_s), s	4.4	0.0	0.0	1.8	0.0	20.3	9.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	0.0	1.8	0.0	20.3	16.7	0.0	0.0	7.3	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.03	0.67		0.19	0.23		0.53
Lane Grp Cap(c), veh/h	68	0	1282	34	0	1267	252	0	0	284	0	0
V/C Ratio(X)	0.78	0.00	0.99	0.61	0.00	0.45	0.62	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	110	0	1282	59	0	1267	346	0	0	388	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.00	0.40	0.92	0.00	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	68.7	0.0	0.0	73.0	0.0	9.3	60.3	0.0	0.0	56.3	0.0	0.0
Incr Delay (d2), s/veh	7.8	0.0	13.4	15.1	0.0	1.1	0.9	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	4.8	0.9	0.0	7.9	5.8	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.4	0.0	13.4	88.1	0.0	10.4	61.2	0.0	0.0	56.5	0.0	0.0
LnGrp LOS	E		B	F		B	E			E		
Approach Vol, veh/h		1320			587			156			90	
Approach Delay, s/veh		15.9			13.2			61.2			56.5	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	114.0		28.6	10.2	111.2		28.6
Change Period (Y+Rc), s	4.5	4.9		4.9	4.5	4.9		4.9
Max Green Setting (Gmax), s	5.0	96.7		34.0	9.3	92.4		34.0
Max Q Clear Time (g_c+I1), s	3.8	2.0		18.7	6.4	22.3		9.3
Green Ext Time (p_c), s	0.0	23.7		0.5	0.0	4.4		0.3

Intersection Summary		
HCM 7th Control Delay, s/veh		20.1
HCM 7th LOS		C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	820	360	70	140	120
Future Volume (veh/h)	130	820	360	70	140	120
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1810	1856	1856
Adj Flow Rate, veh/h	137	863	379	68	147	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	157	1417	982	176	159	121
Arrive On Green	0.18	1.00	0.65	0.65	0.17	0.17
Sat Flow, veh/h	1767	1856	1522	273	949	723
Grp Volume(v), veh/h	137	863	0	447	260	0
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1795	1678	0
Q Serve(g_s), s	11.3	0.0	0.0	17.6	22.9	0.0
Cycle Q Clear(g_c), s	11.3	0.0	0.0	17.6	22.9	0.0
Prop In Lane	1.00			0.15	0.57	0.43
Lane Grp Cap(c), veh/h	157	1417	0	1159	282	0
V/C Ratio(X)	0.87	0.61	0.00	0.39	0.92	0.00
Avail Cap(c_a), veh/h	254	1417	0	1159	416	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.10	0.10	0.00	0.81	1.00	0.00
Uniform Delay (d), s/veh	60.8	0.0	0.0	12.6	61.4	0.0
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.8	16.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.1	0.0	7.2	11.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	61.9	0.2	0.0	13.3	77.4	0.0
LnGrp LOS	E	A		B	E	
Approach Vol, veh/h		1000	447		260	
Approach Delay, s/veh		8.7	13.3		77.4	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		119.9		30.1	17.8	102.1
Change Period (Y+Rc), s		5.3		4.9	4.4	5.3
Max Green Setting (Gmax), s		102.6		37.2	21.6	76.6
Max Q Clear Time (g_c+I1), s		2.0		24.9	13.3	19.6
Green Ext Time (p_c), s		14.5		0.3	0.1	6.0

Intersection Summary	
HCM 7th Control Delay, s/veh	20.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	160	780	640	250	510	320
Future Volume (vph)	160	780	640	250	510	320
Ideal Flow (vphpl)	1900	1842	1900	1842	1900	1841
Total Lost time (s)	4.4	4.9	4.9	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.95	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1788	1845	1442	3400	1481
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1788	1845	1442	3400	1481
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	821	674	263	537	337
RTOR Reduction (vph)	0	0	0	102	0	153
Lane Group Flow (vph)	168	821	674	161	537	184
Confl. Peds. (#/hr)				11		9
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	custom	Prot	Perm
Protected Phases	5	2	6 8		7	
Permitted Phases				6		7
Actuated Green, G (s)	17.2	62.1	74.4	49.9	25.7	25.7
Effective Green, g (s)	17.2	62.1	74.4	49.9	25.7	25.7
Actuated g/C Ratio	0.13	0.46	0.55	0.37	0.19	0.19
Clearance Time (s)	4.4	4.9		4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.0		3.0	2.5	2.5
Lane Grp Cap (vph)	220	814	1006	527	640	279
v/s Ratio Prot	c0.10	c0.46	c0.37		c0.16	
v/s Ratio Perm				0.11		0.12
v/c Ratio	0.76	1.01	0.67	0.31	0.84	0.66
Uniform Delay, d1	57.6	37.2	22.2	30.9	53.4	51.3
Progression Factor	1.00	1.00	0.33	0.33	1.00	1.00
Incremental Delay, d2	13.2	33.7	0.6	0.1	9.3	4.9
Delay (s)	70.8	70.8	7.9	10.2	62.6	56.2
Level of Service	E	E	A	B	E	E
Approach Delay (s/veh)		70.8	8.5		60.2	
Approach LOS		E	A		E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	136.4	Sum of lost time (s)	19.1
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	1090	100	50	660	80	110	30	50	100	60	120
Future Volume (vph)	100	1090	100	50	660	80	110	30	50	100	60	120
Ideal Flow (vphpl)	1900	1850	1850	1900	1844	1844	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9	4.9	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.94	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3360		1752	1790	1425	1752	1628		1708	1660	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.42	1.00		0.68	1.00	
Satd. Flow (perm)	1752	3360		1752	1790	1425	782	1628		1229	1660	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1147	105	53	695	84	116	32	53	105	63	126
RTOR Reduction (vph)	0	5	0	0	0	53	0	43	0	0	53	0
Lane Group Flow (vph)	105	1247	0	53	695	31	116	42	0	105	136	0
Confl. Peds. (#/hr)	15		3	3		15			19	19		
Confl. Bikes (#/hr)			4			2			2			
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5 7	2 7		1	6			8			8	
Permitted Phases						6	8			8		
Actuated Green, G (s)	42.9	92.7		5.0	49.9	49.9	24.5	24.5		24.5	24.5	
Effective Green, g (s)	42.9	92.7		5.0	49.9	49.9	24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.31	0.68		0.04	0.37	0.37	0.18	0.18		0.18	0.18	
Clearance Time (s)				4.4	4.9	4.9	4.9	4.9		4.9	4.9	
Vehicle Extension (s)				2.0	3.0	3.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	551	2283		64	654	521	140	292		220	298	
v/s Ratio Prot	0.06	c0.37		c0.03	c0.39			0.03			0.08	
v/s Ratio Perm						0.02	c0.15			0.09		
v/c Ratio	0.19	0.55		0.83	1.06	0.06	0.83	0.14		0.48	0.46	
Uniform Delay, d1	34.1	11.1		65.3	43.3	28.0	53.9	47.1		50.2	50.0	
Progression Factor	1.09	0.13		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		54.0	53.0	0.0	30.2	0.1		0.6	0.4	
Delay (s)	37.1	1.6		119.2	96.3	28.1	84.1	47.2		50.8	50.4	
Level of Service	D	A		F	F	C	F	D		D	D	
Approach Delay (s/veh)		4.3			90.9			68.5			50.6	
Approach LOS		A			F			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	136.4	Sum of lost time (s)	19.1
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	650	270	140	500	150	130	600	70	130	810	250
Future Volume (veh/h)	390	650	270	140	500	150	130	600	70	130	810	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	1856	1789	1789	1856	1789	1789	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	411	684	253	147	526	141	137	632	67	137	853	235
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	377	655	541	173	448	371	127	926	98	163	842	232
Arrive On Green	0.21	0.37	0.37	0.10	0.25	0.25	0.07	0.29	0.29	0.09	0.31	0.31
Sat Flow, veh/h	1767	1789	1479	1767	1789	1480	1767	3213	340	1767	2725	750
Grp Volume(v), veh/h	411	684	253	147	526	141	137	346	353	137	552	536
Grp Sat Flow(s),veh/h/ln	1767	1789	1479	1767	1789	1480	1767	1763	1790	1767	1763	1712
Q Serve(g_s), s	25.6	44.0	15.7	9.8	30.1	9.5	8.6	20.9	21.0	9.2	37.1	37.1
Cycle Q Clear(g_c), s	25.6	44.0	15.7	9.8	30.1	9.5	8.6	20.9	21.0	9.2	37.1	37.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.44
Lane Grp Cap(c), veh/h	377	655	541	173	448	371	127	508	516	163	545	529
V/C Ratio(X)	1.09	1.04	0.47	0.85	1.17	0.38	1.08	0.68	0.68	0.84	1.01	1.01
Avail Cap(c_a), veh/h	377	655	541	178	448	371	127	508	516	200	545	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	38.1	29.1	53.3	45.0	37.3	55.7	37.9	37.9	53.6	41.5	41.5
Incr Delay (d2), s/veh	73.1	47.4	0.8	28.3	99.2	0.8	103.9	3.1	3.1	19.2	41.9	42.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	27.5	5.6	5.7	25.5	3.5	7.4	9.3	9.5	4.9	22.0	21.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	120.3	85.5	29.9	81.6	144.2	38.1	159.6	40.9	41.0	72.8	83.4	84.2
LnGrp LOS	F	F	C	F	F	D	F	D	D	E	F	F
Approach Vol, veh/h		1348			814			836			1225	
Approach Delay, s/veh		85.7			114.5			60.4			82.6	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	49.0	13.0	42.0	30.0	35.1	15.5	39.5
Change Period (Y+Rc), s	4.4	5.0	4.4	4.9	4.4	* 5	4.4	4.9
Max Green Setting (Gmax), s	12.1	43.5	8.6	37.1	25.6	* 30	13.6	32.1
Max Q Clear Time (g_c+I1), s	11.8	46.0	10.6	39.1	27.6	32.1	11.2	23.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	85.3
HCM 7th LOS	F

Notes

* HCM 7th 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)	90	690	80	170	790	50	50	20	80	50	20	70
Future Volume (veh/h)	90	690	80	170	790	50	50	20	80	50	20	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	0.98		0.97	0.98		0.97
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	1856	1779	1779	1856	1779	1779	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	726	75	179	832	48	53	21	75	53	21	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	122	827	679	224	930	760	149	67	140	154	71	134
Arrive On Green	0.07	0.46	0.46	0.13	0.52	0.52	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1767	1779	1461	1767	1779	1454	400	376	787	422	397	753
Grp Volume(v), veh/h	95	726	75	179	832	48	149	0	0	142	0	0
Grp Sat Flow(s),veh/h/ln	1767	1779	1461	1767	1779	1454	1564	0	0	1572	0	0
Q Serve(g_s), s	3.3	23.3	1.8	6.2	26.5	1.0	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	23.3	1.8	6.2	26.5	1.0	5.0	0.0	0.0	4.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.50	0.37		0.48
Lane Grp Cap(c), veh/h	122	827	679	224	930	760	356	0	0	359	0	0
V/C Ratio(X)	0.78	0.88	0.11	0.80	0.89	0.06	0.42	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	297	857	703	512	1066	871	721	0	0	722	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.9	15.3	9.5	26.8	13.5	7.4	23.4	0.0	0.0	23.3	0.0	0.0
Incr Delay (d2), s/veh	4.0	9.8	0.1	2.5	9.2	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.9	0.5	2.6	10.6	0.3	1.9	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.9	25.1	9.6	29.2	22.7	7.5	23.7	0.0	0.0	23.5	0.0	0.0
LnGrp LOS	C	C	A	C	C	A	C			C		
Approach Vol, veh/h		896			1059			149			142	
Approach Delay, s/veh		24.6			23.1			23.7			23.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	34.5		16.2	8.8	38.2		16.2
Change Period (Y+Rc), s	4.4	* 5.2		4.9	4.4	5.2		4.9
Max Green Setting (Gmax), s	18.3	* 30		27.1	10.6	37.8		27.1
Max Q Clear Time (g_c+I1), s	8.2	25.3		6.7	5.3	28.5		7.0
Green Ext Time (p_c), s	0.2	2.0		0.5	0.0	4.5		0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	23.8
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	110	100	700	90	50	1010
Future Volume (veh/h)	110	100	700	90	50	1010
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	120	97	753	78	53	1074
Peak Hour Factor	0.92	0.92	0.93	0.93	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	171	152	2276	1164	97	2692
Arrive On Green	0.10	0.10	0.65	0.65	0.06	0.76
Sat Flow, veh/h	1767	1572	3618	1568	1767	3618
Grp Volume(v), veh/h	120	97	753	78	53	1074
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1568	1767	1763
Q Serve(g_s), s	4.6	4.2	6.7	0.9	2.0	7.3
Cycle Q Clear(g_c), s	4.6	4.2	6.7	0.9	2.0	7.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	171	152	2276	1164	97	2692
V/C Ratio(X)	0.70	0.64	0.33	0.07	0.54	0.40
Avail Cap(c_a), veh/h	432	384	2276	1164	204	2692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.64	0.64	1.00	1.00
Uniform Delay (d), s/veh	30.7	30.4	5.6	2.5	32.2	2.8
Incr Delay (d2), s/veh	2.0	1.7	0.3	0.1	1.8	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.6	1.8	0.2	0.9	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	32.6	32.1	5.8	2.5	34.0	3.3
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	217		831			1127
Approach Delay, s/veh	32.4		5.5			4.7
Approach LOS	C		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.3	50.1			58.3	11.7
Change Period (Y+Rc), s	4.4	4.9			4.9	4.9
Max Green Setting (Gmax), s	8.1	30.6			43.1	17.1
Max Q Clear Time (g_c+I1), s	4.0	8.7			9.3	6.6
Green Ext Time (p_c), s	0.0	6.7			11.5	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	7.8
HCM 7th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	870	110	120	680	40	90	50	50	80	80	40
Future Volume (veh/h)	50	870	110	120	680	40	90	50	50	80	80	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.97	0.99		0.94
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	926	104	122	694	37	100	56	49	83	83	38
Peak Hour Factor	0.94	0.94	0.94	0.98	0.98	0.98	0.90	0.90	0.90	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	533	2335	262	395	2493	133	147	76	57	133	121	49
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	717	3181	357	543	3396	181	557	399	300	493	636	259
Grp Volume(v), veh/h	53	513	517	122	360	371	205	0	0	204	0	0
Grp Sat Flow(s),veh/h/ln	717	1763	1775	543	1763	1815	1256	0	0	1388	0	0
Q Serve(g_s), s	3.5	14.2	14.2	14.1	8.9	8.9	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	14.2	14.2	28.3	8.9	8.9	21.1	0.0	0.0	18.3	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.10	0.49		0.24	0.41		0.19
Lane Grp Cap(c), veh/h	533	1294	1303	395	1294	1332	281	0	0	303	0	0
V/C Ratio(X)	0.10	0.40	0.40	0.31	0.28	0.28	0.73	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	533	1294	1303	395	1294	1332	328	0	0	353	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.50	0.50	0.50	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	6.5	6.5	11.8	5.8	5.8	51.1	0.0	0.0	49.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.9	0.9	0.1	0.0	0.0	5.2	0.0	0.0	2.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.0	5.1	1.6	2.9	3.0	7.0	0.0	0.0	6.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.2	7.4	7.4	11.9	5.8	5.8	56.2	0.0	0.0	52.3	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	E			D		
Approach Vol, veh/h		1083			853			205			204	
Approach Delay, s/veh		7.4			6.7			56.2			52.3	
Approach LOS		A			A			E			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	100.3	29.7	100.3	29.7
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	91.1	29.1	91.1	29.1
Max Q Clear Time (g_c+I1), s	16.2	23.1	30.3	20.3
Green Ext Time (p_c), s	2.5	0.4	2.3	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	15.3
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	630	300	170	550	250	220	440	180	260	810	120
Future Volume (veh/h)	100	630	300	170	550	250	220	440	180	260	810	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	102	643	239	189	579	206	232	463	169	274	853	99
Peak Hour Factor	0.98	0.98	0.98	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	517	419	219	613	504	296	641	232	305	1199	523
Arrive On Green	0.07	0.28	0.28	0.12	0.33	0.33	0.09	0.25	0.25	0.17	0.34	0.34
Sat Flow, veh/h	1767	1856	1502	1767	1856	1526	3428	2521	912	1767	3526	1539
Grp Volume(v), veh/h	102	643	239	189	579	206	232	323	309	274	853	99
Grp Sat Flow(s),veh/h/ln	1767	1856	1502	1767	1856	1526	1714	1763	1671	1767	1763	1539
Q Serve(g_s), s	6.3	30.7	15.0	11.6	33.4	11.5	7.3	18.4	18.7	16.7	23.2	5.0
Cycle Q Clear(g_c), s	6.3	30.7	15.0	11.6	33.4	11.5	7.3	18.4	18.7	16.7	23.2	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	128	517	419	219	613	504	296	448	425	305	1199	523
V/C Ratio(X)	0.80	1.24	0.57	0.86	0.94	0.41	0.78	0.72	0.73	0.90	0.71	0.19
Avail Cap(c_a), veh/h	255	517	419	321	613	504	492	528	501	443	1438	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	39.7	34.1	47.3	35.9	28.5	49.3	37.5	37.6	44.6	31.6	25.6
Incr Delay (d2), s/veh	4.3	124.9	2.2	10.7	23.5	0.6	1.7	3.9	4.4	12.4	1.7	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(50%),veh/ln	2.9	31.6	5.6	5.7	18.6	4.2	3.1	8.2	7.9	8.2	9.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.6	164.6	36.2	58.1	59.3	29.1	51.0	41.4	42.0	57.0	33.3	25.9
LnGrp LOS	D	F	D	E	E	C	D	D	D	E	C	C
Approach Vol, veh/h		984			974			864			1226	
Approach Delay, s/veh		122.0			52.7			44.2			38.0	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	35.7	13.9	42.4	12.4	41.4	23.4	33.0
Change Period (Y+Rc), s	4.4	* 5	4.4	* 5	4.4	5.0	4.4	5.0
Max Green Setting (Gmax), s	20.0	* 31	15.8	* 45	15.9	34.7	27.6	33.0
Max Q Clear Time (g_c+I1), s	13.6	32.7	9.3	25.2	8.3	35.4	18.7	20.7
Green Ext Time (p_c), s	0.1	0.0	0.2	8.7	0.1	0.0	0.3	3.0

Intersection Summary	
HCM 7th Control Delay, s/veh	63.3
HCM 7th LOS	E

Notes

* HCM 7th 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)	20	880	110	30	790	30	60	20	60	40	20	20
Future Volume (veh/h)	20	880	110	30	790	30	60	20	60	40	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	917	90	32	832	26	63	21	56	42	21	19
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	29	1180	971	40	1192	981	78	26	69	81	41	37
Arrive On Green	0.02	0.64	0.64	0.02	0.64	0.64	0.10	0.10	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1767	1856	1527	1767	1856	1528	760	253	675	888	444	402
Grp Volume(v), veh/h	21	917	90	32	832	26	140	0	0	82	0	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1527	1767	1856	1528	1688	0	0	1734	0	0
Q Serve(g_s), s	1.5	46.2	3.0	2.3	37.8	0.8	10.5	0.0	0.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	1.5	46.2	3.0	2.3	37.8	0.8	10.5	0.0	0.0	5.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.45		0.40	0.51		0.23
Lane Grp Cap(c), veh/h	29	1180	971	40	1192	981	173	0	0	159	0	0
V/C Ratio(X)	0.73	0.78	0.09	0.79	0.70	0.03	0.81	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	69	1180	971	69	1192	981	338	0	0	347	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	63.6	17.0	9.2	63.2	15.1	8.5	57.1	0.0	0.0	56.3	0.0	0.0
Incr Delay (d2), s/veh	12.1	5.1	0.2	12.0	3.4	0.0	3.4	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	19.9	1.0	1.2	15.9	0.3	4.7	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.7	22.1	9.3	75.2	18.5	8.5	60.4	0.0	0.0	57.3	0.0	0.0
LnGrp LOS	E	C	A	E	B	A	E			E		
Approach Vol, veh/h		1028			890			140			82	
Approach Delay, s/veh		22.1			20.2			60.4			57.3	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	87.6		18.2	6.5	88.4		16.8
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	5.1	53.8		26.0	5.1	53.8		26.0
Max Q Clear Time (g_c+I1), s	4.3	48.2		12.5	3.5	39.8		7.9
Green Ext Time (p_c), s	0.0	4.3		0.4	0.0	8.6		0.2

Intersection Summary		
HCM 7th Control Delay, s/veh		25.2
HCM 7th LOS		C

Intersection	
Int Delay, s/veh	751

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	880	70	50	830	20	50	10	70	10	10	10
Future Vol, veh/h	10	880	70	50	830	20	50	10	70	10	10	10
Conflicting Peds, #/hr	9	0	12	12	0	9	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	926	74	53	874	21	53	11	74	11	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	904	0	0	1012	0	0	1944	1968	941	1944	2021	883
Stage 1	-	-	-	-	-	-	959	959	-	988	988	-
Stage 2	-	-	-	-	-	-	984	1009	-	956	1033	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	748	-	-	529	-	-	~ 15	20	319	15	17	344
Stage 1	-	-	-	-	-	-	297	293	-	296	324	-
Stage 2	-	-	-	-	-	-	298	317	-	299	255	-
Platoon blocked, %		-	-	0	-	-	0	0	0	0	0	
Mov Cap-1 Maneuver	742	-	-	523	-	-	~ 2	15	315	~ 3	13	341
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	15	-	~ 3	13	-
Stage 1	-	-	-	-	-	-	284	280	-	235	256	-
Stage 2	-	-	-	-	-	-	221	251	-	213	244	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	0.7	$ 11076.45	$ 2544.55
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	6	20	-	-	102	-	-	7
HCM Lane V/C Ratio	22.94	0.014	-	-	0.101	-	-	4.425
HCM Ctrl Dly (s/v)	$ 11076.5	9.9	0	-	12.7	0		$ 2544.5
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	19.1	0	-	-	0.3	-	-	5.3

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)	240	640	160	320	520	220	230	540	230	270	950	190
Future Volume (veh/h)	240	640	160	320	520	220	230	540	230	270	950	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.94	1.00		0.96
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	1856	1789	1789	1856	1790	1790	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	253	674	150	337	547	207	242	568	189	284	1000	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	296	553	455	376	595	482	263	991	417	306	1078	460
Arrive On Green	0.09	0.31	0.31	0.18	0.56	0.56	0.15	0.28	0.28	0.17	0.31	0.31
Sat Flow, veh/h	3428	1789	1471	3428	1790	1450	1767	3526	1483	1767	3526	1504
Grp Volume(v), veh/h	253	674	150	337	547	207	242	568	189	284	1000	156
Grp Sat Flow(s),veh/h/ln	1714	1789	1471	1714	1790	1450	1767	1763	1483	1767	1763	1504
Q Serve(g_s), s	10.9	46.4	11.8	14.4	41.6	12.5	20.3	20.7	15.8	23.7	41.2	12.1
Cycle Q Clear(g_c), s	10.9	46.4	11.8	14.4	41.6	12.5	20.3	20.7	15.8	23.7	41.2	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	553	455	376	595	482	263	991	417	306	1078	460
V/C Ratio(X)	0.85	1.22	0.33	0.90	0.92	0.43	0.92	0.57	0.45	0.93	0.93	0.34
Avail Cap(c_a), veh/h	311	553	455	393	595	482	269	991	417	383	1123	479
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.47	0.47	0.47	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.6	51.8	39.9	60.4	31.5	25.0	63.0	46.2	44.4	61.1	50.5	40.3
Incr Delay (d2), s/veh	14.6	110.5	1.5	11.4	12.1	1.3	33.7	0.9	0.9	23.1	12.7	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(50%),veh/ln	5.4	37.6	4.5	6.4	16.9	3.9	11.5	9.2	5.9	12.6	19.9	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	82.2	162.3	41.3	71.8	43.6	26.3	96.7	47.1	45.3	84.2	63.1	40.7
LnGrp LOS	F	F	D	E	D	C	F	D	D	F	E	D
Approach Vol, veh/h		1077			1091			999			1440	
Approach Delay, s/veh		126.6			49.0			58.8			64.9	
Approach LOS		F			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	51.4	26.7	51.1	17.4	54.9	30.4	47.4
Change Period (Y+Rc), s	4.4	5.0	4.4	5.2	4.4	* 5	4.4	* 5.2
Max Green Setting (Gmax), s	17.2	43.2	22.8	47.8	13.6	* 47	32.5	* 38
Max Q Clear Time (g_c+I1), s	16.4	48.4	22.3	43.2	12.9	43.6	25.7	22.7
Green Ext Time (p_c), s	0.1	0.0	0.0	2.6	0.0	1.6	0.2	4.5

Intersection Summary	
HCM 7th Control Delay, s/veh	74.2
HCM 7th LOS	E

Notes

* HCM 7th 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)	40	810	160	170	780	10	190	10	150	10	10	10
Future Volume (veh/h)	40	810	160	170	780	10	190	10	150	10	10	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	1856	1796	1796	1856	1790	1790	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	853	149	179	821	10	200	11	124	11	11	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	54	875	726	368	1016	841	240	11	479	32	31	14
Arrive On Green	0.03	0.49	0.49	0.11	0.57	0.57	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1767	1796	1490	3428	1790	1482	629	35	1560	0	100	45
Grp Volume(v), veh/h	42	853	149	179	821	10	211	0	124	32	0	0
Grp Sat Flow(s),veh/h/ln	1767	1796	1490	1714	1790	1482	663	0	1560	145	0	0
Q Serve(g_s), s	3.5	69.6	8.5	7.4	55.0	0.4	0.0	0.0	9.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	69.6	8.5	7.4	55.0	0.4	46.1	0.0	9.0	46.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.34		0.31
Lane Grp Cap(c), veh/h	54	875	726	368	1016	841	251	0	479	77	0	0
V/C Ratio(X)	0.78	0.97	0.21	0.49	0.81	0.01	0.84	0.00	0.26	0.42	0.00	0.00
Avail Cap(c_a), veh/h	90	875	726	379	1016	841	251	0	479	77	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.12	0.12	0.12	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	72.2	37.5	21.9	63.1	25.9	14.1	52.7	0.0	39.1	42.6	0.0	0.0
Incr Delay (d2), s/veh	2.9	6.2	0.1	0.1	0.7	0.0	27.6	0.0	1.3	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	31.1	3.0	3.2	22.8	0.2	10.0	0.0	3.7	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.1	43.7	22.0	63.1	26.6	14.1	80.3	0.0	40.4	43.9	0.0	0.0
LnGrp LOS	E	D	C	E	C	B	F		D	D		
Approach Vol, veh/h		1044			1010			335			32	
Approach Delay, s/veh		41.9			32.9			65.5			43.9	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.0	78.0		51.0	9.0	90.0		51.0
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	16.6	* 73		46.1	7.6	82.1		46.1
Max Q Clear Time (g_c+I1), s	9.4	71.6		48.1	5.5	57.0		48.1
Green Ext Time (p_c), s	0.3	0.9		0.0	0.0	6.2		0.0

Intersection Summary		
HCM 7th Control Delay, s/veh		41.4
HCM 7th LOS		D

Notes

* HCM 7th 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)	100	830	90	100	740	80	50	30	50	80	50	160
Future Volume (veh/h)	100	830	90	100	740	80	50	30	50	80	50	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	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	1856	1802	1802	1856	1800	1800	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	104	865	73	105	779	75	53	32	48	84	53	149
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	970	791	129	971	797	81	49	73	54	34	95
Arrive On Green	0.07	0.54	0.54	0.07	0.54	0.54	0.12	0.12	0.12	0.11	0.11	0.11
Sat Flow, veh/h	1767	1802	1470	1767	1800	1479	673	407	610	492	310	872
Grp Volume(v), veh/h	104	865	73	105	779	75	133	0	0	286	0	0
Grp Sat Flow(s),veh/h/ln	1767	1802	1470	1767	1800	1479	1690	0	0	1674	0	0
Q Serve(g_s), s	7.0	51.1	2.9	7.0	42.2	3.0	9.0	0.0	0.0	13.1	0.0	0.0
Cycle Q Clear(g_c), s	7.0	51.1	2.9	7.0	42.2	3.0	9.0	0.0	0.0	13.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.36	0.29		0.52
Lane Grp Cap(c), veh/h	128	970	791	129	971	797	203	0	0	183	0	0
V/C Ratio(X)	0.81	0.89	0.09	0.81	0.80	0.09	0.66	0.00	0.00	1.57	0.00	0.00
Avail Cap(c_a), veh/h	149	970	791	178	971	797	396	0	0	183	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.9	24.6	13.4	54.8	22.5	13.4	50.4	0.0	0.0	53.5	0.0	0.0
Incr Delay (d2), s/veh	9.1	5.1	0.1	12.8	7.0	0.2	1.3	0.0	0.0	279.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	21.8	1.0	3.6	18.7	1.0	3.9	0.0	0.0	19.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.9	29.7	13.5	67.5	29.4	13.7	51.8	0.0	0.0	332.6	0.0	0.0
LnGrp LOS	E	C	B	E	C	B	D			F		
Approach Vol, veh/h		1042			959			133			286	
Approach Delay, s/veh		32.0			32.4			51.8			332.6	
Approach LOS		C			C			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	69.5		18.0	13.1	69.6		19.3
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	12.1	47.6		13.1	10.1	49.6		28.1
Max Q Clear Time (g_c+I1), s	9.0	53.1		15.1	9.0	44.2		11.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.8		0.4

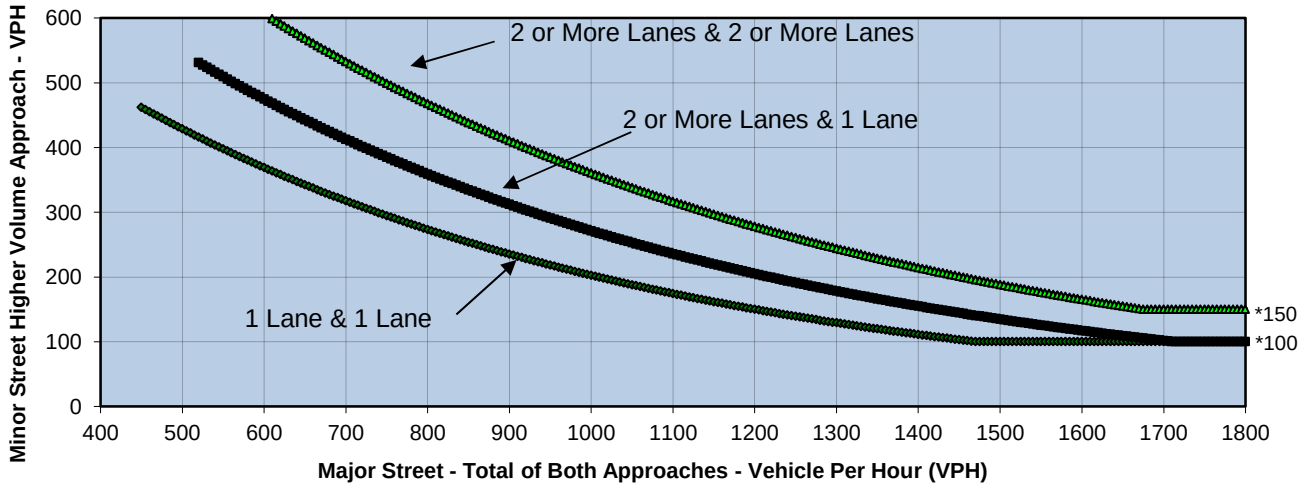
Intersection Summary	
HCM 7th Control Delay, s/veh	68.7
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Sheet No 1 of 2

