APPENDIX 4.8
TRANSPORTATION IMPACT ASSESSMENT

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Transportation Impact Analysis

UC Merced 2020 LRDP

Prepared for:

UNIVERSITY OF CALIFORNIA
UCMERCED

UC Merced 2020 LRDP
Transportation Impact Analysis

Prepared for:
UC Merced

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1. Executive Summary

Overview

This report presents the analysis and findings of the UC Merced 2020 Long Range Development Plan Update Transportation Impact Analysis. The study purpose is to update the impact analysis presented in the 2009 UC Merced LRDP EIR to reflect the new expected campus build-out of 15,000 students in the year 2030. A longer-term analysis is also provided, for the year 2035, assuming a straight-line growth trend (17,500 students). This 2035 scenario is somewhat speculative, as the University does not have plans nor funding to grow beyond the 15,000-student level at this time; however, this scenario is included to provide a longer-term cumulative assessment. The updated impact analysis is intended to provide more current and thus accurate information on the expected off-site impacts of the LRDP, for the University's use in planning for off-campus intersection improvements in coordination with the City of Merced and Merced County.

Methodology

Study Intersections

The study analyzes 19 intersections, including 15 that were studied in the 2009 LRDP EIR, two new project driveways, and two that were added at the City of Merced's request. The intersections are shown on **Figure 1** in Section 2 of this report. AM and PM peak period traffic counts were obtained in November 2017 for 17 of the 19 intersections. The remaining two intersections are planned new campus driveways on Lake Road, which are not yet constructed. Based on these counts, the study area peak hours are typically about 7:30 – 8:30 AM and 4:30 – 5:30 PM.

Freeway Operations

This study analyzes six freeway segments. Average daily traffic and peak hour traffic volumes were obtained in November 2017 from the California Department of Transportation Performance Measurment System data. Based on these traffic volumes, the study area peak hours for the freeway system are typically about 7:00 AM – 8:00 AM and 4:00 PM – 5:00 PM.

Analysis Scenarios

The study assesses peak hour intersection level of service (LOS) for Existing (November 2017), 2030 Without Project, 2030 With Project, 2035 Without Project, and 2035 With Project conditions. The Transportation Research Board's 2010 Highway Capacity Manual methodology for intersection level of service analysis was used; this is an update from the 2000 HCM methodology used in the 2009 LRDP EIR. The methodologies are essentially consistent but have been found to produce somewhat different results under certain circumstances.

The study assess peak hour freeway operations for for Existing (November 2017), 2030 Without Project, 2030 With Project, 2035 Without Project, and 2035 With Project conditions. Volume-to-capacity (V/C) ratios were used to asses the freeway conditions.

Project Trip Generation and Assignment

Campus trip generation rates were developed based on counts conducted in March and November 2017.

The LRDP proposes growth from the current 7,967 enrolled students (November 2017) to 15,000 enrolled students in 2030, with associated growth in faculty and staff. This growth is estimated to add 827 AM peak hour trips and 905 PM peak hour trips to the local and regional roadway network. A portion of this growth is associated with the already-entitled 2020 Project, which is currently projected to accommodate 9,700 students. The 2020 Project portion of the trip growth is 89 AM peak hour trips and 97 PM peak hour trips. Thus, the 2020 LRDP trip growth is 738 AM peak hour trips (827 – 89), and 808 PM peak hour trips (905-97).

The 2035 scenario analyzes additional campus growth to 17,500 enrolled students, with associated growth in faculty and staff. This is an estimated continuation of the growth rate from 2020 to 2030, using a straight-line growth rate. This growth is estimated to add 1,181 AM peak hour trips and 1,292 PM peak hour trips to the local and regional roadway network; as in the 2030 case, the 2020 Project portion of this trip growth is 89 AM peak hour trips and 97 PM peak hour trips. Thus, the post-2020 Project trip growth to the year 2035 is 1,092 AM peak hour trips (1,181 – 89) and 1,195 PM peak hour trips (1,292 – 97).

The assignment of the new trips to the roadway network was based on student and staff residence data provided by the University. The assignment was performed using the Vistro trip assignment software.

Approved and Anticipated Development to 2030 and 2035 – Trip Generation and Assignment

The City of Merced and Merced County provided lists of approved and planned projects expected to be constructed by 2035, encompassing about 1,028,050 square feet of new commercial development, two hotels totaling 187 rooms, and 3,662 residential units. The trip generation for this new development was estimated using trip generation rates from the Institute of Transportation Engineers *Trip Generation, 9th Edition*, or the traffic impact studies prepared for the projects, where available. The total trip generation for this development is estimated at 3,860 AM peak hour trips and 7,050 PM peak hour trips. The trip generation for the 2030 analysis was derived from the 2035 numbers, assuming straight-line growth between 2017 and 2035. Thus, the trip generation in 2030 is estimated at 2,730 AM peak hour trips and 4,980 PM peak hour trips.

The approved and anticipated development trips were assigned to the roadway network using the Vistro software using distribution patterns derived from the MCAG Travel Demand Model.

Findings

Intersection Operations

The Project intersection impacts are presented in Impact TRA-1 (2030 With Project Impacts) in Section 5, and Impact TRA-2 (2035 With Project impacts) in Section 6. The Project is projected to impact nine intersections under 2030 With Project conditions, and 15 intersections under 2035 With Project conditions. Intersection mitigation measures and estimated fair-share contributions are presented in Section 7.

The intersections significantly impacted under 2030 With Project conditions are:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour
- Intersection #2: Bellevue Road/G Street (Signal) – AM peak hour
- Intersection #3: East Bellevue Road/Lake Road (Signal) – PM peak hour
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours

- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours
- Intersection #13: West Olive Avenue/M Street (Signal) -- PM peak hour
- Intersection #14: G Street/Olive Avenue (Signal) – AM Peak Hour
- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour

The intersections significantly impacted under 2035 With Project conditions are:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour
- Intersection #2: Bellevue Road/G Street (Signal) – AM Peak Hour
- Intersection #3: East Bellevue Road/Lake Road (Signal) – AM and PM peak hours
- Intersection #4: G Street/Cardella Road (Signal) – AM peak hour
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours
- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours
- Intersection #11: West Olive Avenue/Snelling Highway (SR-59) (Signal) – PM peak hour
- Intersection #13: West Olive Avenue/M Street (Signal) – AM and PM peak hours
- Intersection #14: G Street/Olive Avenue (Signal) – AM and PM peak hours
- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour
- Intersection #16: Martin Luther King, Jr. Way/SR 99 Northbound Ramps (Side-street stop controlled) – PM peak hour
- Intersection #17: G Street/14th Street/SR 99 Northbound Off-Ramp (Side-street stop controlled) – PM peak hour
- Intersection #18: Lake Road/Project Driveway #1 (Side-street stop controlled) – PM peak hour

- Intersection #19: Lake Road/Project Driveway #2 (Side-street stop controlled) – PM peak hour

Freeway Operations

No significant impacts are identified for freeway operations.

Other Impact Findings

An assessment of impacts relative to the CEQA Guidelines Appendix G criteria addressing pedestrian and bicycle facilities, public transit, emergency access, hazards, and air traffic is provided; no significant impacts are identified for these impact areas.

2. Introduction

This report presents the analysis and findings of the UC Merced 2020 Long Range Development Plan (LRDP). This chapter discusses the study purpose, analysis methods, and criteria used to identify significant impacts.

Study Purpose

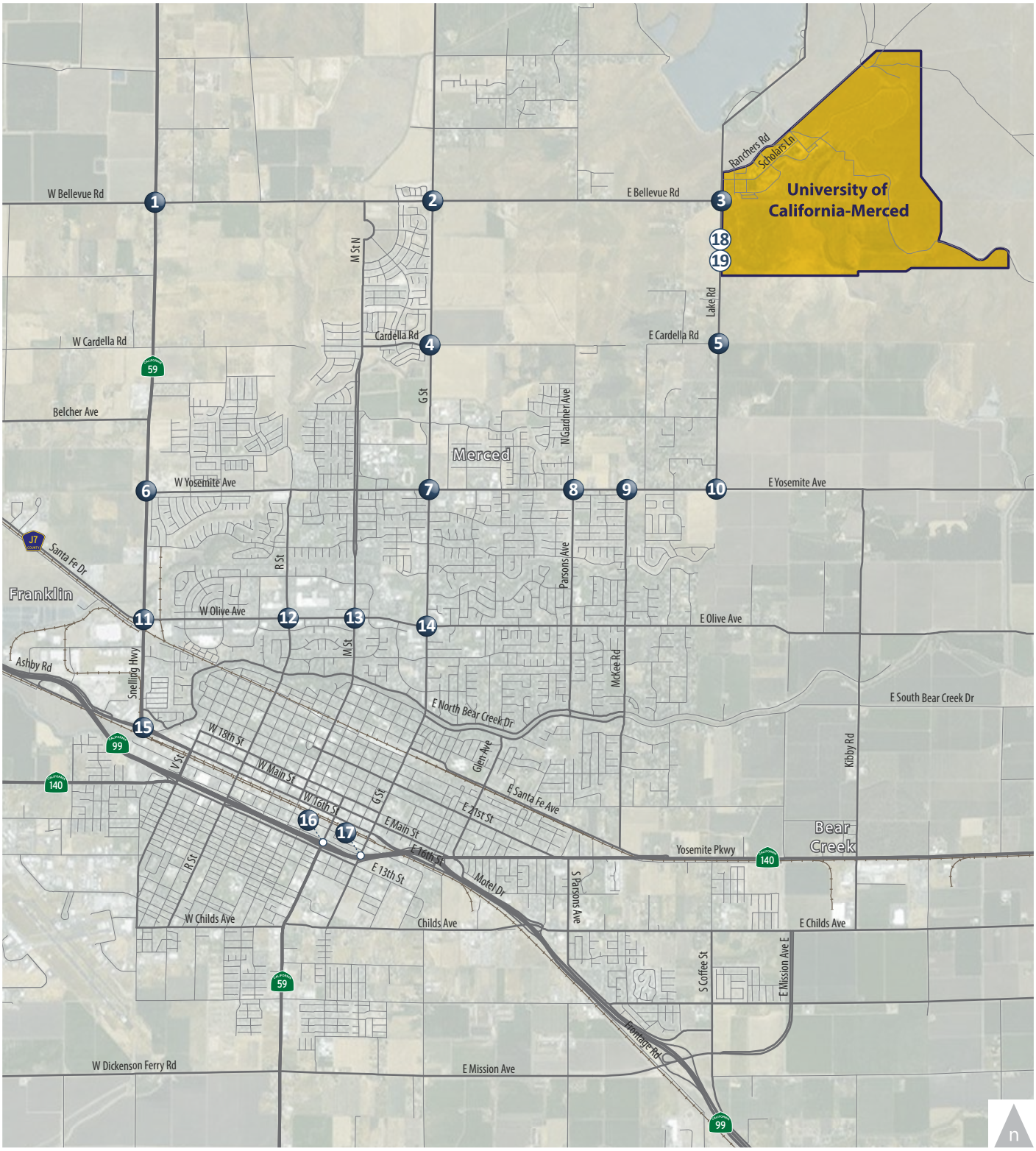
The study purpose is to update the impact analysis from the 2009 UC Merced LRDP EIR to assess the 2020 UC Merced LRDP, which envisions a 15,000-student campus in 2030. A 2035 analysis of a 17,500-student campus is also analyzed, although the University does not currently have plans for growth beyond 15,000 students. The study includes updated existing conditions data, updated campus trip generation rates derived from 2017 campus trip generation counts, and updated traffic projections to the years 2030 and 2035. The updated impact analysis is intended to provide more current and thus accurate information on the expected off-site impacts of campus growth in 2030 and 2035, for the University's use in planning for off-campus intersection improvements in coordination with the City of Merced and Merced County.

Study Intersections and Analysis Scenarios

The study area and intersections are shown in **Figure 1.** These intersections were selected from the full set of analysis locations in the 2009 LRDP EIR based on three criteria:

1. The intersections were identified as significant impact locations in the 2009 LRDP EIR; or
2. The intersections are located adjacent to 2009 LRDP EIR impact locations and were deemed most likely to be identified as new impact locations in the updated analysis; or
3. The intersections are in the northeast quadrant of the city, closest to the UC Merced campus, and thus are expected to serve the highest number of campus trips relative to the other intersections throughout the city that were previously studied.

In addition to the original fifteen intersections selected for analysis, two additional intersections — #6 and #15 on **Figure 1** — were added to the analysis at the City of Merced's request.



LEGEND

Project Site # Study Intersection (#) With Project Study Intersection

Figure 1

Project Site and Study Area

As shown on **Figure 1**, the study intersections are:

1. West Bellevue Road/Snelling Highway (SR-59)
2. Bellevue Road/G Street
3. East Bellevue Road/Lake Road
4. Cardella Road/G Street
5. East Cardella Road/Lake Road
6. West Yosemite Avenue/ Snelling Highway (SR-59)
7. Yosemite Avenue/G Street
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue
9. East Yosemite Avenue/McKee Road
10. East Yosemite Avenue/Lake Road
11. West Olive Avenue/Snelling Highway (SR-59)
12. West Olive Avenue/R Street
13. West Olive Avenue/M Street
14. Olive Avenue/G Street
15. West 16th Street/Snelling Highway (SR-59)
16. SR 99 Northbound Ramps/MLK Jr. Way
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street
18. Lake Road/New UC Merced Driveway 1 (2020 Project Driveway)
19. Lake Load/New UC Merced Driveway 2 (2020 LRDP Driveway)

For this study, the following scenarios are evaluated:

- ***Existing –*** Existing (November 2017) conditions based on traffic counts
- ***2030 No Project*** – Near-term conditions (2030), with traffic from approved and anticipated development throughout the City and County of Merced
- ***2030 With Project*** – Near-term conditions with traffic generated by the 2020 LRDP Project (15,000 students)
- ***2035 No Project*** – Cumulative conditions (2035), with traffic from approved and anticipated development throughout the City and County of Merced

- ***2035 With Project*** – Cumulative conditions with traffic generated by the campus at an enrollment of 17,500 students

Analysis Methods

Intersection Analysis

Study intersections were analyzed using the *2010 Highway Capacity Manual* (HCM) methodologies. Traffic operations were analyzed using the Synchro 9.0 software program, which is based on procedures outlined in the HCM.

The analysis results are presented using a descriptive term known as level of service (LOS), which is a measure of the quality of traffic operating conditions varying from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed capacity resulting in long queues and delays). LOS grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving.

The LOS is determined differently depending on the type of control at the intersection. For side-street stop-controlled intersections, the LOS rating is based on the weighted average control delay of the side-street. At all-way stop-controlled and signalized intersections, the LOS rating is based on the weighted average control delay of all movements measured in seconds per vehicle. Peak hour traffic volumes, lane configurations, and signal timing plans are used as inputs in the LOS calculations. **Table 1** summarizes the relationship between the average control delay per vehicle and LOS for signalized and unsignalized intersections.

Freeway Analysis

Freeway segments were analyzed using volume-to-capacity (V/C) ratios. The analysis results are presented as a ratio, which is a measure of traffic operating conditions and compares the volume to the road's capacity based on the number of lanes. A maximum lane capacity of 1,800 vehicles per hour per lane was used to asses the capacity of each freeway segment. A V/C ratio of 1.0 means that the roadway would operate at capacity and some delays and queuing would be expected, while a V/C ratio of 0.85 or less indicates that vehicles would typically not experience noticeable delays. Freeways are considered to operate at an acceptable level when the V/C ratio is 0.90 or less.

Table 1: Intersection LOS Definitions

Level of Service	Description	Signalized Criteria (Delay in Seconds)	Unsignalized Criteria (Delay in Seconds)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0	> 10.0 to 15.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0	> 15.0 to 25.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	> 35.0 to 50.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0	> 50.0

Source: 2010 *Highway Capacity Manual*.

Significance Criteria

As described in the CEQA Guidelines (2018), the Project may cause a significant impact if it would result in any of the following:

(a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. For the purposes of this EIR, the following criteria are applied.

Intersection Impacts

The Project would have a significant impact on intersection operations if the Project would:

i. Cause the deterioration of a signalized intersection from LOS D or better under baseline conditions to LOS E or LOS F under With Project conditions; or

ii. Cause an increase in average delay of 5 or more seconds for a signalized intersection operating at LOS E or LOS F under baseline conditions; or

iii. At all-way stop controlled intersections, cause deterioration from LOS D or better to E or F; or, if the intersection is already operating at LOS E or F without the Project, add five or more seconds of delay

iv. At side-street stop controlled intersections, cause the worst approach to deteriorate from LOS D or better to E or F; or, if the worst approach is already operating at LOS E or F without the Project, add five or more seconds of delay to the worst approach

Freeway Impacts

The Project would have a significant impact on intersection operations if the Project would increase the volume-to-capacity ratio by more than 0.01 on a freeway segment operating at LOS E (V/C=0.90) or worse.

Transit Impacts

The Project would have a significant impact on the transit system if the Project would disrupt existing transit services or facilities, interfere with planned transit services or facilities, or conflict with adopted transit system plans.

Bicycle Impacts

The Project would have a significant impact on the bicycle network if it would disrupt existing bicycle facilities, interfere with planned bicycle facilities, or conflict with adopted bicycle system plans.

Pedestrian Impacts

The Project would have a significant impact on the pedestrian network if the Project would disrupt existing pedestrian facilities, interfere with planned pedestrian facilities, or conflict with adopted pedestrian system plans.

(b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). For the purposes of this transportation impact analysis, this impact criteria is not assessed because the referenced CEQA Guidelines section is not required to be implemented prior to July 1, 2020 and neither the City of Merced, Merced County, nor the University have developed standards or thresholds for vehicle miles travelled (VMT) impact evaluation.

(c) Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses.

(d) Result in inadequate emergency access.

3. Existing Conditions

This chapter describes the existing transportation conditions in the study area, including improvements that have been constructed since the 2020 Project Traffic Impact Analysis Update, prepared in March of 2014.

Roadway Network

UC Merced Campus is located northeast of the City of Merced. Access to the campus is provided by two two-lane rural roads, Bellevue Road and Lake Road.

Highway 99 is the primary regional facility in the Merced area. Highway 99 provides access to San Francisco and Sacramento to the north, and Fresno and Bakersfield to the south. Through the City of Merced, Highway 99 is a four-lane freeway, two in each direction, through the City of Merced. Future plans[1] call for improvements to SR 99 throughout the Central Valley.

Highway 140 is a major east-west highway serving recreational and local traffic. Highway 140 is a two-lane rural highway providing access to Yosemite National Park to the east, and extending to Highway 99 and Interstate 5 to the west.

Highway 59 is a north-south facility extending from State Route 152 (near Los Banos) to Snelling, a community located north of the City of Merced on the Merced River. Highway 59 is a two-lane rural highway through Merced.

G Street is a north-south roadway extending from E Mission Avenue to La Paloma Road, where it turns into Snelling Road. G Street is a four-lane roadway south of Yosemite Avenue with left-turn pockets at major intersections. North of Yosemite Avenue, G Streets expands to five lanes, three southbound and two northbound, with left-turn pockets until Mercy Avenue, where G Street narrows to become two lanes. North of Cardella Road, G Street expands back to four lanes until Farmland Avenue, where G Street narrows back to two lanes.

Olive Avenue is an east-west street providing cross-town travel. West Olive Avenue connects State Route 59 and R, M, and G Streets. It is a six-lane facility west of G Street, primarily serving a commercial corridor. West of Highway 59, Olive Avenue becomes Santa Fe Drive, connecting the northern portions of Merced to the City of Atwater and Castle Air Force Base. East of G Street, East Olive Avenue transitions from four lanes to two lanes and provides access to one of Merced's largest residential areas.

[1] See Merced County's Regional Transportation Plan (RTP)

Yosemite Avenue is an east-west road extending from Snelling Highway to its eastern terminus at Arboleda Drive. Yosemite Avenue is a two-lane facility west of Arboleda Drive until Lake Road, where the roadway becomes four travel lanes. West of McKee Road, Yosemite Avenue narrows to three travel lanes (two eastbound and one westbound), and expands back to four lanes west of N Gardner Avenue.

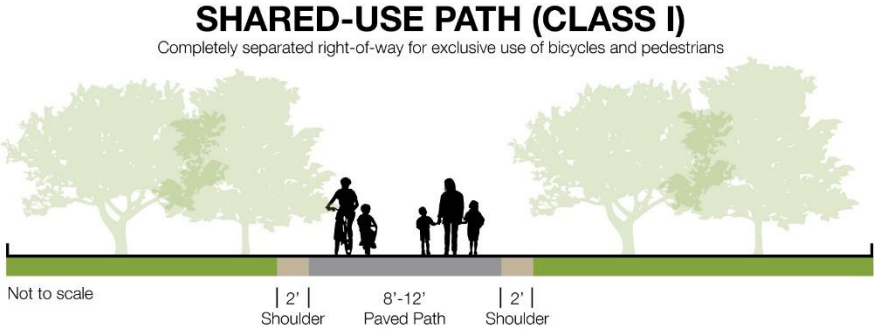
Bellevue Road is a two-lane east-west road extending from Fox Road to its eastern terminus at Lake Road, and is one of the two access roads to the UC Merced Campus. This roadway currently carries approximately 8,500 vehicles per day, west of Lake Road.

Lake Road is a two-lane north-south road extending from Yosemite Avenue to its northern terminus at Lake Yosemite, and is the other access road to the UC Merced Campus. This roadway currently carries approximately 5,600 vehicles per day, south of Bellevue Road.

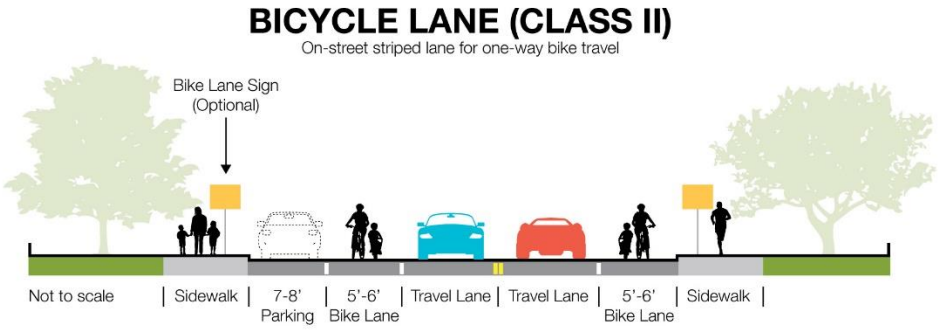
Bicycle Facilities

Bikeway planning and design in California typically relies on guidelines and design standards established by Caltrans in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). The *VTA Bicycle Technical Guidelines* (December 2012) recommends that Caltrans standards regarding bicycle facility dimension be used as a minimum and provides supplemental information and guidance on when and how to better accommodate the many types of bicyclists. Caltrans standards provide for four distinct types of bikeway facilities, as generally described below and shown on the accompany figures.

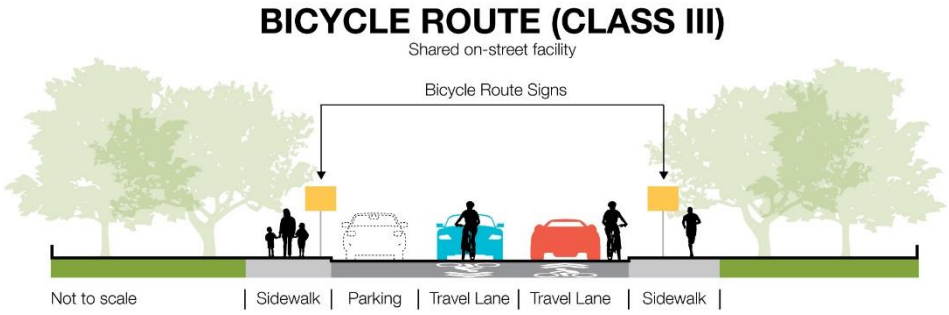
- **Class I Bikeway (Bike Path)** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. In general, bike paths serve corridors not served by streets and highways or where sufficient right-of-way exists to allow such facilities to be constructed away from the influence of parallel streets and numerous vehicle conflicts.



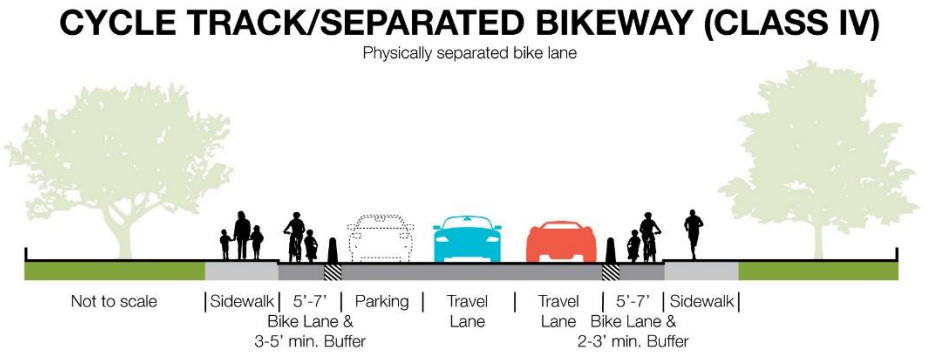
- **Class II Bikeways (Bike Lanes)** are lanes for bicyclists adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- **Class III Bikeways (Bike Routes)** are designated by signs or pavement markings for shared use with pedestrians or motor vehicles, but have no separated bike right-of-way or lane striping. Bike routes serve either to: a) provide continuity to other bicycle facilities, or b) designate preferred routes through high demand corridors.



- **Class IV Bikeways (cycle tracks or "separated" bike lanes)** provide a right-of-way designated exclusively for bicycle travel within a roadway and are protected from other vehicle traffic with devices, including, but not limited to, grade separation, flexible posts, inflexible physical barriers, or parked cars.



Class I bicycle facilities are provided along Fahrens Creek, Cottonwood Creek, Bear Creek, Black Rascal Creek, and Lake Road. Lake Road provides direct access to the UC Merced Campus and can be accessed via Class II bicycle lanes along Yosemite Avenue and the recently completed Black Rascal Creek trail connector.

Class II bicycle facilities include many of the arterial streets within the City of Merced, including major sections of G Street, M Street, Yosemite Avenue, and McKee Road. Designated bicycle lanes are provided along R Street, V Street, West Avenue, Main Street, 18th Street, 21st Street, Grogan Avenue, and Parsons Avenue.

Class III bicycle facilities are located on some sections arterials streets and various collector streets, including V Street, 26th Street, Glen Avenue, 13th Street, 14th Street, and Childs Avenue. The nearest Class III bicycle route to the project site is over 2 miles away.

Pedestrian Facilities

Pedestrian facilities include sidewalks, off-street paths, crosswalks, and pedestrian signals. Sidewalks are generally provided in developed areas in Merced and are being added in undeveloped areas as the adjacent parcels develop. Crosswalks and pedestrian signals are provided at all signalized study intersections in the area.

The trail along Lake Road provides direct access to the UC Merced Campus, and joins with existing sidewalks along Yosemite Avenue and the Black Rascal Creek trail connector.

Transit Service

The UC Merced campus is accessible by transit both locally and regionally. **Figure 2** shows the weekday bus routes that currently serve the UC Merced campus.

Amtrak provides regional train service to the City of Merced on the *San Joaquin* line with six trains per day operating in each direction. This service connects Merced with the San Francisco Bay Area, Fresno, Bakersfield, and other cities in the Central Valley. Connections are also available to Southern California, including San Diego, Oceanside, Santa Ana, and Los Angeles.

The Bus provides local and regional bus service to Merced County. The Bus operates 17 routes (13 of which serve the City of Merced), including a UC Merced Route which serves the UC Merced Campus. Service to UC Merced is provided Monday through Friday between 6:10 AM and 8:02 PM.

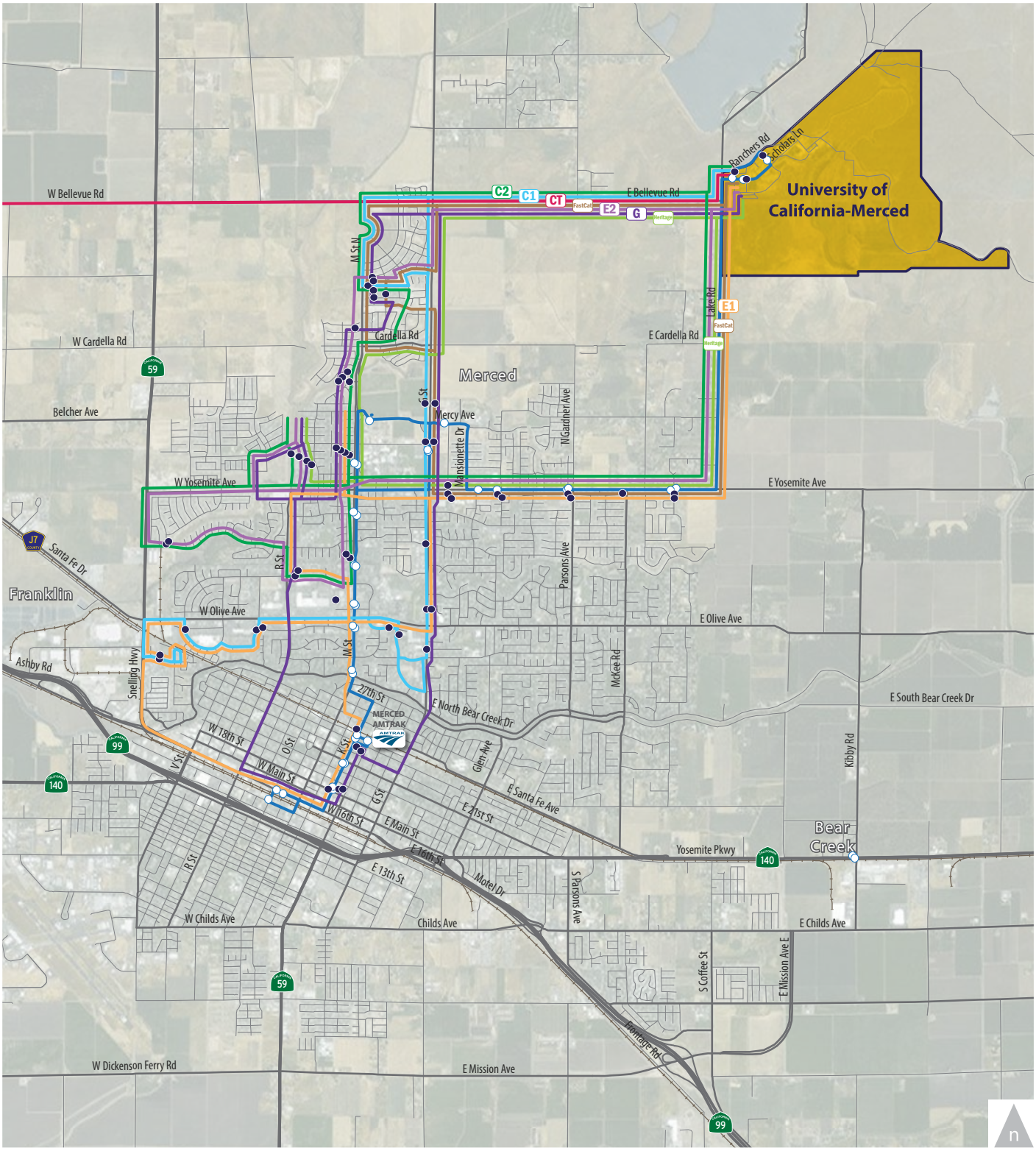
CatTracks is funded by the campus and provides local bus service to UC Merced. CatTracks connects the campus and surrounding areas, including downtown Merced and research facilities located on the closed Castle Air Force base. The following routes are provided when classes are in regular session:

- CampusTrax connects the campus and Castle Research Facilities. Service is provided between 7:30 AM and 6:10 PM Monday – Friday with 50-minute headways. A one-way trip takes 30 minutes.
- Route C-1 connects the campus with retail locations along W Olive Avenue and G Street, and to the Granville Apartments. Service is provided between 5:45 AM and 12:47 AM Monday – Friday with 40-minute headways. A round-trip takes 80 minutes.
- Route C-2 connects the campus with Merced College, retail locations along Yosemite Avenue and Loughborough Drive, and multiple housing locations. Service is provided between 5:25 AM and 11:05 PM Monday – Friday with 60-minute and 80-minute headways. A round-trip takes about 60 minutes.
- Route E-1 connects campus with Merced College, Amtrak, retail and entertainment locations in downtown and along Yosemite and Olive Avenues in the city of Merced, and various housing complexes. Service is provided on weekends only, from 11:05 AM to 11:09 PM.
- Route E-2 connects campus to Merced Mall, retail locations on Yosemite, and to various housing locations north of Olive Avenue. Service is provided on weekends only, from 11:05 AM to 9:43 PM.
- Route G connects campus to downtown Merced and Amtrak along O and K Street, and runs on a one-directional loop Monday – Friday between 5:40 AM and 9:09 PM. Six trips are provided in the AM with 70-minute headways, and seven trips in the PM.

- FastCat connects campus to the Moraga and Bellevue subdivisions, Mercy Hospital, Yosemite Church, and various medical offices. Service is provided Monday – Friday between 5:55 AM and 11:41 PM with 65-minute headways. A round-trip takes 65 minutes.

- Heritage Line is available to Heritage Residents only, and connects campus to the "R" Street Village Apartments. Service is provided Monday – Friday between 5:40 AM and 11:57 PM, and Saturday – Sunday between 10:00 AM and 10:11 PM, with 18-minute and 36-minute headways respectively.

YARTS (Yosemite Area Regional Transportation System) connects the City of Merced to Yosemite National Park. In the eastbound direction, six trips (two AM, four PM) are provided between Yosemite National Park and Merced. In the westbound direction, six trips (four AM, two PM) are provided.



LEGEND

- Project Site
- Merced Transit Authority (The Bus)
- The Bus Stop
- CatTracks Stop

UC Merced CatTracks

- CT — CampusTrax
- C1 — Route C1
- C2 — Route C2
- FastCat — FastCat
- E1 — Route E1
- E2 — Route E2
- G — Route G
- Heritage — Heritage

Figure 2

Weekday Bus Routes

Existing Intersection Operations

Existing Traffic Volumes

Weekday morning (7 – 9 AM) and evening (4 – 6 PM) peak period intersection turning movement counts were taken at intersections 1 – 17 in November 2017. A separate count of pedestrian crossings and bicycle movements were collected in addition to vehicle turning movements. The count sheets are included in the Technical Appendix. Based on these counts, the citywide traffic peak hours are generally 7:30 – 8:30 AM and 4:30 – 5:30 PM.

The existing peak hour intersection volumes, traffic controls and lane configurations are shown in **Figure 3.**

The pedestrian and bicycle volume counts at the intersection of East Bellevue Road/Lake Road, which served all those traveling to and from the campus in November 2017, indicate relatively low bicycling and walking to the campus: in the AM peak hour, 10 pedestrians and 7 bicyclists were observed, and in the PM peak hour, no pedestrians and 14 bicyclists were observed. Most of the bicyclists used the Lake Road path.