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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

Major Street	College Avenue	Project	College CPU Preferred
Minor Street	Zura Way	Scenario	Buildout
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	390		0
Through	1,440	1,450		0
Right	120	0		140
Total	1,560	1,840	0	140

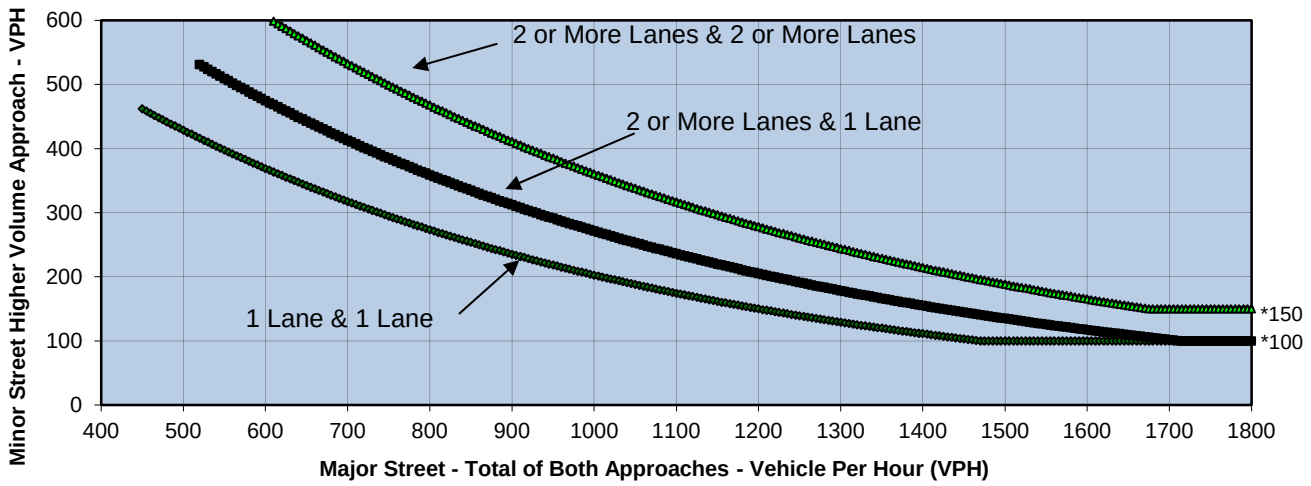
Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	College Avenue	Zura Way	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	3,400	140	

Sheet No 2 of 2

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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

Major Street	College Avenue
Minor Street	Zura Way

Project	College CPU Preferred
Scenario	Buildout
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	170		0
Through	1,170	1,210		0
Right	40	0		440
Total	1,210	1,380	0	440

Major Street Direction

X	North/South
	East/West

	Major Street	Minor Street	Warrant Met
	College Avenue	Zura Way	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,590	440	

Attachment H - Intersection LOS Results and Synchro Worksheets – Existing Conditions

Intersection LOS Results – Existing Conditions

#	Intersection	Peak Hour	Control	Delay	LOS
1	Fairmount Avenue & I-8 EB Ramps	AM PM	Signal	12.2 25.1	B C
2	College Avenue & I-8 WB Ramps	AM PM	Signal	9.0 8.4	A A
3	College Avenue & I-8 EB Ramps	AM PM	Signal	22.9 16.0	C B
4	Reservoir Drive & Alvarado Road	AM PM	Signal	9.8 10.8	A B
5	Lake Murray Boulevard & Wisconsin Avenue/Parkway Drive	AM PM	Signal	34.8 28.3	C C
6	70th Street/Lake Murray Boulevard & Alvarado Road	AM PM	Signal	29.7 37.3	C D
7	College Avenue & Canyon Crest Drive/East Campus Drive	AM PM	Signal	40.2 46.4	D D
8	College Avenue & Zura Way	AM PM	SSSC	16.7 47.8	C **E**
9	College Avenue & Lindo Paseo	AM PM	Signal	17.4 18.4	B B
10	Collwood Boulevard & Montezuma Road	AM PM	Signal	35.2 36.8	D D
11	54th Street/Hardy Elementary School Driveway & Montezuma Road	AM PM	Signal	209.7 12.0	**F** B
12	55th Street & Montezuma Road	AM PM	Signal	43.2 53.0	D D
13	Campanile Drive & Montezuma Road	AM PM	Signal	47.9 55.7	D **E**
14	College Avenue & Montezuma Road	AM PM	Signal	70.7 49.8	**E** D
15	Montezuma Road & East Campus Drive	AM PM	Signal	5.6 10.5	A B
16	63rd Street & Montezuma Road	AM PM	Signal	12.7 8.0	B A
17	Montezuma Road & Reservoir Drive	AM PM	Signal	8.2 7.5	A A
18	El Cajon Boulevard & Montezuma Road	AM PM	Signal	42.6 25.0	D C
19	67th Street & El Cajon Boulevard	AM PM	Signal	34.9 19.1	C B
20	70th Street & El Cajon Boulevard	AM PM	Signal	47.1 58.9	D **E**
21	73rd Street & El Cajon Boulevard	AM PM	Signal	11.8 11.9	B B
22	54th Street & Collwood Boulevard	AM PM	Signal	7.1 6.0	A A
23	52nd Street & El Cajon Boulevard	AM PM	Signal	14.2 11.5	B B
24	54th Street & El Cajon Boulevard	AM PM	Signal	32.9 31.8	C C
25	56th Street & El Cajon Boulevard	AM PM	Signal	12.5 8.5	B A
26	58th Street & El Cajon Boulevard	AM PM	SSSC	19.7 20.0	C C
27	El Cajon Boulevard & College Avenue	AM PM	Signal	45.9 54.2	D D

#	Intersection	Peak Hour	Control	Delay	LOS
28	62nd Street & El Cajon Boulevard	AM PM	Signal	12.9 20.7	B C
29	63rd Street & El Cajon Boulevard	AM PM	Signal	45.9 64.9	D **E**

Source: CR Associates (2023)

Synchro Worksheets –Existing Conditions

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	850	1362	44	0	619	684	247
Future Volume (veh/h)	850	1362	44	0	619	684	247
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00			1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach	No				No	No	
Adj Sat Flow, veh/h/ln	1856	1856		0	1856	1856	1856
Adj Flow Rate, veh/h	955	1530		0	645	735	0
Peak Hour Factor	0.89	0.89		0.96	0.96	0.93	0.93
Percent Heavy Veh, %	3	3		0	3	3	3
Cap, veh/h	1811	1894		0	897	1288	
Arrive On Green	0.53	0.53		0.00	0.25	0.25	0.00
Sat Flow, veh/h	3428	3585		0	3711	5233	1572
Grp Volume(v), veh/h	955	1530		0	645	735	0
Grp Sat Flow(s),veh/h/ln	1714	1195		0	1763	1689	1572
Q Serve(g_s), s	9.3	17.9		0.0	8.5	6.5	0.0
Cycle Q Clear(g_c), s	9.3	17.9		0.0	8.5	6.5	0.0
Prop In Lane	1.00	1.00		0.00			1.00
Lane Grp Cap(c), veh/h	1811	1894		0	897	1288	
V/C Ratio(X)	0.53	0.81		0.00	0.72	0.57	
Avail Cap(c_a), veh/h	3020	3159		0	5384	5157	
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.9	9.9		0.0	17.4	16.6	0.0
Incr Delay (d2), s/veh	0.1	0.3		0.0	0.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.6		0.0	2.6	2.2	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	8.0	10.2		0.0	17.8	16.8	0.0
LnGrp LOS	A	B		A	B	B	
Approach Vol, veh/h	2485				645	735	A
Approach Delay, s/veh	9.4				17.8	16.8	
Approach LOS	A				B	B	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		19.0		32.1		19.0
Change Period (Y+Rc), s		6.0		5.1		* 6
Max Green Setting (Gmax), s		52.0		45.0		* 78
Max Q Clear Time (g_c+I1), s		8.5		19.9		10.5
Green Ext Time (p_c), s		3.6		7.1		2.5

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

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

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	497	0	261	0	942	559	0	800	727
Future Volume (veh/h)	0	0	0	497	0	261	0	942	559	0	800	727
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	0	1856	0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				518	0	0	0	1208	0	0	930	0
Peak Hour Factor				0.96	0.96	0.96	0.78	0.78	0.78	0.86	0.86	0.86
Percent Heavy Veh, %				3	0	3	0	3	3	0	3	3
Cap, veh/h				784	0		0	1873		0	1873	
Arrive On Green				0.23	0.00	0.00	0.00	0.53	0.00	0.00	0.53	0.00
Sat Flow, veh/h				3428	0	1572	0	3618	1572	0	3618	1572
Grp Volume(v), veh/h				518	0	0	0	1208	0	0	930	0
Grp Sat Flow(s),veh/h/ln				1714	0	1572	0	1763	1572	0	1763	1572
Q Serve(g_s), s				6.0	0.0	0.0	0.0	10.7	0.0	0.0	7.3	0.0
Cycle Q Clear(g_c), s				6.0	0.0	0.0	0.0	10.7	0.0	0.0	7.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				784	0		0	1873		0	1873	
V/C Ratio(X)				0.66	0.00		0.00	0.64		0.00	0.50	
Avail Cap(c_a), veh/h				5097	0		0	3871		0	3653	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.3	0.0	0.0	0.0	7.3	0.0	0.0	6.5	0.0
Incr Delay (d2), s/veh				1.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.0	0.0	2.2	0.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.3	0.0	0.0	0.0	7.7	0.0	0.0	6.7	0.0
LnGrp LOS				B	A		A	A		A	A	
Approach Vol, veh/h					518	A		1208	A		930	A
Approach Delay, s/veh					16.3			7.7			6.7	
Approach LOS					B			A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	28.6	15.1	28.6
Change Period (Y+Rc), s	5.4	5.1	* 5.4
Max Green Setting (Gmax), s	48.0	65.0	* 45
Max Q Clear Time (g_c+I1), s	12.7	8.0	9.3
Green Ext Time (p_c), s	10.5	2.0	7.3

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.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	0	1570	0	0	0	0	1015	326	0	1031	266
Future Volume (veh/h)	486	0	1570	0	0	0	0	1015	326	0	1031	266
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	534	0	1340				0	1080	0	0	1146	0
Peak Hour Factor	0.91	0.91	0.91				0.94	0.94	0.94	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	3				0	3	3	0	3	3
Cap, veh/h	1361	0	1423				0	1534		0	1534	
Arrive On Green	0.40	0.00	0.40				0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h	3428	0	3585				0	3618	1572	0	3618	1572
Grp Volume(v), veh/h	534	0	1340				0	1080	0	0	1146	0
Grp Sat Flow(s),veh/h/ln	1714	0	1195				0	1763	1572	0	1763	1572
Q Serve(g_s), s	8.3	0.0	26.8				0.0	18.6	0.0	0.0	20.3	0.0
Cycle Q Clear(g_c), s	8.3	0.0	26.8				0.0	18.6	0.0	0.0	20.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1361	0	1423				0	1534		0	1534	
V/C Ratio(X)	0.39	0.00	0.94				0.00	0.70		0.00	0.75	
Avail Cap(c_a), veh/h	1380	0	1444				0	3076		0	3076	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	21.6				0.0	17.1	0.0	0.0	17.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	12.1				0.0	0.6	0.0	0.0	0.7	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
%ile BackOfQ(50%),veh/ln	8.0	0.0	8.4				0.0	6.6	0.0	0.0	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	33.7				0.0	17.7	0.0	0.0	18.4	0.0
LnGrp LOS	B	A	C				A	B		A	B	
Approach Vol, veh/h		1874						1080	A		1146	A
Approach Delay, s/veh		28.7						17.7			18.4	
Approach LOS		C						B			B	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		38.8		35.7		38.8
Change Period (Y+Rc), s		6.4		6.1		6.4
Max Green Setting (Gmax), s		65.0		30.0		65.0
Max Q Clear Time (g_c+I1), s		20.6		28.8		22.3
Green Ext Time (p_c), s		9.3		0.8		10.2

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	88	98	110	165	90	97
Future Volume (veh/h)	88	98	110	165	90	97
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	98	98	124	185	114	98
Peak Hour Factor	0.90	0.90	0.89	0.89	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	238	238	160	975	205	183
Arrive On Green	0.28	0.28	0.09	0.53	0.12	0.12
Sat Flow, veh/h	850	850	1767	1856	1767	1572
Grp Volume(v), veh/h	0	196	124	185	114	98
Grp Sat Flow(s),veh/h/ln	0	1700	1767	1856	1767	1572
Q Serve(g_s), s	0.0	2.7	2.0	1.5	1.7	1.7
Cycle Q Clear(g_c), s	0.0	2.7	2.0	1.5	1.7	1.7
Prop In Lane		0.50	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	476	160	975	205	183
V/C Ratio(X)	0.00	0.41	0.78	0.19	0.55	0.54
Avail Cap(c_a), veh/h	0	3585	1863	1957	2485	2211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	12.7	3.6	11.9	11.8
Incr Delay (d2), s/veh	0.0	0.5	3.1	0.1	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.7	0.2	0.6	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.8	15.7	3.6	12.7	12.8
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	196			309	212	
Approach Delay, s/veh	8.8			8.5	12.8	
Approach LOS	A			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.0	13.3			20.2	8.2
Change Period (Y+Rc), s	4.4	* 5.3			5.3	4.9
Max Green Setting (Gmax), s	30.0	* 60			30.0	40.0
Max Q Clear Time (g_c+I1), s	4.0	4.7			3.5	3.7
Green Ext Time (p_c), s	0.2	1.2			1.0	0.3

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)	25	6	131	424	38	79	93	514	189	14	1038	23
Future Volume (veh/h)	25	6	131	424	38	79	93	514	189	14	1038	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	29	7	123	323	317	84	118	651	214	16	1180	20
Peak Hour Factor	0.86	0.86	0.86	0.82	0.82	0.82	0.79	0.79	0.79	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	135	33	279	528	422	112	150	1293	416	57	1491	25
Arrive On Green	0.09	0.09	0.09	0.30	0.30	0.30	0.08	0.34	0.34	0.03	0.29	0.29
Sat Flow, veh/h	1437	347	1550	1767	1412	374	1767	3766	1213	1767	5127	87
Grp Volume(v), veh/h	36	0	123	323	0	401	118	582	283	16	777	423
Grp Sat Flow(s),veh/h/ln	1784	0	1550	1767	0	1786	1767	1689	1602	1767	1689	1837
Q Serve(g_s), s	1.9	0.0	7.3	16.1	0.0	20.8	6.7	14.0	14.4	0.9	21.8	21.8
Cycle Q Clear(g_c), s	1.9	0.0	7.3	16.1	0.0	20.8	6.7	14.0	14.4	0.9	21.8	21.8
Prop In Lane	0.81		1.00	1.00		0.21	1.00		0.76	1.00		0.05
Lane Grp Cap(c), veh/h	168	0	279	528	0	534	150	1159	550	57	982	534
V/C Ratio(X)	0.21	0.00	0.44	0.61	0.00	0.75	0.79	0.50	0.51	0.28	0.79	0.79
Avail Cap(c_a), veh/h	434	0	511	826	0	835	344	1184	562	344	1184	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	37.6	30.9	0.0	32.5	46.1	26.7	26.9	48.5	33.5	33.5
Incr Delay (d2), s/veh	0.6	0.0	1.1	2.5	0.0	4.5	3.5	0.3	0.8	1.0	3.1	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.8	7.0	0.0	9.4	3.1	5.6	5.5	0.4	9.1	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	0.0	38.7	33.3	0.0	37.1	49.6	27.1	27.6	49.5	36.6	39.1
LnGrp LOS	D	A	D	C	A	D	D	C	C	D	D	D
Approach Vol, veh/h		159			724			983			1216	
Approach Delay, s/veh		39.8			35.4			29.9			37.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	41.6		15.2	14.4	36.3		36.8
Change Period (Y+Rc), s	* 5.7	* 6.4		5.6	* 5.7	6.4		6.1
Max Green Setting (Gmax), s	* 20	* 36		25.0	* 20	36.0		48.0
Max Q Clear Time (g_c+I1), s	12.9	16.4		9.3	8.7	23.8		22.8
Green Ext Time (p_c), s	0.0	5.6		0.5	0.1	6.1		7.5

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	92	118	33	388	112	360	91	971	342	114	509	266
Future Volume (veh/h)	92	118	33	388	112	360	91	971	342	114	509	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	115	148	35	451	130	303	95	1011	283	131	585	249
Peak Hour Factor	0.80	0.80	0.80	0.86	0.86	0.86	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	424	241	55	564	234	610	140	1253	559	167	1306	563
Arrive On Green	0.12	0.09	0.09	0.16	0.13	0.13	0.08	0.36	0.36	0.09	0.37	0.37
Sat Flow, veh/h	3428	2831	649	3428	1856	2768	1767	3526	1572	1767	3526	1519
Grp Volume(v), veh/h	115	90	93	451	130	303	95	1011	283	131	585	249
Grp Sat Flow(s),veh/h/ln	1714	1763	1717	1714	1856	1384	1767	1763	1572	1767	1763	1519
Q Serve(g_s), s	2.8	4.5	4.8	11.6	6.0	8.8	4.8	23.8	6.6	6.7	11.5	11.3
Cycle Q Clear(g_c), s	2.8	4.5	4.8	11.6	6.0	8.8	4.8	23.8	6.6	6.7	11.5	11.3
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	150	146	564	234	610	140	1253	559	167	1306	563
V/C Ratio(X)	0.27	0.60	0.63	0.80	0.56	0.50	0.68	0.81	0.51	0.78	0.45	0.44
Avail Cap(c_a), veh/h	933	672	654	933	303	713	289	1535	685	385	2303	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	40.5	40.6	36.9	37.7	31.3	41.1	26.8	5.9	40.7	21.8	21.8
Incr Delay (d2), s/veh	0.1	3.9	4.5	2.7	2.1	0.6	2.1	2.7	0.7	3.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	2.2	4.9	2.8	2.9	2.1	9.9	4.2	3.0	4.6	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	44.4	45.1	39.6	39.8	32.0	43.3	29.5	6.6	43.7	22.1	22.3
LnGrp LOS	D	D	D	D	D	C	D	C	A	D	C	C
Approach Vol, veh/h		298			884			1389			965	
Approach Delay, s/veh		41.6			37.0			25.8			25.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	39.7	22.2	14.5	14.0	41.1	18.1	18.7
Change Period (Y+Rc), s	* 6.7	7.1	* 7.1	* 6.7	* 6.7	7.1	* 6.7	7.1
Max Green Setting (Gmax), s	* 26	40.0	* 25	* 35	* 15	60.0	* 25	15.0
Max Q Clear Time (g_c+I1), s	8.7	25.8	13.6	6.8	6.8	13.5	4.8	10.8
Green Ext Time (p_c), s	0.1	6.8	1.3	1.1	0.1	5.4	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* 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	19	23	63	58	216	116	1052	68	530	1375	696
Future Volume (veh/h)	73	19	23	63	58	216	116	1052	68	530	1375	696
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	49	27	83	76	218	122	1107	56	616	1599	576
Peak Hour Factor	0.84	0.84	0.84	0.76	0.76	0.76	0.95	0.95	0.95	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	296	179	99	120	110	509	145	1307	582	674	2474	1815
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.08	0.37	0.37	0.20	0.49	0.49
Sat Flow, veh/h	1767	1073	591	944	864	1572	1767	3526	1570	3428	5066	2768
Grp Volume(v), veh/h	68	0	76	159	0	218	122	1107	56	616	1599	576
Grp Sat Flow(s),veh/h/ln	1767	0	1665	1808	0	1572	1767	1763	1570	1714	1689	1384
Q Serve(g_s), s	5.1	0.0	6.1	12.9	0.0	16.7	10.4	44.1	3.6	26.9	36.1	13.9
Cycle Q Clear(g_c), s	5.1	0.0	6.1	12.9	0.0	16.7	10.4	44.1	3.6	26.9	36.1	13.9
Prop In Lane	1.00		0.36	0.52		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	0	278	229	0	509	145	1307	582	674	2474	1815
V/C Ratio(X)	0.23	0.00	0.27	0.69	0.00	0.43	0.84	0.85	0.10	0.91	0.65	0.32
Avail Cap(c_a), veh/h	462	0	435	355	0	618	346	1613	718	1568	2979	2090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	0.0	55.6	64.0	0.0	40.7	69.2	44.2	31.4	60.2	29.3	11.5
Incr Delay (d2), s/veh	0.1	0.0	0.2	1.4	0.0	0.2	11.9	3.7	0.1	2.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.6	6.0	0.0	6.5	5.2	19.5	1.4	11.8	14.4	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.3	0.0	55.8	65.4	0.0	40.9	81.1	47.8	31.5	62.3	29.8	11.6
LnGrp LOS	E	A	E	E	A	D	F	D	C	E	C	B
Approach Vol, veh/h		144			377			1285			2791	
Approach Delay, s/veh		55.6			51.2			50.3			33.2	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	35.0	62.8		30.5	17.0	80.8		24.7
Change Period (Y+Rc), s	4.9	6.1		4.9	4.4	* 6.1		5.3
Max Green Setting (Gmax), s	30.0	70.0		40.0	30.0	* 90		30.0
Max Q Clear Time (g_c+I1), s	28.9	46.1		8.1	12.4	38.1		18.7
Green Ext Time (p_c), s	1.2	8.5		0.4	0.3	36.6		0.7

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	102	1107	105	355	1132
Future Vol, veh/h	0	102	1107	105	355	1132
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	370	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	91	91	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	126	1216	115	399	1272

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	612	0	0	1335	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	4.16	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	0	434	-	-	507	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	432	-	-	505	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	8.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	505	-
HCM Lane V/C Ratio	-	-	0.291	0.79	-
HCM Control Delay (s)	-	-	16.7	33.9	-
HCM Lane LOS	-	-	C	D	-
HCM 95th %tile Q(veh)	-	-	1.2	7.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	18	15	59	15	24	54	946	238	34	1103	31
Future Volume (veh/h)	36	18	15	59	15	24	54	946	238	34	1103	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.90		0.91	0.94		0.88	1.00		0.88	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	26	22	75	19	30	58	1017	229	37	1186	28
Peak Hour Factor	0.68	0.68	0.68	0.79	0.79	0.79	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	96	68	227	60	75	75	1744	390	47	2147	51
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.04	0.63	0.63	0.03	0.61	0.61
Sat Flow, veh/h	690	442	315	807	276	346	1767	2785	624	1767	3518	83
Grp Volume(v), veh/h	101	0	0	124	0	0	58	642	604	37	594	620
Grp Sat Flow(s),veh/h/ln	1447	0	0	1428	0	0	1767	1763	1645	1767	1763	1838
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	3.6	23.5	23.9	2.3	21.8	21.8
Cycle Q Clear(g_c), s	5.8	0.0	0.0	7.3	0.0	0.0	3.6	23.5	23.9	2.3	21.8	21.8
Prop In Lane	0.52		0.22	0.60		0.24	1.00		0.38	1.00		0.05
Lane Grp Cap(c), veh/h	363	0	0	361	0	0	75	1104	1030	47	1076	1122
V/C Ratio(X)	0.28	0.00	0.00	0.34	0.00	0.00	0.78	0.58	0.59	0.79	0.55	0.55
Avail Cap(c_a), veh/h	457	0	0	454	0	0	259	1104	1030	259	1076	1122
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	0.61	0.61	0.61	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	36.5	0.0	0.0	52.2	12.1	12.1	53.2	12.6	12.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	3.9	1.4	1.5	10.4	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	2.9	0.0	0.0	1.6	8.6	8.2	1.1	8.3	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	0.0	36.7	0.0	0.0	56.1	13.5	13.6	63.7	14.6	14.6
LnGrp LOS	D	A	A	D	A	A	E	B	B	E	B	B
Approach Vol, veh/h		101			124			1304			1251	
Approach Delay, s/veh		36.1			36.7			15.4			16.0	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	74.0		28.7	9.1	72.2		28.7
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	5.1		4.9
Max Green Setting (Gmax), s	16.1	48.2		31.3	16.1	48.2		31.3
Max Q Clear Time (g_c+I1), s	4.3	25.9		7.8	5.6	23.8		9.3
Green Ext Time (p_c), s	0.0	10.5		0.4	0.0	10.2		0.5

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	906	530	65	1231	1068	103
Future Volume (veh/h)	906	530	65	1231	1068	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1132	525	79	1501	1174	91
Peak Hour Factor	0.80	0.80	0.82	0.82	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1604	1260	99	1938	1219	559
Arrive On Green	0.45	0.45	0.06	0.55	0.36	0.36
Sat Flow, veh/h	3618	1540	1767	3618	3428	1572
Grp Volume(v), veh/h	1132	525	79	1501	1174	91
Grp Sat Flow(s),veh/h/ln	1763	1540	1767	1763	1714	1572
Q Serve(g_s), s	36.0	13.7	6.2	46.6	46.9	5.5
Cycle Q Clear(g_c), s	36.0	13.7	6.2	46.6	46.9	5.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1604	1260	99	1938	1219	559
V/C Ratio(X)	0.71	0.42	0.79	0.77	0.96	0.16
Avail Cap(c_a), veh/h	2273	1552	380	2273	1228	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	3.8	65.1	24.6	44.1	30.8
Incr Delay (d2), s/veh	0.9	0.3	5.3	2.1	17.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	14.3	2.9	18.7	22.3	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.5	4.2	70.4	26.7	61.6	31.0
LnGrp LOS	C	A	E	C	E	C
Approach Vol, veh/h	1657			1580	1265	
Approach Delay, s/veh	22.8			28.9	59.4	
Approach LOS	C			C	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.3	70.8			84.1	55.6
Change Period (Y+Rc), s	5.4	* 7.3			7.3	5.9
Max Green Setting (Gmax), s	30.0	* 90			90.0	50.0
Max Q Clear Time (g_c+I1), s	8.2	38.0			48.6	48.9
Green Ext Time (p_c), s	0.1	25.2			28.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

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)	19	752	42	38	858	0	134	45	73	60	36	54
Future Volume (veh/h)	19	752	42	38	858	0	134	45	73	60	36	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.95	1.00		0.95
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	25	977	49	47	1059	0	203	68	88	130	78	106
Peak Hour Factor	0.77	0.77	0.77	0.81	0.81	0.81	0.66	0.66	0.66	0.46	0.46	0.46
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	1873	94	60	1991	0	247	66	436	40	18	9
Arrive On Green	0.02	0.55	0.55	0.07	1.00	0.00	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1767	3410	171	1767	3618	0	677	227	1498	0	60	31
Grp Volume(v), veh/h	25	505	521	47	1059	0	271	0	88	314	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1819	1767	1763	0	904	0	1498	91	0	0
Q Serve(g_s), s	1.8	22.8	22.8	3.3	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	22.8	22.8	3.3	0.0	0.0	36.7	0.0	5.6	36.7	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.00	0.75		1.00	0.41		0.34
Lane Grp Cap(c), veh/h	33	968	999	60	1991	0	313	0	436	67	0	0
V/C Ratio(X)	0.76	0.52	0.52	0.78	0.53	0.00	0.86	0.00	0.20	4.69	0.00	0.00
Avail Cap(c_a), veh/h	128	968	999	128	1991	0	313	0	436	67	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.76	0.76	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	61.6	17.9	17.9	58.3	0.0	0.0	45.2	0.0	33.6	48.8	0.0	0.0
Incr Delay (d2), s/veh	6.5	1.0	0.9	6.2	0.8	0.0	20.6	0.0	0.1	1695.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.1	9.3	1.5	0.2	0.0	10.4	0.0	2.1	33.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	18.9	18.9	64.4	0.8	0.0	65.8	0.0	33.7	1744.4	0.0	0.0
LnGrp LOS	E	B	B	E	A	A	E	A	C	F	A	A
Approach Vol, veh/h		1051			1106			359			314	
Approach Delay, s/veh		20.1			3.5			57.9			1744.4	
Approach LOS		C			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	75.7		41.6	6.7	77.7		41.6
Change Period (Y+Rc), s	4.4	* 6.5		4.9	4.4	6.5		4.9
Max Green Setting (Gmax), s	9.1	* 65		36.7	9.1	64.4		36.7
Max Q Clear Time (g_c+I1), s	5.3	24.8		38.7	3.8	2.0		38.7
Green Ext Time (p_c), s	0.0	6.1		0.0	0.0	9.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	209.7
HCM 6th LOS	F