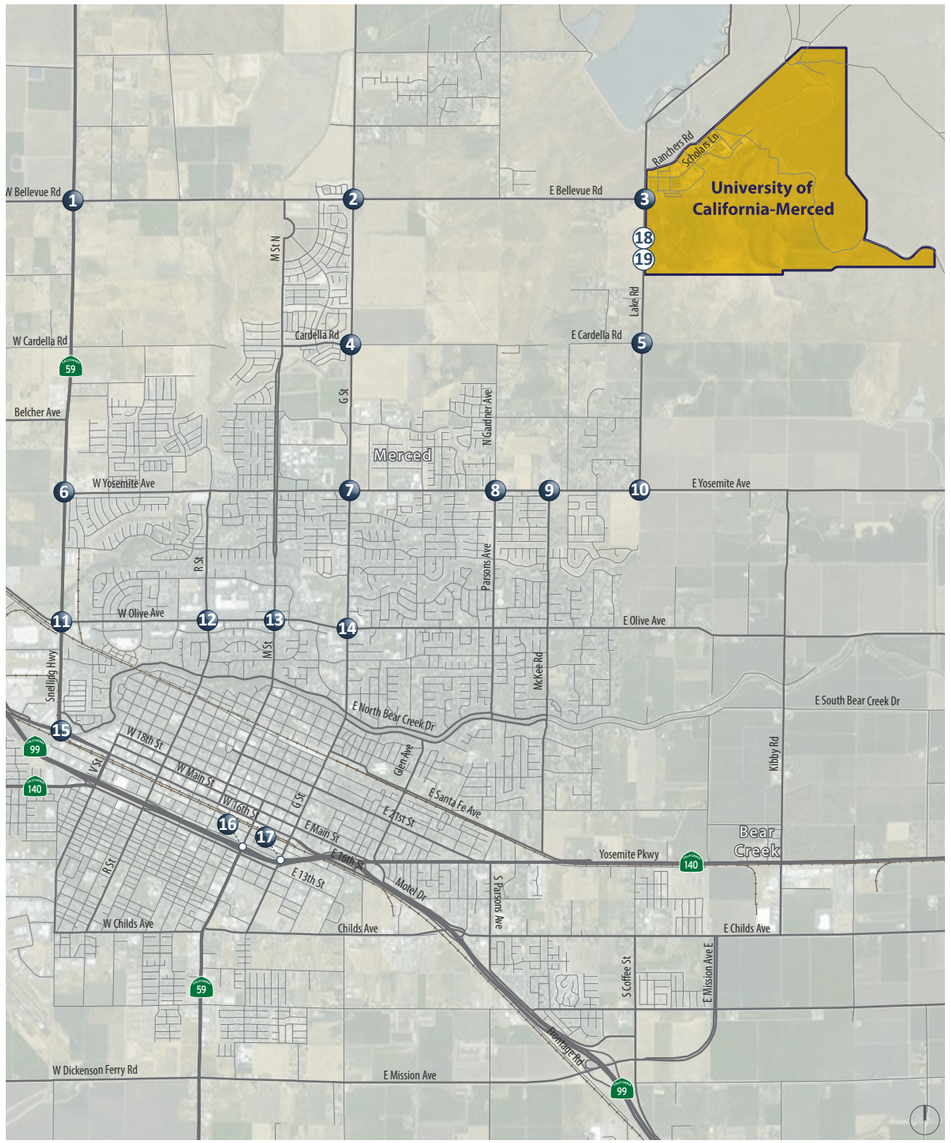
Intersection Level of Service

Existing operations were evaluated using the methodology described in Section 2 for the weekday AM and PM peak hours. The results are summarized in **Table 2.** As of November 2017, the following four intersections operated deficiently in one or both peak hours:

Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop)
Intersection #3: East Bellevue Road/Lake Road (All-way stop)
Intersection #12: West Olive Road/R Street (Signal)
Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop)

The peak hour signal warrant is met at intersections #3 and #15 under existing conditions. It is noted that, since the November 2017 counts were taken, the intersection of East Bellevue Road/Lake Road (#3) has been signalized, and operations have improved at this intersection as a result.

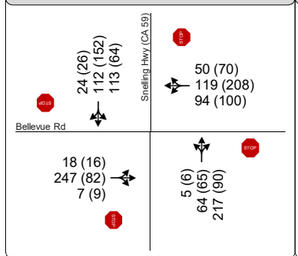
In addition, it is noted that the signal warrant is met at the intersection of East Yosemite Avenue/Parsons Avenue/Gardner Avenue (#8), even though the levels of service are acceptable based on November 2017 counts (LOS C in the AM peak hour and D in the PM peak hour).



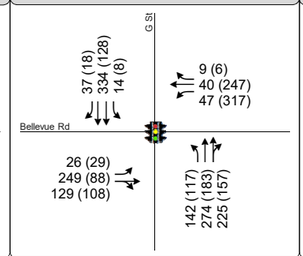
XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign

Project Site | Study Intersection

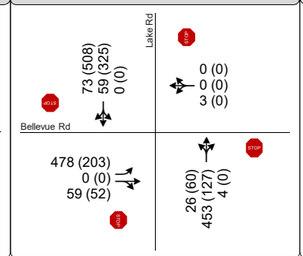
1. Snelling Hwy (CA 59)/Bellevue Rd



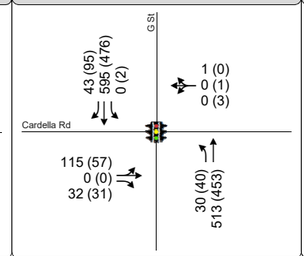
2. G St/Bellevue Rd



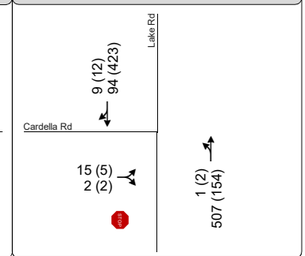
3. Lake Rd/Bellevue Rd



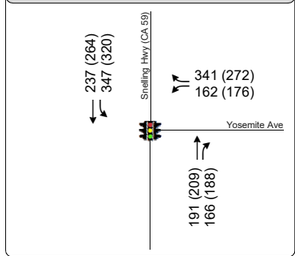
4. G St/Cardella Rd



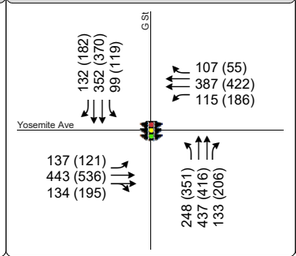
5. Lake Rd/Cardella Rd



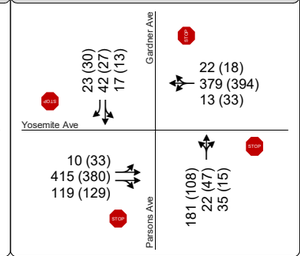
6. Snelling Hwy (CA 59)/Yosemite Ave



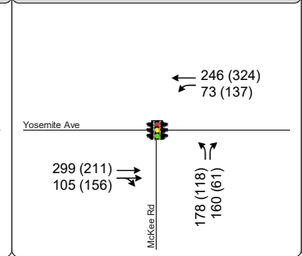
7. G St/Yosemite Ave



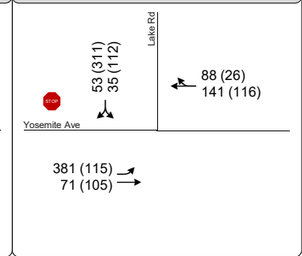
8. Gardner Ave/Parsons Ave/Yosemite Ave



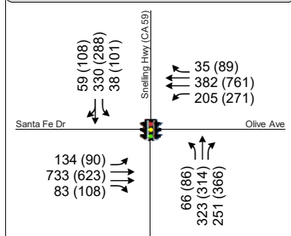
9. McKee Rd/Yosemite Ave



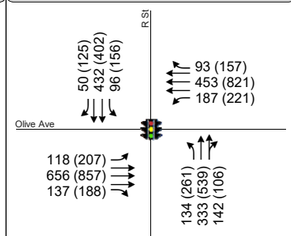
10. Lake Rd/Yosemite Ave



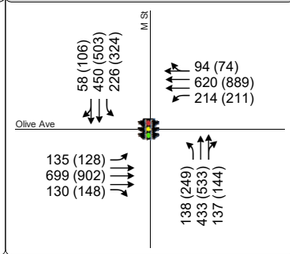
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



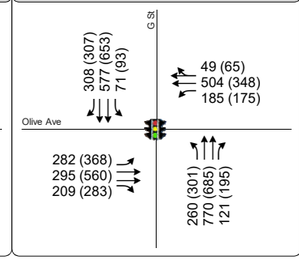
12. R St/Olive Ave



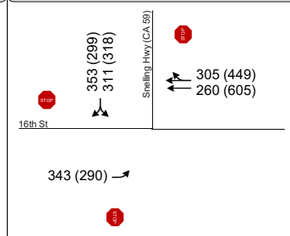
13. M St/Olive Ave



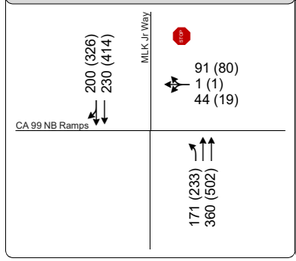
14. G St/Olive Ave



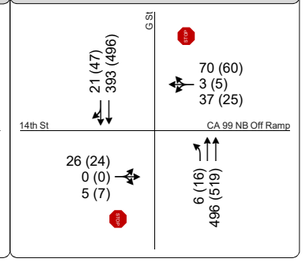
15. Snelling Hwy (CA 59)/16th St



16. MLK Jr Way/CA 99 NB Ramps



17. G St/14th St/CA 99 NB Off Ramp



Source: Counts conducted in November 2017.

Figure 3

Existing Peak Hour
Intersection Traffic Volumes, Lane Configurations and Traffic Controls

Table 2: Intersection Levels of Service — Existing Conditions

Location	Control[1, 2]	Peak Hour	Existing Conditions	
			Delay (seconds)	LOS
1. West Bellevue Road/Snelling Highway (SR-59)	AWS	AM PM	**41.3** 13.2	**E** B
2. Bellevue Road/G Street	Signal	AM PM	36.6 21.0	D C
3. East Bellevue Road/Lake Road	AWS	AM PM	**53.6** **70.8**	**F** **F**
4. Cardella Road/G Street	Signal	AM PM	11.4 6.8	B A
5. East Cardella Road/Lake Road	SSS	AM PM	0.4 (13.4) 0.2 (12.4)	A (B) A (B)
6. West Yosemite Avenue/ Snelling Highway (SR-59)	Signal	AM PM	13.1 11.4	B B
7. Yosemite Avenue/G Street	Signal	AM PM	40.1 43.1	D D
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue	AWS	AM PM	28.7 21.2	D C
9. East Yosemite Avenue/McKee Road	Signal	AM PM	8.6 8.2	A A
10. East Yosemite Avenue/Lake Road	SSS	AM PM	6.4 (17.3) 10.2 (16.8)	B (C) B (C)
11. West Olive Avenue/Snelling Highway (SR-59)	Signal	AM PM	48.4 49.8	D D
12. West Olive Avenue/R Street	Signal	AM PM	46.6 **56.4**	D **E**
13. West Olive Avenue/M Street	Signal	AM PM	48.1 55.0	D D
14. Olive Avenue/G Street	Signal	AM PM	45.5 47.0	D D
15. West 16th Street/Snelling Highway (SR-59)	AWS	AM PM	**78.7** **95.0**	**F** **F**
16. SR 99 Northbound Ramps/MLK Jr. Way	SSS	AM PM	3.5 (16.5) 2.8 (18.3)	A (C) A (C)
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street	SSS	AM PM	2.4 (20.1) 2.0 (22.5)	A (C) A (C)

Notes:
1. Signal = signalized intersection; AWS=all-way stop; SSS=side street stop
2. For side-street stop-controlled intersections, two service levels are listed: Average intersection LOS (LOS for worst side-street movement)

Source: Fehr & Peers, February 2019.

Freeway Operations

Existing operations were evaluated using the methodology described in Section 2 for the weekday AM and PM peak hours. The results are summarized in **Table 3.** As of November 2017, all freeway segments operated with a V/C ratio of 0.51 or lower in the AM peak hour, and 0.61 or lower in the PM peak hour. Based on this assessment, there is excess freeway capacity, and typical conditions would not incur substantial delays to drivers.

Table 3: Freeway Operations — Existing Conditions

Location	Direction	Peak Hour	Existing Conditions
			V/C Ratio
1. SR 99 North of 16th Street	NB	AM	0.50
		PM	0.61
	SB	AM	0.50
		PM	0.61
2. SR 99 North of SR 140	NB	AM	0.47
		PM	0.59
	SB	AM	0.50
		PM	0.61
3. SR 99 North of MLK	NB	AM	0.48
		PM	0.59
	SB	AM	0.51
		PM	0.61
4. SR 99 South of MLK	NB	AM	0.51
		PM	0.61
	SB	AM	0.51
		PM	0.60
5. SR 99 South of G Street	NB	AM	0.51
		PM	0.61
	SB	AM	0.51
		PM	0.61
6. SR 99 South of Mission Street	NB	AM	0.51
		PM	0.61
	SB	AM	0.38
		PM	0.53

Source Fehr & Peers, February 2019

4. Project Characteristics

This chapter describes the proposed Project (the 2020 LRDP), including campus population growth under the 2030 and 2035 scenarios, the proposed roadway network, and the Project trip generation, distribution, and assignment.

Project Description

The LRDP site and circulation network are shown on **Figure 4.** The LRDP Project is defined as the campus at 15,000 enrolled students. As of the fall 2017 quarter, when the baseline traffic counts were taken, the campus enrollment was 7,967 students, with 2,815 students (about 35%) housed on campus, and 1,140 faculty and staff. An additional 304 staff were located at various off-campus sites. The Project is thus defined as an additional enrollment of 7,033 students (15,000 – 7,967). Almost half of all enrolled students, 7,200, will be on-campus residents. The faculty and staff count will increase to 2,411. An additional 300 staff are projected to work at the Downtown Administrative Center; however, these staff are not included in the LRDP, which addresses only growth on campus.

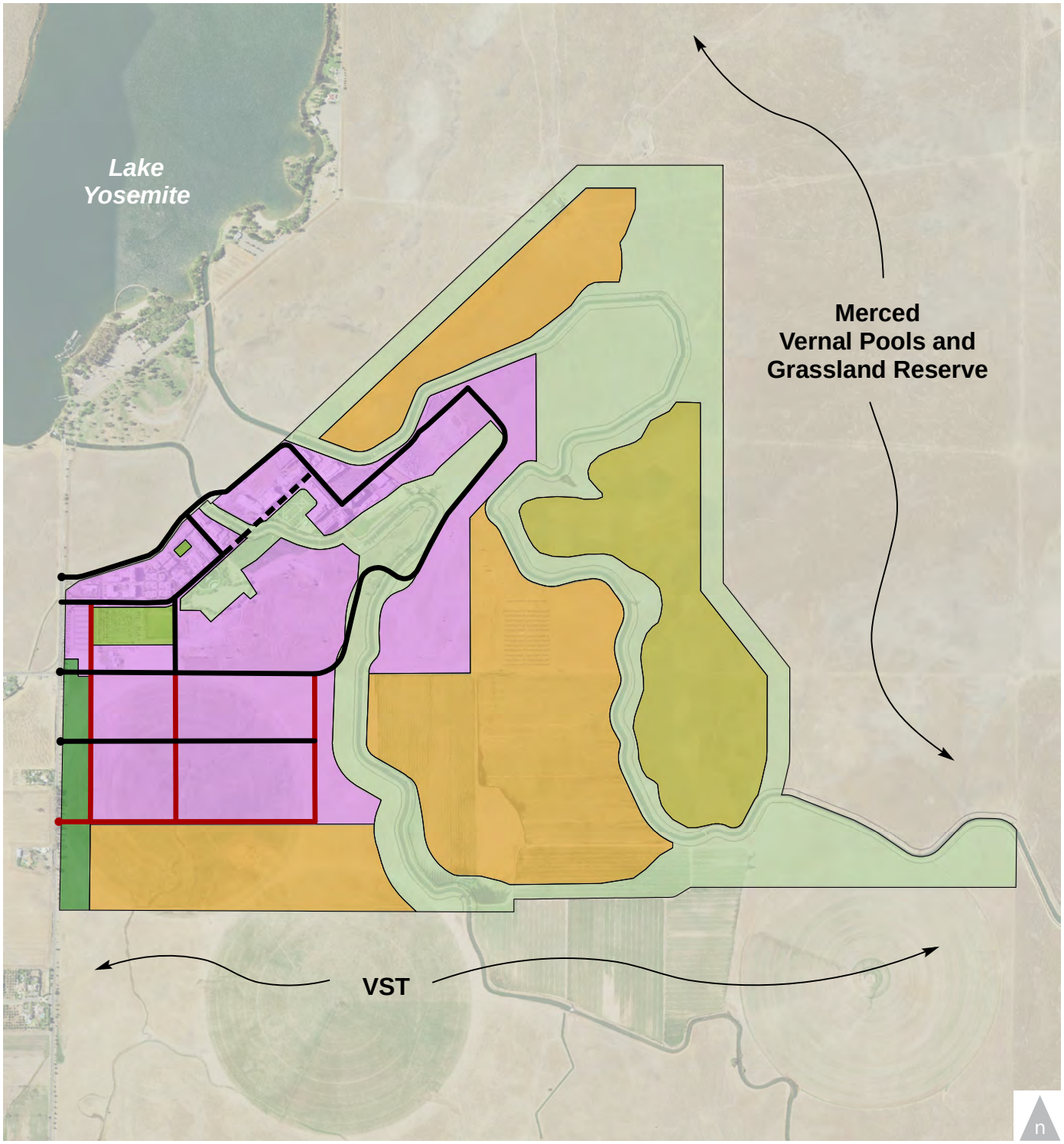
It is noted that the above LRDP Project description include some growth that is already entitled as part of the 2020 Project. The current 2020 Project projections include 9,700 enrolled students (1,733 more than were present in fall 2017), and 1,330 faculty and staff (190 more than were present in fall 2017). Student residents would increase from 2,815 to 4,800. For purposes of the traffic impact analysis, the full increment of growth from fall 2017 population levels to build-out of the LRDP (15,000 students) is included in the Existing With Project and 2030 With Project scenarios. However, only the increment of growth between the completion of the 2020 Project (9,700 students) and the full LRDP (15,000 students) is used for determining the University's proportional share contributions to mitigation measures.

For the 2035 analysis, the campus is estimated to grow at a straight-line rate beyond the LRDP level of 15,000 students, to 17,500 enrolled students. This represents an additional 2,500 enrolled students relative to the LRDP Project. Almost half of all enrolled students, 8,400, are assumed to be on-campus residents. The faculty and staff count is projected to increase to 2,975. As in the 2030 case, an additional 300 staff are projected to work at the Downtown Administrative Center; however, these staff are not included in the LRDP, which addresses only growth on campus. (The 300 staff are included in the approved projects traffic projections, for the 2030 and 2035 cases). For purposes of the traffic impact analysis, the full increment of growth from fall 2017 population levels to the 17,500-student campus is included in the 2035 With Project scenario. However, only the increment of growth between the completion of the 2020 Project (9,700

students) and the 17,500-student campus is used for determining the University's proportional share contributions to mitigation measures under 2035 With Project conditions.

The campus access and adjacent roadway network assumptions include recent improvements at the intersection of East Bellevue Road/Lake Road and two additional campus access points on Lake Road. Specifically:

- Signalization of Lake Road/Bellevue Road (this was not complete when the traffic counts were taken)
- Eastbound and westbound Bellevue Road: one left turn lane and a shared through/right turn lane
- Northbound and southbound Lake Road: shared left/through/right lane, and elimination of the channelized southbound right turn lane
- Two new project driveways, intersections #18 and #19, representing the two community collectors south of East Bellevue Road as shown on Figure 4. Both take access from Lake Road. The driveways were assumed to be unsignalized, with stop control on the driveway leg. At each driveway, a designated southbound left turn lane on Lake Road was assumed, as well as separate left-turn and right-turn lanes on each driveway.



Date: 9/12/18

LEGEND

- Existing Community Collector
- Existing Managed Access
- 2030 Community Collector

Figure 4

2020 LRDP Circulation Network

Trip Generation

The LRDP Project trip generation was estimated in the 2009 LRDP EIR using trip generation rates from other campuses deemed similar to the future UC Merced, as well as ITE Trip Generation Manual rates. This is because the UC Merced campus was relatively small at only 2,500 students, and trip rates derived directly from traffic counts entering and leaving the campus were not thought to be sufficiently representative of the future campus' vehicle trip generating characteristics. A daily trip generation rate of 2.08 trips per student was used in the 2009 LRDP EIR, derived from comparable campus trip rates (UC Davis and UC Santa Cruz), and peak hour traffic was calculated with the Merced County Association of Government's travel demand model.

In 2017, at almost 8,000 enrolled students, trip generation rates based on actual campus traffic counts is more reliable as a predictor of future characteristics at 15,000 and 17,500 students. Therefore, trip generation rates were derived from peak period counts taken in November 2017 at the intersection of East Bellevue Road/Lake Road. These counts were adjusted to screen out trips to and from Lake Yosemite, using multi-day counts from March 2017 on Lake Road north of Bellevue Road, Ranchers Road, and Scholars Lane. The total campus trip generation was then split into estimated trips generated by commuter students, resident students, and by faculty/staff, using parking lot-specific counts to capture the rough proportion of trips generated by these two groups. The campus trip generation rates are shown below:

Commuter Student Trip Rates:

- Daily: 1.57 trips per student (50% inbound, 50% outbound)
- AM Peak Hour: 0.14 trips per student (86% inbound, 14% outbound)
- PM Peak Hour: 0.15 trips per student (27% inbound, 73% outbound)

Resident Student Trip Rates:

- Daily: 0.52 trips per student (50% inbound, 50% outbound)
- AM Peak Hour: 0.04 trips per student (12% inbound, 88% outbound)
- PM Peak Hour: 0.05 trips per student (72% inbound, 28% outbound)

Faculty/Staff Trip Generation Rates:

- Daily: 2.42 trips per faculty/staff member (50% inbound, 50% outbound)
- AM: 0.21 trips per faculty/staff member (90% inbound, 10% outbound)
- PM: 0.23 trips per faculty/staff member (26% inbound, 74% outbound)

Table 4 summarizes the daily and peak hour trips for the remaining build-out of the 2020 Project, to 9,700 enrolled students. **Table 5** presents the daily and peak hour trips for the LRDP Project (growth from 9,700 students to 15,000 students). **Table 6** presents the daily and peak hour trips for the projected campus growth from 2030 (15,000 students) to 2035 (17,500 students). The Technical Appendix contains the detailed trip generation calculations.

For the Existing With Project analysis, the trips shown in Table 4 and Table 5 are added to existing traffic volumes. For the 2030 With Project analysis, the trips shown in Table 4 and Table 5 are added to the 2030 No Project volumes. For the 2035 With Project analysis, the trips Table 4, Table 5, and Table 6 are added to the 2035 No Project volumes.

Table 4: 2020 Project Remaining Development Trip Generation Estimates

Population	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
New Student Commuters	(31)	(4)	(36)	(11)	(28)	(39)	(395)
New Student Residents	10	74	84	66	26	92	1,036
New Faculty/Staff	35	5	40	12	31	44	459
Total	**14**	**74**	**89**	**67**	**30**	**97**	**1,101**

Notes:
Table 4 presents trip generation associated with student enrollment growth from 7,967 students to 9,700 students.
See the Technical Appendix for detailed trip generation calculations.

Table 5: LRDP Project (2030) Trip Generation Estimates

Population	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
New Student Commuters	358	51	409	127	320	447	4,540
New Student Residents	13	89	101	80	32	111	1,252
New Faculty/Staff	200	28	229	71	179	250	2,614
Total	**571**	**168**	**739**	**277**	**531**	**808**	**8,406**

Notes:
Table 5 presents trip generation associated with student enrollment growth from 9,700 students to 15,000 students.
See the Technical Appendix for detailed trip generation calculations.

Table 6: 2035 Project Trip Generation Estimates

Population	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
New Student Commuters	161	23	183	57	144	200	2,035
New Student Residents	6	44	51	40	16	56	626
New Faculty/Staff	104	15	119	37	93	130	1,364
Total	**271**	**82**	**353**	**134**	**253**	**387**	**4,025**

Notes:
Table 6 presents trip generation associated with student enrollment growth from 15,000 students to 17,500 students.
See the Technical Appendix for detailed trip generation calculations.

It is noted that, based on the counts at the intersection of Lake Road and East Bellevue Road, the campus traffic peak hours are slightly different than the citywide traffic peak hours as seen in the study area intersection counts: the campus peak hours are 8:00 – 9:00 AM and 4:45 – 5:45 PM, whereas the citywide peak hours are generally 7:45 – 8:45 AM and 4:30 – 5:30 PM. However, for purposes of the intersection impact analysis, the campus peak hour trip generation is overlaid on the citywide peak hour traffic volumes to ensure a conservative analysis.

Project Trip Distribution and Assignment

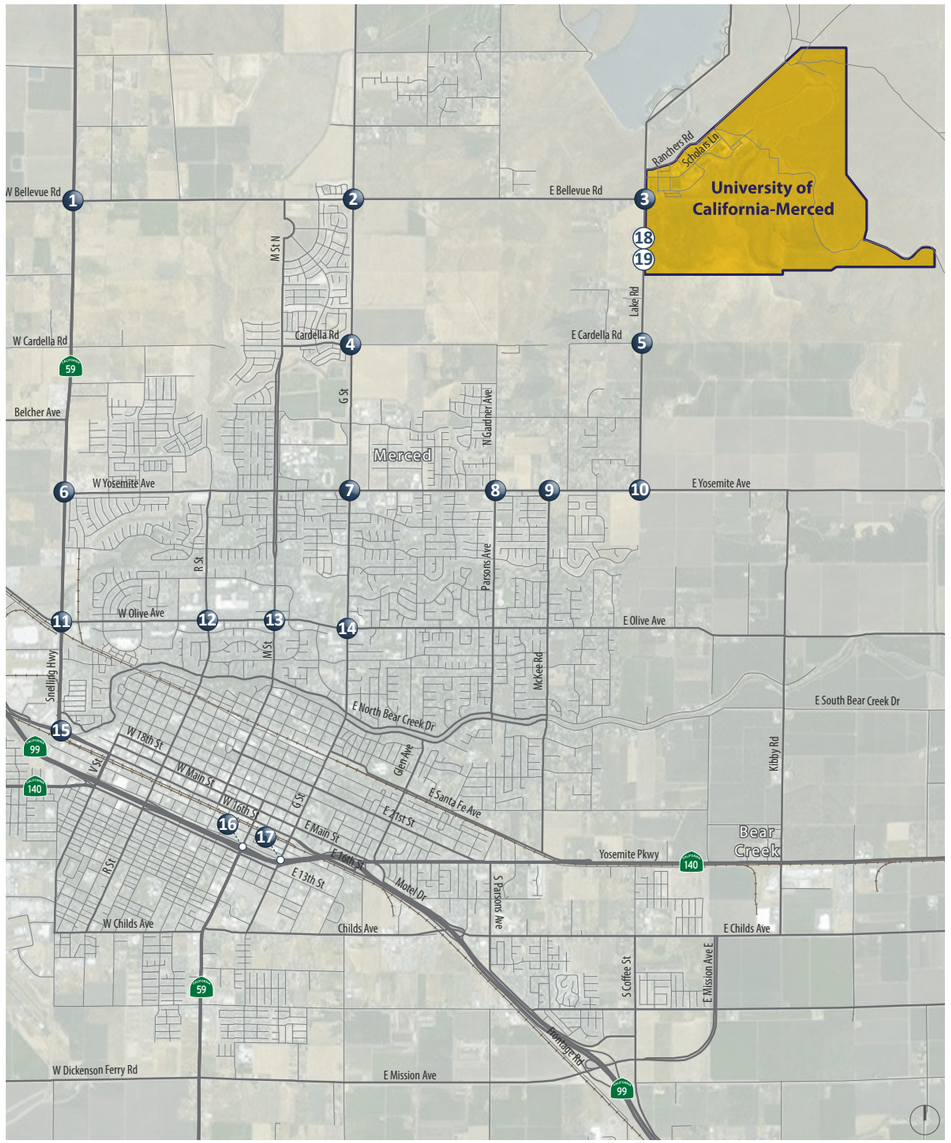
The trip distribution for the 2030 and 2035 Project trips is based on a GIS analysis of the locations of student and staff residences within Merced and the greater region, provided by University staff. The estimated student and staff trips were distributed to/from the various residence locations, using a Vistro trip assignment model. Trips were distributed 30 percent to Bellevue Road and 70 percent to Lake Road for both inbound and outbound trips, based on the expected use of the two roadways given residence patterns, the relative congestion on the two roadways in the vicinity of campus, and the two additional access points on Lake Road south of Bellevue Road which will be provided with the LRDP Project (one of which will be completed as part of the 2020 Project). Trips were further distributed to various zones within the City and in other areas outside the City, based on the residence data. The Technical Appendix contains the residential data.

Trips were assigned to the four campus access points based on Fehr & Peer's best estimate of the relative parking accessibility via each access point under the LRDP Project (note that parking distribution under the LRDP has not been defined):

- Ranchers Road/Scholars Lane: 50 percent of residential trips, 50% of commuter trips using EastBellevue Road, 25% of commuter trips using Lake Road

- East Bellevue Road Extension: 50% of residential trips, 50% of commuter trips using East Bellevue Road, 25% of commuter trips using Lake Road
- Driveway #1 (intersection #18): 25% of commuters using Lake Road
- Driveway #2 (intersection #19): 25% of commuters using Lake Road

The resulting vehicle trips generated by the 2020 Project are shown in **Figure 5**, and the vehicle trips generated by the LRDP Project (post-2020 Project growth, to 15,000 students) are shown in **Figure 6.** The vehicle trips generated by the projected additional growth to 17,500 students at the year 2035 are shown in **Figure 7.**



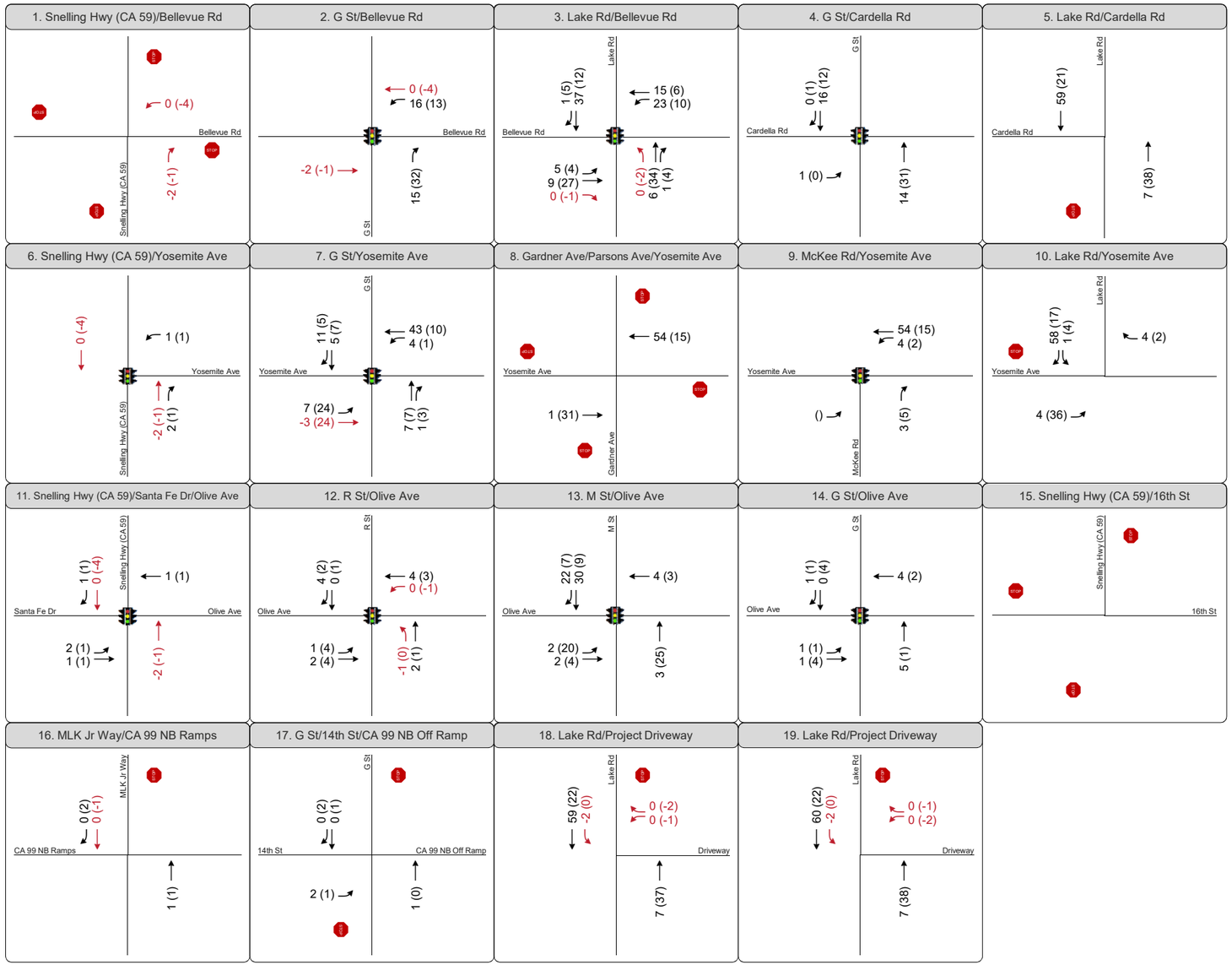
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

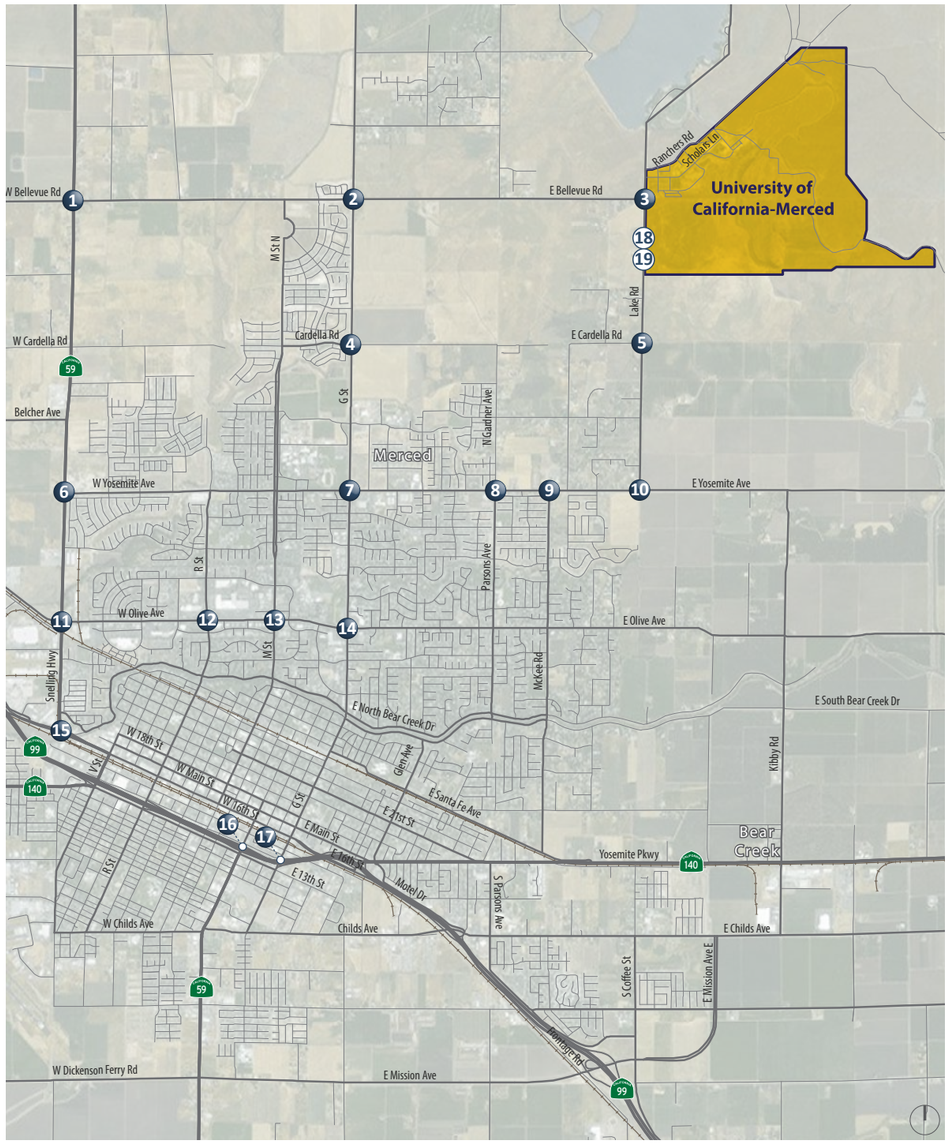
Study Intersection



Note: This figure shows the trips associated with completion of the 2020 Project, with growth from 7.967 enrolled students to 9,700 enrolled students.