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)	478	399	23	14	818	308	43	19	19	105	6	134
Future Volume (veh/h)	478	399	23	14	818	308	43	19	19	105	6	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.84	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	549	459	26	16	951	277	53	23	23	133	0	120
Peak Hour Factor	0.87	0.87	0.87	0.86	0.86	0.86	0.81	0.81	0.81	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	601	1847	104	24	1339	585	172	75	75	331	0	147
Arrive On Green	0.29	0.91	0.91	0.00	0.13	0.13	0.19	0.19	0.19	0.09	0.00	0.09
Sat Flow, veh/h	3428	3387	191	1767	3526	1541	885	384	384	3534	0	1567
Grp Volume(v), veh/h	549	238	247	16	951	277	99	0	0	133	0	120
Grp Sat Flow(s),veh/h/ln	1714	1763	1815	1767	1763	1541	1653	0	0	1767	0	1567
Q Serve(g_s), s	19.5	2.0	2.0	1.1	32.6	21.1	6.5	0.0	0.0	4.5	0.0	9.5
Cycle Q Clear(g_c), s	19.5	2.0	2.0	1.1	32.6	21.1	6.5	0.0	0.0	4.5	0.0	9.5
Prop In Lane	1.00		0.11	1.00		1.00	0.54		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	601	961	990	24	1339	585	321	0	0	331	0	147
V/C Ratio(X)	0.91	0.25	0.25	0.67	0.71	0.47	0.31	0.00	0.00	0.40	0.00	0.82
Avail Cap(c_a), veh/h	724	961	990	128	1339	585	358	0	0	396	0	175
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.35	0.35	0.35	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	2.6	2.6	62.4	48.4	43.4	43.5	0.0	0.0	53.8	0.0	56.0
Incr Delay (d2), s/veh	11.4	0.5	0.5	4.1	1.1	1.0	0.2	0.0	0.0	1.2	0.0	24.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.7	0.8	0.5	15.7	8.9	2.7	0.0	0.0	2.1	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	3.2	3.1	66.5	49.6	44.3	43.7	0.0	0.0	54.9	0.0	80.3
LnGrp LOS	E	A	A	E	D	D	D	A	A	D	A	F
Approach Vol, veh/h		1034			1244			99			253	
Approach Delay, s/veh		30.7			48.6			43.7			66.9	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	74.3		16.7	27.0	53.5		28.9
Change Period (Y+Rc), s	4.4	5.6		4.9	4.9	* 5.6		4.4
Max Green Setting (Gmax), s	9.1	56.2		14.1	26.6	* 39		27.3
Max Q Clear Time (g_c+I1), s	3.1	4.0		11.5	21.5	34.6		8.5
Green Ext Time (p_c), s	0.0	6.1		0.3	0.6	2.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* 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)	78	432	11	62	1063	318	35	13	87	93	13	60
Future Volume (veh/h)	78	432	11	62	1063	318	35	13	87	93	13	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.89	1.00		0.90
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	520	13	73	1251	345	45	17	99	102	14	39
Peak Hour Factor	0.83	0.83	0.83	0.85	0.85	0.85	0.78	0.78	0.78	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	117	1742	44	93	1315	355	45	17	98	306	42	381
Arrive On Green	0.02	0.16	0.16	0.05	0.48	0.48	0.10	0.10	0.10	0.20	0.20	0.20
Sat Flow, veh/h	1767	3511	88	1767	2727	735	429	162	943	1563	215	1409
Grp Volume(v), veh/h	94	261	272	73	798	798	161	0	0	116	0	39
Grp Sat Flow(s),veh/h/ln	1767	1763	1836	1767	1763	1700	1534	0	0	1777	0	1409
Q Serve(g_s), s	6.7	16.4	16.4	5.1	54.0	57.7	13.1	0.0	0.0	7.1	0.0	2.6
Cycle Q Clear(g_c), s	6.7	16.4	16.4	5.1	54.0	57.7	13.1	0.0	0.0	7.1	0.0	2.6
Prop In Lane	1.00		0.05	1.00		0.43	0.28		0.61	0.88		1.00
Lane Grp Cap(c), veh/h	117	875	911	93	850	820	159	0	0	348	0	381
V/C Ratio(X)	0.80	0.30	0.30	0.79	0.94	0.97	1.01	0.00	0.00	0.33	0.00	0.10
Avail Cap(c_a), veh/h	170	875	911	128	850	820	159	0	0	439	0	452
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.36	0.36	0.36	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.8	33.4	33.4	59.0	30.9	31.8	56.5	0.0	0.0	43.6	0.0	35.3
Incr Delay (d2), s/veh	9.7	0.9	0.8	5.3	8.9	13.5	73.8	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	8.0	8.3	2.4	24.0	25.7	8.4	0.0	0.0	3.2	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.5	34.3	34.2	64.3	39.8	45.4	130.3	0.0	0.0	43.8	0.0	35.3
LnGrp LOS	E	C	C	E	D	D	F	A	A	D	A	D
Approach Vol, veh/h		627			1669			161			155	
Approach Delay, s/veh		39.7			43.5			130.3			41.6	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	67.4		29.6	12.8	65.6		18.0
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	9.1	53.6		31.1	12.1	50.6		13.1
Max Q Clear Time (g_c+I1), s	7.1	18.4		9.1	8.7	59.7		15.1
Green Ext Time (p_c), s	0.0	9.2		0.5	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	275	128	39	648	222	543	841	119	267	638	272
Future Volume (veh/h)	175	275	128	39	648	222	543	841	119	267	638	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.97	1.00		0.91
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	211	331	124	46	771	204	578	895	111	284	679	252
Peak Hour Factor	0.83	0.83	0.83	0.84	0.84	0.84	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	1310	554	59	970	416	619	1261	156	325	772	286
Arrive On Green	0.13	0.37	0.37	0.03	0.28	0.28	0.18	0.40	0.40	0.09	0.32	0.32
Sat Flow, veh/h	1767	3526	1492	1767	3526	1511	3428	3143	390	3428	2447	908
Grp Volume(v), veh/h	211	331	124	46	771	204	578	502	504	284	489	442
Grp Sat Flow(s),veh/h/ln	1767	1763	1492	1767	1763	1511	1714	1763	1770	1714	1763	1592
Q Serve(g_s), s	22.4	12.4	10.8	4.9	38.6	21.5	31.6	45.3	45.3	15.5	50.0	50.0
Cycle Q Clear(g_c), s	22.4	12.4	10.8	4.9	38.6	21.5	31.6	45.3	45.3	15.5	50.0	50.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.57
Lane Grp Cap(c), veh/h	229	1310	554	59	970	416	619	707	710	325	556	502
V/C Ratio(X)	0.92	0.25	0.22	0.78	0.79	0.49	0.93	0.71	0.71	0.87	0.88	0.88
Avail Cap(c_a), veh/h	372	1310	554	372	1112	477	721	707	710	721	556	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.8	41.4	40.9	91.2	63.9	57.7	76.8	47.7	47.7	85.0	61.7	61.7
Incr Delay (d2), s/veh	13.4	0.3	0.6	8.0	5.7	3.1	16.7	5.9	5.9	2.9	17.8	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	5.5	4.2	2.4	18.1	8.6	15.4	21.2	21.3	7.0	25.0	22.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.2	41.7	41.5	99.3	69.6	60.8	93.4	53.6	53.6	87.9	79.5	81.0
LnGrp LOS	F	D	D	F	E	E	F	D	D	F	E	F
Approach Vol, veh/h		666			1021			1584			1215	
Approach Delay, s/veh		58.6			69.2			68.1			82.0	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	81.4	10.7	75.6	38.7	65.1	29.1	57.3
Change Period (Y+Rc), s	4.4	5.1	4.4	4.9	4.4	5.1	4.4	4.9
Max Green Setting (Gmax), s	40.6	60.0	40.0	60.0	40.0	60.0	40.0	60.0
Max Q Clear Time (g_c+I1), s	17.5	47.3	6.9	14.4	33.6	52.0	24.4	40.6
Green Ext Time (p_c), s	0.5	6.6	0.0	6.6	0.7	4.0	0.2	11.8

Intersection Summary	
HCM 6th Ctrl Delay	70.7
HCM 6th LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	136	432	782	89	36	38
Future Volume (veh/h)	136	432	782	89	36	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	166	527	909	86	51	40
Peak Hour Factor	0.82	0.82	0.86	0.86	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	527	3041	2538	240	80	71
Arrive On Green	0.04	0.86	0.78	0.78	0.05	0.05
Sat Flow, veh/h	1767	3618	3335	307	1767	1572
Grp Volume(v), veh/h	166	527	494	501	51	40
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1786	1767	1572
Q Serve(g_s), s	1.7	2.5	8.9	8.9	3.0	2.6
Cycle Q Clear(g_c), s	1.7	2.5	8.9	8.9	3.0	2.6
Prop In Lane	1.00			0.17	1.00	1.00
Lane Grp Cap(c), veh/h	527	3041	1380	1399	80	71
V/C Ratio(X)	0.31	0.17	0.36	0.36	0.64	0.56
Avail Cap(c_a), veh/h	824	3041	1380	1399	412	367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.95	0.95	1.00	1.00
Uniform Delay (d), s/veh	2.3	1.2	3.4	3.4	49.3	49.1
Incr Delay (d2), s/veh	0.1	0.1	0.7	0.7	3.2	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	2.5	2.5	1.4	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.4	1.3	4.1	4.1	52.5	51.7
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		693	995		91	
Approach Delay, s/veh		1.5	4.1		52.1	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.9		9.1	8.4	87.5
Change Period (Y+Rc), s		5.3		4.4	4.4	5.3
Max Green Setting (Gmax), s		70.8		24.5	21.6	44.8
Max Q Clear Time (g_c+I1), s		4.5		5.0	3.7	10.9
Green Ext Time (p_c), s		5.8		0.1	0.2	11.4

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	391	49	13	620	11	109	4	26	6	4	46
Future Volume (veh/h)	20	391	49	13	620	11	109	4	26	6	4	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.98	0.99		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	24	471	53	16	747	13	173	6	33	7	5	48
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.63	0.63	0.63	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	110	2076	232	61	2446	42	280	8	42	55	44	244
Arrive On Green	1.00	1.00	1.00	0.48	0.48	0.48	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	101	2883	321	35	3397	59	1168	41	223	89	238	1307
Grp Volume(v), veh/h	282	0	266	404	0	372	212	0	0	60	0	0
Grp Sat Flow(s),veh/h/ln	1689	0	1616	1815	0	1675	1432	0	0	1634	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	14.2	11.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	13.8	0.0	14.2	14.6	0.0	0.0	3.3	0.0	0.0
Prop In Lane	0.09		0.20	0.04		0.03	0.82		0.16	0.12		0.80
Lane Grp Cap(c), veh/h	1253	0	1164	1343	0	1206	329	0	0	343	0	0
V/C Ratio(X)	0.22	0.00	0.23	0.30	0.00	0.31	0.64	0.00	0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	1253	0	1164	1343	0	1206	518	0	0	556	0	0
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	0.91	0.00	0.91	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	11.2	0.0	11.3	40.3	0.0	0.0	36.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.5	0.0	0.6	0.8	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	6.3	0.0	5.9	5.2	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.4	0.0	0.5	11.7	0.0	11.9	41.1	0.0	0.0	36.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	B	D	A	A	D	A	A
Approach Vol, veh/h		548			776			212			60	
Approach Delay, s/veh		0.4			11.8			41.1			36.2	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	80.5	24.5	80.5	24.5
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	61.1	34.1	61.1	34.1
Max Q Clear Time (g_c+I1), s	2.0	16.6	16.2	5.3
Green Ext Time (p_c), s	3.9	0.7	5.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	351	652	111	38	87
Future Volume (veh/h)	90	351	652	111	38	87
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	120	468	847	125	49	99
Peak Hour Factor	0.75	0.75	0.77	0.77	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	482	2799	2193	324	58	118
Arrive On Green	0.07	1.00	0.72	0.72	0.11	0.11
Sat Flow, veh/h	1767	3618	3159	452	537	1085
Grp Volume(v), veh/h	120	468	487	485	149	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1756	1633	0
Q Serve(g_s), s	1.8	0.0	11.4	11.4	9.4	0.0
Cycle Q Clear(g_c), s	1.8	0.0	11.4	11.4	9.4	0.0
Prop In Lane	1.00			0.26	0.33	0.66
Lane Grp Cap(c), veh/h	482	2799	1261	1256	178	0
V/C Ratio(X)	0.25	0.17	0.39	0.39	0.84	0.00
Avail Cap(c_a), veh/h	637	2799	1261	1256	428	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.45	0.45	1.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	5.9	5.9	45.9	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.4	0.4	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.6	3.6	4.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.0	0.1	6.3	6.3	49.9	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h		588	972		149	
Approach Delay, s/veh		0.9	6.3		49.9	
Approach LOS		A	A		D	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	88.7		16.3	8.3	80.4
Change Period (Y+Rc), s	5.3		4.9	4.4	5.3
Max Green Setting (Gmax), s	67.3		27.5	13.1	49.8
Max Q Clear Time (g_c+I1), s	2.0		11.4	3.8	13.4
Green Ext Time (p_c), s	5.4		0.2	0.1	13.7

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

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	164	474	613	668	244	98
Future Volume (vph)	164	474	613	668	244	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9	4.9	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1542	3400	1536
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1542	3400	1536
Peak-hour factor, PHF	0.83	0.83	0.94	0.94	0.71	0.71
Adj. Flow (vph)	198	571	652	711	344	138
RTOR Reduction (vph)	0	0	0	387	0	117
Lane Group Flow (vph)	198	571	652	324	344	21
Confl. Peds. (#/hr)				1		5
Confl. Bikes (#/hr)				4		
Turn Type	Prot	NA	NA	custom	Prot	Perm
Protected Phases	5	2	6 8		7	
Permitted Phases				6		7
Actuated Green, G (s)	22.2	62.0	85.0	44.2	22.1	22.1
Effective Green, g (s)	22.2	62.0	85.0	44.2	22.1	22.1
Actuated g/C Ratio	0.15	0.42	0.57	0.30	0.15	0.15
Clearance Time (s)	4.4	4.9		4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.0		3.0	2.5	2.5
Lane Grp Cap (vph)	262	1464	2007	459	506	228
v/s Ratio Prot	c0.11	0.16	c0.19		c0.10	
v/s Ratio Perm				c0.21		0.01
v/c Ratio	0.76	0.39	0.32	0.71	0.68	0.09
Uniform Delay, d1	60.5	30.0	16.6	46.3	59.8	54.5
Progression Factor	1.00	1.00	0.17	1.39	1.00	1.00
Incremental Delay, d2	10.5	0.2	0.1	4.2	3.3	0.1
Delay (s)	71.0	30.2	3.0	68.8	63.1	54.6
Level of Service	E	C	A	E	E	D
Approach Delay (s)		40.7	37.3		60.7	
Approach LOS		D	D		E	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	148.4	Sum of lost time (s)	19.1
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	513	37	23	970	19	209	17	38	25	10	91
Future Volume (vph)	46	513	37	23	970	19	209	17	38	25	10	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9		4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.96		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.96	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3453		1752	5015		1752	1591		1686	1577	
Flt Permitted	0.95	1.00		0.95	1.00		0.65	1.00		0.72	1.00	
Satd. Flow (perm)	1752	3453		1752	5015		1200	1591		1275	1577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	558	40	25	1054	21	227	18	41	27	11	99
RTOR Reduction (vph)	0	2	0	0	1	0	0	30	0	0	72	0
Lane Group Flow (vph)	50	596	0	25	1074	0	227	29	0	27	38	0
Confl. Peds. (#/hr)			11			12			25	25		
Confl. Bikes (#/hr)			5			6			1			1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5 7	2 7		1	6			8			8	
Permitted Phases							8			8		
Actuated Green, G (s)	44.3	89.0		4.4	44.2		40.8	40.8		40.8	40.8	
Effective Green, g (s)	44.3	89.0		4.4	44.2		40.8	40.8		40.8	40.8	
Actuated g/C Ratio	0.30	0.60		0.03	0.30		0.27	0.27		0.27	0.27	
Clearance Time (s)				4.4	4.9		4.9	4.9		4.9	4.9	
Vehicle Extension (s)				2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	523	2070		51	1493		329	437		350	433	
v/s Ratio Prot	0.03	c0.17		c0.01	c0.21			0.02			0.02	
v/s Ratio Perm							c0.19			0.02		
v/c Ratio	0.10	0.29		0.49	0.72		0.69	0.07		0.08	0.09	
Uniform Delay, d1	37.6	14.4		70.9	46.6		48.1	39.7		39.9	40.0	
Progression Factor	0.92	0.04		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		2.7	1.7		4.8	0.0		0.0	0.0	
Delay (s)	34.6	0.7		73.6	48.3		52.9	39.8		39.9	40.0	
Level of Service	C	A		E	D		D	D		D	D	
Approach Delay (s)		3.3			48.8			50.2			40.0	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	148.4	Sum of lost time (s)	19.1
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	284	114	104	309	185	167	690	65	102	493	224
Future Volume (veh/h)	328	284	114	104	309	185	167	690	65	102	493	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	373	323	113	124	368	196	176	726	57	128	616	243
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.95	0.95	0.95	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	402	921	316	151	478	249	205	1020	80	156	688	271
Arrive On Green	0.23	0.36	0.36	0.09	0.22	0.22	0.12	0.31	0.31	0.09	0.28	0.28
Sat Flow, veh/h	1767	2559	877	1767	2196	1145	1767	3307	259	1767	2455	967
Grp Volume(v), veh/h	373	220	216	124	294	270	176	387	396	128	442	417
Grp Sat Flow(s),veh/h/ln	1767	1763	1673	1767	1763	1579	1767	1763	1803	1767	1763	1659
Q Serve(g_s), s	24.5	10.8	11.2	8.2	18.5	19.1	11.6	23.0	23.0	8.4	28.5	28.6
Cycle Q Clear(g_c), s	24.5	10.8	11.2	8.2	18.5	19.1	11.6	23.0	23.0	8.4	28.5	28.6
Prop In Lane	1.00		0.52	1.00		0.73	1.00		0.14	1.00		0.58
Lane Grp Cap(c), veh/h	402	634	602	151	384	344	205	544	556	156	494	465
V/C Ratio(X)	0.93	0.35	0.36	0.82	0.77	0.79	0.86	0.71	0.71	0.82	0.89	0.90
Avail Cap(c_a), veh/h	597	634	602	448	596	534	448	596	610	448	596	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	27.7	27.8	53.2	43.4	43.7	51.4	36.3	36.3	53.1	40.9	40.9
Incr Delay (d2), s/veh	12.7	0.4	0.4	4.1	4.0	5.1	4.0	2.8	2.8	4.1	12.8	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	4.6	4.6	3.8	8.4	7.9	5.3	10.2	10.4	3.9	13.9	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	28.1	28.3	57.3	47.4	48.8	55.4	39.1	39.1	57.2	53.7	54.5
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		809			688			959			987	
Approach Delay, s/veh		41.7			49.7			42.1			54.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	47.6	18.1	38.1	31.3	30.8	14.8	41.4
Change Period (Y+Rc), s	4.4	5.0	4.4	4.9	4.4	* 5	4.4	4.9
Max Green Setting (Gmax), s	30.0	40.0	30.0	40.0	40.0	* 40	30.0	40.0
Max Q Clear Time (g_c+I1), s	10.2	13.2	13.6	30.6	26.5	21.1	10.4	25.0
Green Ext Time (p_c), s	0.1	3.5	0.2	2.6	0.5	4.1	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

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)	44	410	19	96	522	20	63	12	65	29	9	35
Future Volume (veh/h)	44	410	19	96	522	20	63	12	65	29	9	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.98	0.99		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	52	488	23	110	600	23	91	17	80	38	12	39
Peak Hour Factor	0.84	0.84	0.84	0.87	0.87	0.87	0.69	0.69	0.69	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	80	1036	49	142	1167	45	272	62	137	241	94	150
Arrive On Green	0.05	0.30	0.30	0.08	0.34	0.34	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1767	3425	161	1767	3456	132	575	290	640	459	438	699
Grp Volume(v), veh/h	52	251	260	110	306	317	188	0	0	89	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1823	1767	1763	1826	1504	0	0	1596	0	0
Q Serve(g_s), s	1.0	4.2	4.2	2.2	5.0	5.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	4.2	4.2	2.2	5.0	5.0	3.9	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.07	0.48		0.43	0.43		0.44
Lane Grp Cap(c), veh/h	80	533	551	142	595	616	471	0	0	485	0	0
V/C Ratio(X)	0.65	0.47	0.47	0.78	0.51	0.51	0.40	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1472	2936	3037	1472	2936	3042	1771	0	0	1781	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.9	10.2	10.2	16.2	9.6	9.6	12.6	0.0	0.0	11.7	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.5	0.5	3.4	0.8	0.8	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	1.3	0.8	1.4	1.5	1.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	10.7	10.7	19.7	10.4	10.3	12.8	0.0	0.0	11.8	0.0	0.0
LnGrp LOS	C	B	B	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		563			733			188			89	
Approach Delay, s/veh		11.6			11.7			12.8			11.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	16.1		12.6	6.0	17.4		12.6
Change Period (Y+Rc), s	4.4	* 5.2		4.9	4.4	5.2		4.9
Max Green Setting (Gmax), s	30.6	* 60		40.0	30.0	60.0		40.0
Max Q Clear Time (g_c+I1), s	4.2	6.2		3.6	3.0	7.0		5.9
Green Ext Time (p_c), s	0.1	2.6		0.4	0.1	4.9		0.8

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Notes

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	75	61	1017	99	28	520	
Future Volume (veh/h)	75	61	1017	99	28	520	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No		No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	
Adj Flow Rate, veh/h	95	58	1211	94	33	612	
Peak Hour Factor	0.79	0.79	0.84	0.84	0.85	0.85	
Percent Heavy Veh, %	3	3	3	3	3	3	
Cap, veh/h	140	124	2389	1183	72	2754	
Arrive On Green	0.08	0.08	0.68	0.68	0.04	0.78	
Sat Flow, veh/h	1767	1572	3618	1563	1767	3618	
Grp Volume(v), veh/h	95	58	1211	94	33	612	
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1563	1767	1763	
Q Serve(g_s), s	3.7	2.5	11.8	1.1	1.3	3.2	
Cycle Q Clear(g_c), s	3.7	2.5	11.8	1.1	1.3	3.2	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	140	124	2389	1183	72	2754	
V/C Ratio(X)	0.68	0.47	0.51	0.08	0.46	0.22	
Avail Cap(c_a), veh/h	432	384	2389	1183	204	2754	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.55	0.55	1.00	1.00	
Uniform Delay (d), s/veh	31.4	30.8	5.5	2.2	32.8	2.0	
Incr Delay (d2), s/veh	2.2	1.0	0.4	0.1	1.7	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.6	1.0	2.8	0.2	0.5	0.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	33.6	31.8	6.0	2.3	34.5	2.2	
LnGrp LOS	C	C	A	A	C	A	
Approach Vol, veh/h	153		1305			645	
Approach Delay, s/veh	32.9		5.7			3.9	
Approach LOS	C		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.2	52.3				59.6	10.4
Change Period (Y+Rc), s	4.4	4.9				4.9	4.9
Max Green Setting (Gmax), s	8.1	30.6				43.1	17.1
Max Q Clear Time (g_c+I1), s	3.3	13.8				5.2	5.7
Green Ext Time (p_c), s	0.0	9.7				5.7	0.2

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	525	34	51	650	25	60	50	19	38	53	17
Future Volume (veh/h)	30	525	34	51	650	25	60	50	19	38	53	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.98		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	33	577	32	61	783	24	85	70	27	61	85	27
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.71	0.71	0.71	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	509	2544	141	617	2618	80	137	102	35	111	143	40
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	669	3389	188	803	3487	107	552	588	199	424	825	231
Grp Volume(v), veh/h	33	300	309	61	396	411	182	0	0	173	0	0
Grp Sat Flow(s),veh/h/ln	669	1763	1813	803	1763	1832	1338	0	0	1479	0	0
Q Serve(g_s), s	2.2	6.6	6.7	3.2	9.4	9.4	3.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.6	6.6	6.7	9.9	9.4	9.4	17.5	0.0	0.0	14.2	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.47		0.15	0.35		0.16
Lane Grp Cap(c), veh/h	509	1323	1361	617	1323	1375	273	0	0	295	0	0
V/C Ratio(X)	0.06	0.23	0.23	0.10	0.30	0.30	0.67	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	509	1323	1361	617	1323	1375	347	0	0	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	4.9	4.9	6.4	5.2	5.2	51.5	0.0	0.0	49.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.0	0.0	0.0	1.6	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	2.3	0.5	3.0	3.1	5.9	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	5.3	5.3	6.4	5.2	5.2	53.1	0.0	0.0	50.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		642			868			182			173	
Approach Delay, s/veh		5.4			5.3			53.1			50.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	102.5	27.5	102.5	27.5
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	91.1	29.1	91.1	29.1
Max Q Clear Time (g_c+I1), s	13.6	19.5	11.9	16.2
Green Ext Time (p_c), s	1.3	0.5	1.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	445	118	138	468	312	191	739	178	136	397	75
Future Volume (veh/h)	78	445	118	138	468	312	191	739	178	136	397	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.99	1.00		0.96
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	88	500	105	157	532	281	210	812	174	151	441	61
Peak Hour Factor	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	113	873	372	191	1028	440	289	982	210	185	1274	544
Arrive On Green	0.06	0.25	0.25	0.11	0.29	0.29	0.08	0.34	0.34	0.10	0.36	0.36
Sat Flow, veh/h	1767	3526	1502	1767	3526	1510	3428	2881	617	1767	3526	1505
Grp Volume(v), veh/h	88	500	105	157	532	281	210	497	489	151	441	61
Grp Sat Flow(s),veh/h/ln	1767	1763	1502	1767	1763	1510	1714	1763	1736	1767	1763	1505
Q Serve(g_s), s	4.6	11.8	5.4	8.2	11.9	15.3	5.7	24.5	24.5	7.9	8.6	2.6
Cycle Q Clear(g_c), s	4.6	11.8	5.4	8.2	11.9	15.3	5.7	24.5	24.5	7.9	8.6	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	113	873	372	191	1028	440	289	601	592	185	1274	544
V/C Ratio(X)	0.78	0.57	0.28	0.82	0.52	0.64	0.73	0.83	0.83	0.82	0.35	0.11
Avail Cap(c_a), veh/h	560	1863	794	560	1863	798	1087	745	734	560	1491	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	31.2	28.8	41.3	28.0	29.2	42.3	28.6	28.6	41.5	22.1	20.1
Incr Delay (d2), s/veh	4.2	0.8	0.5	3.3	0.5	1.7	1.3	6.3	6.4	3.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.0	1.9	3.7	4.9	5.5	2.4	10.7	10.6	3.5	3.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	32.0	29.3	44.6	28.4	30.9	43.6	34.9	35.0	44.8	22.3	20.3
LnGrp LOS	D	C	C	D	C	C	D	C	D	D	C	C
Approach Vol, veh/h		693			970			1196			653	
Approach Delay, s/veh		33.6			31.7			36.5			27.3	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	28.4	12.4	39.2	10.5	32.6	14.3	37.2
Change Period (Y+Rc), s	4.4	* 5	4.4	* 5	4.4	5.0	4.4	5.0
Max Green Setting (Gmax), s	30.0	* 50	30.0	* 40	30.0	50.0	30.0	40.0
Max Q Clear Time (g_c+I1), s	10.2	13.8	7.7	10.6	6.6	17.3	9.9	26.5
Green Ext Time (p_c), s	0.2	5.4	0.3	4.9	0.1	5.7	0.2	5.1

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

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)	25	511	44	23	721	10	71	14	29	28	15	51
Future Volume (veh/h)	25	511	44	23	721	10	71	14	29	28	15	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.99	1.00		0.99
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	29	587	45	26	810	11	101	20	34	42	22	69
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.70	0.70	0.70	0.67	0.67	0.67
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	116	2299	175	86	2578	35	162	31	41	93	56	122
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	111	2961	226	72	3320	45	796	211	283	390	385	835
Grp Volume(v), veh/h	334	0	327	434	0	413	155	0	0	133	0	0
Grp Sat Flow(s),veh/h/ln	1655	0	1641	1758	0	1679	1290	0	0	1610	0	0
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	9.5	5.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	7.2	8.9	0.0	9.5	15.5	0.0	0.0	9.8	0.0	0.0
Prop In Lane	0.09		0.14	0.06		0.03	0.65		0.22	0.32		0.52
Lane Grp Cap(c), veh/h	1315	0	1274	1394	0	1304	234	0	0	271	0	0
V/C Ratio(X)	0.25	0.00	0.26	0.31	0.00	0.32	0.66	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1315	0	1274	1394	0	1304	311	0	0	355	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.00	0.66	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.0	0.0	4.1	4.2	0.0	4.3	54.2	0.0	0.0	51.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.6	0.0	0.6	1.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	2.1	3.0	0.0	3.0	5.1	0.0	0.0	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	0.0	4.4	4.8	0.0	4.9	55.4	0.0	0.0	52.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	D	A	A
Approach Vol, veh/h		661			847			155			133	
Approach Delay, s/veh		4.3			4.9			55.4			52.1	
Approach LOS		A			A			E			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	106.1	23.9	106.1	23.9
Change Period (Y+Rc), s	5.2	4.9	5.2	4.9
Max Green Setting (Gmax), s	93.8	26.1	93.8	26.1
Max Q Clear Time (g_c+I1), s	9.2	17.5	11.5	11.8
Green Ext Time (p_c), s	2.8	0.4	3.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	556	21	33	697	0	65	2	37	2	2	5
Future Vol, veh/h	6	556	21	33	697	0	65	2	37	2	2	5
Conflicting Peds, #/hr	9	0	7	7	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	88	88	88	97	97	97	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	598	23	38	792	0	67	2	38	3	3	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	801	0	0	628	0	0	1103	1506	318	1189	1517	405
Stage 1	-	-	-	-	-	-	629	629	-	877	877	-
Stage 2	-	-	-	-	-	-	474	877	-	312	640	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	812	-	-	1259	-	-	294	161	*861	*246	158	592
Stage 1	-	-	-	-	-	-	783	693	-	*308	362	-
Stage 2	-	-	-	-	-	-	538	362	-	*812	684	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	805	-	-	1251	-	-	271	148	*855	*219	145	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	148	-	*219	145	-
Stage 1	-	-	-	-	-	-	769	681	-	*302	339	-
Stage 2	-	-	-	-	-	-	499	339	-	*765	671	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	19.7	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	351	805	-	-	1251	-	-	286
HCM Lane V/C Ratio	0.305	0.008	-	-	0.03	-	-	0.042
HCM Control Delay (s)	19.7	9.5	0.1	-	8	0.2	-	18.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	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)	195	306	76	126	352	86	175	910	114	82	326	163
Future Volume (veh/h)	195	306	76	126	352	86	175	910	114	82	326	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	214	336	79	150	419	84	186	968	89	90	358	141
Peak Hour Factor	0.91	0.91	0.91	0.84	0.84	0.84	0.94	0.94	0.94	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	264	1206	279	201	1190	236	212	1076	474	112	877	383
Arrive On Green	0.08	0.43	0.43	0.06	0.41	0.41	0.12	0.31	0.31	0.06	0.25	0.25
Sat Flow, veh/h	3428	2826	654	3428	2915	579	1767	3526	1554	1767	3526	1539
Grp Volume(v), veh/h	214	208	207	150	252	251	186	968	89	90	358	141
Grp Sat Flow(s),veh/h/ln	1714	1763	1718	1714	1763	1732	1767	1763	1554	1767	1763	1539
Q Serve(g_s), s	8.0	10.0	10.2	5.6	12.8	13.1	13.5	34.2	5.5	6.5	11.0	9.8
Cycle Q Clear(g_c), s	8.0	10.0	10.2	5.6	12.8	13.1	13.5	34.2	5.5	6.5	11.0	9.8
Prop In Lane	1.00		0.38	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	752	733	201	720	707	212	1076	474	112	877	383
V/C Ratio(X)	0.81	0.28	0.28	0.75	0.35	0.36	0.88	0.90	0.19	0.80	0.41	0.37
Avail Cap(c_a), veh/h	280	752	733	280	720	707	307	1139	502	198	917	400
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)	0.89	0.89	0.89	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	24.2	24.3	60.2	26.5	26.6	56.3	43.3	33.3	60.1	40.8	40.4
Incr Delay (d2), s/veh	12.8	0.8	0.9	3.6	1.3	1.3	13.5	9.6	0.2	5.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	4.3	4.3	2.5	5.6	5.6	6.8	16.1	2.1	3.1	4.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	25.0	25.2	63.8	27.8	28.0	69.7	52.9	33.5	65.1	41.1	40.9
LnGrp LOS	E	C	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		629			653			1243			589	
Approach Delay, s/veh		41.0			36.1			54.0			44.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	60.5	20.0	37.5	14.4	58.1	12.6	44.9
Change Period (Y+Rc), s	4.4	5.0	4.4	5.2	4.4	* 5	4.4	* 5.2
Max Green Setting (Gmax), s	10.6	44.0	22.6	33.8	10.6	* 44	14.6	* 42
Max Q Clear Time (g_c+I1), s	7.6	12.2	15.5	13.0	10.0	15.1	8.5	36.2
Green Ext Time (p_c), s	0.1	2.9	0.1	2.3	0.0	4.1	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

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)	2	434	42	50	566	0	86	0	54	0	0	2
Future Volume (veh/h)	2	434	42	50	566	0	86	0	54	0	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2	472	41	62	699	0	115	0	52	0	0	8
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.75	0.75	0.75	0.25	0.25	0.25
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1668	144	417	2231	0	397	0	386	0	0	386
Arrive On Green	0.00	0.51	0.51	0.24	1.00	0.00	0.25	0.00	0.25	0.00	0.00	0.25
Sat Flow, veh/h	1767	3276	283	3428	3618	0	1368	0	1565	0	0	1565
Grp Volume(v), veh/h	2	253	260	62	699	0	115	0	52	0	0	8
Grp Sat Flow(s),veh/h/ln	1767	1763	1797	1714	1763	0	1368	0	1565	0	0	1565
Q Serve(g_s), s	0.1	9.9	10.0	1.7	0.0	0.0	8.2	0.0	3.1	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.1	9.9	10.0	1.7	0.0	0.0	8.7	0.0	3.1	0.0	0.0	0.5
Prop In Lane	1.00		0.16	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	4	898	915	417	2231	0	397	0	386	0	0	386
V/C Ratio(X)	0.53	0.28	0.28	0.15	0.31	0.00	0.29	0.00	0.13	0.00	0.00	0.02
Avail Cap(c_a), veh/h	222	898	915	431	2231	0	397	0	386	0	0	386
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.95	0.95	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	59.8	16.9	16.9	40.5	0.0	0.0	37.5	0.0	35.2	0.0	0.0	34.2
Incr Delay (d2), s/veh	78.9	0.7	0.7	0.2	0.3	0.0	1.8	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.1	4.2	0.7	0.1	0.0	3.0	0.0	1.3	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.7	17.6	17.6	40.7	0.3	0.0	39.3	0.0	35.9	0.0	0.0	34.2
LnGrp LOS	F	B	B	D	A	A	D	A	D	A	A	C
Approach Vol, veh/h		515			761			167			8	
Approach Delay, s/veh		18.1			3.6			38.3			34.2	
Approach LOS		B			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.5	66.0		34.5	4.7	80.8		34.5
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	15.1	* 61		29.6	15.1	61.1		29.6
Max Q Clear Time (g_c+I1), s	3.7	12.0		2.5	2.1	2.0		10.7
Green Ext Time (p_c), s	0.1	3.1		0.0	0.0	5.3		0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.9
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)	92	407	18	32	470	36	28	24	16	23	21	159
Future Volume (veh/h)	92	407	18	32	470	36	28	24	16	23	21	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	462	14	36	534	35	37	32	21	35	32	211
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.75	0.75	0.75	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	2065	883	46	1807	118	62	54	35	29	27	176
Arrive On Green	0.14	1.00	1.00	0.03	0.54	0.54	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1767	3526	1509	1767	3352	219	713	616	404	204	187	1232
Grp Volume(v), veh/h	105	462	14	36	280	289	90	0	0	278	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1509	1767	1763	1809	1734	0	0	1624	0	0
Q Serve(g_s), s	6.9	0.0	0.0	2.4	10.5	10.5	6.0	0.0	0.0	17.1	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	0.0	2.4	10.5	10.5	6.0	0.0	0.0	17.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.12	0.41		0.23	0.13		0.76
Lane Grp Cap(c), veh/h	128	2065	883	46	950	975	151	0	0	231	0	0
V/C Ratio(X)	0.82	0.22	0.02	0.79	0.29	0.30	0.60	0.00	0.00	1.20	0.00	0.00
Avail Cap(c_a), veh/h	208	2065	883	119	950	975	406	0	0	231	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.5	0.0	0.0	58.1	15.2	15.2	52.8	0.0	0.0	51.5	0.0	0.0
Incr Delay (d2), s/veh	5.3	0.2	0.0	10.6	0.8	0.8	1.4	0.0	0.0	124.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.1	0.0	1.2	4.3	4.4	2.7	0.0	0.0	15.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	0.2	0.0	68.7	16.0	15.9	54.2	0.0	0.0	176.0	0.0	0.0
LnGrp LOS	E	A	A	E	B	B	D	A	A	F	A	A
Approach Vol, veh/h		581			605			90			278	
Approach Delay, s/veh		10.3			19.1			54.2			176.0	
Approach LOS		B			B			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	75.2		22.0	13.1	69.6		15.3
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	8.1	47.6		17.1	14.1	41.6		28.1
Max Q Clear Time (g_c+I1), s	4.4	2.0		19.1	8.9	12.5		8.0
Green Ext Time (p_c), s	0.0	7.9		0.0	0.0	7.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	651	1768	0	23	476	1085	383
Future Volume (veh/h)	651	1768	0	23	476	1085	383
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00			1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach	No				No	No	
Adj Sat Flow, veh/h/ln	1856	1856		1856	1856	1856	1856
Adj Flow Rate, veh/h	693	1881		26	529	1219	0
Peak Hour Factor	0.94	0.94		0.90	0.90	0.89	0.89
Percent Heavy Veh, %	3	3		3	3	3	3
Cap, veh/h	1863	1948		62	934	1628	
Arrive On Green	0.54	0.54		0.32	0.32	0.32	0.00
Sat Flow, veh/h	3428	3585		44	2992	5233	1572
Grp Volume(v), veh/h	693	1881		279	276	1219	0
Grp Sat Flow(s),veh/h/ln	1714	1195		1348	1604	1689	1572
Q Serve(g_s), s	9.5	41.4		1.3	11.6	17.7	0.0
Cycle Q Clear(g_c), s	9.5	41.4		18.9	11.6	17.7	0.0
Prop In Lane	1.00	1.00		0.09			1.00
Lane Grp Cap(c), veh/h	1863	1948		481	515	1628	
V/C Ratio(X)	0.37	0.97		0.58	0.53	0.75	
Avail Cap(c_a), veh/h	1880	1966		1388	1524	3209	
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	18.0		22.5	22.8	24.9	0.0
Incr Delay (d2), s/veh	0.0	13.0		0.4	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.1		3.8	3.9	6.7	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	10.8	31.0		22.9	23.1	25.2	0.0
LnGrp LOS	B	C		C	C	C	
Approach Vol, veh/h	2574				555	1219	A
Approach Delay, s/veh	25.5				23.0	25.2	
Approach LOS	C				C	C	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		32.4		49.7		32.4
Change Period (Y+Rc), s		6.0		5.1		* 6
Max Green Setting (Gmax), s		52.0		45.0		* 78
Max Q Clear Time (g_c+I1), s		19.7		43.4		20.9
Green Ext Time (p_c), s		6.7		1.2		1.9

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

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

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	467	335	373	0	930	1108	0	562	572
Future Volume (veh/h)	0	0	0	467	335	373	0	930	1108	0	562	572
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				502	360	0	0	949	0	0	592	0
Peak Hour Factor				0.93	0.93	0.93	0.98	0.98	0.98	0.95	0.95	0.95
Percent Heavy Veh, %				3	3	3	0	3	3	0	3	3
Cap, veh/h				820	0		0	1657		0	1657	
Arrive On Green				0.24	0.24	0.00	0.00	0.47	0.00	0.00	0.47	0.00
Sat Flow, veh/h				3428	0	1572	0	3618	1572	0	3618	1572
Grp Volume(v), veh/h				502	0	0	0	949	0	0	592	0
Grp Sat Flow(s),veh/h/ln				1714	0	1572	0	1763	1572	0	1763	1572
Q Serve(g_s), s				4.7	0.0	0.0	0.0	7.0	0.0	0.0	3.9	0.0
Cycle Q Clear(g_c), s				4.7	0.0	0.0	0.0	7.0	0.0	0.0	3.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				820	0		0	1657		0	1657	
V/C Ratio(X)				0.61	0.00		0.00	0.57		0.00	0.36	
Avail Cap(c_a), veh/h				4274	0		0	6642		0	6378	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.2	0.0	0.0	0.0	6.9	0.0	0.0	6.1	0.0
Incr Delay (d2), s/veh				0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	0.0	0.0	1.4	0.0	0.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.0	0.0	0.0	0.0	7.3	0.0	0.0	6.2	0.0
LnGrp LOS				B	A		A	A		A	A	
Approach Vol, veh/h					502	A		949	A		592	A
Approach Delay, s/veh					13.0			7.3			6.2	
Approach LOS					B			A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	22.4	13.7	22.4
Change Period (Y+Rc), s	5.4	5.1	* 5.4
Max Green Setting (Gmax), s	68.0	45.0	* 65
Max Q Clear Time (g_c+I1), s	9.0	6.7	5.9
Green Ext Time (p_c), s	7.9	1.9	4.3

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.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	614	0	797	0	0	0	0	1424	591	0	730	299
Future Volume (veh/h)	614	0	797	0	0	0	0	1424	591	0	730	299
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	0	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	660	0	642				0	1531	0	0	802	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.91	0.91	0.91
Percent Heavy Veh, %	3	0	3				0	3	3	0	3	3
Cap, veh/h	861	0	900				0	2025		0	2025	
Arrive On Green	0.25	0.00	0.25				0.00	0.57	0.00	0.00	0.57	0.00
Sat Flow, veh/h	3428	0	3585				0	3618	1572	0	3618	1572
Grp Volume(v), veh/h	660	0	642				0	1531	0	0	802	0
Grp Sat Flow(s),veh/h/ln	1714	0	1195				0	1763	1572	0	1763	1572
Q Serve(g_s), s	12.8	0.0	11.7				0.0	23.4	0.0	0.0	9.0	0.0
Cycle Q Clear(g_c), s	12.8	0.0	11.7				0.0	23.4	0.0	0.0	9.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	861	0	900				0	2025		0	2025	
V/C Ratio(X)	0.77	0.00	0.71				0.00	0.76		0.00	0.40	
Avail Cap(c_a), veh/h	2395	0	2505				0	3202		0	3202	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	24.5				0.0	11.5	0.0	0.0	8.4	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.4				0.0	0.6	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	3.2				0.0	7.1	0.0	0.0	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	0.0	24.8				0.0	12.1	0.0	0.0	8.5	0.0
LnGrp LOS	C	A	C				A	B		A	A	
Approach Vol, veh/h		1302						1531	A		802	A
Approach Delay, s/veh		25.1						12.1			8.5	
Approach LOS		C						B			A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		47.5		24.1		47.5
Change Period (Y+Rc), s		6.4		6.1		6.4
Max Green Setting (Gmax), s		65.0		50.0		65.0
Max Q Clear Time (g_c+I1), s		25.4		14.8		11.0
Green Ext Time (p_c), s		15.7		3.2		6.2

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	162	95	80	98	105	116
Future Volume (veh/h)	162	95	80	98	105	116
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	104	110	134	131	114
Peak Hour Factor	0.82	0.82	0.73	0.73	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	357	187	141	999	228	203
Arrive On Green	0.32	0.32	0.08	0.54	0.13	0.13
Sat Flow, veh/h	1129	593	1767	1856	1767	1572
Grp Volume(v), veh/h	0	302	110	134	131	114
Grp Sat Flow(s),veh/h/ln	0	1723	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.5	1.9	1.1	2.1	2.1
Cycle Q Clear(g_c), s	0.0	4.5	1.9	1.1	2.1	2.1
Prop In Lane		0.34	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	544	141	999	228	203
V/C Ratio(X)	0.00	0.56	0.78	0.13	0.57	0.56
Avail Cap(c_a), veh/h	0	3365	1726	1812	2301	2048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.7	13.9	3.5	12.6	12.6
Incr Delay (d2), s/veh	0.0	0.8	3.5	0.1	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.7	0.2	0.7	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.5	17.4	3.6	13.4	13.5
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	302			244	245	
Approach Delay, s/veh	9.5			9.8	13.4	
Approach LOS	A			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.8	15.0			21.8	8.9
Change Period (Y+Rc), s	4.4	* 5.3			5.3	4.9
Max Green Setting (Gmax), s	30.0	* 60			30.0	40.0
Max Q Clear Time (g_c+I1), s	3.9	6.5			3.1	4.1
Green Ext Time (p_c), s	0.1	1.9			0.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	10.8
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)	29	8	83	564	44	75	66	727	164	18	649	23
Future Volume (veh/h)	29	8	83	564	44	75	66	727	164	18	649	23
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		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	36	10	77	705	0	0	70	773	153	20	713	25
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.94	0.94	0.94	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	147	41	306	1019	535	0	157	1134	223	71	1096	38
Arrive On Green	0.11	0.11	0.11	0.29	0.00	0.00	0.09	0.27	0.27	0.04	0.22	0.22
Sat Flow, veh/h	1397	388	1572	3534	1856	0	1767	4249	834	1767	5020	175
Grp Volume(v), veh/h	46	0	77	705	0	0	70	613	313	20	479	259
Grp Sat Flow(s),veh/h/ln	1786	0	1572	1767	1856	0	1767	1689	1705	1767	1689	1819
Q Serve(g_s), s	1.9	0.0	3.3	14.1	0.0	0.0	3.0	13.0	13.1	0.9	10.3	10.3
Cycle Q Clear(g_c), s	1.9	0.0	3.3	14.1	0.0	0.0	3.0	13.0	13.1	0.9	10.3	10.3
Prop In Lane	0.78		1.00	1.00		0.00	1.00		0.49	1.00		0.10
Lane Grp Cap(c), veh/h	188	0	306	1019	535	0	157	901	455	71	737	397
V/C Ratio(X)	0.24	0.00	0.25	0.69	0.00	0.00	0.45	0.68	0.69	0.28	0.65	0.65
Avail Cap(c_a), veh/h	560	0	633	2129	1118	0	444	1526	771	444	1526	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	0.0	27.2	25.2	0.0	0.0	34.4	26.2	26.2	37.1	28.4	28.4
Incr Delay (d2), s/veh	0.7	0.0	0.4	1.8	0.0	0.0	0.7	0.9	1.9	0.8	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.2	5.8	0.0	0.0	1.3	5.0	5.3	0.4	4.1	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	0.0	27.6	27.0	0.0	0.0	35.2	27.1	28.1	37.9	29.3	30.2
LnGrp LOS	C	A	C	C	A	A	D	C	C	D	C	C
Approach Vol, veh/h		123			705			996			758	
Approach Delay, s/veh		29.8			27.0			28.0			29.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	27.7		14.0	12.8	23.8		29.1
Change Period (Y+Rc), s	* 5.7	* 6.4		5.6	* 5.7	6.4		6.1
Max Green Setting (Gmax), s	* 20	* 36		25.0	* 20	36.0		48.0
Max Q Clear Time (g_c+I1), s	12.9	15.1		5.3	5.0	12.3		16.1
Green Ext Time (p_c), s	0.0	6.1		0.4	0.1	4.8		6.7

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	131	221	91	705	74	617	38	744	406	122	641	161
Future Volume (veh/h)	131	221	91	705	74	617	38	744	406	122	641	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	149	251	92	742	78	428	40	791	347	133	697	137
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	361	344	122	860	523	1033	89	978	436	162	1122	484
Arrive On Green	0.11	0.14	0.14	0.25	0.28	0.28	0.05	0.28	0.28	0.09	0.32	0.32
Sat Flow, veh/h	3428	2524	896	3428	1856	2768	1767	3526	1572	1767	3526	1520
Grp Volume(v), veh/h	149	173	170	742	78	428	40	791	347	133	697	137
Grp Sat Flow(s),veh/h/ln	1714	1763	1658	1714	1856	1384	1767	1763	1572	1767	1763	1520
Q Serve(g_s), s	4.6	10.6	11.2	23.4	3.6	13.0	2.5	23.6	11.1	8.4	19.0	7.6
Cycle Q Clear(g_c), s	4.6	10.6	11.2	23.4	3.6	13.0	2.5	23.6	11.1	8.4	19.0	7.6
Prop In Lane	1.00		0.54	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	240	226	860	523	1033	89	978	436	162	1122	484
V/C Ratio(X)	0.41	0.72	0.75	0.86	0.15	0.41	0.45	0.81	0.80	0.82	0.62	0.28
Avail Cap(c_a), veh/h	910	624	587	1819	523	1033	391	1247	556	391	2339	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	46.8	47.0	40.5	30.4	26.3	52.1	38.1	8.7	50.5	32.8	28.9
Incr Delay (d2), s/veh	0.3	4.0	5.0	2.7	0.1	0.3	1.3	3.2	6.2	4.0	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.0	5.0	10.0	1.6	4.2	1.1	10.4	4.2	3.8	8.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	50.8	52.0	43.2	30.6	26.5	53.4	41.3	14.9	54.4	33.3	29.2
LnGrp LOS	D	D	D	D	C	C	D	D	B	D	C	C
Approach Vol, veh/h		492			1248			1178			967	
Approach Delay, s/veh		50.2			36.7			33.9			35.6	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	38.5	35.4	22.1	12.4	43.1	18.6	39.0
Change Period (Y+Rc), s	* 6.7	7.1	* 7.1	* 6.7	* 6.7	7.1	* 6.7	7.1
Max Green Setting (Gmax), s	* 25	40.0	* 60	* 40	* 25	75.0	* 30	30.0
Max Q Clear Time (g_c+I1), s	10.4	25.6	25.4	13.2	4.5	21.0	6.6	15.0
Green Ext Time (p_c), s	0.1	5.7	3.0	2.2	0.0	6.0	0.3	1.9

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* 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)	369	37	30	54	9	278	40	1368	83	240	1142	145
Future Volume (veh/h)	369	37	30	54	9	278	40	1368	83	240	1142	145
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		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	460	0	0	65	11	251	43	1455	72	247	1177	103
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.94	0.94	0.94	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	640	336	0	243	41	387	56	1541	687	296	2508	1842
Arrive On Green	0.18	0.00	0.00	0.16	0.16	0.16	0.03	0.44	0.44	0.09	0.50	0.50
Sat Flow, veh/h	3534	1856	0	1522	258	1572	1767	3526	1571	3428	5066	2707
Grp Volume(v), veh/h	460	0	0	76	0	251	43	1455	72	247	1177	103
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1779	0	1572	1767	1763	1571	1714	1689	1354
Q Serve(g_s), s	19.2	0.0	0.0	5.9	0.0	22.4	3.8	61.9	4.2	11.1	23.9	2.0
Cycle Q Clear(g_c), s	19.2	0.0	0.0	5.9	0.0	22.4	3.8	61.9	4.2	11.1	23.9	2.0
Prop In Lane	1.00		0.00	0.86		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	640	336	0	284	0	387	56	1541	687	296	2508	1842
V/C Ratio(X)	0.72	0.00	0.00	0.27	0.00	0.65	0.77	0.94	0.10	0.83	0.47	0.06
Avail Cap(c_a), veh/h	904	475	0	455	0	538	339	1578	703	877	2508	1842
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.3	0.0	0.0	57.7	0.0	52.9	75.2	42.2	26.0	70.3	26.0	8.5
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.2	0.0	0.7	19.5	11.8	0.1	2.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	0.0	2.7	0.0	8.9	2.0	28.7	1.6	4.9	9.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	0.0	0.0	57.8	0.0	53.5	94.7	54.0	26.0	72.7	26.2	8.5
LnGrp LOS	E	A	A	E	A	D	F	D	C	E	C	A
Approach Vol, veh/h		460			327			1570			1527	
Approach Delay, s/veh		61.0			54.5			53.9			32.5	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.4	74.4		33.2	9.3	83.5		30.3
Change Period (Y+Rc), s	4.9	6.1		4.9	4.4	* 6.1		5.3
Max Green Setting (Gmax), s	40.0	70.0		40.0	30.0	* 70		40.0
Max Q Clear Time (g_c+I1), s	13.1	63.9		21.2	5.8	25.9		24.4
Green Ext Time (p_c), s	0.4	4.5		0.9	0.1	18.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	8.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	416	996	37	146	1011
Future Vol, veh/h	0	416	996	37	146	1011
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	370	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	94	94	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	438	1060	39	159	1099

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	531	0	0	1100	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	4.16	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	0	490	-	-	625	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	490	-	-	624	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47.8	0	1.6
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	490	624	-
HCM Lane V/C Ratio	-	-	0.894	0.254	-
HCM Control Delay (s)	-	-	47.8	12.7	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	10	1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	13	29	122	15	48	58	854	120	61	1000	34
Future Volume (veh/h)	29	13	29	122	15	48	58	854	120	61	1000	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.74		0.71	0.76		0.51	1.00		0.79	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	16	29	131	16	47	60	890	109	65	1064	31
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.96	0.96	0.96	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	147	68	95	196	25	53	77	1895	232	84	2177	63
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.62	0.62	0.05	0.62	0.62
Sat Flow, veh/h	492	335	471	696	126	263	1767	3061	375	1767	3496	102
Grp Volume(v), veh/h	80	0	0	194	0	0	60	512	487	65	536	559
Grp Sat Flow(s),veh/h/ln	1298	0	0	1085	0	0	1767	1763	1674	1767	1763	1835
Q Serve(g_s), s	0.0	0.0	0.0	13.4	0.0	0.0	3.7	17.2	17.2	4.0	18.2	18.2
Cycle Q Clear(g_c), s	5.3	0.0	0.0	18.7	0.0	0.0	3.7	17.2	17.2	4.0	18.2	18.2
Prop In Lane	0.44		0.36	0.68		0.24	1.00		0.22	1.00		0.06
Lane Grp Cap(c), veh/h	310	0	0	275	0	0	77	1091	1036	84	1098	1143
V/C Ratio(X)	0.26	0.00	0.00	0.71	0.00	0.00	0.78	0.47	0.47	0.78	0.49	0.49
Avail Cap(c_a), veh/h	310	0	0	275	0	0	275	1091	1036	275	1098	1143
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	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	0.0	41.8	0.0	0.0	52.1	11.3	11.3	51.8	11.3	11.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	6.9	0.0	0.0	4.4	1.0	1.1	5.7	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	5.6	0.0	0.0	1.7	6.3	6.0	1.9	6.8	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	0.0	48.7	0.0	0.0	56.5	12.3	12.4	57.5	12.8	12.8
LnGrp LOS	D	A	A	D	A	A	E	B	B	E	B	B
Approach Vol, veh/h		80			194			1059			1160	
Approach Delay, s/veh		37.2			48.7			14.8			15.3	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	73.2		27.2	9.2	73.6		27.2
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	5.1		4.9
Max Green Setting (Gmax), s	17.1	56.2		22.3	17.1	56.2		22.3
Max Q Clear Time (g_c+I1), s	6.0	19.2		7.3	5.7	20.2		20.7
Green Ext Time (p_c), s	0.0	9.3		0.3	0.0	10.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1607	1098	121	1043	750	90
Future Volume (veh/h)	1607	1098	121	1043	750	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1766	954	127	1098	833	78
Peak Hour Factor	0.91	0.91	0.95	0.95	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1895	1266	148	2303	917	421
Arrive On Green	0.54	0.54	0.08	0.65	0.27	0.27
Sat Flow, veh/h	3618	1572	1767	3618	3428	1572
Grp Volume(v), veh/h	1766	954	127	1098	833	78
Grp Sat Flow(s),veh/h/ln	1763	1572	1767	1763	1714	1572
Q Serve(g_s), s	77.4	50.2	11.8	26.2	39.2	6.4
Cycle Q Clear(g_c), s	77.4	50.2	11.8	26.2	39.2	6.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1895	1266	148	2303	917	421
V/C Ratio(X)	0.93	0.75	0.86	0.48	0.91	0.19
Avail Cap(c_a), veh/h	1903	1269	318	2303	1028	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	8.1	75.5	14.6	59.1	47.1
Incr Delay (d2), s/veh	9.1	2.9	5.6	0.4	11.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.4	42.0	5.5	10.1	18.3	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.9	10.9	81.0	14.9	70.3	47.4
LnGrp LOS	D	B	F	B	E	D
Approach Vol, veh/h	2720			1225	911	
Approach Delay, s/veh	32.9			21.8	68.3	
Approach LOS	C			C	E	

Timer - Assigned Phs	1	2		6	8
Phs Duration (G+Y+Rc), s	19.3	96.9		116.2	50.5
Change Period (Y+Rc), s	5.4	* 7.3		7.3	5.9
Max Green Setting (Gmax), s	30.0	* 90		90.0	50.0
Max Q Clear Time (g_c+I1), s	13.8	79.4		28.2	41.2
Green Ext Time (p_c), s	0.1	10.2		22.4	3.4

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

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)	13	1343	172	70	979	2	66	8	46	15	7	11
Future Volume (veh/h)	13	1343	172	70	979	2	66	8	46	15	7	11
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		0.97	0.98		0.97	0.98		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	15	1544	175	73	1020	2	80	10	44	16	7	12
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.82	0.82	0.82	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	2260	253	92	2695	5	174	19	187	67	32	31
Arrive On Green	0.01	0.71	0.71	0.10	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1767	3196	358	1767	3610	7	1006	154	1519	223	260	252
Grp Volume(v), veh/h	15	844	875	73	498	524	90	0	44	35	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1791	1767	1763	1854	1160	0	1519	735	0	0
Q Serve(g_s), s	1.1	36.0	37.5	5.4	0.0	0.0	0.0	0.0	3.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	36.0	37.5	5.4	0.0	0.0	11.0	0.0	3.5	11.3	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.00	0.89		1.00	0.46		0.34
Lane Grp Cap(c), veh/h	23	1247	1267	92	1316	1384	193	0	187	129	0	0
V/C Ratio(X)	0.66	0.68	0.69	0.80	0.38	0.38	0.47	0.00	0.24	0.27	0.00	0.00
Avail Cap(c_a), veh/h	226	1247	1267	226	1316	1384	373	0	382	318	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.24	0.24	0.24	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	65.9	11.0	11.2	59.3	0.0	0.0	56.3	0.0	53.1	53.1	0.0	0.0
Incr Delay (d2), s/veh	3.0	0.7	0.8	4.6	0.6	0.6	0.6	0.0	0.2	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	12.5	13.2	2.4	0.2	0.2	3.0	0.0	1.4	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.8	11.7	12.0	63.9	0.6	0.6	56.9	0.0	53.3	53.6	0.0	0.0
LnGrp LOS	E	B	B	E	A	A	E	A	D	D	A	A
Approach Vol, veh/h		1734			1095			134			35	
Approach Delay, s/veh		12.4			4.9			55.7			53.6	
Approach LOS		B			A			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	101.3		21.4	6.1	106.5		21.4
Change Period (Y+Rc), s	4.4	* 6.5		4.9	4.4	6.5		4.9
Max Green Setting (Gmax), s	7.1	* 68		33.7	17.1	67.4		33.7
Max Q Clear Time (g_c+I1), s	7.4	39.5		13.3	3.1	2.0		13.0
Green Ext Time (p_c), s	0.0	13.1		0.1	0.0	7.7		0.4

Intersection Summary	
HCM 6th Ctrl Delay	12.0
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)	352	971	81	23	694	175	47	11	25	280	22	386
Future Volume (veh/h)	352	971	81	23	694	175	47	11	25	280	22	386
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.76	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	409	1129	82	26	780	152	58	14	31	333	0	333
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.81	0.81	0.81	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	459	1562	113	33	1236	534	190	46	102	530	0	236
Arrive On Green	0.27	0.94	0.94	0.02	0.35	0.35	0.22	0.22	0.22	0.15	0.00	0.15
Sat Flow, veh/h	3428	3324	241	1767	3526	1522	874	211	467	3534	0	1572
Grp Volume(v), veh/h	409	598	613	26	780	152	103	0	0	333	0	333
Grp Sat Flow(s),veh/h/ln	1714	1763	1802	1767	1763	1522	1553	0	0	1767	0	1572
Q Serve(g_s), s	15.4	8.5	8.6	2.0	24.7	9.7	7.4	0.0	0.0	11.8	0.0	20.1
Cycle Q Clear(g_c), s	15.4	8.5	8.6	2.0	24.7	9.7	7.4	0.0	0.0	11.8	0.0	20.1
Prop In Lane	1.00		0.13	1.00		1.00	0.56		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	459	828	847	33	1236	534	338	0	0	530	0	236
V/C Ratio(X)	0.89	0.72	0.72	0.79	0.63	0.28	0.30	0.00	0.00	0.63	0.00	1.41
Avail Cap(c_a), veh/h	681	828	847	226	1236	534	374	0	0	530	0	236
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.82	0.82	0.82	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.1	2.4	2.4	65.5	36.3	31.4	43.9	0.0	0.0	53.4	0.0	57.0
Incr Delay (d2), s/veh	5.0	3.5	3.5	12.4	2.0	1.1	0.2	0.0	0.0	2.8	0.0	208.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	2.0	2.0	1.0	10.9	3.7	2.9	0.0	0.0	5.5	0.0	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	5.9	5.9	77.9	38.3	32.5	44.1	0.0	0.0	56.2	0.0	265.5
LnGrp LOS	D	A	A	E	D	C	D	A	A	E	A	F
Approach Vol, veh/h		1620			958			103			666	
Approach Delay, s/veh		17.8			38.4			44.1			160.9	
Approach LOS		B			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.9	68.6		25.0	22.8	52.6		33.6
Change Period (Y+Rc), s	4.4	5.6		4.9	4.9	* 5.6		4.4
Max Green Setting (Gmax), s	17.1	45.2		20.1	26.6	* 36		32.3
Max Q Clear Time (g_c+I1), s	14.0	10.6		22.1	17.4	26.7		9.4
Green Ext Time (p_c), s	0.0	18.2		0.0	0.6	4.0		0.4

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* 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)	111	1131	57	89	628	152	113	16	80	182	26	140
Future Volume (veh/h)	111	1131	57	89	628	152	113	16	80	182	26	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.92	1.00		0.85	1.00		0.77
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	122	1243	58	96	675	141	143	20	82	207	30	119
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.79	0.79	0.79	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	1293	60	118	1037	216	199	28	114	318	46	377
Arrive On Green	0.08	0.38	0.38	0.07	0.36	0.36	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1767	3415	159	1767	2854	595	934	131	535	1553	225	1211
Grp Volume(v), veh/h	122	641	660	96	417	399	245	0	0	237	0	119
Grp Sat Flow(s),veh/h/ln	1767	1763	1811	1767	1763	1686	1600	0	0	1778	0	1211
Q Serve(g_s), s	9.5	49.7	49.9	7.5	27.6	27.7	19.9	0.0	0.0	17.1	0.0	10.9
Cycle Q Clear(g_c), s	9.5	49.7	49.9	7.5	27.6	27.7	19.9	0.0	0.0	17.1	0.0	10.9
Prop In Lane	1.00		0.09	1.00		0.35	0.58		0.33	0.87		1.00
Lane Grp Cap(c), veh/h	145	668	686	118	640	612	341	0	0	364	0	377
V/C Ratio(X)	0.84	0.96	0.96	0.81	0.65	0.65	0.72	0.00	0.00	0.65	0.00	0.32
Avail Cap(c_a), veh/h	216	668	686	216	640	612	355	0	0	370	0	381
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)	0.72	0.72	0.72	0.77	0.77	0.77	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.4	42.5	42.5	64.5	37.2	37.2	51.2	0.0	0.0	51.0	0.0	39.5
Incr Delay (d2), s/veh	8.5	21.3	21.4	4.0	3.9	4.1	5.5	0.0	0.0	3.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	25.1	25.9	3.5	12.5	12.0	8.6	0.0	0.0	8.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.8	63.8	63.9	68.4	41.1	41.3	56.7	0.0	0.0	54.1	0.0	39.6
LnGrp LOS	E	E	E	E	D	D	E	A	A	D	A	D
Approach Vol, veh/h		1423			912			245			356	
Approach Delay, s/veh		64.5			44.1			56.7			49.3	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	57.9		33.6	15.9	55.8		34.7
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.1	43.6		29.1	17.1	43.6		31.1
Max Q Clear Time (g_c+I1), s	9.5	51.9		19.1	11.5	29.7		21.9
Green Ext Time (p_c), s	0.1	0.0		1.0	0.1	4.2		0.7