Figure 5

2020 Project Remaining Development Trip Assignment



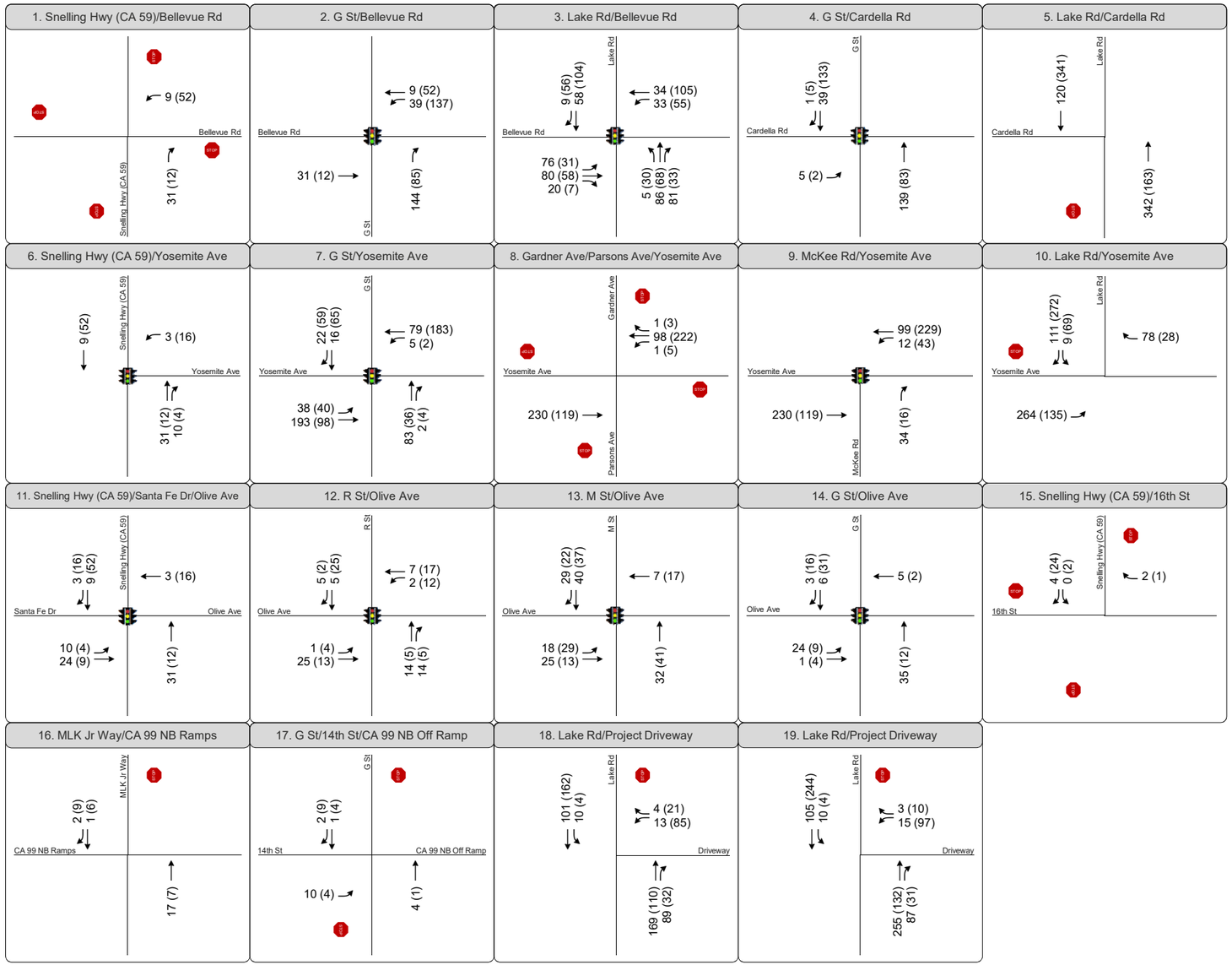
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

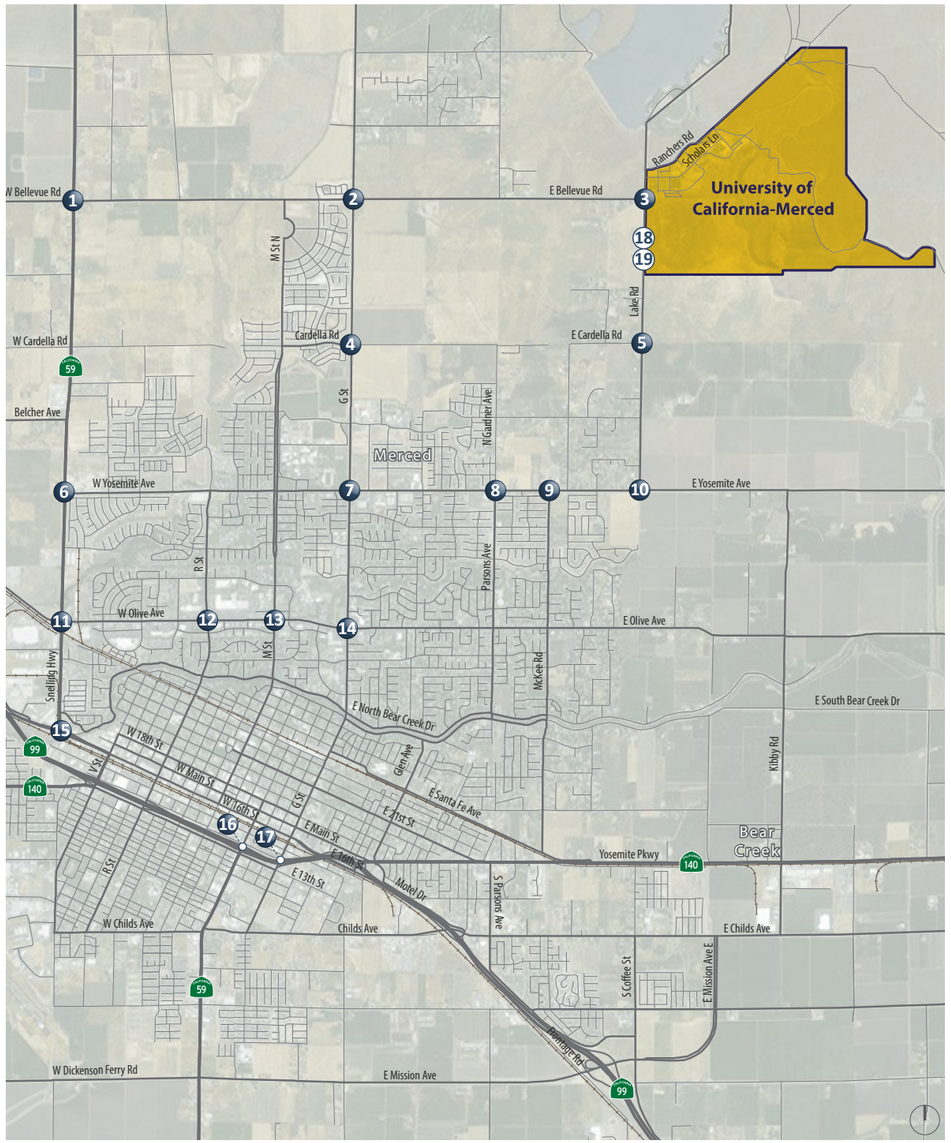
Study Intersection



Note: This figure shows the trips associated with growth from 9,700 students (at completion of the 2020 Project) to 15,000 students.

Figure 6

2020 LRDP Project Trip Assignment



XX (YY) AM (PM) Peak Hour Traffic Volumes

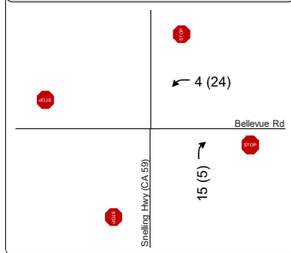
Signalized Intersection

Stop Sign

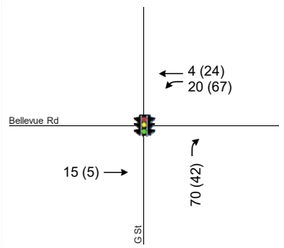
Project Site

Study Intersection

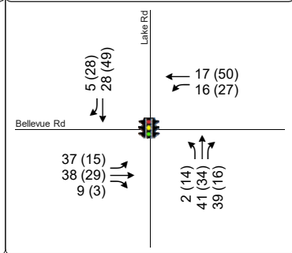
1. Snelling Hwy (CA 59)/Bellevue Rd



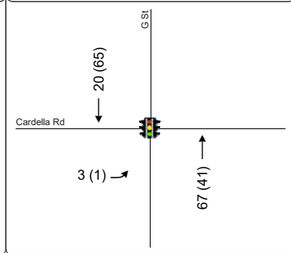
2. G St/Bellevue Rd



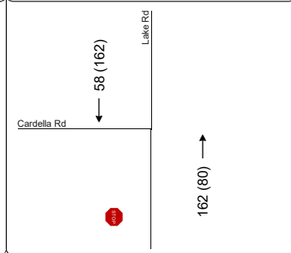
3. Lake Rd/Bellevue Rd



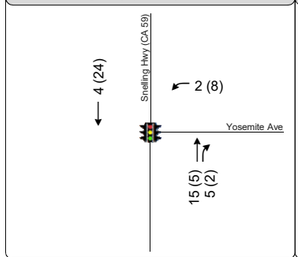
4. G St/Cardella Rd



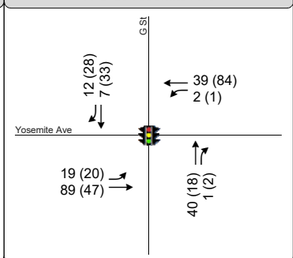
5. Lake Rd/Cardella Rd



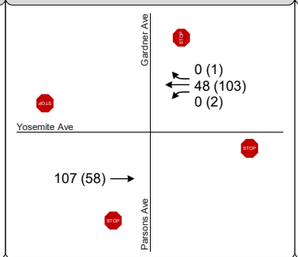
6. Snelling Hwy (CA 59)/Yosemite Ave



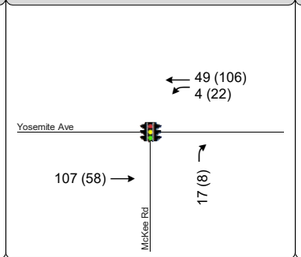
7. G St/Yosemite Ave



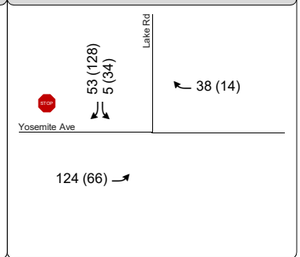
8. Gardner Ave/Parsons Ave/Yosemite Ave



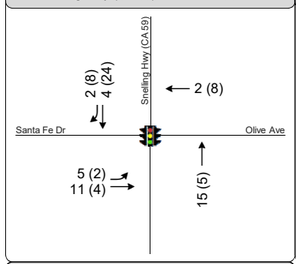
9. McKee Rd/Yosemite Ave



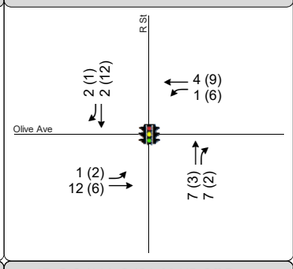
10. Lake Rd/Yosemite Ave



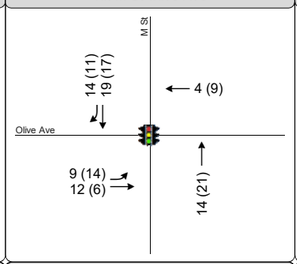
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



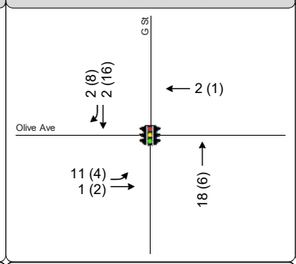
12. R St/Olive Ave



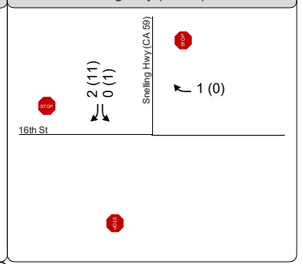
13. M St/Olive Ave



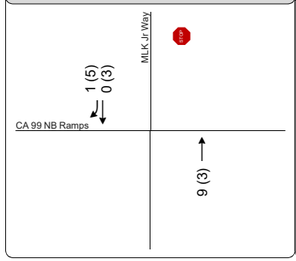
14. G St/Olive Ave



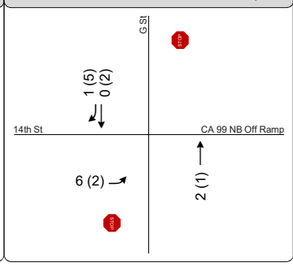
15. Snelling Hwy (CA 59)/16th St



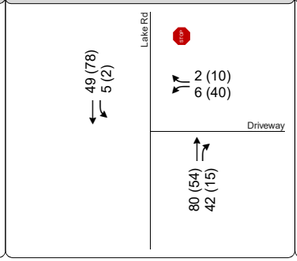
16. MLK Jr Way/CA 99 NB Ramps



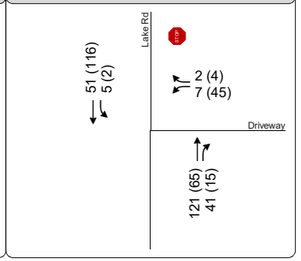
17. G St/14th St/CA 99 NB Off Ramp



18. Lake Rd/Project Driveway



19. Lake Rd/Project Driveway



Note: This figure shows the trips associated with growth from 15,000 students (at completion of the LRDP Project) to 17,500 students in 2035.

Figure 7

Campus Growth, 2030 – 2035 Trip Assignment

5. 2030 Conditions

This chapter discusses Near-Term (2030) traffic conditions both without and with the Project, considering the traffic growth from approved and anticipated development in Merced through the year 2030.

Traffic Growth from Approved and Anticipated Development

The City of Merced and Merced County provided a list of approved and planned projects expected to be constructed by 2035. The list of development projects is shown in Section 6 (2035 Conditions) **Table 9**. As described in Section 6, the vehicle trip generation for the approved and anticipated development was estimated using average trip generation rates and trip generation equations for the proposed land uses from ITE's *Trip Generation* (9th Edition), and, where available, the Transportation Impact Analyses prepared for specific developments. The total trip generation of the approved and anticipated development through the year 2035 is estimated at 3,860 AM peak hour trips and 7,053 PM peak hour trips. To estimate the total trip generation at the year 2030, a straight-line assumption was used between the year 2017 (when the existing conditions counts were taken) and 2035 (when all development would be constructed). Thus, the total trip generation for approved and anticipated development at 2030 is estimated at 2,730 AM peak hour trips and 4,980 PM peak hour trips.

Traffic generated by the approved and anticipated development through the year 2030 was assigned to the roadway network based on trip distribution information derived from the MCAG Travel Demand Model. Specifically, several 'select zone' runs were used to determine the general distribution of traffic from residential and commercial traffic analysis zones; these distribution patterns were then manually applied to the approved/anticipated development traffic, using the manual traffic assignment software Vistro. Trip distribution patterns based on the land use type and location within in the City are presented in Section 6.

The estimated peak hour intersection turning movements resulting from approved and anticipated development to 2030 are shown in **Figure 8.**

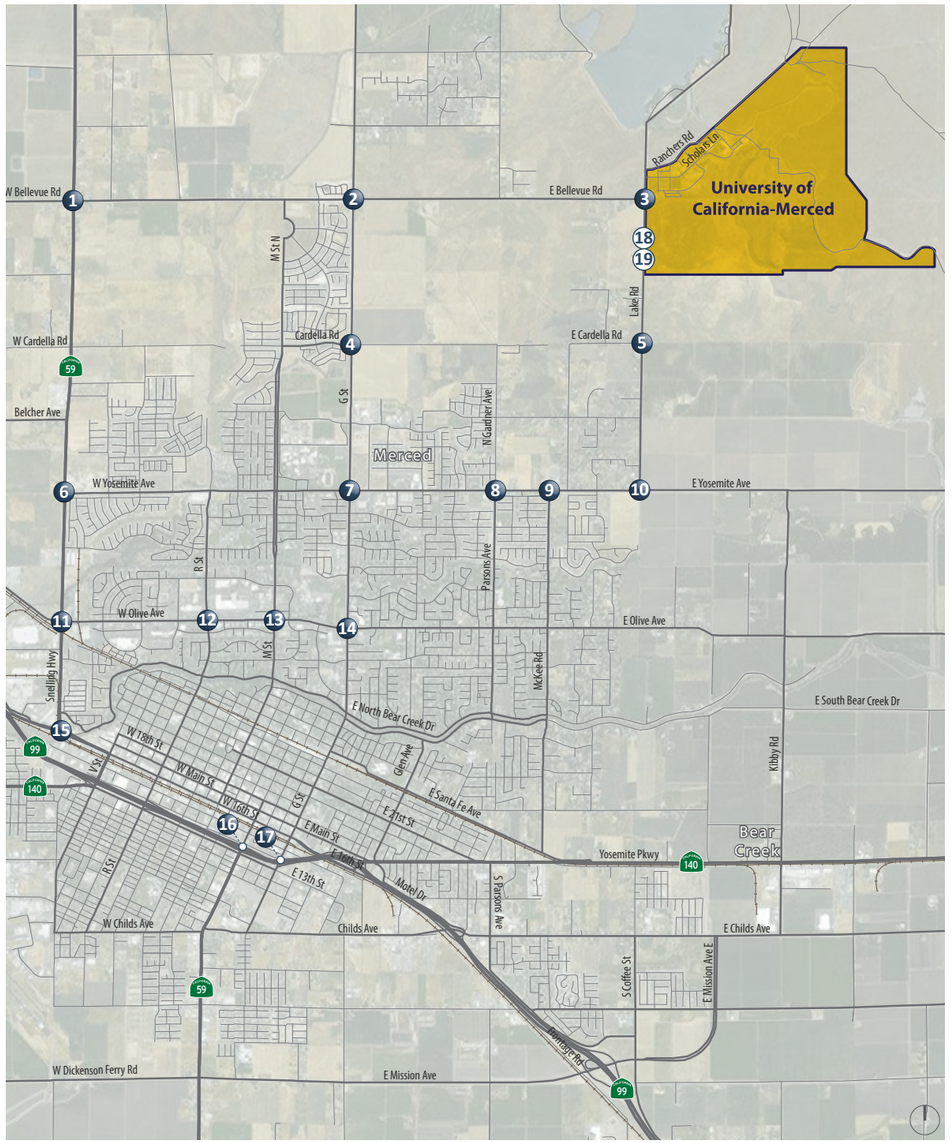
It is important to note that the trip generation and assignment process in this analysis is conservative for the following reason: it is expected that some of the new trips from housing development in the City will be made by new University commuters. This analysis does not take a credit for this fact, but instead assigns all new development trips to the network along with all Project (campus) trips. This essentially leads to some trips being double counted. The extent of the double counting is difficult to estimate. It should therefore simply be noted that the analysis is clearly conservative.