Intersection Summary	
HCM 6th Ctrl Delay	55.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	760	415	168	362	222	300	534	63	218	672	261
Future Volume (veh/h)	276	760	415	168	362	222	300	534	63	218	672	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.86	1.00		0.93	1.00		0.80
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	297	817	338	175	377	184	326	580	63	237	730	251
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	281	967	402	199	802	309	379	1256	136	290	885	304
Arrive On Green	0.32	0.55	0.55	0.11	0.23	0.23	0.11	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1767	3526	1465	1767	3526	1358	3428	3183	345	3428	2401	825
Grp Volume(v), veh/h	297	817	338	175	377	184	326	320	323	237	536	445
Grp Sat Flow(s),veh/h/ln	1767	1763	1465	1767	1763	1358	1714	1763	1765	1714	1763	1463
Q Serve(g_s), s	22.3	27.3	27.1	13.7	12.9	17.0	13.1	18.8	19.0	9.5	38.6	38.6
Cycle Q Clear(g_c), s	22.3	27.3	27.1	13.7	12.9	17.0	13.1	18.8	19.0	9.5	38.6	38.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.56
Lane Grp Cap(c), veh/h	281	967	402	199	802	309	379	695	696	290	649	539
V/C Ratio(X)	1.06	0.85	0.84	0.88	0.47	0.60	0.86	0.46	0.46	0.82	0.83	0.83
Avail Cap(c_a), veh/h	281	967	402	281	947	365	541	695	696	541	649	539
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	0.38	0.91	0.91	0.91	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	47.7	29.1	29.1	61.2	46.8	48.3	61.2	31.4	31.4	63.0	40.1	40.1
Incr Delay (d2), s/veh	48.6	3.2	7.2	14.4	1.3	5.7	7.1	2.2	2.2	1.9	9.9	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	9.1	7.9	6.9	5.8	6.2	6.0	8.4	8.5	4.2	18.1	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.3	32.3	36.2	75.6	48.1	54.0	68.3	33.6	33.6	64.9	50.0	51.8
LnGrp LOS	F	C	D	E	D	D	E	C	C	E	D	D
Approach Vol, veh/h		1452			736			969			1218	
Approach Delay, s/veh		46.3			56.1			45.3			53.6	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	60.3	20.2	43.3	19.9	56.7	26.7	36.7
Change Period (Y+Rc), s	4.4	5.1	4.4	4.9	4.4	5.1	4.4	4.9
Max Green Setting (Gmax), s	22.1	39.2	22.3	37.6	22.1	39.2	22.3	37.6
Max Q Clear Time (g_c+I1), s	11.5	21.0	15.7	29.3	15.1	40.6	24.3	19.0
Green Ext Time (p_c), s	0.3	4.9	0.1	6.3	0.4	0.0	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	993	585	33	118	203
Future Volume (veh/h)	79	993	585	33	118	203
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	86	1079	705	34	159	206
Peak Hour Factor	0.92	0.92	0.83	0.83	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	539	2540	2127	102	280	249
Arrive On Green	0.04	0.72	0.62	0.62	0.16	0.16
Sat Flow, veh/h	1767	3618	3506	165	1767	1572
Grp Volume(v), veh/h	86	1079	364	375	159	206
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1815	1767	1572
Q Serve(g_s), s	1.3	9.9	7.8	7.9	6.7	10.2
Cycle Q Clear(g_c), s	1.3	9.9	7.8	7.9	6.7	10.2
Prop In Lane	1.00			0.09	1.00	1.00
Lane Grp Cap(c), veh/h	539	2540	1098	1131	280	249
V/C Ratio(X)	0.16	0.42	0.33	0.33	0.57	0.83
Avail Cap(c_a), veh/h	720	2540	1098	1131	519	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.44	0.44	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	4.7	4.5	7.2	7.2	31.2	32.6
Incr Delay (d2), s/veh	0.0	0.2	0.8	0.8	0.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.5	2.7	2.7	2.9	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.7	4.7	8.0	7.9	31.8	35.3
LnGrp LOS	A	A	A	A	C	D
Approach Vol, veh/h		1165	739		365	
Approach Delay, s/veh		4.7	7.9		33.8	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		62.9		17.1	7.8	55.1
Change Period (Y+Rc), s		5.3		4.4	4.4	5.3
Max Green Setting (Gmax), s		46.8		23.5	11.6	30.8
Max Q Clear Time (g_c+I1), s		11.9		12.2	3.3	9.9
Green Ext Time (p_c), s		13.3		0.5	0.1	6.5

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	856	98	11	415	10	90	11	14	7	9	39
Future Volume (veh/h)	39	856	98	11	415	10	90	11	14	7	9	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.96	0.97		0.97	0.98		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	930	96	14	525	13	112	14	18	9	12	45
Peak Hour Factor	0.92	0.92	0.92	0.79	0.79	0.79	0.80	0.80	0.80	0.75	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	104	2126	216	75	2348	58	259	34	30	66	70	182
Arrive On Green	1.00	1.00	1.00	0.23	0.23	0.23	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	79	2996	304	39	3309	81	1068	201	181	88	417	1082
Grp Volume(v), veh/h	558	0	510	285	0	267	144	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1763	0	1616	1760	0	1669	1450	0	0	1587	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	10.4	4.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.9	0.0	10.4	6.9	0.0	0.0	2.8	0.0	0.0
Prop In Lane	0.08		0.19	0.05		0.05	0.78		0.12	0.14		0.68
Lane Grp Cap(c), veh/h	1300	0	1146	1296	0	1185	324	0	0	318	0	0
V/C Ratio(X)	0.43	0.00	0.44	0.22	0.00	0.23	0.45	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	1300	0	1146	1296	0	1185	677	0	0	717	0	0
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	0.99	0.00	0.99	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.7	0.0	12.9	30.4	0.0	0.0	28.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.1	0.4	0.0	0.4	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	4.4	0.0	4.2	2.5	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	0.0	1.1	13.1	0.0	13.3	30.7	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		1068			552			144			66	
Approach Delay, s/veh		1.0			13.2			30.7			29.0	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	61.7	18.3	61.7	18.3
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	36.1	34.1	36.1	34.1
Max Q Clear Time (g_c+I1), s	2.0	8.9	12.4	4.8
Green Ext Time (p_c), s	8.9	0.5	3.5	0.2

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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	610	270	52	97	97
Future Volume (veh/h)	84	610	270	52	97	97
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	762	321	56	113	101
Peak Hour Factor	0.80	0.80	0.84	0.84	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	740	2540	1854	319	134	119
Arrive On Green	0.09	1.00	0.62	0.62	0.15	0.15
Sat Flow, veh/h	1767	3618	3082	514	878	785
Grp Volume(v), veh/h	105	762	187	190	215	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1763	1741	1670	0
Q Serve(g_s), s	1.6	0.0	3.6	3.7	10.0	0.0
Cycle Q Clear(g_c), s	1.6	0.0	3.6	3.7	10.0	0.0
Prop In Lane	1.00			0.30	0.53	0.47
Lane Grp Cap(c), veh/h	740	2540	1093	1080	254	0
V/C Ratio(X)	0.14	0.30	0.17	0.18	0.85	0.00
Avail Cap(c_a), veh/h	927	2540	1093	1080	491	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.87	0.87	1.00	0.00
Uniform Delay (d), s/veh	4.1	0.0	6.5	6.5	33.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.3	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	1.2	1.2	4.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.1	0.3	6.8	6.8	36.0	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h		867	377		215	
Approach Delay, s/veh		0.7	6.8		36.0	
Approach LOS		A	A		D	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	62.9		17.1	8.0	54.9
Change Period (Y+Rc), s	5.3		4.9	4.4	5.3
Max Green Setting (Gmax), s	46.3		23.5	12.1	29.8
Max Q Clear Time (g_c+I1), s	2.0		12.0	3.6	5.7
Green Ext Time (p_c), s	9.5		0.3	0.1	3.8

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	109	655	583	193	437	153
Future Volume (vph)	109	655	583	193	437	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9	4.9	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1524	3400	1532
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1524	3400	1532
Peak-hour factor, PHF	0.94	0.94	0.86	0.86	0.77	0.77
Adj. Flow (vph)	116	697	678	224	568	199
RTOR Reduction (vph)	0	0	0	125	0	133
Lane Group Flow (vph)	116	697	678	99	568	66
Confl. Peds. (#/hr)				11		9
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	custom	Prot	Perm
Protected Phases	5	2	6 8		7	
Permitted Phases				6		7
Actuated Green, G (s)	13.8	36.1	49.8	28.3	29.3	29.3
Effective Green, g (s)	13.8	36.1	49.8	28.3	29.3	29.3
Actuated g/C Ratio	0.12	0.32	0.44	0.25	0.26	0.26
Clearance Time (s)	4.4	4.9		4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.0		3.0	2.5	2.5
Lane Grp Cap (vph)	215	1129	1558	385	889	400
v/s Ratio Prot	c0.07	c0.20	c0.19		c0.17	
v/s Ratio Perm				0.07		0.04
v/c Ratio	0.54	0.62	0.44	0.26	0.64	0.17
Uniform Delay, d1	46.1	32.1	21.4	33.5	36.7	31.9
Progression Factor	1.00	1.00	0.25	0.23	1.00	1.00
Incremental Delay, d2	1.3	1.0	0.2	0.4	1.3	0.1
Delay (s)	47.4	33.1	5.5	7.9	38.0	32.1
Level of Service	D	C	A	A	D	C
Approach Delay (s)		35.2	6.1		36.4	
Approach LOS		D	A		D	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	941	83	32	554	59	88	16	23	69	41	83
Future Volume (vph)	68	941	83	32	554	59	88	16	23	69	41	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9		4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.98	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3453		1752	4936		1752	1643		1713	1660	
Flt Permitted	0.95	1.00		0.95	1.00		0.59	1.00		0.73	1.00	
Satd. Flow (perm)	1752	3453		1752	4936		1097	1643		1316	1660	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	1023	90	35	602	64	96	17	25	75	45	90
RTOR Reduction (vph)	0	3	0	0	7	0	0	20	0	0	35	0
Lane Group Flow (vph)	74	1110	0	35	659	0	96	22	0	75	100	0
Confl. Peds. (#/hr)	15		3	3		15			19	19		
Confl. Bikes (#/hr)			4			2			2			
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5 7	2 7		1	6			8			8	
Permitted Phases							8			8		
Actuated Green, G (s)	43.1	70.3		6.0	28.3		21.5	21.5		21.5	21.5	
Effective Green, g (s)	43.1	70.3		6.0	28.3		21.5	21.5		21.5	21.5	
Actuated g/C Ratio	0.38	0.63		0.05	0.25		0.19	0.19		0.19	0.19	
Clearance Time (s)				4.4	4.9		4.9	4.9		4.9	4.9	
Vehicle Extension (s)				2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	674	2167		93	1247		210	315		252	318	
v/s Ratio Prot	0.04	c0.32		c0.02	0.13			0.01			0.06	
v/s Ratio Perm							c0.09			0.06		
v/c Ratio	0.11	0.51		0.38	0.53		0.46	0.07		0.30	0.32	
Uniform Delay, d1	22.1	11.4		51.2	36.1		40.1	37.1		38.8	38.9	
Progression Factor	1.20	0.06		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.9	0.4		0.6	0.0		0.2	0.2	
Delay (s)	26.5	0.9		52.1	36.5		40.7	37.1		39.0	39.1	
Level of Service	C	A		D	D		D	D		D	D	
Approach Delay (s)		2.5			37.3			39.6			39.1	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	486	242	117	386	138	118	572	57	119	794	228
Future Volume (veh/h)	367	486	242	117	386	138	118	572	57	119	794	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.99
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	399	528	236	139	460	146	139	673	61	128	854	218
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	425	852	379	165	564	177	165	1025	93	154	853	218
Arrive On Green	0.24	0.36	0.36	0.09	0.22	0.22	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	1767	2352	1047	1767	2620	824	1767	3267	296	1767	2777	709
Grp Volume(v), veh/h	399	395	369	139	308	298	139	363	371	128	542	530
Grp Sat Flow(s),veh/h/ln	1767	1763	1636	1767	1763	1682	1767	1763	1800	1767	1763	1723
Q Serve(g_s), s	28.8	24.0	24.2	10.1	21.6	22.0	10.1	23.2	23.2	9.3	40.0	40.0
Cycle Q Clear(g_c), s	28.8	24.0	24.2	10.1	21.6	22.0	10.1	23.2	23.2	9.3	40.0	40.0
Prop In Lane	1.00		0.64	1.00		0.49	1.00		0.16	1.00		0.41
Lane Grp Cap(c), veh/h	425	639	593	165	380	362	165	553	565	154	542	529
V/C Ratio(X)	0.94	0.62	0.62	0.84	0.81	0.82	0.84	0.66	0.66	0.83	1.00	1.00
Avail Cap(c_a), veh/h	543	639	593	407	542	517	407	553	565	407	542	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	34.1	34.2	58.1	48.6	48.7	58.1	38.6	38.6	58.5	45.1	45.1
Incr Delay (d2), s/veh	19.5	2.0	2.2	4.4	7.0	8.0	4.4	2.2	2.2	4.4	38.8	39.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	10.6	10.0	4.7	10.2	9.9	4.7	10.3	10.5	4.3	23.0	22.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	36.1	36.4	62.5	55.6	56.7	62.5	40.9	40.9	63.0	83.9	84.5
LnGrp LOS	E	D	D	E	E	E	E	D	D	E	F	F
Approach Vol, veh/h		1163			745			873			1200	
Approach Delay, s/veh		47.1			57.3			44.3			81.9	
Approach LOS		D			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	52.2	16.6	44.9	35.7	33.0	15.7	45.7
Change Period (Y+Rc), s	4.4	5.0	4.4	4.9	4.4	* 5	4.4	4.9
Max Green Setting (Gmax), s	30.0	40.0	30.0	40.0	40.0	* 40	30.0	40.0
Max Q Clear Time (g_c+I1), s	12.1	26.2	12.1	42.0	30.8	24.0	11.3	25.2
Green Ext Time (p_c), s	0.2	5.1	0.2	0.0	0.5	4.0	0.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	58.9
HCM 6th LOS	E

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)	42	588	32	130	664	30	35	7	57	29	7	50
Future Volume (veh/h)	42	588	32	130	664	30	35	7	57	29	7	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.98	0.98		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	47	661	30	146	746	28	38	8	56	42	10	65
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.93	0.93	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	73	1119	51	191	1361	51	196	61	157	195	60	159
Arrive On Green	0.04	0.33	0.33	0.11	0.39	0.39	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	3428	155	1767	3459	130	361	328	839	361	320	851
Grp Volume(v), veh/h	47	340	351	146	380	394	102	0	0	117	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1821	1767	1763	1826	1529	0	0	1531	0	0
Q Serve(g_s), s	1.0	6.2	6.2	3.1	6.4	6.4	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	1.0	6.2	6.2	3.1	6.4	6.4	2.0	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.07	0.37		0.55	0.36		0.56
Lane Grp Cap(c), veh/h	73	575	594	191	694	718	415	0	0	414	0	0
V/C Ratio(X)	0.65	0.59	0.59	0.76	0.55	0.55	0.25	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	1384	2761	2852	1384	2761	2860	1665	0	0	1673	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.1	10.8	10.8	16.6	9.0	9.0	13.5	0.0	0.0	13.6	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.7	0.7	2.4	0.8	0.8	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.9	1.1	1.8	1.8	0.7	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	11.5	11.5	19.0	9.8	9.7	13.6	0.0	0.0	13.8	0.0	0.0
LnGrp LOS	C	B	B	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		738			920			102			117	
Approach Delay, s/veh		12.1			11.2			13.6			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	17.7		12.1	6.0	20.3		12.1
Change Period (Y+Rc), s	4.4	* 5.2		4.9	4.4	5.2		4.9
Max Green Setting (Gmax), s	30.0	* 60		40.0	30.0	60.0		40.0
Max Q Clear Time (g_c+I1), s	5.1	8.2		4.4	3.0	8.4		4.0
Green Ext Time (p_c), s	0.2	3.7		0.5	0.0	6.5		0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	78	54	667	70	34	989	
Future Volume (veh/h)	78	54	667	70	34	989	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No		No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	
Adj Flow Rate, veh/h	85	48	717	59	36	1052	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.94	0.94	
Percent Heavy Veh, %	3	3	3	3	3	3	
Cap, veh/h	127	113	2406	1183	76	2780	
Arrive On Green	0.07	0.07	0.68	0.68	0.04	0.79	
Sat Flow, veh/h	1767	1572	3618	1568	1767	3618	
Grp Volume(v), veh/h	85	48	717	59	36	1052	
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1568	1767	1763	
Q Serve(g_s), s	3.3	2.0	5.7	0.7	1.4	6.3	
Cycle Q Clear(g_c), s	3.3	2.0	5.7	0.7	1.4	6.3	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	127	113	2406	1183	76	2780	
V/C Ratio(X)	0.67	0.43	0.30	0.05	0.47	0.38	
Avail Cap(c_a), veh/h	432	384	2406	1183	204	2780	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.80	0.80	1.00	1.00	
Uniform Delay (d), s/veh	31.7	31.1	4.4	2.2	32.7	2.2	
Incr Delay (d2), s/veh	2.3	0.9	0.3	0.1	1.7	0.4	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.5	0.8	1.4	0.1	0.6	0.8	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	34.0	32.1	4.7	2.3	34.4	2.6	
LnGrp LOS	C	C	A	A	C	A	
Approach Vol, veh/h	133		776			1088	
Approach Delay, s/veh	33.3		4.5			3.7	
Approach LOS	C		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.4	52.7				60.1	9.9
Change Period (Y+Rc), s	4.4	4.9				4.9	4.9
Max Green Setting (Gmax), s	8.1	30.6				43.1	17.1
Max Q Clear Time (g_c+I1), s	3.4	7.7				8.3	5.3
Green Ext Time (p_c), s	0.0	6.4				11.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	786	76	86	614	19	65	30	39	60	59	14
Future Volume (veh/h)	24	786	76	86	614	19	65	30	39	60	59	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.96	0.98		0.96
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	26	836	70	88	627	19	72	33	37	62	61	15
Peak Hour Factor	0.94	0.94	0.94	0.98	0.98	0.98	0.90	0.90	0.90	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	627	2574	215	488	2736	83	129	58	51	119	107	23
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	776	3282	275	610	3489	106	625	414	366	561	762	161
Grp Volume(v), veh/h	26	449	457	88	317	329	142	0	0	138	0	0
Grp Sat Flow(s),veh/h/ln	776	1763	1794	610	1763	1832	1405	0	0	1485	0	0
Q Serve(g_s), s	1.2	9.6	9.6	6.4	6.1	6.2	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.3	9.6	9.6	15.9	6.1	6.2	12.7	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.06	0.51		0.26	0.45		0.11
Lane Grp Cap(c), veh/h	627	1382	1407	488	1382	1437	239	0	0	249	0	0
V/C Ratio(X)	0.04	0.32	0.32	0.18	0.23	0.23	0.59	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	627	1382	1407	488	1382	1437	360	0	0	376	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	4.1	4.1	6.4	3.7	3.7	53.3	0.0	0.0	52.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.1	0.0	0.0	0.9	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.1	3.1	0.8	1.8	1.9	4.5	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	4.7	4.7	6.4	3.7	3.7	54.2	0.0	0.0	53.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		932			734			142			138	
Approach Delay, s/veh		4.7			4.0			54.2			53.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	106.9	23.1	106.9	23.1
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	91.1	29.1	91.1	29.1
Max Q Clear Time (g_c+I1), s	11.6	14.7	17.9	13.5
Green Ext Time (p_c), s	2.0	0.4	1.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	567	244	159	478	228	191	420	116	224	798	96
Future Volume (veh/h)	87	567	244	159	478	228	191	420	116	224	798	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		0.98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	89	579	198	177	531	197	203	447	107	236	840	80
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.94	0.94	0.94	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	115	929	395	213	1125	486	282	735	174	273	1174	512
Arrive On Green	0.06	0.26	0.26	0.12	0.32	0.32	0.08	0.26	0.26	0.15	0.33	0.33
Sat Flow, veh/h	1767	3526	1499	1767	3526	1525	3428	2815	668	1767	3526	1538
Grp Volume(v), veh/h	89	579	198	177	531	197	203	278	276	236	840	80
Grp Sat Flow(s),veh/h/ln	1767	1763	1499	1767	1763	1525	1714	1763	1720	1767	1763	1538
Q Serve(g_s), s	4.6	13.5	10.5	9.2	11.3	9.5	5.4	13.0	13.2	12.2	19.5	3.4
Cycle Q Clear(g_c), s	4.6	13.5	10.5	9.2	11.3	9.5	5.4	13.0	13.2	12.2	19.5	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	115	929	395	213	1125	486	282	460	449	273	1174	512
V/C Ratio(X)	0.78	0.62	0.50	0.83	0.47	0.40	0.72	0.61	0.61	0.87	0.72	0.16
Avail Cap(c_a), veh/h	566	1883	801	566	1883	814	1099	753	735	566	1506	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	30.4	29.2	40.3	25.6	24.9	41.9	30.4	30.4	38.6	27.3	22.0
Incr Delay (d2), s/veh	4.2	0.9	1.3	3.2	0.3	0.6	1.3	1.3	1.4	3.2	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.7	3.7	4.1	4.6	3.3	2.3	5.4	5.4	5.3	8.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	31.3	30.6	43.5	25.9	25.5	43.2	31.7	31.8	41.9	28.9	22.2
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		866			905			757			1156	
Approach Delay, s/veh		32.8			29.3			34.8			31.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	29.7	12.1	36.2	10.5	34.9	18.8	29.4
Change Period (Y+Rc), s	4.4	* 5	4.4	* 5	4.4	5.0	4.4	5.0
Max Green Setting (Gmax), s	30.0	* 50	30.0	* 40	30.0	50.0	30.0	40.0
Max Q Clear Time (g_c+I1), s	11.2	15.5	7.4	21.5	6.6	13.3	14.2	15.2
Green Ext Time (p_c), s	0.2	6.9	0.3	8.2	0.1	5.2	0.3	3.2

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

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)	14	801	39	27	726	17	49	9	47	24	7	10
Future Volume (veh/h)	14	801	39	27	726	17	49	9	47	24	7	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	15	834	36	29	772	18	60	11	51	39	11	16
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.82	0.82	0.82	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	54	2705	116	101	2630	61	112	22	67	118	35	35
Arrive On Green	0.82	0.82	0.82	0.82	0.82	0.82	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	31	3289	141	87	3198	74	705	222	666	738	351	349
Grp Volume(v), veh/h	461	0	424	412	0	407	122	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1802	0	1659	1686	0	1673	1594	0	0	1438	0	0
Q Serve(g_s), s	0.0	0.0	7.9	0.0	0.0	7.4	3.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	7.9	6.6	0.0	7.4	9.4	0.0	0.0	5.5	0.0	0.0
Prop In Lane	0.03		0.08	0.07		0.04	0.49		0.42	0.59		0.24
Lane Grp Cap(c), veh/h	1511	0	1364	1417	0	1376	200	0	0	188	0	0
V/C Ratio(X)	0.31	0.00	0.31	0.29	0.00	0.30	0.61	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	1511	0	1364	1417	0	1376	350	0	0	334	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.00	0.61	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.7	0.0	2.8	2.6	0.0	2.7	56.7	0.0	0.0	55.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.5	0.0	0.5	1.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.0	1.9	0.0	2.0	4.0	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.0	3.1	3.2	0.0	3.3	57.8	0.0	0.0	55.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		885			819			122			66	
Approach Delay, s/veh		3.1			3.2			57.8			55.4	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	112.1	17.9	112.1	17.9
Change Period (Y+Rc), s	5.2	4.9	5.2	4.9
Max Green Setting (Gmax), s	93.8	26.1	93.8	26.1
Max Q Clear Time (g_c+I1), s	9.9	11.4	9.4	7.5
Green Ext Time (p_c), s	3.9	0.4	3.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

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	0	826	53	38	764	6	30	0	54	0	0	5
Future Vol, veh/h	0	826	53	38	764	6	30	0	54	0	0	5
Conflicting Peds, #/hr	9	0	12	12	0	9	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	92	92	92	79	79	79	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	939	60	41	830	7	38	0	68	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	846	0	0	1011	0	0	1478	1909	515	1398	1936	428
Stage 1	-	-	-	-	-	-	981	981	-	925	925	-
Stage 2	-	-	-	-	-	-	497	928	-	473	1011	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	780	-	-	1011	-	-	192	93	*743	*233	88	572
Stage 1	-	-	-	-	-	-	642	575	-	*288	344	-
Stage 2	-	-	-	-	-	-	521	343	-	*701	551	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	773	-	-	1000	-	-	177	84	*732	*197	80	567
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	84	-	*197	80	-
Stage 1	-	-	-	-	-	-	635	569	-	*285	315	-
Stage 2	-	-	-	-	-	-	477	314	-	*634	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	20	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	773	-	-	1000	-	-	567
HCM Lane V/C Ratio	0.308	-	-	-	0.041	-	-	0.009
HCM Control Delay (s)	20	0	-	-	8.8	0.3	-	11.4
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0

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)	222	540	141	279	481	114	197	422	130	241	780	163
Future Volume (veh/h)	222	540	141	279	481	114	197	422	130	241	780	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.97
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	258	628	147	297	512	105	219	469	111	284	918	145
Peak Hour Factor	0.86	0.86	0.86	0.94	0.94	0.94	0.90	0.90	0.90	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	306	952	222	332	999	204	244	866	371	307	991	430
Arrive On Green	0.09	0.34	0.34	0.10	0.35	0.35	0.14	0.25	0.25	0.17	0.28	0.28
Sat Flow, veh/h	3428	2819	659	3428	2892	589	1767	3526	1511	1767	3526	1529
Grp Volume(v), veh/h	258	392	383	297	311	306	219	469	111	284	918	145
Grp Sat Flow(s),veh/h/ln	1714	1763	1715	1714	1763	1718	1767	1763	1511	1767	1763	1529
Q Serve(g_s), s	9.6	24.6	24.7	11.1	18.2	18.4	15.9	15.1	7.8	20.6	32.9	9.8
Cycle Q Clear(g_c), s	9.6	24.6	24.7	11.1	18.2	18.4	15.9	15.1	7.8	20.6	32.9	9.8
Prop In Lane	1.00		0.38	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	595	579	332	609	594	244	866	371	307	991	430
V/C Ratio(X)	0.84	0.66	0.66	0.89	0.51	0.52	0.90	0.54	0.30	0.93	0.93	0.34
Avail Cap(c_a), veh/h	306	595	579	332	609	594	280	976	418	307	1025	445
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)	0.59	0.59	0.59	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	36.7	36.7	58.0	33.8	33.9	55.1	42.7	39.9	52.9	45.4	37.1
Incr Delay (d2), s/veh	11.4	3.4	3.5	23.6	2.9	3.1	25.2	0.6	0.5	32.1	13.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	11.0	10.8	5.9	8.2	8.1	8.7	6.6	2.9	11.8	16.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	40.0	40.2	81.6	36.7	36.9	80.3	43.3	40.5	85.0	58.8	37.5
LnGrp LOS	E	D	D	F	D	D	F	D	D	F	E	D
Approach Vol, veh/h		1033			914			799			1347	
Approach Delay, s/veh		47.5			51.4			53.1			62.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	48.9	22.3	41.8	16.0	49.9	27.0	37.1
Change Period (Y+Rc), s	4.4	5.0	4.4	5.2	4.4	* 5	4.4	* 5.2
Max Green Setting (Gmax), s	12.6	40.0	20.6	37.8	11.6	* 41	22.6	* 36
Max Q Clear Time (g_c+I1), s	13.1	26.7	17.9	34.9	11.6	20.4	22.6	17.1
Green Ext Time (p_c), s	0.0	4.4	0.1	1.7	0.0	4.7	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	54.2
HCM 6th LOS	D

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)	29	687	88	123	659	0	145	0	87	0	0	0
Future Volume (veh/h)	29	687	88	123	659	0	145	0	87	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	32	755	86	131	701	0	163	0	76	0	0	0
Peak Hour Factor	0.91	0.91	0.91	0.94	0.94	0.94	0.89	0.89	0.89	0.25	0.25	0.25
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	40	1793	204	303	2232	0	375	0	353	0	419	0
Arrive On Green	0.02	0.56	0.56	0.09	0.63	0.00	0.23	0.00	0.23	0.00	0.00	0.00
Sat Flow, veh/h	1767	3182	362	3428	3618	0	1397	0	1562	0	1856	0
Grp Volume(v), veh/h	32	418	423	131	701	0	163	0	76	0	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1782	1714	1763	0	1397	0	1562	0	1856	0
Q Serve(g_s), s	2.2	16.3	16.3	4.3	10.9	0.0	12.3	0.0	4.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.2	16.3	16.3	4.3	10.9	0.0	12.3	0.0	4.8	0.0	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	40	993	1004	303	2232	0	375	0	353	0	419	0
V/C Ratio(X)	0.79	0.42	0.42	0.43	0.31	0.00	0.43	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	163	993	1004	317	2232	0	375	0	353	0	419	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	0.86	0.86	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	58.3	15.0	15.0	51.8	10.1	0.0	40.7	0.0	37.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	19.2	0.8	0.8	0.8	0.3	0.0	3.6	0.0	1.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.5	6.6	1.9	4.1	0.0	4.6	0.0	2.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	15.8	15.8	52.7	10.4	0.0	44.3	0.0	39.2	0.0	0.0	0.0
LnGrp LOS	E	B	B	D	B	A	D	A	D	A	A	A
Approach Vol, veh/h		873			832			239			0	
Approach Delay, s/veh		18.1			17.1			42.7			0.0	
Approach LOS		B			B			D				

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	72.5		32.0	7.1	80.9		32.0
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	11.1	* 68		27.1	11.1	67.6		27.1
Max Q Clear Time (g_c+I1), s	6.3	18.3		0.0	4.2	12.9		14.3
Green Ext Time (p_c), s	0.1	5.9		0.0	0.0	5.3		0.6

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

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)	89	704	46	52	615	33	38	16	31	45	29	140
Future Volume (veh/h)	89	704	46	52	615	33	38	16	31	45	29	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	93	733	38	58	683	31	54	23	37	66	43	184
Peak Hour Factor	0.96	0.96	0.96	0.90	0.90	0.90	0.71	0.71	0.71	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	115	2043	878	75	1909	87	88	38	60	41	26	113
Arrive On Green	0.13	1.00	1.00	0.04	0.56	0.56	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	3526	1515	1767	3429	156	803	342	550	372	242	1036
Grp Volume(v), veh/h	93	733	38	58	351	363	114	0	0	293	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1515	1767	1763	1822	1694	0	0	1650	0	0
Q Serve(g_s), s	6.1	0.0	0.0	3.9	13.2	13.2	7.7	0.0	0.0	13.1	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	3.9	13.2	13.2	7.7	0.0	0.0	13.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	0.47		0.32	0.23		0.63
Lane Grp Cap(c), veh/h	115	2043	878	75	981	1014	186	0	0	180	0	0
V/C Ratio(X)	0.81	0.36	0.04	0.78	0.36	0.36	0.61	0.00	0.00	1.63	0.00	0.00
Avail Cap(c_a), veh/h	149	2043	878	178	981	1014	397	0	0	180	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.5	0.0	0.0	56.9	14.7	14.7	51.0	0.0	0.0	53.5	0.0	0.0
Incr Delay (d2), s/veh	16.0	0.4	0.1	6.4	1.0	1.0	1.2	0.0	0.0	305.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.1	0.0	1.9	5.4	5.6	3.4	0.0	0.0	20.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	0.4	0.1	63.3	15.7	15.7	52.2	0.0	0.0	359.2	0.0	0.0
LnGrp LOS	E	A	A	E	B	B	D	A	A	F	A	A
Approach Vol, veh/h		864			772			114			293	
Approach Delay, s/veh		7.6			19.3			52.2			359.2	
Approach LOS		A			B			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	74.4		18.0	12.2	71.7		18.1
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	12.1	47.6		13.1	10.1	49.6		28.1
Max Q Clear Time (g_c+I1), s	5.9	2.0		15.1	8.1	15.2		9.7
Green Ext Time (p_c), s	0.0	14.2		0.0	0.0	10.2		0.4

Intersection Summary	
HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Attachment I - Dedicated Bus Lane Information

Vissim Microsimulation Analysis

This section presents a summary of peak period vehicle travel speeds along El Cajon Boulevard between 52nd Street and College Avenue under both existing conditions and the future conditions envisioned in the College Area Community Plan Update (CPU). The analysis supports the mobility evaluation conducted as part of the CPU, aiming to assess the operational impacts of the proposed mobility network.

Average travel speeds were estimated using a VISSIM microsimulation model. Although the model was validated to reflect corridor-level speeds under existing conditions, it was not fully calibrated due to time and budget limitations. Key features incorporated into the model include:

1. All intersections and roadway geometrics within the study area.
2. Signal timing at all intersections, which was assumed to remain consistent across both existing and future scenarios.
3. Transit Signal Priority (TSP) in the planned scenario, limited to basic functionality such as green time extensions.
4. Existing traffic volumes, sourced from the Existing Conditions Report, were input into the baseline model.
5. Future year traffic volumes were incorporated into the future conditions model.
6. Traffic volume throughput at intersections was validated using the Scalable Quality Value (SQV)[7], a modified version of the widely used Geoffrey E. Havers (GEH) statistic, to compare modeled intersection volumes against field counts.

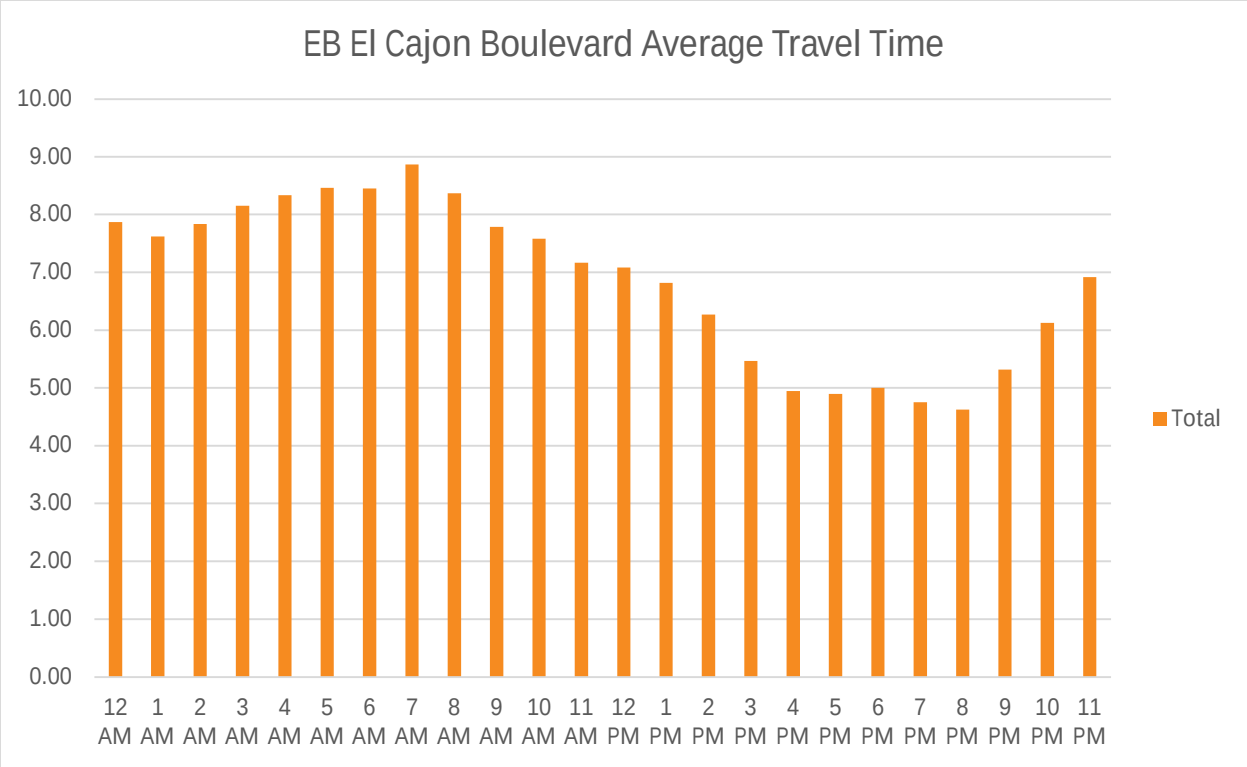
As noted, only validation was performed, meaning that traffic volumes were checked against field counts. Calibration of other parameters such as travel time and average travel speed was not performed due to resource constraints. For example, travel time data from Google Maps Route API (February 2019) show average travel times along this segment of El Cajon Boulevard ranging from 5 to 9 minutes, with westbound times between 7 and 8 minutes. In contrast, the VISSIM model estimates average travel times of approximately 13 minutes.

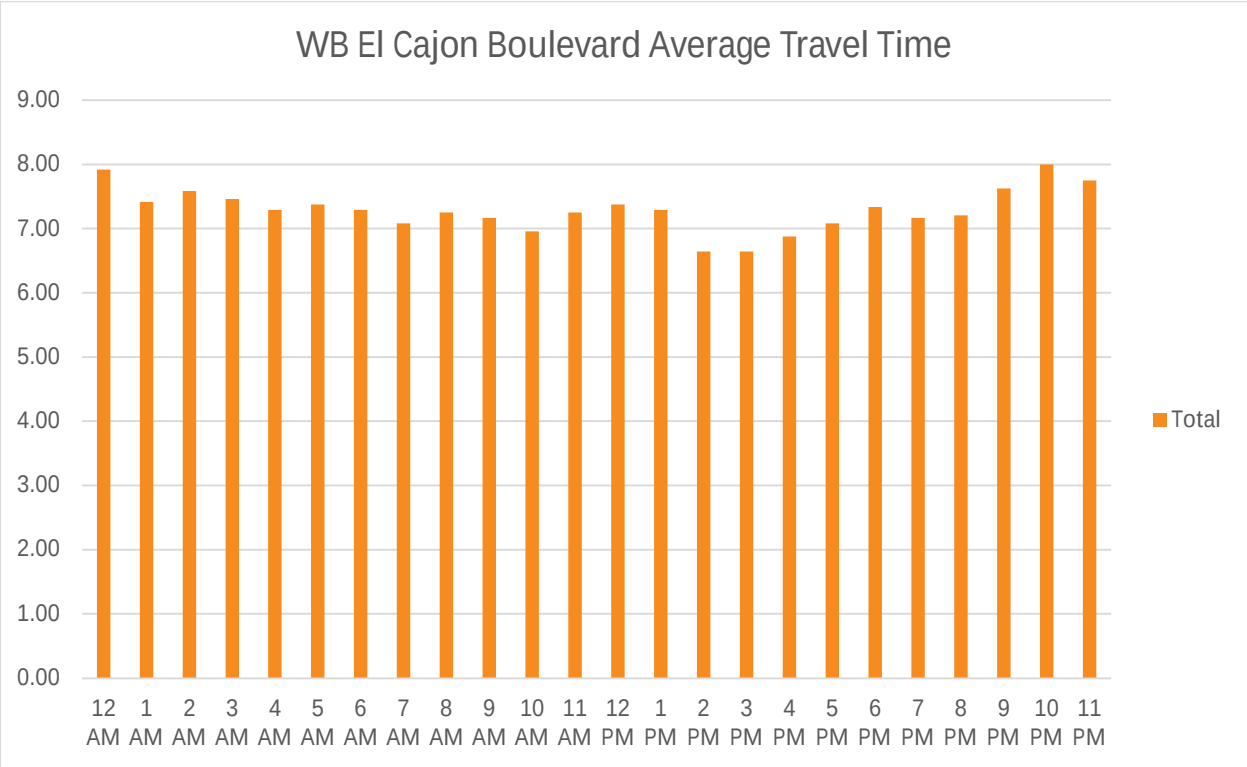
Due to the lack of further calibration, the project team maintained consistent assumptions across existing and future VISSIM models to allow for a direct, apples-to-apples comparison.

Figures 1 and 2 present average travel times in the eastbound and westbound directions under existing conditions. Tables 1 and 2 provide average travel speeds for both the existing and future (CPU) scenarios.

As shown, the VISSIM model results are conservative, suggesting that actual traffic performance is likely to be better than the model's estimates.

[7] https://journals.sagepub.com/doi/10.1177/0361198119838849


EB El Cajon Boulevard Average Travel Time
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Total


WB El Cajon Boulevard Average Travel Time
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Total

Existing Vissim Model Results					
AM					
Direction	Vehicles	Travel Time (sec)	Distance (ft)	Speed (ft/s)	Speed (mi/hr)
EB	5	171.598816	3378.902229	19.69070829	13.43
WB	5	82.589711	2729.952148	33.05438553	22.54
PM					
Direction	Vehicles	Travel Time (sec)	Distance (ft)	Speed (ft/s)	Speed (mi/hr)
EB	6	166.13856	3360.956834	20.22984209	13.79
WB	5	88.040583	2827.678501	32.11789841	21.90

Future Model Results					
AM					
Direction	Vehicles	Travel Time (sec)	Distance (ft)	Speed (ft/s)	Speed (mi/hr)
EB	5	124.743917	3256.442581	26.10502106	17.80
WB	5	123.2024	2712.544156	22.01697496	15.01
PM					
Direction	Vehicles	Travel Time (sec)	Distance (ft)	Speed (ft/s)	Speed (mi/hr)
EB	6	178.590615	3339.322789	18.69819861	12.75
WB	5	93.302103	2938.960207	31.4993994	21.48

Attachment J - Arterial Analysis Results – Existing Conditions

Arterial Level of Service: NB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
El Cajon Boulevard	II	35	17.8	54.7	72.5	0.14	7.1	F
Montezuma Road	II	35	70.6	57.6	128.2	0.69	19.3	D
Lindo Paseo	II	40	7.5	11.6	19.1	0.06	12.2	F
East Campus Drive	II	40	38.9	48.2	87.1	0.41	16.8	E
I-8 EB Ramps	II	40	10.9	39.1	50.0	0.09	6.8	F
I-8 WB Ramps	II	40	24.5	14.0	38.5	0.21	20.0	D
Total	II		170.2	225.2	395.4	1.61	14.6	E

Arterial Level of Service: SB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 WB Ramps	II	40	21.9	11.3	33.2	0.19	20.7	D
I-8 EB Ramps	II	40	24.5	41.7	66.2	0.21	11.6	F
Canyon Crest Drive	II	40	10.9	29.7	40.6	0.09	8.4	F
Lindo Paseo	II	40	38.9	12.0	50.9	0.41	28.7	B
Montezuma Road	II	40	7.5	83.9	91.4	0.06	2.6	F
El Cajon Boulevard	II	35	70.6	41.6	112.2	0.69	22.0	C
Total	II		174.3	220.2	394.5	1.66	15.1	E

Arterial Level of Service: NB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
El Cajon Boulevard	II	35	17.8	43.4	61.2	0.14	8.4	F
Montezuma Road	II	35	70.6	37.0	107.6	0.69	23.0	C
Lindo Paseo	II	40	7.5	13.9	21.4	0.06	10.9	F
East Campus Drive	II	40	38.9	47.6	86.5	0.41	16.9	E
I-8 EB Ramps	II	40	10.9	19.9	30.8	0.09	11.1	F
I-8 WB Ramps	II	40	24.5	13.2	37.7	0.21	20.4	D
Total	II		170.2	175.0	345.2	1.61	16.8	E

Arterial Level of Service: SB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 WB Ramps	II	40	21.9	10.6	32.5	0.19	21.1	D
I-8 EB Ramps	II	40	24.5	12.7	37.2	0.21	20.7	D
Canyon Crest Drive	II	40	10.9	20.5	31.4	0.09	10.9	F
Lindo Paseo	II	40	38.9	13.8	52.7	0.41	27.7	C
Montezuma Road	II	40	7.5	58.5	66.0	0.06	3.5	F
El Cajon Boulevard	II	35	70.6	62.1	132.7	0.69	18.6	D
Total	II		174.3	178.2	352.5	1.66	16.9	E

Arterial Level of Service: EB El Cajon Boulevard

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
52nd Street	III	35	10.9	5.4	16.3	0.08	17.8	D
54th Street	III	35	29.8	48.1	77.9	0.25	11.5	E
56th Street	III	35	31.7	5.3	37.0	0.26	25.7	B
59th Street	III	35	32.8	11.3	44.1	0.27	22.3	C
College Avenue	III	35	27.9	27.8	55.7	0.23	15.0	D
62nd Street	III	35	21.4	15.9	37.3	0.18	17.2	D
63rd Street	III	35	13.3	8.1	21.4	0.10	16.6	D
Montezuma Road	III	35	62.7	30.8	93.5	0.61	23.5	C
67th Street	III	30	6.6	0.9	7.5	0.04	20.5	C
70th Street	III	30	48.3	34.1	82.4	0.38	16.6	D
73rd Street	III	35	46.6	18.2	64.8	0.39	21.6	C
Total	III		332.0	205.9	537.9	2.80	18.7	C

Arterial Level of Service: WB El Cajon Boulevard

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
73rd Street	III	35	16.8	15.5	32.3	0.12	13.9	E
70th Street	III	35	46.6	58.2	104.8	0.39	13.3	E
67th Street	III	30	48.3	51.2	99.5	0.38	13.8	E
Montezuma Road	III	30	6.6	1.9	8.5	0.04	18.1	C
63rd Street	III	35	62.7	21.6	84.3	0.61	26.0	B
	III	35	13.3	6.2	19.5	0.10	18.3	C
College Avenue	III	35	21.4	30.1	51.5	0.18	12.5	E
59th Street	III	35	27.9	12.4	40.3	0.23	20.8	C
56th Street	III	35	32.8	5.8	38.6	0.27	25.5	B
54th Street	III	35	31.7	41.9	73.6	0.26	12.9	E
52nd Street	III	35	29.8	5.9	35.7	0.25	25.1	B
Total	III		337.9	250.7	588.6	2.84	17.4	D

Arterial Level of Service: EB El Cajon Boulevard

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
52nd Street	III	35	10.9	5.0	15.9	0.08	18.3	C
54th Street	III	35	29.8	47.8	77.6	0.25	11.5	E
56th Street	III	35	31.7	4.4	36.1	0.26	26.3	B
59th Street	III	35	32.8	15.7	48.5	0.27	20.3	C
College Avenue	III	35	27.9	41.8	69.7	0.23	12.0	E
62nd Street	III	35	21.4	15.7	37.1	0.18	17.3	D
63rd Street	III	35	13.3	13.6	26.9	0.10	13.2	E
Montezuma Road	III	35	62.7	38.3	101.0	0.61	21.7	C
67th Street	III	30	6.6	1.6	8.2	0.04	18.8	C
70th Street	III	30	48.3	38.8	87.1	0.38	15.7	D
73rd Street	III	35	46.6	18.0	64.6	0.39	21.6	C
Total	III		332.0	240.7	572.7	2.80	17.6	D

Arterial Level of Service: WB El Cajon Boulevard

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
73rd Street	III	35	16.8	12.3	29.1	0.12	15.4	D
70th Street	III	35	46.6	62.5	109.1	0.39	12.8	E
67th Street	III	30	48.3	41.1	89.4	0.38	15.3	D
Montezuma Road	III	30	6.6	4.0	10.6	0.04	14.5	D
63rd Street	III	35	62.7	26.8	89.5	0.61	24.5	B
	III	35	13.3	5.9	19.2	0.10	18.5	C
College Avenue	III	35	21.4	36.5	57.9	0.18	11.1	E
59th Street	III	35	27.9	14.3	42.2	0.23	19.8	C
56th Street	III	35	32.8	4.4	37.2	0.27	26.4	B
54th Street	III	35	31.7	37.9	69.6	0.26	13.7	E
52nd Street	III	35	29.8	4.5	34.3	0.25	26.1	B
Total	III		337.9	250.2	588.1	2.84	17.4	D

Arterial Level of Service: EB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Collwood Boulevard	II	40	63.7	45.3	109.0	0.71	23.4	C
54th Street	II	40	39.3	20.4	59.7	0.41	24.7	C
55th Street	II	40	22.0	10.9	32.9	0.19	21.0	D
Campanile Drive	II	35	30.0	19.3	49.3	0.25	18.4	D
College Avenue	II	35	15.1	44.7	59.8	0.12	7.3	F
East Campus Drive	II	35	19.2	2.7	21.9	0.15	25.2	C
63rd Street	II	35	20.4	8.5	28.9	0.16	20.3	D
Reservoir Drive	II	35	49.0	1.4	50.4	0.47	33.7	B
El Cajon Boulevard	II	35	17.0	67.6	84.6	0.14	5.8	F
Total	II		275.7	220.8	496.5	2.61	18.9	D

Arterial Level of Service: WB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservoir Drive	II	35	17.0	8.4	25.4	0.14	19.3	D
63rd Street	II	35	49.0	2.7	51.7	0.47	32.8	B
East Campus Drive	II	35	20.4	7.1	27.5	0.16	21.3	D
College Avenue	II	35	19.2	80.2	99.4	0.15	5.6	F
Campanile Drive	II	35	15.1	37.1	52.2	0.12	8.3	F
55th Street	II	35	30.0	19.5	49.5	0.25	18.3	D
Hardy Elementary Sch	II	45	20.9	5.1	26.0	0.19	26.5	C
Collwood Boulevard	II	45	38.5	33.6	72.1	0.41	20.4	D
Total	II		210.1	193.7	403.8	1.90	16.9	E

Arterial Level of Service: EB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Collwood Boulevard	II	40	63.7	58.8	122.5	0.71	20.8	D
54th Street	II	40	39.3	17.3	56.6	0.41	26.0	C
55th Street	II	40	22.0	16.7	38.7	0.19	17.8	D
Campanile Drive	II	35	30.0	44.2	74.2	0.25	12.2	F
College Avenue	II	35	15.1	36.4	51.5	0.12	8.4	F
East Campus Drive	II	35	19.2	6.0	25.2	0.15	21.9	D
63rd Street	II	35	20.4	6.4	26.8	0.16	21.9	D
Reservoir Drive	II	35	49.0	3.3	52.3	0.47	32.4	B
El Cajon Boulevard	II	35	17.0	42.2	59.2	0.14	8.3	F
Total	II		275.7	231.3	507.0	2.61	18.5	D

Arterial Level of Service: WB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservoir Drive	II	35	17.0	9.0	26.0	0.14	18.9	D
63rd Street	II	35	49.0	5.5	54.5	0.47	31.1	B
East Campus Drive	II	35	20.4	9.6	30.0	0.16	19.6	D
College Avenue	II	35	19.2	47.1	66.3	0.15	8.3	F
Campanile Drive	II	35	15.1	36.0	51.1	0.12	8.5	F
55th Street	II	35	30.0	33.2	63.2	0.25	14.4	E
Hardy Elementary Sch	II	45	20.9	7.9	28.8	0.19	23.9	C
Collwood Boulevard	II	45	38.5	17.4	55.9	0.41	26.4	C
Total	II		210.1	165.7	375.8	1.90	18.2	D

Attachment K - Arterial Analysis Results – Planned Conditions

Arterial Level of Service: NB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
El Cajon Boulevard	II	35	17.8	57.3	75.1	0.14	6.8	F
Montezuma Road	II	35	70.6	53.8	124.4	0.69	19.9	D
Lindo Paseo	II	40	7.5	18.2	25.7	0.06	9.1	F
Zura Way	II	40	22.0	24.9	46.9	0.19	14.7	E
East Campus Drive	II	40	24.6	64.9	89.5	0.21	8.6	F
I-8 EB Ramps	II	40	10.9	47.7	58.6	0.09	5.8	F
I-8 WB Ramps	II	40	24.5	17.6	42.1	0.21	18.3	D
Total	II		177.9	284.4	462.3	1.61	12.5	F

Arterial Level of Service: SB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 WB Ramps	II	40	21.9	13.6	35.5	0.19	19.3	D
	II	40	24.5	58.3	82.8	0.21	9.3	F
Canyon Crest Drive	II	40	10.9	35.4	46.3	0.09	7.4	F
Zura Way	II	40	24.6	2.5	27.1	0.21	28.4	B
Lindo Paseo	II	40	22.0	19.1	41.1	0.19	16.8	E
Montezuma Road	II	40	7.5	70.4	77.9	0.06	3.0	F
El Cajon Boulevard	II	35	70.6	39.5	110.1	0.69	22.5	C
Total	II		182.0	238.8	420.8	1.66	14.2	E

Arterial Level of Service: NB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
El Cajon Boulevard	II	35	17.8	51.2	69.0	0.14	7.4	F
Montezuma Road	II	35	70.6	43.6	114.2	0.69	21.7	D
Lindo Paseo	II	40	7.5	19.5	27.0	0.06	8.7	F
Zura Way	II	40	22.0	19.1	41.1	0.19	16.8	E
East Campus Drive	II	40	24.6	65.2	89.8	0.21	8.6	F
I-8 EB Ramps	II	40	10.9	23.4	34.3	0.09	10.0	F
I-8 WB Ramps	II	40	24.5	38.8	63.3	0.21	12.1	F
Total	II		177.9	260.8	438.7	1.61	13.2	E

Arterial Level of Service: SB College Avenue

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 WB Ramps	II	40	21.9	28.6	50.5	0.19	13.6	E
I-8 EB Ramps	II	40	24.5	14.5	39.0	0.21	19.7	D
Canyon Crest Drive	II	40	10.9	29.7	40.6	0.09	8.4	F
Zura Way	II	40	24.6	7.4	32.0	0.21	24.1	C
Lindo Paseo	II	40	22.0	15.7	37.7	0.19	18.3	D
Montezuma Road	II	40	7.5	81.2	88.7	0.06	2.6	F
El Cajon Boulevard	II	35	70.6	49.2	119.8	0.69	20.6	D
Total	II		182.0	226.3	408.3	1.66	14.6	E

Arterial Level of Service: EB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Collwood Boulevard	II	40	63.7	60.2	123.9	0.71	20.6	D
54th Street	II	40	39.3	21.8	61.1	0.41	24.1	C
55th Street	II	40	22.0	23.5	45.5	0.19	15.1	E
Campanile Drive	II	35	30.0	28.8	58.8	0.25	15.4	E
College Avenue	II	35	15.1	47.8	62.9	0.12	6.9	F
East Campus Drive	II	35	19.2	4.2	23.4	0.15	23.6	C
63rd Street	II	35	20.4	19.2	39.6	0.16	14.8	E
Reservoir Drive	II	35	49.0	4.8	53.8	0.47	31.5	B
El Cajon Boulevard	II	35	17.0	66.0	83.0	0.14	5.9	F
Total	II		275.7	276.3	552.0	2.61	17.0	E

Arterial Level of Service: WB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservoir Drive	II	35	17.0	18.6	35.6	0.14	13.8	E
63rd Street	II	35	49.0	26.1	75.1	0.47	22.6	C
East Campus Drive	II	35	20.4	34.6	55.0	0.16	10.7	F
College Avenue	II	35	19.2	84.8	104.0	0.15	5.3	F
Campanile Drive	II	35	15.1	66.6	81.7	0.12	5.3	F
55th Street	II	35	30.0	34.3	64.3	0.25	14.1	E
Hardy Elementary Sch	II	45	20.9	4.0	24.9	0.19	27.7	C
Collwood Boulevard	II	45	38.5	41.6	80.1	0.41	18.4	D
Total	II		210.1	310.6	520.7	1.90	13.1	E

Arterial Level of Service: EB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Collwood Boulevard	II	40	63.7	66.5	130.2	0.71	19.6	D
54th Street	II	40	39.3	19.5	58.8	0.41	25.1	C
55th Street	II	40	22.0	19.8	41.8	0.19	16.5	E
Campanile Drive	II	35	30.0	77.5	107.5	0.25	8.4	F
College Avenue	II	35	15.1	115.7	130.8	0.12	3.3	F
East Campus Drive	II	35	19.2	16.3	35.5	0.15	15.6	E
63rd Street	II	35	20.4	36.7	57.1	0.16	10.3	F
Reservoir Drive	II	35	49.0	2.4	51.4	0.47	33.0	B
El Cajon Boulevard	II	35	17.0	65.7	82.7	0.14	5.9	F
Total	II		275.7	420.1	695.8	2.61	13.5	E

Arterial Level of Service: WB Montezuma Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Reservoir Drive	II	35	17.0	17.7	34.7	0.14	14.1	E
63rd Street	II	35	49.0	17.3	66.3	0.47	25.6	C
East Campus Drive	II	35	20.4	9.0	29.4	0.16	20.0	D
College Avenue	II	35	19.2	41.7	60.9	0.15	9.1	F
Campanile Drive	II	35	15.1	52.2	67.3	0.12	6.5	F
55th Street	II	35	30.0	33.7	63.7	0.25	14.3	E
Hardy Elementary Sch	II	45	20.9	8.8	29.7	0.19	23.2	C
Collwood Boulevard	II	45	38.5	19.2	57.7	0.41	25.5	C
Total	II		210.1	199.6	409.7	1.90	16.7	E

Attachment L - Queue Reports – Planned Conditions

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1247	1798	146	708	839	398
v/c Ratio	0.69	0.93	0.78	0.51	0.43	0.25
Control Delay (s/veh)	25.5	36.7	68.5	34.3	33.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	36.7	68.5	34.3	33.0	0.4
Queue Length 50th (ft)	423	625	112	246	198	0
Queue Length 95th (ft)	485	699	#287	384	298	0
Internal Link Dist (ft)	1274			1344	616	
Turn Bay Length (ft)						
Base Capacity (vph)	2443	2595	204	1510	2120	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.69	0.72	0.47	0.40	0.25

Intersection Summary

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

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	740	333	1423	1051	1058	895
v/c Ratio	0.68	0.63	0.74	0.68	0.55	0.58
Control Delay (s/veh)	29.3	29.0	17.6	2.5	13.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.3	29.0	17.6	2.5	13.6	1.6
Queue Length 50th (ft)	164	124	265	0	166	0
Queue Length 95th (ft)	306	282	366	0	278	0
Internal Link Dist (ft)			1047		927	
Turn Bay Length (ft)						
Base Capacity (vph)	1970	925	3068	1536	3075	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.36	0.46	0.68	0.34	0.58

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	846	1769	1245	436	1367	433
v/c Ratio	0.49	0.98	0.88	0.28	0.96	0.28
Control Delay (s/veh)	24.3	50.4	47.7	0.4	58.3	0.5
Queue Delay	0.0	0.0	47.8	0.0	0.0	0.0
Total Delay (s/veh)	24.3	50.4	95.5	0.4	58.3	0.5
Queue Length 50th (ft)	262	694	567	0	658	0
Queue Length 95th (ft)	319	#852	669	0	#819	0
Internal Link Dist (ft)			421		1047	
Turn Bay Length (ft)	160					
Base Capacity (vph)	1762	1854	1441	1568	1441	1536
Starvation Cap Reductn	0	0	387	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.95	1.18	0.28	0.95	0.28

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	300	180	258	278
v/c Ratio	0.59	0.51	0.25	0.62
Control Delay (s/veh)	22.7	29.1	8.0	24.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.7	29.1	8.0	24.9
Queue Length 50th (ft)	73	54	40	70
Queue Length 95th (ft)	192	143	99	153
Internal Link Dist (ft)	282		385	701
Turn Bay Length (ft)		200		80
Base Capacity (vph)	1453	1037	1845	1340
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	0.21	0.17	0.14	0.21

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	81	198	403	390	152	1038	34	1318
v/c Ratio	0.60	0.67	0.81	0.79	0.76	0.49	0.28	0.80
Control Delay (s/veh)	83.6	61.9	58.8	55.2	83.7	27.5	72.3	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	83.6	61.9	58.8	55.2	83.7	27.5	72.3	45.8
Queue Length 50th (ft)	76	167	362	334	141	253	31	413
Queue Length 95th (ft)	#143	243	460	430	193	249	69	468
Internal Link Dist (ft)	644			883		683		345
Turn Bay Length (ft)					90		100	
Base Capacity (vph)	141	346	582	576	257	2269	121	1934
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.57	0.69	0.68	0.59	0.46	0.28	0.68

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	126	221	453	200	400	135	1531	179	589	316
v/c Ratio	0.43	0.64	0.79	0.62	0.41	0.73	1.05	1.07	0.39	0.41
Control Delay (s/veh)	66.5	60.3	65.8	61.0	25.2	82.6	76.1	145.8	29.8	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.5	60.3	65.8	61.0	25.2	82.6	76.1	145.8	29.8	10.8
Queue Length 50th (ft)	56	86	203	168	106	119	~781	~177	188	49
Queue Length 95th (ft)	97	138	274	251	156	200	#1050	#366	291	149
Internal Link Dist (ft)		780		687			1600		683	
Turn Bay Length (ft)	130		180			80		50		90
Base Capacity (vph)	295	509	707	480	977	258	1453	168	1514	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.43	0.64	0.42	0.41	0.52	1.05	1.07	0.39	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	96	107	197	303	158	1526	616	1860	826
v/c Ratio	0.55	0.61	0.89	0.49	0.77	0.94	0.91	0.66	0.41
Control Delay (s/veh)	103.5	87.1	127.9	38.0	116.6	64.9	101.8	35.4	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.5	28.0	48.0	0.9
Total Delay (s/veh)	103.5	87.1	127.9	38.0	116.6	68.4	129.8	83.3	9.8
Queue Length 50th (ft)	142	125	286	219	226	1055	452	639	161
Queue Length 95th (ft)	204	189	#369	257	324	#1290	#552	781	210
Internal Link Dist (ft)		640	341			604		421	
Turn Bay Length (ft)					140		150		110
Base Capacity (vph)	260	249	221	636	293	1751	717	2937	2124
Starvation Cap Reductn	0	0	0	0	0	152	126	1254	949
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.43	0.89	0.48	0.54	0.95	1.04	1.11	0.70

Intersection Summary

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

Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	173	1582	132	438	1629
v/c Ratio	0.38	0.81	0.15	0.92	0.54
Control Delay (s/veh)	2.4	24.9	2.6	64.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.4	24.9	2.6	64.1	2.5
Queue Length 50th (ft)	0	481	0	291	96
Queue Length 95th (ft)	0	589	28	#452	115
Internal Link Dist (ft)		930			366
Turn Bay Length (ft)			370	360	
Base Capacity (vph)	455	1944	901	517	3041
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.81	0.15	0.85	0.54

Intersection Summary

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	147	177	86	1613	43	1548
v/c Ratio	0.60	0.84	0.55	0.75	0.38	0.71
Control Delay (s/veh)	45.0	70.5	60.7	18.2	57.9	19.1
Queue Delay	0.0	0.0	0.0	24.1	0.0	0.0
Total Delay (s/veh)	45.0	70.5	60.7	42.3	57.9	19.1
Queue Length 50th (ft)	83	113	59	403	30	378
Queue Length 95th (ft)	95	150	107	#726	66	#630
Internal Link Dist (ft)	422	158		263		930
Turn Bay Length (ft)			80		100	
Base Capacity (vph)	392	340	256	2141	256	2182
Starvation Cap Reductn	0	0	0	591	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.52	0.34	1.04	0.17	0.71