2030 Roadway Network

In addition to the improvements noted in Section 4 at the intersection of East Bellevue Road/Lake Road, the 2030 roadway network includes the completion of Campus Parkway from its current terminus at East Childs Avenue, north to East Yosemite Avenue. The construction of the segment to SR 140 ("Segment 2") has commenced, and the segment from SR 140 to Yosemite Avenue ("Segment 3") is in the construction bidding process. It is not anticipated that Campus Parkway would extend north of Yosemite Avenue by 2030 or 2035. Therefore, the analysis in this report is based on the assumption that Lake Road will continue to be a through road up to Bellevue Road and to Lake Yosemite Regional Park, and would continue to be used to access the campus from the south.

Based on the estimated campus trip distribution and assignment, relative few campus trips are expected to use Campus Parkway – generally fewer than 50 peak hour/peak direction trips. Most of these trips would be through trips at the intersections along Campus Parkway connecting to SR 99, which generally affect intersection capacity to a lesser degree than turning movements. The forecasted intersection operations with completion of the Parkway up to East Yosemite Avenue were projected to be LOS D or better in the *Merced Campus Parkway FEIR* (2005). Due to the low number of campus trips expected to use Campus Parkway, and the projected acceptable operations for the major intersections along the Parkway, intersections along Campus Parkway were not selected for analysis in this document.2030 No Project and With Project Traffic Volumes

Figure 9 shows the 2030 No Project traffic volumes, which result from adding the volumes in Figure 8 to the existing volumes (Figure 3). **Figure 10** shows the 2030 With Project traffic volumes, which result from adding the volumes in Figure 5 (2020 Project) and Figure 6 (2020 LRDP Project) to the volumes in Figure 9.



XX (YY) AM (PM) Peak Hour Traffic Volumes

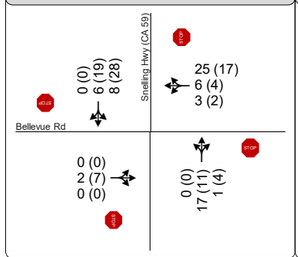
Signalized Intersection

Stop Sign

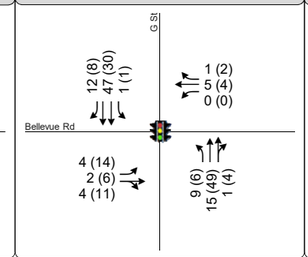
Project Site

Study Intersection

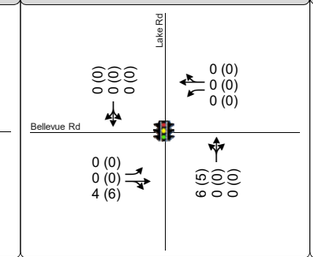
1. Snelling Hwy (CA 59)/Bellevue Rd



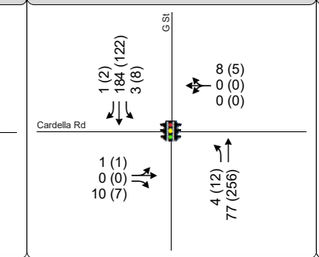
2. G St/Bellevue Rd



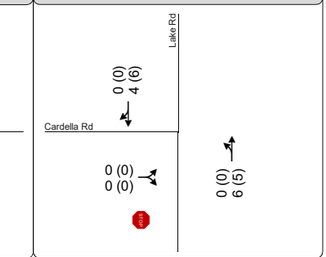
3. Lake Rd/Bellevue Rd



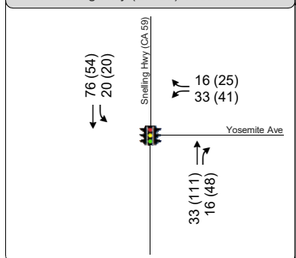
4. G St/Cardella Rd



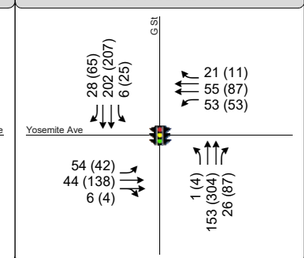
5. Lake Rd/Cardella Rd



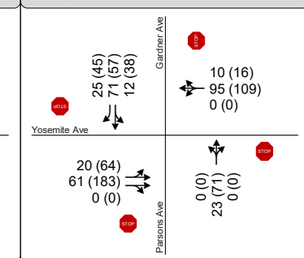
6. Snelling Hwy (CA 59)/Yosemite Ave



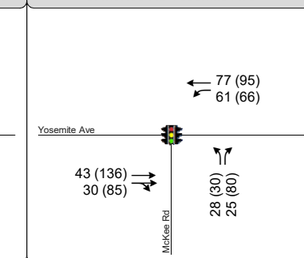
7. G St/Yosemite Ave



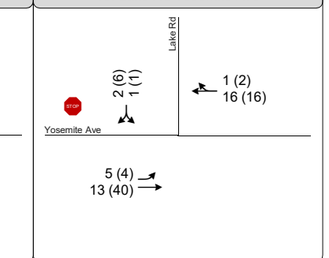
8. Gardner Ave/Parsons Ave/Yosemite Ave



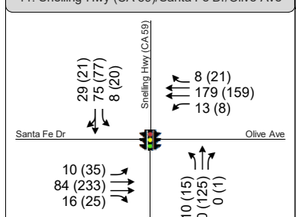
9. McKee Rd/Yosemite Ave



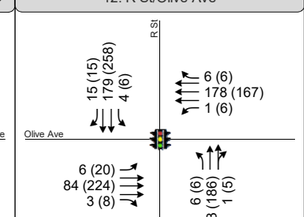
10. Lake Rd/Yosemite Ave



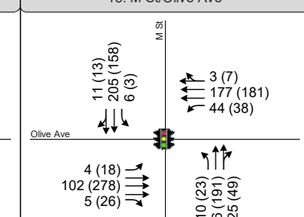
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



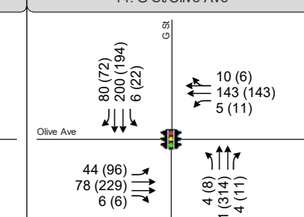
12. R St/Olive Ave



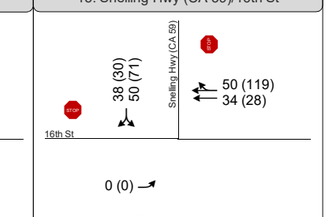
13. M St/Olive Ave



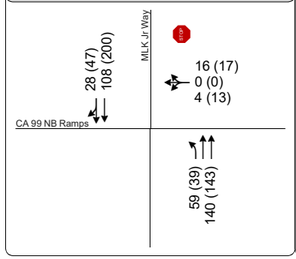
14. G St/Olive Ave



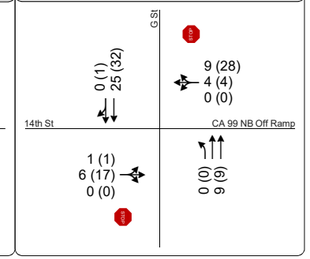
15. Snelling Hwy (CA 59)/16th St



16. MLK Jr Way/CA 99 NB Ramps



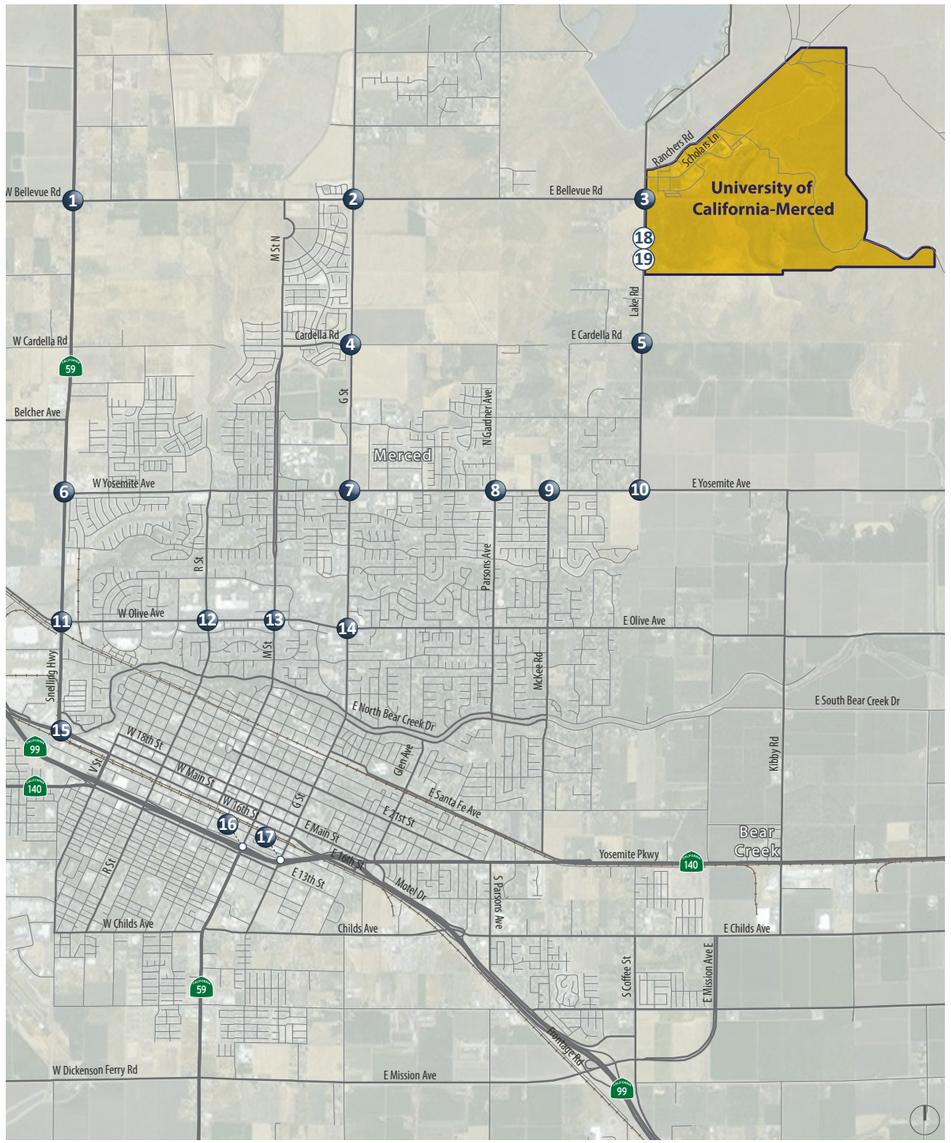
17. G St/14th St/CA 99 NB Off Ramp



Source: City of Merced and Merced County. 2030 growth projections were derived from 2035 projections, using a straight-line assumption, by Fehr & Peers.

Figure 8

2030 Approved/Anticipated Development Trip Assignment



XX (YY) AM (PM) Peak Hour Traffic Volumes

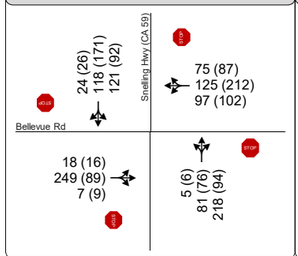
Signalized Intersection

Stop Sign

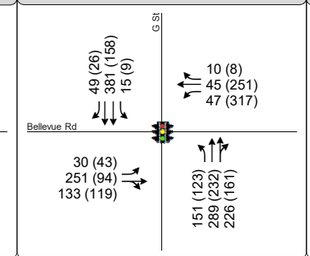
Project Site

Study Intersection

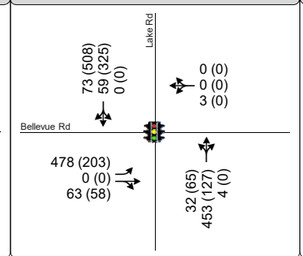
1. Snelling Hwy (CA 59)/Bellevue Rd



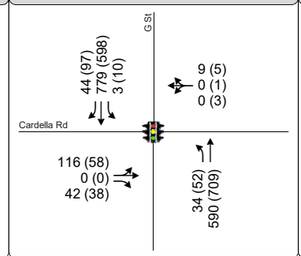
2. G St/Bellevue Rd



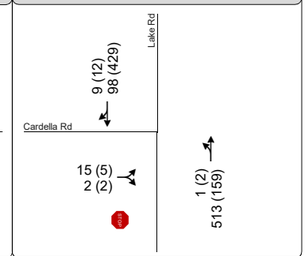
3. Lake Rd/Bellevue Rd



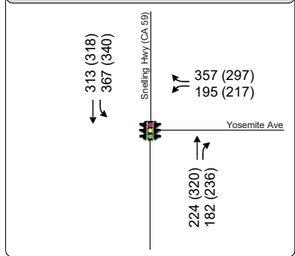
4. G St/Cardella Rd



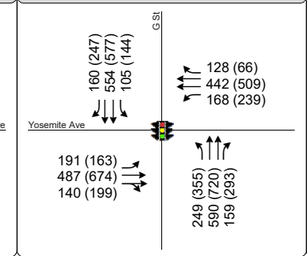
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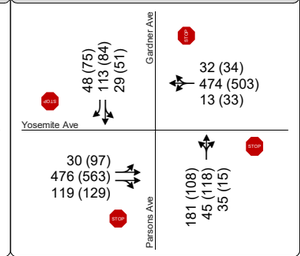
6. Snelling Hwy (CA 59)/Yosemite Ave



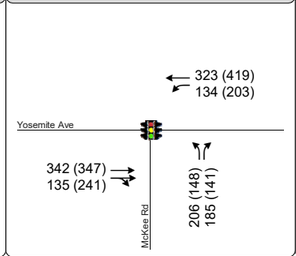
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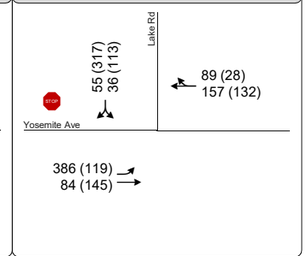
8. Gardner Ave/Parsons Ave/Yosemite Ave



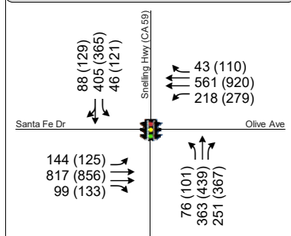
9. McKee Rd/Yosemite Ave



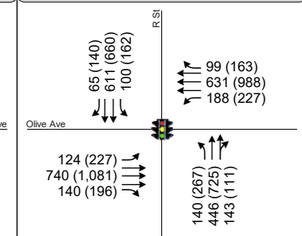
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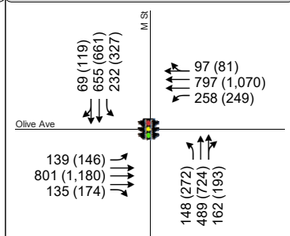
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



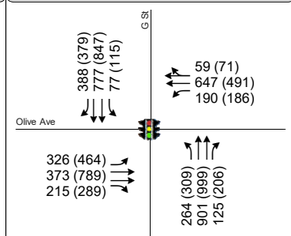
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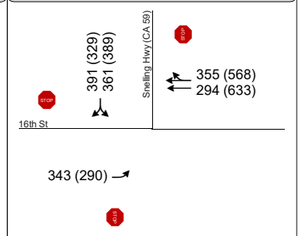
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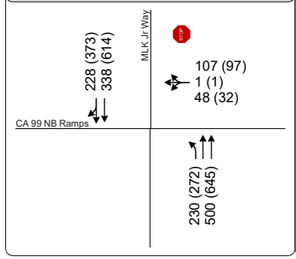
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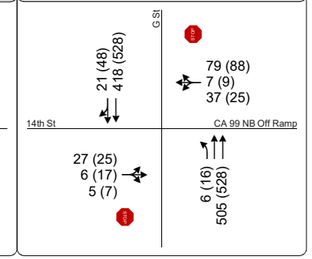
15. Snelling Hwy (CA 59)/16th St