Intersection Summary

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	1295	663	84	1474	1274
v/c Ratio	0.96	0.55	0.81	0.89	0.97
Control Delay (s/veh)	60.2	4.6	115.5	41.6	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.2	4.6	115.5	41.6	60.3
Queue Length 50th (ft)	644	119	83	670	619
Queue Length 95th (ft)	#803	164	#181	785	#778
Internal Link Dist (ft)	975			2082	714
Turn Bay Length (ft)		560	160		
Base Capacity (vph)	1384	1234	108	1702	1353
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.94	0.54	0.78	0.87	0.94

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	42	1200	95	1064	221	126	221
v/c Ratio	0.42	0.66	0.63	0.52	0.89	0.37	0.83
Control Delay (s/veh)	62.7	21.8	80.2	4.0	73.7	36.2	58.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.7	21.8	80.2	4.0	73.7	36.2	58.7
Queue Length 50th (ft)	29	308	72	41	151	74	130
Queue Length 95th (ft)	67	460	m103	63	225	117	205
Internal Link Dist (ft)		2082		931	436		315
Turn Bay Length (ft)	130		160			50	
Base Capacity (vph)	105	1821	173	2031	336	466	349
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.66	0.55	0.52	0.66	0.27	0.63

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	579	727	63	958	347	117	78	80	147
v/c Ratio	0.78	0.40	0.50	0.73	0.44	0.52	0.48	0.49	0.50
Control Delay (s/veh)	47.3	23.5	61.8	34.3	4.9	44.3	58.6	58.7	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.3	23.5	61.8	34.3	4.9	44.3	58.6	58.7	12.3
Queue Length 50th (ft)	214	153	43	305	1	69	54	55	0
Queue Length 95th (ft)	#348	279	87	414	65	104	#150	#154	52
Internal Link Dist (ft)		931		1252		543		557	
Turn Bay Length (ft)	440		100		310		140		
Base Capacity (vph)	747	1819	162	1306	782	469	161	163	295
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.40	0.39	0.73	0.44	0.25	0.48	0.49	0.50

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	116	685	84	1579	211	169	95
v/c Ratio	0.64	0.41	0.63	1.02	0.76	0.63	0.21
Control Delay (s/veh)	79.7	28.8	87.4	66.6	64.8	68.2	7.8
Queue Delay	0.0	0.0	0.0	30.5	0.0	0.0	0.0
Total Delay (s/veh)	79.7	28.8	87.4	97.1	64.8	68.2	7.8
Queue Length 50th (ft)	108	198	81	775	162	163	0
Queue Length 95th (ft)	#281	361	138	#1136	238	219	44
Internal Link Dist (ft)		1252		557	549	581	
Turn Bay Length (ft)	190		110				
Base Capacity (vph)	180	1665	183	1545	369	401	451
Starvation Cap Reductn	0	0	0	216	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.41	0.46	1.19	0.57	0.42	0.21

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	263	590	84	726	295	611	1284	432	1158
v/c Ratio	1.10	0.64	0.64	0.97	0.59	1.10	0.92	1.15	0.99
Control Delay (s/veh)	143.9	47.8	87.9	84.8	17.5	123.8	53.8	150.4	70.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.2
Total Delay (s/veh)	143.9	47.8	87.9	84.8	17.5	123.8	53.8	150.4	109.7
Queue Length 50th (ft)	~290	248	81	374	51	~347	619	~255	576
Queue Length 95th (ft)	#476	329	138	#508	153	#470	#766	#367	#738
Internal Link Dist (ft)		557		730			1904		263
Turn Bay Length (ft)	190		200		250	170		90	
Base Capacity (vph)	240	921	179	745	499	557	1389	376	1168
Starvation Cap Reductn	0	0	0	0	0	0	0	0	409
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.64	0.47	0.97	0.59	1.10	0.92	1.15	1.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	211	726	1074	63	53
v/c Ratio	0.78	0.46	0.92	0.43	0.31
Control Delay (s/veh)	72.5	4.2	34.6	63.5	17.4
Queue Delay	0.0	0.4	8.6	0.0	0.0
Total Delay (s/veh)	72.5	4.7	43.2	63.5	17.4
Queue Length 50th (ft)	169	107	768	52	0
Queue Length 95th (ft)	#335	290	#1231	90	37
Internal Link Dist (ft)		730	781	602	
Turn Bay Length (ft)	80				
Base Capacity (vph)	271	1595	1166	296	293
Starvation Cap Reductn	0	413	84	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.61	0.99	0.21	0.18

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	53	716	21	779	221	85
v/c Ratio	0.38	0.66	0.18	0.78	0.70	0.24
Control Delay (s/veh)	48.8	19.2	43.6	26.1	39.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.8	19.2	43.6	26.1	39.9	12.6
Queue Length 50th (ft)	29	184	11	336	108	15
Queue Length 95th (ft)	#80	#646	35	#723	146	41
Internal Link Dist (ft)		781		2408	572	483
Turn Bay Length (ft)	150		150			
Base Capacity (vph)	138	1083	116	1001	528	601
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.66	0.18	0.78	0.42	0.14

Intersection Summary

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

Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	116	568	884	200
v/c Ratio	0.72	0.39	0.71	0.78
Control Delay (s/veh)	80.6	4.8	18.3	49.7
Queue Delay	0.0	0.0	2.5	0.0
Total Delay (s/veh)	80.6	4.8	20.9	49.7
Queue Length 50th (ft)	96	102	418	89
Queue Length 95th (ft)	#169	216	747	163
Internal Link Dist (ft)		2408	640	2208
Turn Bay Length (ft)	120			
Base Capacity (vph)	187	1464	1239	367
Starvation Cap Reductn	0	0	232	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	0.39	0.88	0.54

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	221	568	705	726	368	200
v/c Ratio	1.03	0.71	0.65	0.94	0.71	0.56
Control Delay (s/veh)	130.5	40.0	4.7	13.7	66.0	22.3
Queue Delay	0.0	0.0	33.1	46.6	0.0	0.0
Total Delay (s/veh)	130.5	40.0	37.8	60.3	66.0	22.3
Queue Length 50th (ft)	~225	444	64	97	172	42
Queue Length 95th (ft)	#414	628	m45	m15	228	126
Internal Link Dist (ft)		1558	146		640	
Turn Bay Length (ft)	190				97	97
Base Capacity (vph)	214	801	1108	773	639	402
Starvation Cap Reductn	0	0	437	281	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.71	1.05	1.48	0.58	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	821	32	1074	53	253	95	53	137
v/c Ratio	0.22	0.39	0.59	1.75	0.09	0.93	0.22	0.18	0.28
Control Delay (s/veh)	21.5	0.9	109.2	373.7	0.3	92.2	33.5	45.5	14.6
Queue Delay	0.5	0.4	0.0	0.2	0.0	8.1	0.0	0.0	0.1
Total Delay (s/veh)	21.9	1.3	109.2	373.9	0.3	100.2	33.5	45.5	14.7
Queue Length 50th (ft)	59	0	31	~1511	0	233	52	39	23
Queue Length 95th (ft)	m93	0	#89	#1846	0	#421	107	82	83
Internal Link Dist (ft)		146		588			526		696
Turn Bay Length (ft)			110		75	90		80	
Base Capacity (vph)	550	2231	54	614	563	282	453	309	495
Starvation Cap Reductn	209	855	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	16	0	17	0	0	29
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.60	0.59	1.80	0.09	0.95	0.21	0.17	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	379	411	158	126	337	242	179	873	147	811
v/c Ratio	1.38	0.74	0.31	0.66	0.71	0.53	0.73	0.86	0.70	0.86
Control Delay (s/veh)	231.4	47.0	19.2	70.8	48.6	24.4	69.0	49.1	70.7	48.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	231.4	47.0	19.2	70.8	48.6	24.4	69.0	49.1	70.7	48.5
Queue Length 50th (ft)	~394	287	46	93	235	86	131	322	108	285
Queue Length 95th (ft)	#728	453	112	185	363	178	#266	485	#225	437
Internal Link Dist (ft)		1267			1969			1275		1600
Turn Bay Length (ft)	240		75	160		75	160		210	
Base Capacity (vph)	274	880	763	258	866	752	311	1304	266	1193
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.38	0.47	0.21	0.49	0.39	0.32	0.58	0.67	0.55	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	84	505	63	137	579	53	222	127
v/c Ratio	0.37	0.69	0.09	0.48	0.75	0.08	0.62	0.37
Control Delay (s/veh)	34.9	24.7	0.3	34.1	25.2	2.7	27.0	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.9	24.7	0.3	34.1	25.2	2.7	27.0	19.0
Queue Length 50th (ft)	31	152	0	50	175	0	62	27
Queue Length 95th (ft)	86	#420	1	122	#472	14	141	76
Internal Link Dist (ft)		1969			578		529	622
Turn Bay Length (ft)	70		75	90		75		
Base Capacity (vph)	371	924	813	531	1045	880	827	795
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.55	0.08	0.26	0.55	0.06	0.27	0.16

Intersection Summary

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	139	89	1226	155	118	671
v/c Ratio	0.48	0.27	0.68	0.14	0.56	0.28
Control Delay (s/veh)	30.5	7.5	17.3	0.8	42.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.5	7.5	17.3	0.8	42.9	5.3
Queue Length 50th (ft)	57	0	193	0	48	41
Queue Length 95th (ft)	73	21	300	7	#123	102
Internal Link Dist (ft)	710		386			393
Turn Bay Length (ft)		40		70	80	
Base Capacity (vph)	550	542	1797	1294	210	2438
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.16	0.68	0.12	0.56	0.28

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	88	725	96	927	254	243
v/c Ratio	0.25	0.30	0.22	0.38	0.97	0.80
Control Delay (s/veh)	9.2	7.4	8.3	8.3	97.4	65.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	7.4	8.3	8.3	97.4	65.0
Queue Length 50th (ft)	24	105	26	150	207	185
Queue Length 95th (ft)	50	133	45	163	#250	176
Internal Link Dist (ft)		346		1233	666	539
Turn Bay Length (ft)	100		100			
Base Capacity (vph)	353	2393	444	2428	262	306
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.30	0.22	0.38	0.97	0.79

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	537	147	158	568	347	284	1063	168	474	95
v/c Ratio	0.70	0.97	0.29	0.83	0.96	0.61	0.75	0.94	0.97	0.42	0.18
Control Delay (s/veh)	75.9	72.8	13.8	84.4	67.7	26.0	63.3	51.9	113.8	33.1	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.9	72.8	13.8	84.4	67.7	26.0	63.3	51.9	113.8	33.1	6.3
Queue Length 50th (ft)	79	415	28	121	439	142	110	396	132	151	0
Queue Length 95th (ft)	#149	#647	81	#233	#678	249	157	#525	#278	202	37
Internal Link Dist (ft)		1233			542			585		386	
Turn Bay Length (ft)	150		110	190		100	270		60		80
Base Capacity (vph)	174	554	514	204	594	573	428	1204	174	1144	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.97	0.29	0.77	0.96	0.61	0.66	0.88	0.97	0.41	0.17

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	53	642	126	42	863	53	158	126
v/c Ratio	0.47	0.64	0.15	0.44	0.91	0.06	0.64	0.52
Control Delay (s/veh)	68.3	26.3	6.3	69.4	42.5	0.3	54.2	40.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.3	26.3	6.3	69.4	42.5	0.3	54.2	40.8
Queue Length 50th (ft)	40	324	8	32	550	0	105	66
Queue Length 95th (ft)	#125	#706	53	#98	#1080	2	160	114
Internal Link Dist (ft)		286			632		223	249
Turn Bay Length (ft)	125		125	125		125		
Base Capacity (vph)	113	997	868	96	950	836	383	391
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.64	0.15	0.44	0.91	0.06	0.41	0.32

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	274	389	105	189	400	147	200	1137	147	158	411	274
v/c Ratio	0.85	0.66	0.19	0.69	0.71	0.27	0.79	0.93	0.25	0.86	0.38	0.47
Control Delay (s/veh)	85.0	48.0	5.0	76.5	51.6	10.9	78.6	57.3	14.9	98.7	39.5	17.5
Queue Delay	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.0	55.4	5.0	76.5	51.6	10.9	78.6	57.3	14.9	98.7	39.5	17.5
Queue Length 50th (ft)	128	316	0	87	333	18	178	510	38	143	149	69
Queue Length 95th (ft)	#200	443	34	129	462	73	253	608	90	#263	213	167
Internal Link Dist (ft)		347			862			672			371	
Turn Bay Length (ft)	150		75	180		75	260		170	200		70
Base Capacity (vph)	333	587	563	301	561	542	356	1276	599	195	1080	583
Starvation Cap Reductn	0	154	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.90	0.19	0.63	0.71	0.27	0.56	0.89	0.25	0.81	0.38	0.47

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	11	537	126	53	716	11	116	95	11
v/c Ratio	0.13	0.58	0.16	0.13	0.63	0.01	0.32	0.20	0.02
Control Delay (s/veh)	61.9	26.2	10.9	49.6	17.9	0.0	41.7	8.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	61.9	26.2	10.9	49.6	24.3	0.0	41.7	8.2	0.1
Queue Length 50th (ft)	9	325	31	20	317	0	79	0	0
Queue Length 95th (ft)	30	449	68	40	573	0	136	43	0
Internal Link Dist (ft)		862			442		717		201
Turn Bay Length (ft)	60		75	180		75			
Base Capacity (vph)	115	925	783	486	1139	965	359	472	631
Starvation Cap Reductn	0	0	0	0	366	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.58	0.16	0.11	0.93	0.01	0.32	0.20	0.02

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	116	516	42	53	589	53	127	295
v/c Ratio	0.69	0.60	0.06	0.50	0.77	0.08	0.58	0.78
Control Delay (s/veh)	72.4	29.2	0.2	69.9	39.6	0.2	53.5	51.8
Queue Delay	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	30.9	0.2	69.9	39.6	0.2	53.5	51.8
Queue Length 50th (ft)	88	298	0	40	388	0	86	170
Queue Length 95th (ft)	150	471	0	84	#674	0	130	#376
Internal Link Dist (ft)		442			1499		669	751
Turn Bay Length (ft)	80		80	210		75		
Base Capacity (vph)	206	854	711	122	763	700	416	376
Starvation Cap Reductn	0	186	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.77	0.06	0.43	0.77	0.08	0.31	0.78

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	723	2160	100	589	1393	629
v/c Ratio	0.37	1.06	1.96	0.45	0.76	0.72
Control Delay (s/veh)	19.7	72.0	523.1	39.5	48.3	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	72.0	523.1	39.5	48.3	15.0
Queue Length 50th (ft)	207	~1084	~161	245	470	134
Queue Length 95th (ft)	252	#1191	#240	302	521	282
Internal Link Dist (ft)	1274			1344	616	
Turn Bay Length (ft)						
Base Capacity (vph)	1931	2036	51	1299	1825	873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.06	1.96	0.45	0.76	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	645	376	505	1071	1255	632	632
v/c Ratio	0.35	no cap	0.58	0.83	0.80	0.49	0.40
Control Delay (s/veh)	16.8		21.0	38.8	4.4	28.6	0.8
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.8	Error	21.0	38.8	4.4	28.6	0.8
Queue Length 50th (ft)	132	0	219	372	0	185	0
Queue Length 95th (ft)	215	0	404	452	0	235	0
Internal Link Dist (ft)		160		1047		927	
Turn Bay Length (ft)							
Base Capacity (vph)	1833	1	865	1782	1568	1791	1568
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	376.00	0.58	0.60	0.80	0.35	0.40

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	849	925	1602	731	846	495
v/c Ratio	0.79	0.82	0.82	0.48	0.43	0.32
Control Delay (s/veh)	39.5	40.6	23.4	1.1	14.5	0.6
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	39.5	40.6	23.8	1.1	14.5	0.6
Queue Length 50th (ft)	260	244	419	0	158	0
Queue Length 95th (ft)	401	372	646	0	253	0
Internal Link Dist (ft)			421		1047	
Turn Bay Length (ft)	160					
Base Capacity (vph)	1527	1606	2602	1536	2602	1536
Starvation Cap Reductn	0	0	479	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.58	0.75	0.48	0.33	0.32

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	439	164	192	426
v/c Ratio	0.74	0.58	0.19	0.78
Control Delay (s/veh)	34.2	47.7	11.4	36.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.2	47.7	11.4	36.3
Queue Length 50th (ft)	183	78	45	173
Queue Length 95th (ft)	369	163	92	338
Internal Link Dist (ft)	282		385	701
Turn Bay Length (ft)		200		80
Base Capacity (vph)	1222	511	1648	1078
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	0.36	0.32	0.12	0.40

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	123	447	435	160	1095	55	813
v/c Ratio	0.58	0.29	0.77	0.75	0.71	0.70	0.42	0.72
Control Delay (s/veh)	74.3	41.3	46.7	44.4	73.1	40.1	73.2	49.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.3	41.3	46.7	44.4	73.1	40.1	73.2	49.8
Queue Length 50th (ft)	80	81	342	321	129	289	45	227
Queue Length 95th (ft)	143	136	535	509	229	382	103	322
Internal Link Dist (ft)	644			883		683		345
Turn Bay Length (ft)					90		100	
Base Capacity (vph)	200	528	778	771	341	1978	136	1403
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.23	0.57	0.56	0.47	0.55	0.40	0.58

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	189	421	758	137	800	53	1284	158	705	211
v/c Ratio	0.65	0.94	1.02	0.29	0.70	0.48	1.04	1.03	0.48	0.30
Control Delay (s/veh)	73.1	85.5	90.8	43.8	34.7	77.7	77.2	142.4	32.0	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.1	85.5	90.8	43.8	34.7	77.7	77.2	142.4	32.0	11.7
Queue Length 50th (ft)	87	188	~375	101	305	48	~639	~153	252	43
Queue Length 95th (ft)	130	#293	#502	163	389	94	#782	#302	317	105
Internal Link Dist (ft)		780		687			1600		683	
Turn Bay Length (ft)	130		180			80		50		90
Base Capacity (vph)	291	448	745	474	1148	123	1233	153	1463	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.94	1.02	0.29	0.70	0.43	1.04	1.03	0.48	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	279	271	205	361	96	1713	268	1258	165
v/c Ratio	0.94	0.93	1.11	0.89	0.68	0.98	0.74	0.46	0.08
Control Delay (s/veh)	120.6	117.3	175.3	90.4	115.6	65.2	101.4	29.7	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	13.2	0.0	2.6	0.0
Total Delay (s/veh)	120.6	117.3	175.3	90.4	115.6	78.4	101.4	32.3	2.7
Queue Length 50th (ft)	409	387	~333	441	132	1199	187	379	9
Queue Length 95th (ft)	#623	#596	#464	#526	203	#1373	245	439	24
Internal Link Dist (ft)		640	309			604		421	
Turn Bay Length (ft)					140		150		110
Base Capacity (vph)	306	300	185	422	188	1840	399	2825	1993
Starvation Cap Reductn	0	0	0	0	0	157	0	1401	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.90	1.11	0.86	0.51	1.02	0.67	0.88	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	463	1245	43	185	1315
v/c Ratio	0.90	0.68	0.05	0.77	0.53
Control Delay (s/veh)	34.3	19.1	4.4	57.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	19.1	4.4	57.8	7.4
Queue Length 50th (ft)	94	282	0	95	166
Queue Length 95th (ft)	#252	366	17	#193	229
Internal Link Dist (ft)		930			366
Turn Bay Length (ft)			370	360	
Base Capacity (vph)	578	1828	820	260	2488
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.68	0.05	0.71	0.53

Intersection Summary

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	259	73	1229	106	1212
v/c Ratio	0.47	1.15	0.51	0.68	0.61	0.58
Control Delay (s/veh)	36.5	145.3	60.1	19.5	61.3	15.7
Queue Delay	0.0	0.0	0.0	31.7	0.0	0.0
Total Delay (s/veh)	36.5	145.3	60.1	51.2	61.3	15.7
Queue Length 50th (ft)	58	~208	50	299	73	268
Queue Length 95th (ft)	105	#373	95	417	125	366
Internal Link Dist (ft)	422	158		263		930
Turn Bay Length (ft)			80		100	
Base Capacity (vph)	257	225	272	1814	272	2072
Starvation Cap Reductn	0	0	0	651	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.15	0.27	1.06	0.39	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	1779	1200	147	1284	979
v/c Ratio	1.03	0.93	1.09	0.61	1.02
Control Delay (s/veh)	66.5	22.9	164.8	19.2	85.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.5	22.9	164.8	19.2	85.5
Queue Length 50th (ft)	~978	665	~161	386	~517
Queue Length 95th (ft)	#1115	#1391	#311	455	#653
Internal Link Dist (ft)	975			2082	714
Turn Bay Length (ft)		560	160		
Base Capacity (vph)	1725	1290	135	2101	957
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	0.93	1.09	0.61	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	32	1736	104	1187	116	116	106
v/c Ratio	0.38	0.78	0.69	0.48	0.73	0.59	0.65
Control Delay (s/veh)	71.9	19.5	71.0	8.8	79.0	63.6	63.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.9	19.5	71.0	8.8	79.0	63.6	63.2
Queue Length 50th (ft)	27	494	91	127	96	94	74
Queue Length 95th (ft)	62	734	m#159	267	150	145	128
Internal Link Dist (ft)		2082		931	436		315
Turn Bay Length (ft)	130		160			50	
Base Capacity (vph)	94	2236	159	2465	253	318	251
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.78	0.65	0.48	0.46	0.36	0.42

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.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	400	1326	53	874	200	148	189	190	432
v/c Ratio	0.84	0.75	0.60	0.61	0.28	0.59	0.80	0.79	0.73
Control Delay (s/veh)	79.8	19.8	87.4	33.7	5.0	52.5	78.3	77.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.8	19.8	87.4	33.7	5.0	52.5	78.3	77.1	12.6
Queue Length 50th (ft)	160	403	44	303	0	106	157	158	0
Queue Length 95th (ft)	m217	533	#121	426	54	158	#306	#305	108
Internal Link Dist (ft)		931		1252		543		557	
Turn Bay Length (ft)	440		100		310		140		
Base Capacity (vph)	520	1762	88	1434	727	379	241	245	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.75	0.60	0.61	0.28	0.39	0.78	0.78	0.72

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.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	158	1463	105	1084	274	253	200
v/c Ratio	0.72	1.04	0.66	0.87	0.90	0.80	0.37
Control Delay (s/veh)	81.3	77.5	62.5	52.2	86.4	77.4	7.8
Queue Delay	0.0	23.4	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	81.3	100.8	62.5	52.2	86.4	77.4	7.8
Queue Length 50th (ft)	148	~861	101	415	247	242	9
Queue Length 95th (ft)	#335	#1013	m#152	m432	#377	325	68
Internal Link Dist (ft)		1252		557	549	581	
Turn Bay Length (ft)	190		110				
Base Capacity (vph)	218	1403	159	1246	347	401	547
Starvation Cap Reductn	0	0	0	4	0	0	0
Spillback Cap Reductn	0	212	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	1.23	0.66	0.87	0.79	0.63	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	305	1411	219	427	271	463	873	274	1021
v/c Ratio	0.90	1.20	1.39	0.49	0.53	1.31	0.79	0.89	1.02
Control Delay (s/veh)	85.2	115.7	257.3	41.7	9.6	221.4	43.6	96.5	81.2
Queue Delay	0.0	0.1	0.0	0.1	0.0	0.0	0.8	0.0	31.6
Total Delay (s/veh)	85.2	115.8	257.3	41.8	9.6	221.4	44.4	96.5	112.8
Queue Length 50th (ft)	253	~300	~289	152	24	~306	427	139	~539
Queue Length 95th (ft)	m260	m#822	#467	221	61	m#422	464	#219	#680
Internal Link Dist (ft)		557		730			1904		263
Turn Bay Length (ft)	190		200		250	170		90	
Base Capacity (vph)	376	1176	158	875	512	353	1099	312	1001
Starvation Cap Reductn	0	14	0	0	0	0	0	0	317
Spillback Cap Reductn	0	3	0	44	0	0	61	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.21	1.39	0.51	0.53	1.31	0.84	0.88	1.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	95	1305	769	158	253
v/c Ratio	0.67	0.87	0.62	0.77	0.65
Control Delay (s/veh)	67.3	16.3	9.0	87.6	14.8
Queue Delay	0.0	3.9	0.0	0.0	0.0
Total Delay (s/veh)	67.3	20.2	9.1	87.6	14.8
Queue Length 50th (ft)	95	492	184	152	0
Queue Length 95th (ft)	m92	m365	260	228	87
Internal Link Dist (ft)		730	781	602	
Turn Bay Length (ft)	80				
Base Capacity (vph)	183	1508	1244	256	422
Starvation Cap Reductn	0	59	15	0	0
Spillback Cap Reductn	0	138	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.95	0.63	0.62	0.60

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	53	1274	21	568	158	95
v/c Ratio	0.54	1.00	0.31	0.46	0.79	0.34
Control Delay (s/veh)	83.3	36.7	77.7	17.3	82.5	33.8
Queue Delay	0.0	8.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	83.3	44.8	77.7	17.3	82.5	33.8
Queue Length 50th (ft)	53	~371	20	327	145	49
Queue Length 95th (ft)	m64	#1709	m45	483	214	99
Internal Link Dist (ft)		781		2408	572	483
Turn Bay Length (ft)	150		150			
Base Capacity (vph)	109	1280	67	1237	273	373
Starvation Cap Reductn	0	37	0	0	0	0
Spillback Cap Reductn	0	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	1.02	0.31	0.46	0.58	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	137	863	453	273
v/c Ratio	0.73	0.62	0.41	0.85
Control Delay (s/veh)	82.1	2.4	17.7	76.2
Queue Delay	0.0	0.0	0.6	0.0
Total Delay (s/veh)	82.1	2.4	18.3	76.2
Queue Length 50th (ft)	128	27	212	237
Queue Length 95th (ft)	m121	m33	374	323
Internal Link Dist (ft)		2408	640	2208
Turn Bay Length (ft)	120			
Base Capacity (vph)	254	1391	1103	438
Starvation Cap Reductn	0	0	319	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.62	0.58	0.62

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	168	821	674	263	537	337
v/c Ratio	0.76	1.01	0.67	0.42	0.84	0.78
Control Delay (s/veh)	79.6	71.7	5.3	5.2	66.4	36.5
Queue Delay	0.0	0.0	1.8	4.7	0.0	0.0
Total Delay (s/veh)	79.6	71.7	7.1	9.9	66.4	36.5
Queue Length 50th (ft)	150	~804	58	30	244	132
Queue Length 95th (ft)	223	#1056	m61	m31	#312	#260
Internal Link Dist (ft)		1558	146		640	
Turn Bay Length (ft)	190				97	97
Base Capacity (vph)	295	813	1040	628	674	444
Starvation Cap Reductn	0	0	210	290	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.01	0.81	0.78	0.80	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	1252	53	695	84	116	85	105	189
v/c Ratio	0.19	0.55	0.83	1.06	0.14	0.83	0.25	0.48	0.54
Control Delay (s/veh)	19.3	1.9	137.1	95.0	2.3	95.4	23.1	58.2	39.3
Queue Delay	0.5	2.0	0.0	0.0	0.0	1.2	0.0	0.0	0.1
Total Delay (s/veh)	19.8	3.8	137.1	95.0	2.3	96.6	23.1	58.2	39.4
Queue Length 50th (ft)	57	0	49	~720	0	101	24	85	102
Queue Length 95th (ft)	m57	m0	#136	#1027	14	#207	74	148	184
Internal Link Dist (ft)		146		593			526		696
Turn Bay Length (ft)			110		75	90		80	
Base Capacity (vph)	649	2318	64	654	597	154	365	243	380
Starvation Cap Reductn	290	865	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	4	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.86	0.83	1.06	0.14	0.77	0.23	0.43	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	411	684	284	147	526	158	137	706	137	1116
v/c Ratio	1.10	1.05	0.46	0.86	1.18	0.31	1.10	0.73	0.77	1.05
Control Delay (s/veh)	121.0	87.2	17.1	94.4	141.9	5.5	160.0	44.2	79.4	81.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	121.0	87.2	17.1	94.4	141.9	5.5	160.0	44.2	79.4	81.2
Queue Length 50th (ft)	~361	~583	82	114	~488	0	~120	262	104	~486
Queue Length 95th (ft)	#561	#815	163	#228	#704	41	#250	334	#191	#623
Internal Link Dist (ft)		1262			1969			1275		1600
Turn Bay Length (ft)	240		75	160		75	160		210	
Base Capacity (vph)	373	650	624	176	446	502	125	966	198	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	1.05	0.46	0.84	1.18	0.31	1.10	0.73	0.69	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	95	726	84	179	832	53	158	148
v/c Ratio	0.49	0.86	0.11	0.63	0.84	0.06	0.59	0.58
Control Delay (s/veh)	41.2	32.2	1.7	39.6	27.5	2.3	26.4	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.2	32.2	1.7	39.6	27.5	2.3	26.4	27.3
Queue Length 50th (ft)	39	245	0	72	281	0	38	37
Queue Length 95th (ft)	100	#723	12	156	#772	13	92	90
Internal Link Dist (ft)		1969			578		529	622
Turn Bay Length (ft)	70		75	90		75		
Base Capacity (vph)	268	846	756	463	987	823	575	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.86	0.11	0.39	0.84	0.06	0.27	0.27

Intersection Summary

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	120	109	753	97	53	1074
v/c Ratio	0.48	0.35	0.35	0.08	0.31	0.43
Control Delay (s/veh)	32.8	8.7	9.2	0.8	34.0	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.8	8.7	9.2	0.8	34.0	5.3
Queue Length 50th (ft)	49	0	83	0	22	73
Queue Length 95th (ft)	84	35	163	8	52	161
Internal Link Dist (ft)	710		386			377
Turn Bay Length (ft)		40		70	80	
Base Capacity (vph)	427	456	2160	1290	202	2515
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.24	0.35	0.08	0.26	0.43

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	53	1043	122	735	212	208
v/c Ratio	0.11	0.42	0.37	0.29	0.91	0.82
Control Delay (s/veh)	6.6	7.5	11.2	6.5	86.8	71.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.6	7.5	11.2	6.5	86.8	71.9
Queue Length 50th (ft)	12	163	36	102	163	159
Queue Length 95th (ft)	28	214	80	138	#285	#251
Internal Link Dist (ft)		346		1233	666	539
Turn Bay Length (ft)	100		100			
Base Capacity (vph)	473	2504	327	2544	272	298
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.42	0.37	0.29	0.78	0.70

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	102	643	306	189	579	263	232	652	274	853	126
v/c Ratio	0.60	1.27	0.61	0.77	0.99	0.46	0.64	0.82	0.83	0.78	0.24
Control Delay (s/veh)	67.3	171.5	28.9	70.4	75.4	20.8	59.5	48.8	66.4	41.2	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay (s/veh)	67.3	171.5	28.9	70.4	75.4	20.8	59.5	48.8	66.4	41.7	11.2
Queue Length 50th (ft)	75	~626	118	137	434	78	87	229	198	301	18
Queue Length 95th (ft)	141	#979	246	#249	#808	185	140	321	#323	401	65
Internal Link Dist (ft)		1233			544			585		386	
Turn Bay Length (ft)	150		110	190		100	270		60		80
Base Capacity (vph)	248	507	501	312	586	567	479	1011	431	1404	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	190	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	1.27	0.61	0.61	0.99	0.46	0.48	0.64	0.64	0.70	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	21	917	115	32	832	32	147	84
v/c Ratio	0.29	0.86	0.13	0.40	0.78	0.03	0.64	0.34
Control Delay (s/veh)	70.2	36.0	6.3	74.6	30.8	0.1	56.2	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.2	36.0	6.3	74.6	30.8	0.1	56.2	45.3
Queue Length 50th (ft)	17	580	7	27	474	0	100	58
Queue Length 95th (ft)	47	#1189	48	#68	#1037	0	157	100
Internal Link Dist (ft)		283			632		223	249
Turn Bay Length (ft)	125		125	125		125		
Base Capacity (vph)	75	1064	900	82	1070	927	357	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.86	0.13	0.39	0.78	0.03	0.41	0.24

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	253	674	168	337	547	232	242	568	242	284	1000	200
v/c Ratio	0.84	1.23	0.32	0.88	0.93	0.42	0.94	0.60	0.44	0.88	0.94	0.39
Control Delay (s/veh)	90.5	162.3	16.5	105.2	60.1	19.2	104.4	51.2	12.0	76.5	49.2	22.1
Queue Delay	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.5	164.1	16.5	105.2	60.1	19.2	104.4	51.2	12.0	76.5	49.2	22.1
Queue Length 50th (ft)	127	~848	41	180	482	50	236	252	28	268	486	60
Queue Length 95th (ft)	#197	#1093	107	m#240	#774	m103	#399	328	109	m229	m402	m49
Internal Link Dist (ft)		357			862			672			371	
Turn Bay Length (ft)	150		75	180		75	260		170	200		70
Base Capacity (vph)	311	547	521	392	591	551	266	943	548	379	1116	527
Starvation Cap Reductn	0	104	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	43	0	0	0	0	0	0	4	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.52	0.32	0.86	0.93	0.42	0.91	0.60	0.44	0.75	0.90	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	42	853	168	179	821	11	211	158	33
v/c Ratio	0.51	0.98	0.23	0.48	0.82	0.01	0.53	0.27	0.07
Control Delay (s/veh)	71.3	59.4	27.5	67.2	35.7	0.0	48.6	6.5	27.5
Queue Delay	0.0	2.8	0.0	0.0	49.8	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.3	62.2	27.5	67.2	85.5	0.0	48.6	6.5	27.5
Queue Length 50th (ft)	43	637	87	86	655	0	171	0	15
Queue Length 95th (ft)	m50	m613	m100	127	870	0	259	54	42
Internal Link Dist (ft)		862			442		717		201
Turn Bay Length (ft)	60		75	180		75			
Base Capacity (vph)	88	869	738	376	1003	846	401	581	489
Starvation Cap Reductn	0	12	0	0	286	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.00	0.23	0.48	1.15	0.01	0.53	0.27	0.07

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	104	865	94	105	779	84	138	305
v/c Ratio	0.75	1.18	0.15	0.70	1.04	0.13	0.61	0.75
Control Delay (s/veh)	85.6	126.5	4.4	76.3	79.0	3.1	51.1	51.4
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.6	127.5	4.4	76.3	79.0	3.1	51.1	51.4
Queue Length 50th (ft)	80	~814	0	80	~660	0	86	189
Queue Length 95th (ft)	#165	#1067	29	#140	#898	22	133	#467
Internal Link Dist (ft)		442			1499		669	751
Turn Bay Length (ft)	80		80	210		75		
Base Capacity (vph)	147	735	636	176	748	659	415	406
Starvation Cap Reductn	0	98	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	1.36	0.15	0.60	1.04	0.13	0.33	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Attachment M - Roundabout Feasibility Study

Michael Wallwork, Roundabout Expert

Technical Memorandum

To:	Phuong Nguyen, PE
From:	Michael J. Wallwork
Date:	June 17, 22
Re:	Roundabout assistance at Montezuma Road at 63rd Street, San Diego

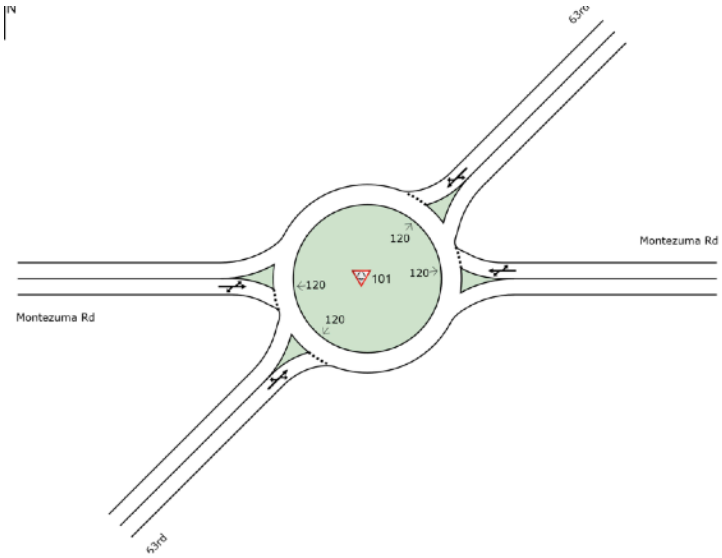
As requested I undertaken a capacity analysis of the above intersection using SIDRA latest version using traffic counts that were provided by Counts Unlimited.

Capacity Analyses

The summary of the AM and PM peak periods are shown in the table below.

Control	Time Period	Level-of-service	Average Delay per Vehicle (seconds)	Volume/ capacity Ratio	95th Percentile Vehicle Queue (Ft) and approach
One-lane roundabout	AM	A	1.4	0.579	133 9E)
	PM	A	1.2	0.606	162 (W)

Overall, a roundabout as proposed has more than ample capacity for this intersection. The circumference of the Peanut Roundabout is 377 feet that equates to an effective diameter of 120 feet. The layout used in the analysis is shown to the right.



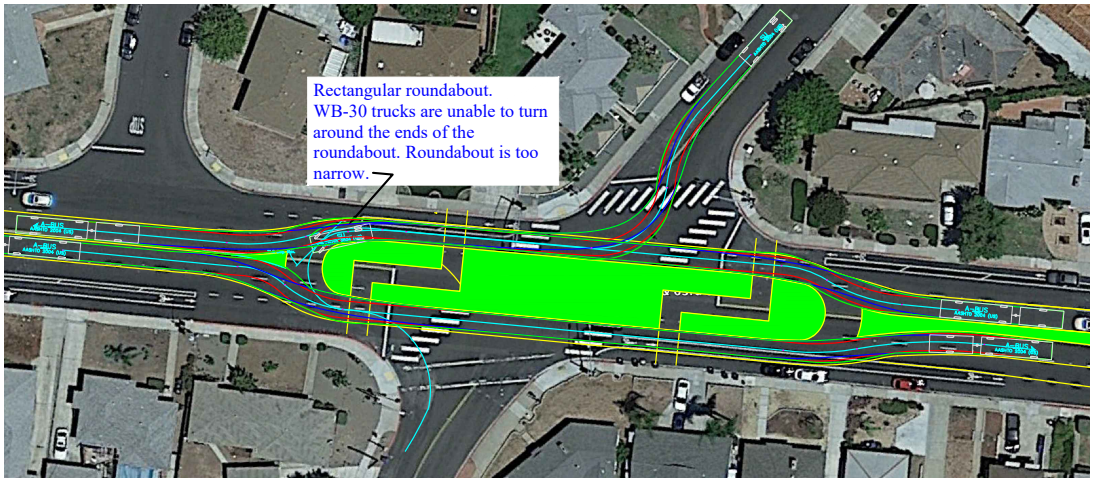
1516 Plainfield Avenue, Orange Park, FL 32073 (904) 710-2150 Email: mjwallwork@me.com

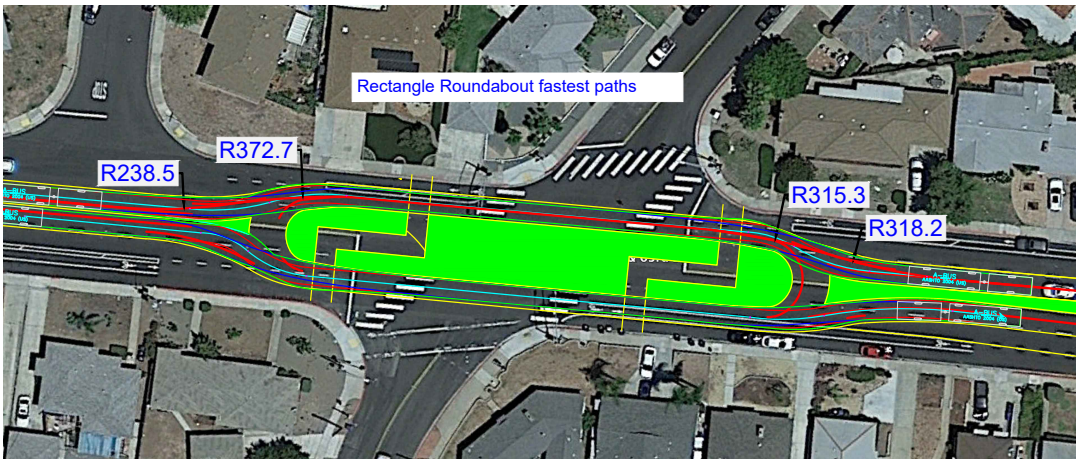
Design vehicles

For this roundabout design th proposed design vehicle was a SU-30 style delivery vehicle into and out of 63rd Street. A Articulated bus was used along Montezuma Road. As a check WB-50 trucks were tested on all movements. Such a truck could make all of the movements. In several cases the turns were tight with minimal clearance to curb faces. In some cases, these trucks will need to drive over the side street splitter islands and even take their wheels over the truck apron to get that additional clearance they needs.

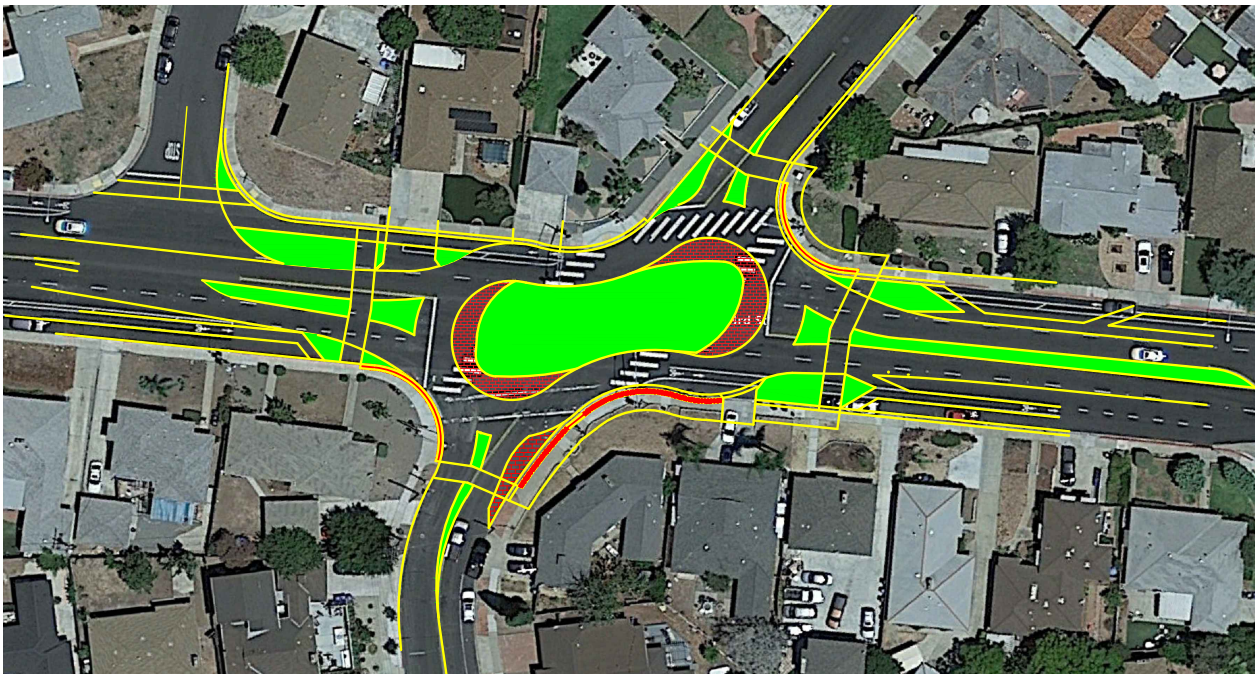
Geometric Design

A range of design options were considered from a simple circle, an elliptical roundabout, but were excluded quickly. A rectangular roundabout was promising until the fastest paths were checked and they were too fast, SU-30 trucks could not make a ton around the ends of the central island and the crosswalks were within the circulating roadway to minimize the distance pedestrians had to walk to cross the Road.

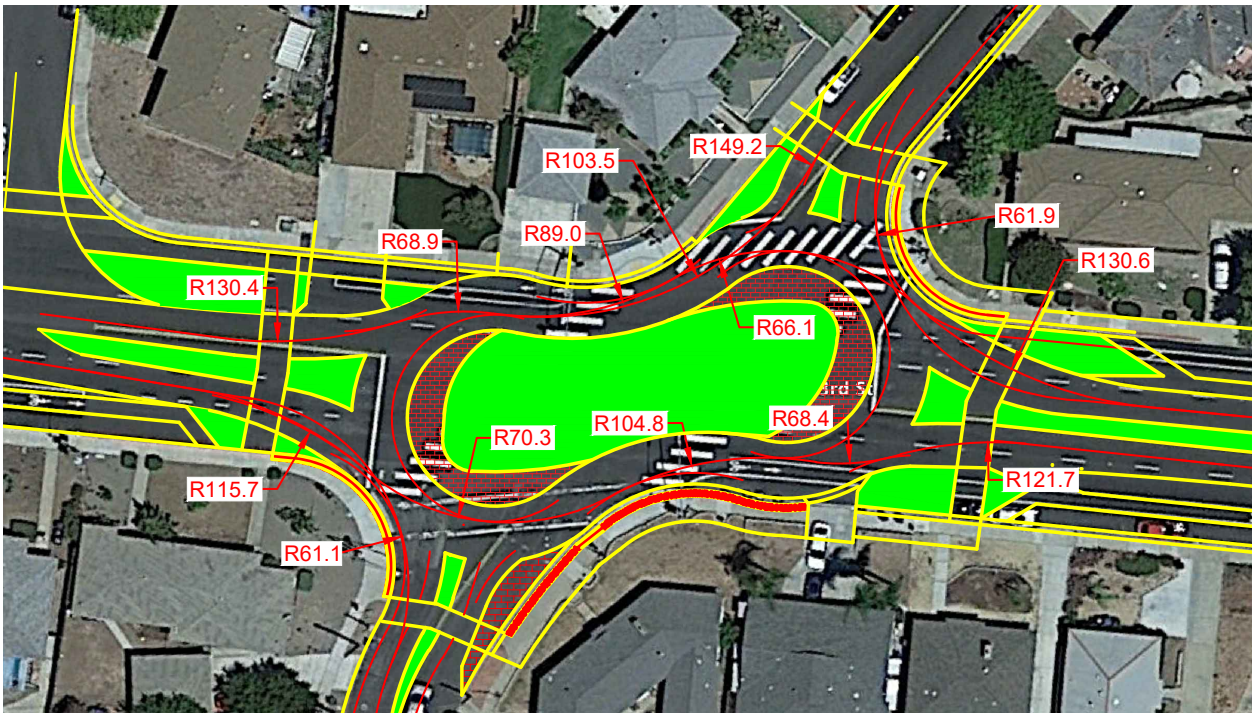




Then I tried several versions of a peanut roundabout until finalizing on the one shown below.

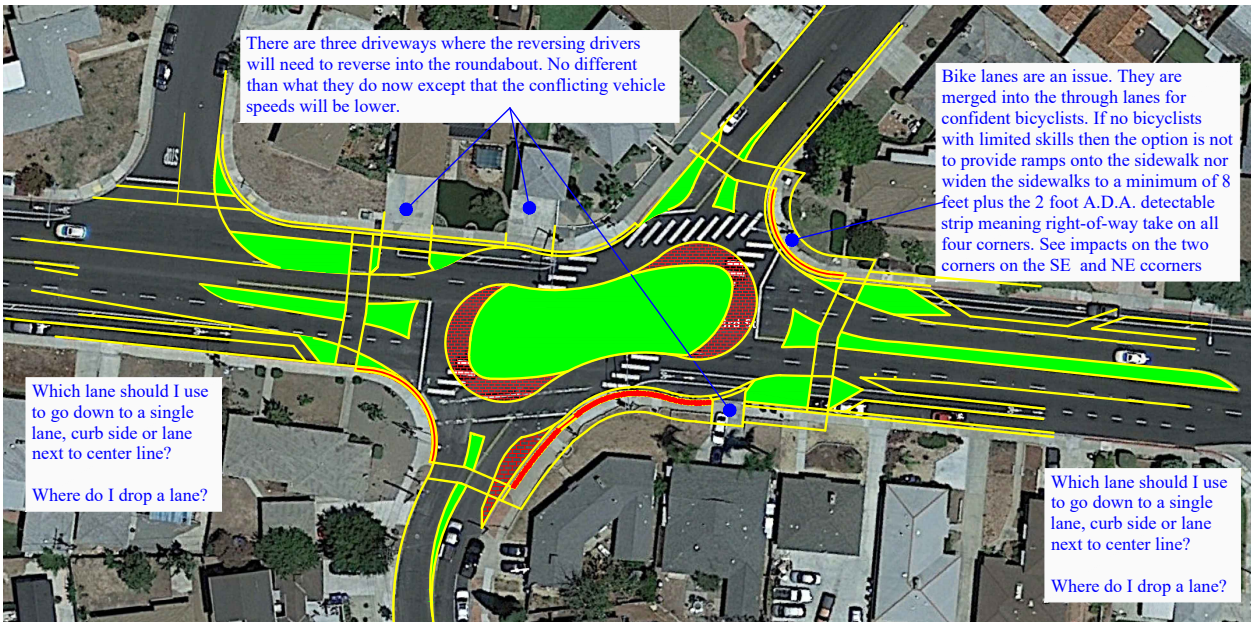


Its fastest paths are shown below. The maximum desired radius is 161 feet representing 25 mph. Overall this layout provides low speeds for all movements.

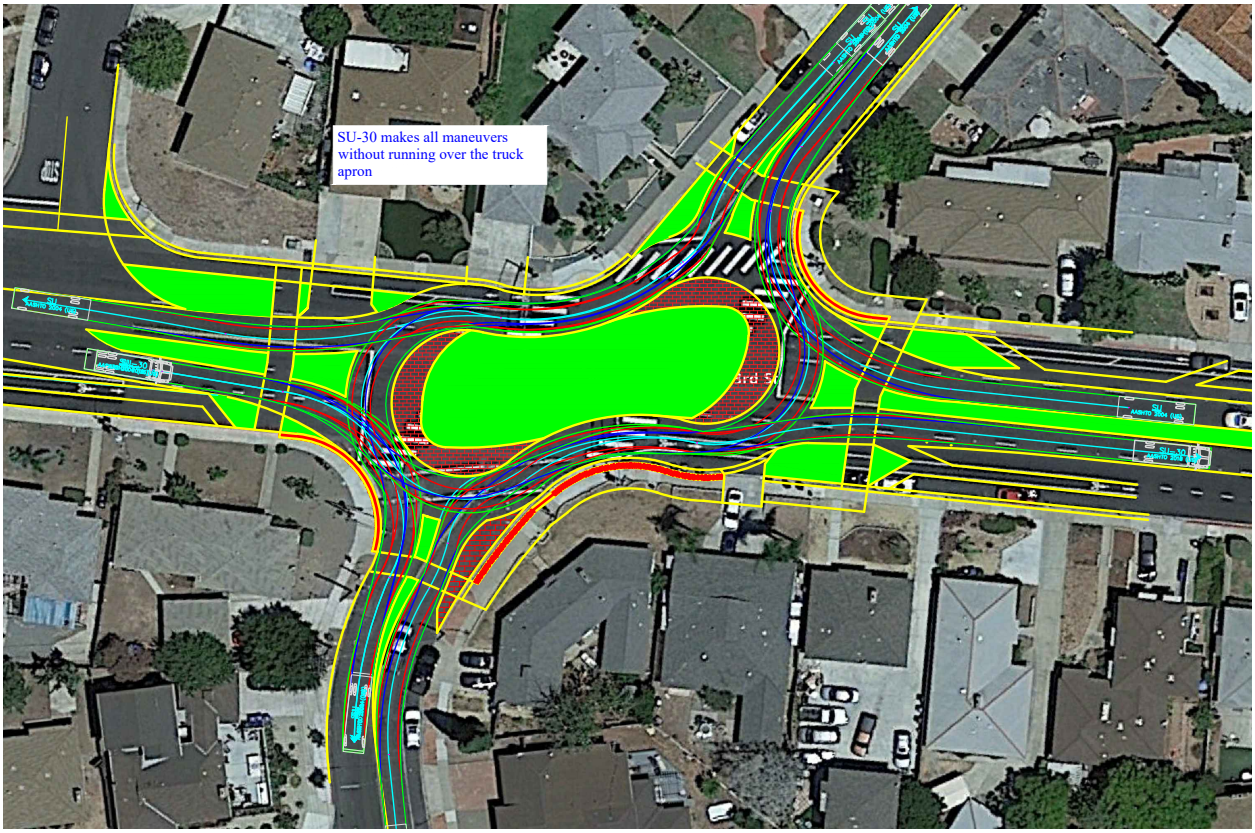


1516 Plainfield Avenue, Orange Park, FL 32073 (904) 710-2150 Email: mjwallwork@me.com

Notes for consideration. A larger version will be added to the email.

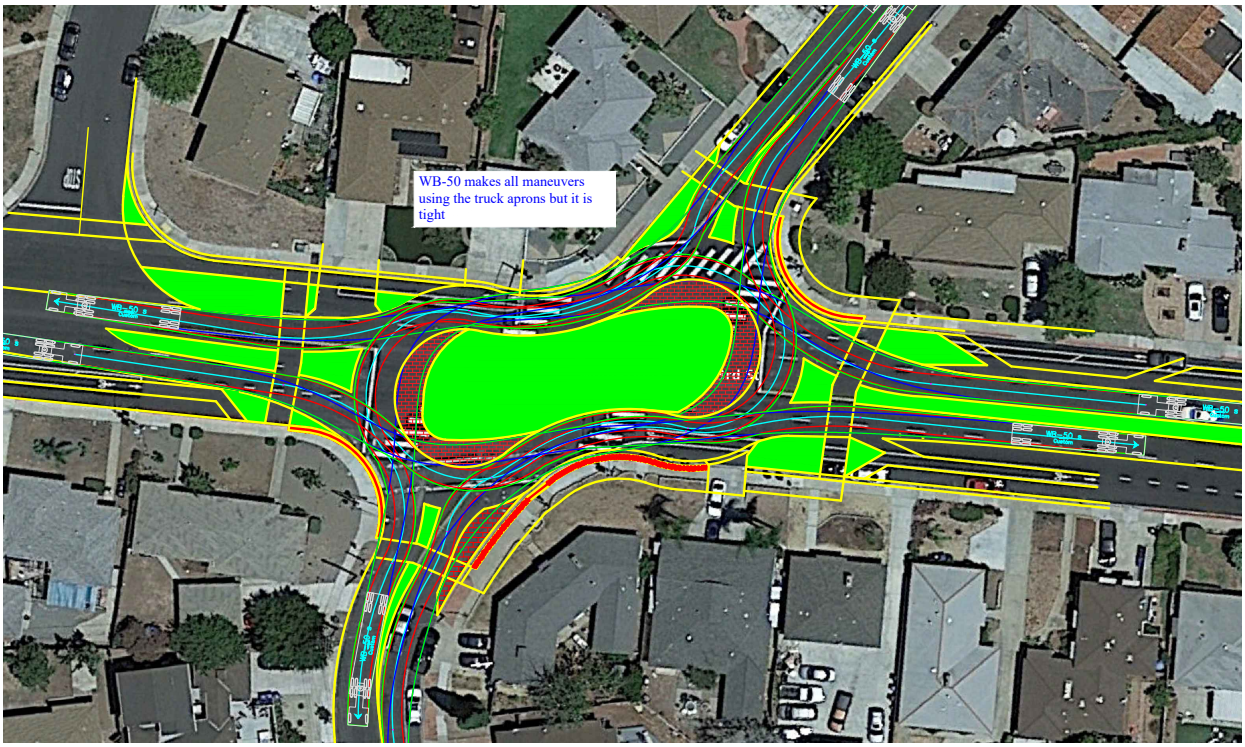


Below are the SU templates that provide around a three foot clearance to face of curb in most cases

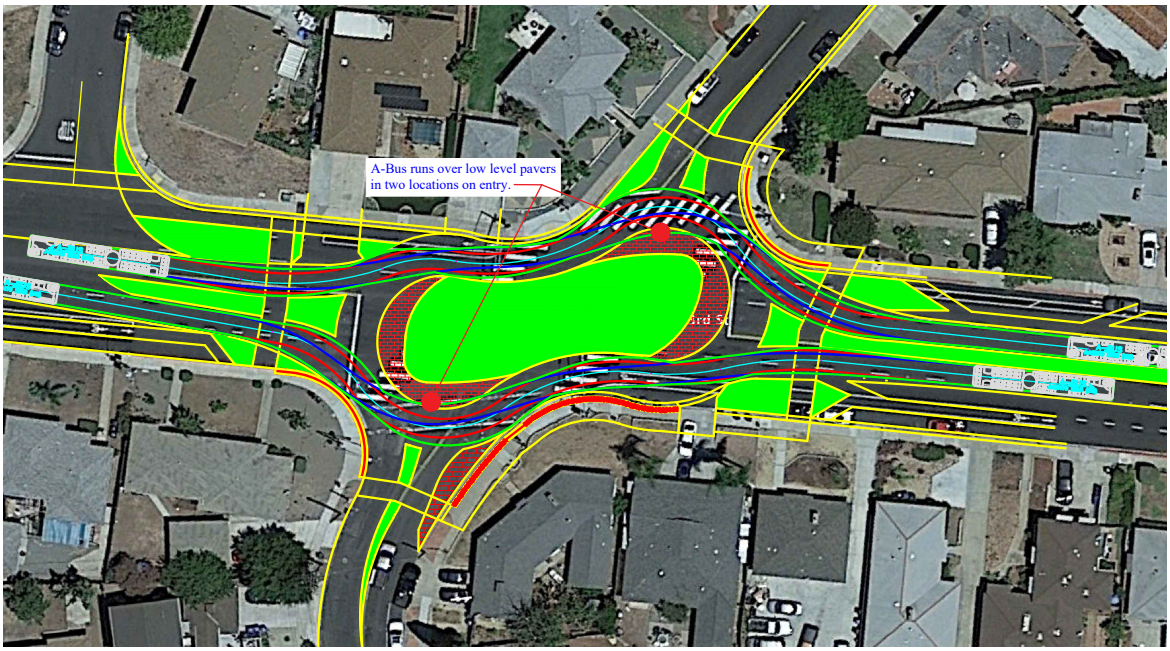


1516 Plainfield Avenue, Orange Park, FL 32073 (904) 710-2150 Email: mjwallwork@me.com

As a check WB-50 templates were develop=ed last show that in most cases a WB-50 can make all movements except in several cases is may have to drive over splitter island or the truck apron with its front tires.



Below are the A-Bus templates that show an articulated bus will runner the truck apron on both Montezuma Road approaches

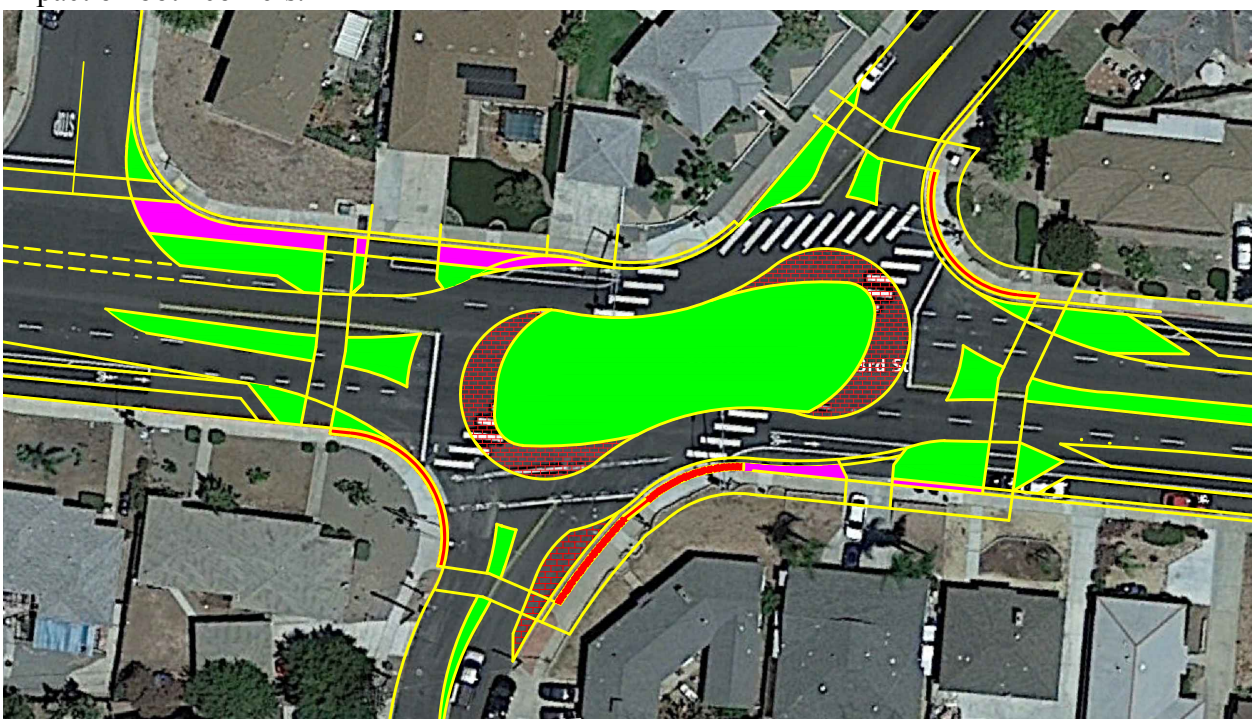


In this case, instead of the three inch vertical face to the curb around the edge of the truck apron/ central island, in these two areas a tapered edge could be provided that would discourage most vehicle drivers while significantly reducing the bump to bus passenger.

Right-of-way is needed in several locations however, if, only professional/competent bicyclists ride along Montezuma Road, then the bike ramps could be deleted and all bicyclists required to exit the bike lane and "claim the lane" and ride through the roundabout where vehicles are traveling quite slow, around 15 to 22 mph. With this change only the right-of-way on the NE corner would be required to provide the A.D.A. detectable strip between crosswalks.

Late Breaking Ideas

While writing this memo a couple of thoughts came to mind that modified the circulating road way widths on the SE and NW corners to eliminate excess area, thereby reducing right-of-way impact on both corners.



Questions:
1. How to taper back to existing on the westside
2. Bike lanes/shared paths or on-Road bike lanes only
3. Truck apron taper for A-Buses

Disclaimer: This concept and related comments are based on a concept prepared from a image that was scaled to the approximate size. All to often preparation on a CAD file allows for detailed comments.

1516 Plainfield Avenue, Orange Park, FL 32073 (904) 710-2150 Email: mjwallwork@me.com