16. MLK Jr Way/CA 99 NB Ramps



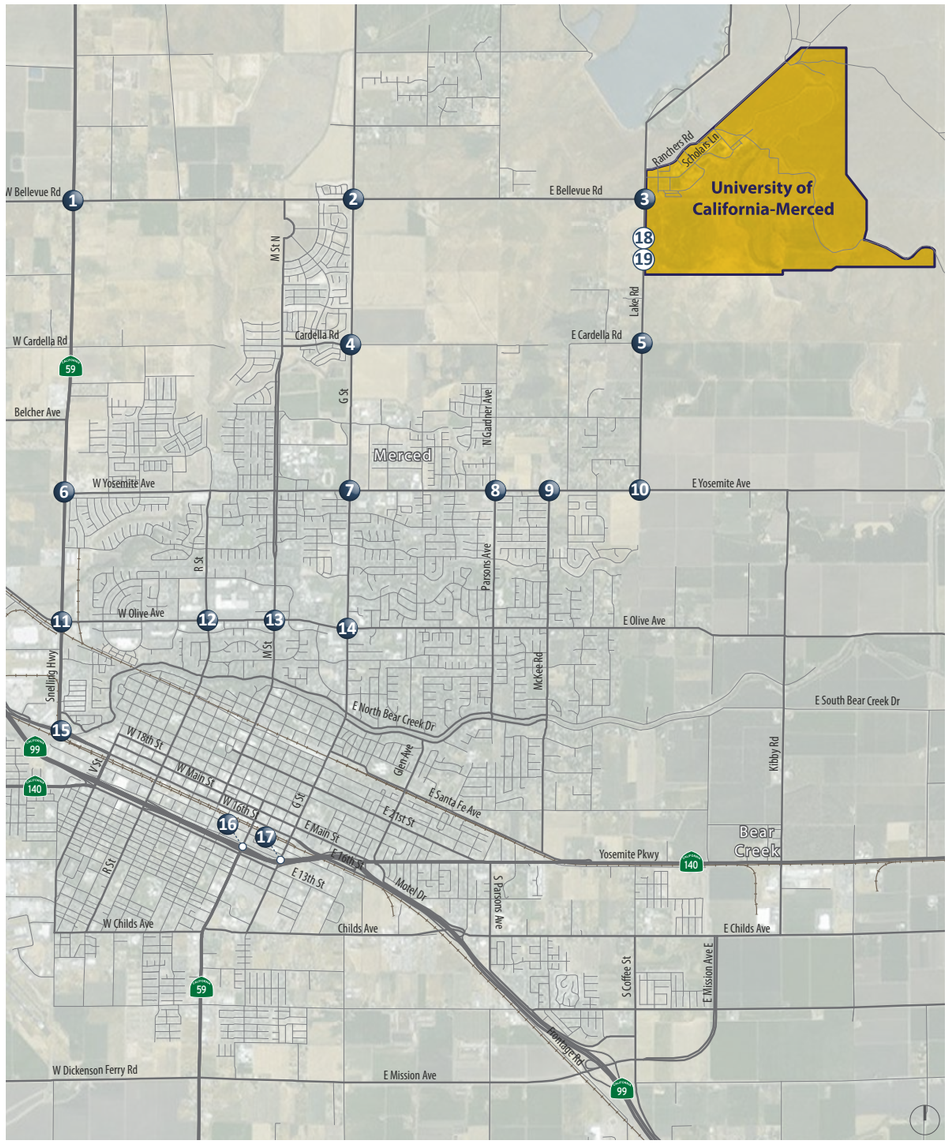
17. G St/14th St/CA 99 NB Off Ramp



Note: This figure includes traffic volumes associated with approved and anticipated projects through the year 2030.

Figure 9

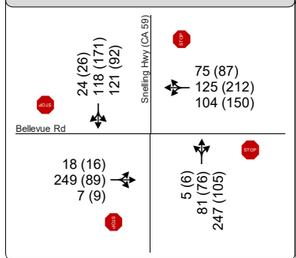
Year 2030 No Project Peak Hour
Intersection Traffic Volumes, Lane Configurations and Traffic Controls



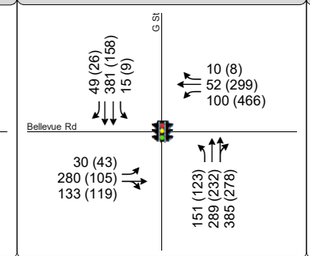
XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection — Stop Sign

Project Site — Study Intersection — With Project Study Intersection

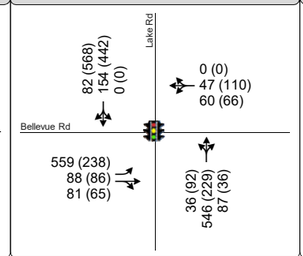
1. Snelling Hwy (CA 59)/Bellevue Rd



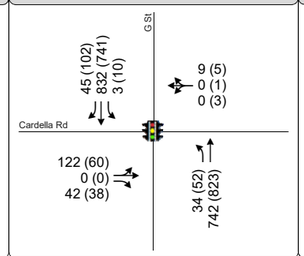
2. G St/Bellevue Rd



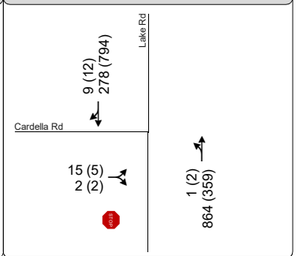
3. Lake Rd/Bellevue Rd



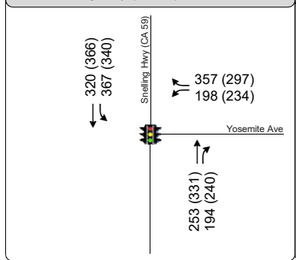
4. G St/Cardella Rd



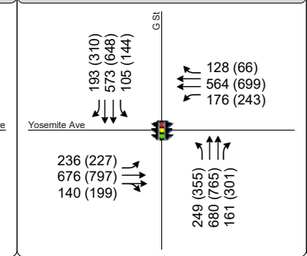
5. Lake Rd/Cardella Rd



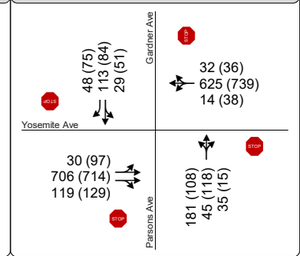
6. Snelling Hwy (CA 59)/Yosemite Ave



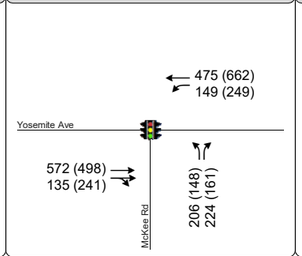
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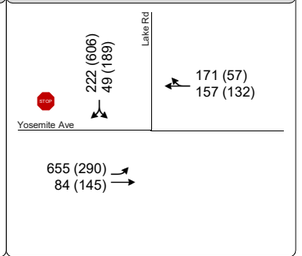
8. Gardner Ave/Parsons Ave/Yosemite Ave



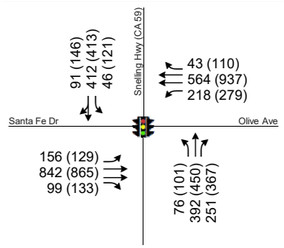
9. McKee Rd/Yosemite Ave



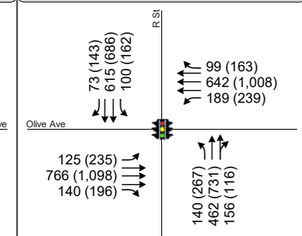
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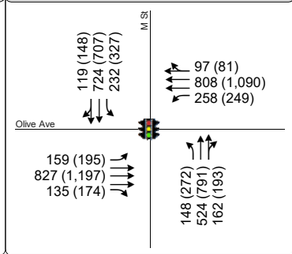
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



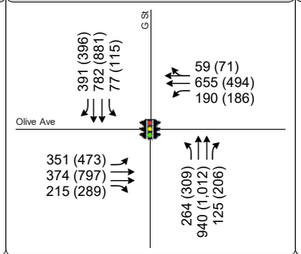
12. R St/Olive Ave



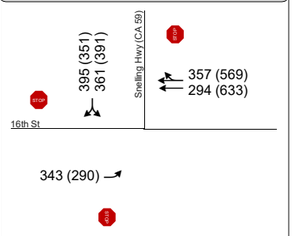
13. M St/Olive Ave



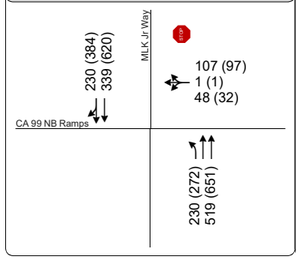
14. G St/Olive Ave



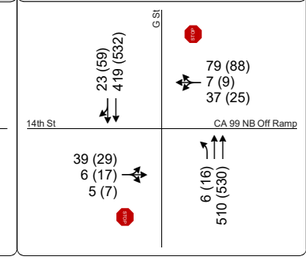
15. Snelling Hwy (CA 59)/16th St



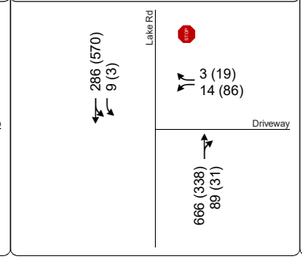
16. MLK Jr Way/CA 99 NB Ramps



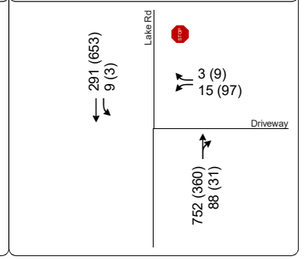
17. G St/14th St/CA 99 NB Off Ramp



18. Lake Rd/Project Driveway



19. Lake Rd/Project Driveway



Note: This figure includes traffic volumes associated with approved and anticipated projects through the year 2030, completion of the 2020 Project, and completion of the LRDP Project (additional campus growth to 15,000 students).

Figure 10

Year 2030 with Project (15,000-Student Campus) Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

2030 Intersection Levels of Service

2030 No Project and 2030 With Project peak hour intersection operations are presented in **Table 7** along with the Existing Conditions results. The following intersections operate deficiently in at least one peak hour:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59)
- Intersection #2: Bellevue Road/G Street
- Intersection #3: East Bellevue Road/Lake Road
- Intersection #7: G Street/Yosemite Avenue
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue
- Intersection #10: East Yosemite Avenue/Lake Road
- Intersection #13: West Olive Avenue/M Street
- Intersection #14: Olive/G Street
- Intersection #15: West 16th Street/Snelling Highway (SR-59)

At intersections #8, #15 and #16, the peak hour signal warrants are met under 2030 No Project conditions in one or both peak hours, and would continue to be met under 2030 With Project conditions. At intersection #10, the addition of Project traffic causes the peak hour signal warrant to be met in both peak hours.

Based on the significance thresholds presented in Section 2, the following nine intersections are significantly impacted by the Project in the 2030 With Project (15,000-Student Campus) case:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #2: Bellevue Road/G Street (Signal) – AM peak hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #3: East Bellevue Road/Lake Road (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from A to F
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from D to E

- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours, Project traffic causes the worst approach to fall from LOS C to LOS F in both peak hours
- Intersection #13: West Olive Avenue/M Street (Signal) -- PM peak hour, LOS is E without the Project and the Project adds five seconds to the intersection delay
- Intersection #14: G Street/Olive Avenue (Signal) – AM Peak Hour, LOS is E without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour, LOS is F without Project and Project adds more than five seconds to the intersection delay

Impact TRA-1: The implementation of the Project is projected to significantly impact nine intersections during peak commute hours.

The Project would significantly impact the following intersections in the AM and/or PM peak hours:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #2: Bellevue Road/G Street (Signal) – AM Peak Hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #3: East Bellevue Road/Lake Road (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from A to F
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours, Project traffic causes the worst approach to fall from LOS C to LOS F in both peak hours

- Intersection #13: West Olive Avenue/M Street (Signal) -- PM peak hour, LOS is E without the Project and the Project adds five seconds to the intersection delay
- Intersection #14: G Street/Olive Avenue (Signal) – AM Peak Hour, LOS is E without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour, LOS is F without Project and Project adds more than five seconds to the intersection delay

Mitigation Meaure TRA-1: The following improvements are recommended to mitigate the 2030 With Project Cumulative impacts.

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) – Add a northbound right turn pocket lane *(note: this improvement is also recommended as mitigation for the Existing With Project case)*
- Intersection #2: Bellevue Road/G Street – Add an eastbound right turn pocket lane
- Intersection #3: East Bellevue Road/Lake Road -- Add northbound and southbound right turn pocket lanes
- Intersection #7: Yosemite Avenue/G Street – Remove westbound right turn pocket lane and add westbound left turn pocket lane
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue – Install a signal and widen the westbound approach to provide one left/through lane and one through/right lane
- Intersection #10: East Yosemite Avenue/Lake Road – Install a signal, widen the southbound approach to provide separate left turn and right turn lanes, add a second eastbound left turn lane, and widen the northbound departure to provide two acceptance lanes
- Intersection #13: West Olive Avenue/M Street – Construct a second southbound left turn lane
- Intersection #14: G Street/Olive Avenue – Add an overlap phase for the southbound right turn
- Intersection #15: West 16th Street/Snelling Highway (SR-59) – Modify the geometry of the southbound right turn lane to provide a full 200 feet of storage, such that the southbound right turn queues do not interfere with vehicles in the left turn lane

With the improvements described above, all intersection impacts can be mitigated to a less than significant level. **Table 13** in Section 7 provides an overview of the mitigated service levels for the 2030 Plus Project and 2035 Plus Project cases.

Because the impacts identified in impact TRA-1 are the result of cumulative traffic growth along with Project traffic, the University should contribute a fair-share contribution to the identified improvements, based on its proportion of traffic growth at each intersection in the year 2030. However, because the implementation of the improvements depends on funding from other sources and implementation by the responsible agencies (the City of Merced, Merced County, and/or Caltrans), the impacts would remain significant and unavoidable with mitigation.

Table 7: Intersection Levels of Service — 2030 No Project and 2030 With Project

Location	Control[1,2]	Peak Hour	Existing[3]		2030 Without Project[3]		2030 With Project[3]	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
1. West Bellevue Road/Snelling Highway (SR-59)	AWS	AM PM	**41.3** 13.2	**E** B	**77.6** 14.2	**F** B	**83.4** 16.4	**F** C
2. Bellevue Road/G Street	Signal	AM PM	36.6 21.0	D C	40.7 22.0	D C	**60.8** 26.8	**E** C
3. East Bellevue Road/Lake Road[4]	Signal	AM PM	**53.6** **70.8**	**F** **F**	10.9 9.4	B A	37.5 **>120**	D **F**
4. Cardella Road/G Street	Signal	AM PM	11.4 6.8	B A	21.1 7.4	C A	30.5 7.9	C A
5. East Cardella Road/Lake Road	SSS	AM PM	0.4 (13.4) 0.2 (12.4)	A (B) A (B)	0.4 (13.5) 0.2 (12.6)	A (B) A (B)	0.4 (24.9) 0.2 (21.2)	A (C) A (C)
6. West Yosemite Avenue/ Snelling Highway (SR-59)	Signal	AM PM	13.1 11.4	B B	16.2 13.8	B B	17.3 14.2	B B
7. Yosemite Avenue/G Street	Signal	AM PM	40.1 43.1	D D	36.7 48.7	D D	41.9 **56.6**	D **E**
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue	AWS	AM PM	28.7 21.2	D C	**71.9** **75.5**	**F** **F**	**>120** **>120**	**F** **F**
9. East Yosemite Avenue/McKee Road	Signal	AM PM	8.6 8.2	A A	10.3 10.7	B B	11.4 12.8	B B
10. East Yosemite Avenue/Lake Road	SSS	AM PM	6.4 (17.3) 10.2 (16.8)	A (C) B (C)	6.3 (17.1) 10.3 (18.4)	A (C) B (C)	34 **(>120)** **>120(>120)**	D **(F)** **F (F)**
11. West Olive Avenue/Snelling Highway (SR-59)	Signal	AM PM	48.4 49.8	D D	48.3 50.5	D D	49.5 51.1	D D

Table 7: Intersection Levels of Service — 2030 No Project and 2030 With Project

Location	Control[1,2]	Peak Hour	Existing[3]		2030 Without Project[3]		2030 With Project[3]	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
12. West Olive Avenue/R Street	Signal	AM PM	46.6 **56.4**	D **E**	47.5 **61.3**	D **E**	47.6 **62.2**	D **E**
13. West Olive Avenue/M Street	Signal	AM PM	48.1 55.0	D D	50.9 **63.0**	D **E**	53.9 **68.0**	D **E**
14. Olive Avenue/G Street	Signal	AM PM	45.5 47.0	D D	**61.2** **67.9**	**E** **E**	**66.7** **71.9**	**E** **E**
15. West 16th Street/ Snelling Highway (SR-59)	AWS	AM PM	**78.7** **95.0**	**F** **F**	**108.0** **>120**	**F** **F**	**109.9** **>120**	**F** **F**
16. SR 99 Northbound Ramps/MLK Jr. Way	SSS	AM PM	3.5 (16.5) 2.8 (18.3)	A (C) A (C)	5.1 (32.5) 6.1 **(68.2)**	A (D) A **(F)**	5.2 (34.4) 6.3 **(73.0)**	A (D) A **(F)**
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street	SSS	AM PM	2.4 (20.1) 2.0 (22.5)	A (C) A (C)	2.7 (21.7) 3.0 (30.6)	A (C) A (D)	3 (23.4) 3.2 (32.6)	A (C) A (D)
18. Lake Road/Project Driveway	SSS	AM PM	-	-	-	-	0.4 (17.6) 2.6 (11.4)	A (C) A (B)
19. Lake Road/Project Driveway	SSS	AM PM	-	-	-	-	0.4 (24.5) 2.4 (13.1)	A (C) A (B)

Notes:
1. Signal = signalized intersection; AWS=all-way stop; SSS=side street stop
2. For side-street stop-controlled intersections, two service levels are listed: Average intersection LOS (LOS for worst side-street movement)
3. **Bold** indicates below-standard service level. Shaded indicates a significant impact.
4. This intersection is analyzed as an all-way stop with three legs for Existing conditions, and as a signal with a fourth leg for all other cases.

Source: Fehr & Peers, February 2019.

2030 Freeway Operations

2030 No Project and 2030 with Project operations were evaluated using the methodology described in Section 2 for the weekday AM and PM peak hours. Project trips were manually added to the freeway segments in the methods described above. The results are summarized in **Table 8.**

Under 2030 No Project conditions, all freeway segments operated with a V/C ratio of 0.59 or lower in the AM peak hour, and 0.73 or lower in the PM peak hour. Under 2030 with Project conditions, the V/C ratio increases on some freeway segments in the AM and PM peak hours with the addition of project traffic. However, all freeway segments are projected to operate with a V/C ratio of 0.59 or lower in the AM peak hour, and 0.73 or lower in the PM peak hour. Based on this assessment, there is excess freeway capacity, and typical conditions would not incur substantial delays to drivers. All intersections operate better than LOS E (V/C = 0.90), so no significant freeway impacts are identified.

Table 8: Freeway Operations — 2030 no Project and 2030 with Project Conditions

Location	Direction	Peak Hour	2030 No Project Conditions	2030 with Project Conditions
			V/C Ratio	V/C Ratio
1. SR 99 North of 16th Street	NB	AM	0.59	0.59
		PM	0.68	0.70
	SB	AM	0.54	0.55
		PM	0.72	0.72
2. SR 99 North of SR 140	NB	AM	0.54	0.54
		PM	0.65	0.66
	SB	AM	0.54	0.55
		PM	0.72	0.72
3. SR 99 North of MLK	NB	AM	0.55	0.55
		PM	0.66	0.67
	SB	AM	0.56	0.57
		PM	0.73	0.73
4. SR 99 South of MLK	NB	AM	0.55	0.55
		PM	0.65	0.66
	SB	AM	0.54	0.55
		PM	0.67	0.67
5. SR 99 South of G Street	NB	AM	0.55	0.55
		PM	0.66	0.67
	SB	AM	0.56	0.56
		PM	0.69	0.69
6. SR 99 South of Mission Street	NB	AM	0.53	0.53
		PM	0.64	0.64
	SB	AM	0.40	0.40
		PM	0.56	0.56

Source Fehr & Peers, February 2019.

Air Traffic Impacts

The Project would not interfere with the operations of airports in the region, and would not be expected to generate substantial new demand for air travel. Therefore, the Project's impact on air traffic patterns is less than significant.

Safety Impacts

As described in Section 2, the safety impacts of the 2020 LRDP are evaluated based on whether it would substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). The LRDP transportation facilities, including connections to the off-campus facilities, will be constructed according to State of California design standards for roadway and intersection design and operations. Therefore, the transportation facilities would not cause adverse safety effects for vehicles, transit, pedestrians or bicyclists, and the Project's impact on safety is less-than-significant.

Emergency Access Impacts

As described in Section 2, the emergency access impacts of the 2020 LRDP are evaluated based on whether the Project would result in inadequate emergency access. The 2020 LRDP does not propose any infrastructure changes outside the campus, and thus would not create barriers to or impede emergency access. The Project traffic analysis indicates significant impacts at intersections in the Existing With Project, 2030 with Project, and 2035 With Project cases, and identifies intersection capacity mitigations for the impact locations. Emergency responders are charged with developing fastest-response travel routes and assessing traffic conditions and developing alternate routes in real time to provide emergency services. Therefore, the identified significant impacts would not result in inadequate emergency access within the traffic study area, and the impact on emergency access is less-than-significant.

For the purposes of this analysis, this Project would have a significant impact if it would:

i. Disrupt existing transit services or facilities, interfere with planned transit services or facilities, or conflict with adopted transit system plans; or

    i. Disrupt existing bicycle facilities, interfere with planned bicycle facilities, or conflict with adopted bicycle system plans; or

    ii. Disrupt existing pedestrian facilities, interfere with planned pedestrian facilities, or conflict with adopted pedestrian system plans.

Pedestrian and Bicycle Facility Impacts

As described in Section 2, a significant impact to bicycle or pedestrian facilities would occur if the Project would disrupt existing pedestrian or bicycle facilities, interfere with planned pedestrian or bicycle facilities, or conflict with adopted pedestrian or bicycle system plans. The 2020 LRDP does not propose any infrastructure changes outside the campus and, thus, would not disrupt existing facilities, interfere with planned facilities, nor conflict with adopted plans. Therefore, the Project's impact on pedestrian and bicycle facilities would be less-than-significant.

Transit Impacts

As described in Section 2, a significant impact to transit facilities or service would occur if the Project would disrupt existing transit services or facilities, interfere with planned transit services or facilities, or conflict with adopted transit system plans. The 2020 LRDP does not propose any changes to transit service or infrastructure provided by non-University operators. The LRDP contains policies regarding working with transit providers to coordinate service with campus-provided service (CatTracks). Therefore, the Project's impact on pedestrian and bicycle facilities would be less-than-significant.

6. 2035 Conditions

This chapter discusses Cumulative (2035) traffic conditions both without and with the Project, considering the traffic growth from approved and anticipated development in Merced through the year 2035.

Traffic Growth from Approved and Anticipated Development

The City of Merced provided a list of approved projects expected to be constructed by 2035. The list of development projects is shown in **Table 9.**

The vehicle trip generation for the approved and anticipated development to 2035 was estimated using average trip generation rates and trip generation equations for the proposed land uses from ITE's *Trip Generation* (9th Edition), and, where available, the Transportation Impact Analyses prepared for specific developments. The total trip generation of the approved and anticipated development is estimated at 3,860 AM peak hour trips and 7,053 PM peak hour trips in 2035. The appendix contains the detailed trip generation calculations.

Traffic generated by the approved and anticipated development was assigned to the roadway network based on trip distribution information derived from the MCAG Travel Demand Model. Specifically, several 'select zone' runs were used to determine the general distribution of traffic from residential and commercial traffic analysis zones; these distribution patterns were then manually applied to the approved/anticipated development traffic, using the manual traffic assignment software Vistro. Trip distribution patterns based on the land use type and location within in the City are presented in **Table 10.** The appendix contains detailed information on the trip assignment process.

Table 9: Approved/Anticipated Development to 2035

Site No.	Project Name	Size	Units
1	Bellevue Ranch West Village 12	15.7	KSF
2	Regency Court Apartments	6.4	KSF
3	Compass Pointe II Apartments	87	Rooms
4	Mansionette Estates Unit 5	12	KSF
5	University Village Merced Annexation	178	DU
6	University Village Merced Annexation	523	KSF
7	Bianchi/Norcal Cajun Annexation	15	KSF

Table 9: Approved/Anticipated Development to 2035

Site No.	Project Name	Size	Units
8	Yosemite & McKee Commercial Center	11.2	KSF
9	University Village Merced - Lake ("Merced Station")	100	Rooms
10	University Village Merced - Lake ("Merced Station")	74	KSF
11	Prime Shine	21	KSF
12	Pro Lube	65	DU
13	Gas Station/Conv. Market/Car Wash - Carol Ave	134	DU
14	Towne Place Suites	100	DU
15	Childs and Parsons (Old Bowling Alley)	67	DU
16	Merced Gateway Center	61	DU
17	Merced Gateway Center	60	DU
18	Super Shop	58	DU
19	Mainzer Theater	134	DU
20	El Capitan Hotel	27	KSF
21	El Capitan Hotel (retail)	66.45	KSF
22	Advanced Chemical Transportation (ACT)	48	KSF
23	Bellevue Ranch East Village 15 (Remaining Lots)	7	Screens
24	Bellevue Ranch East Village 7 (Remaining Lots)	50	KSF
25	Bellevue Ranch East Lot Q (Remaining Lots)	160	DU
26	Bellevue Ranch West Village 1	100	DU
27	Campus Vista Unit 2 (Remaining Lots)	71	DU
28	Lantana Estates South (Phase 1)	37	DU
29	The Meadows Subdivision (Remaining Lots)	125	DU
30	Mission Ranch (Remaining Lots)	44	DU
31	Golden Valley Health Centers (Part of Northview)	48	DU
31	Northview Medical Offices	249	DU
32	PG&E Regional Utility Center	101	DU
32	Merced Mall Expansion	144	DU
33	Merced Mall Expansion	101	DU
34	Stoneridge South Subdivision	47	DU
35	Stoneridge South Subdivision	293	DU
36	Bellevue Ranch East Village 16 (Remaining Lots)	127	DU
37	Bellevue Ranch East Village 8 (Remaining Lots)	25	DU
38	University Park II, Phase 2 Subdivision (Remaining Lots)	300	Emp
39	Sierra Vista Units 2 and 3 (Remaining Lots)	15.7	KSF

Table 9: Approved/Anticipated Development to 2035

Site No.	Project Name	Size	Units
40	Bellevue Ranch East Village 14 (Remaining Lots)	6.4	KSF
41	Moraga Subdivision Phase 1 (Remaining Lots)	87	Rooms
42	Cypress Terrace East (Remaining Lots)	12	KSF
43	Sandcastle Phase 2 & 3 Subdivision (Remaining Lots)	178	DU
44	Cypress Terrace East Phase 4 (Remaining Lots)	523	KSF
45	Tuscany East Subdivision (Remaining Lots)	15	KSF
46	Shadow Creek at Compass Point (Remaining Lots)	11.2	KSF

Notes:
1. A map of the locations of these projects is included in the Technical Appendix.
Source: City of Merced and Merced County, May 2018.

Table 10: Approved/Anticipated Development Trip Distribution

		Residential North of Olive Ave	Residential South of SR 99	Residential between Olive and SR 99	Commercial North of Olive Ave	Commercial South of SR 99	Commericial between Olive and SR 99
1	SR 59 SB	5%					
2	West of Merced on Santa Fe Drive	20%	5%	15%	10%		5%
3	SR 99 NB	20%	25%	25%	5%	15%	10%
4	SR 140 WB		5%	5%		10%	5%
5	SR 59 SB		10%	5%	5%	10%	5%
6	SR 140 EB		5%	5%	5%	5%	5%
7	SR 99 EB	5%	5%	5%	5%	10%	10%
8	Olive Ave east of Mckee Road		5%		10%		5%
9	North of Yosemite Ave between SR 59 and R St		10%	5%	10%	10%	10%
10	Dowtown Merced	30%	25%	25%	15%	15%	15%
11	Northwest Merced				5%	5%	5%
12	North of Yosemite Ave between G St and Parsons Ave				5%		5%
13	South of Yosemite Ave between G St and Parsons Ave			5%	5%		5%
14	South of Olive Ave between M St and G St	5%			5%	5%	
15	Central Merced	5%		5%	10%	10%	15%
16	SR 59 - Downtown	5%	5%		5%	5%	
	Total	100%	100%	100%	100%	100%	100%

Notes:
1. For the purposes of this distribution, commercial uses include office, retail and industrial land uses.

The estimated peak hour intersection turning movements resulting from approved and anticipated development to 2035 are shown in **Figure 11.**

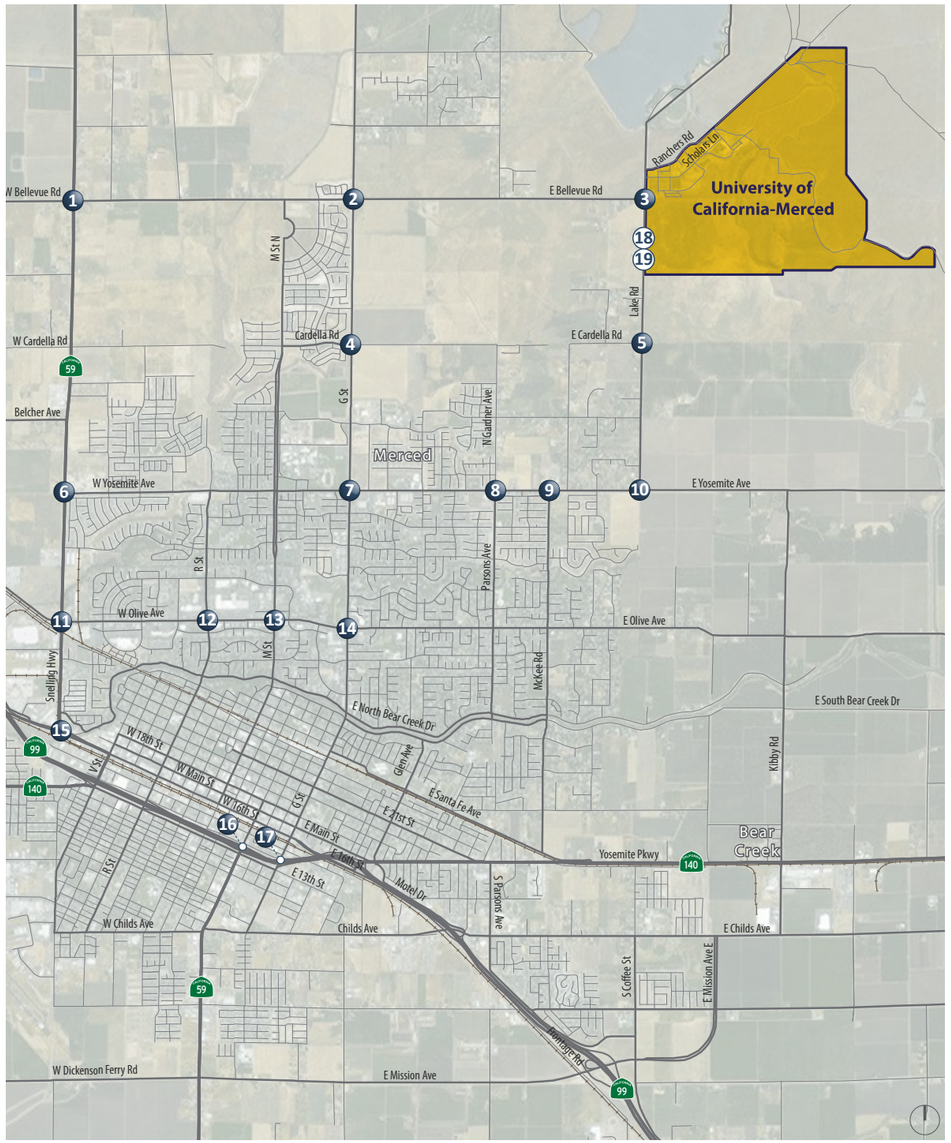
It is important to note that the trip generation and assignment process in this analysis is conservative for the following reason: it is likely and in fact expected that some of the new trips from housing development in the City will be made by new University commuters. This analysis does not take a credit for this fact, but instead assigns all new development trips to the network along with all Project (campus) trips. This essentially leads to some trips being double counted. The extent of the double counting is difficult to estimate. It should therefore simply be noted that the analysis is clearly conservative.

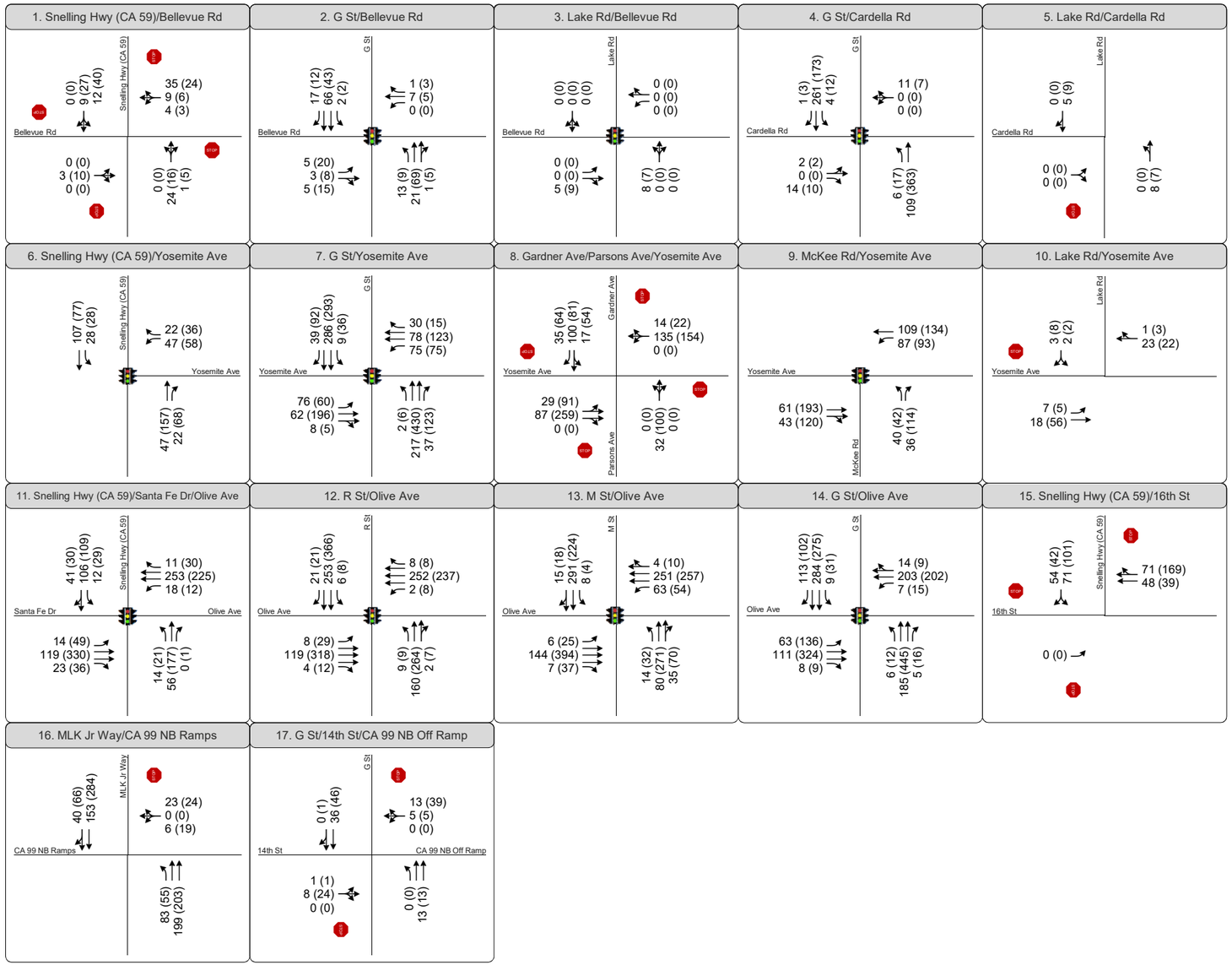
2035 Roadway Network

In addition to the improvements noted in Section 5 at the intersection of East Bellevue Road/Lake Road, the 2035 roadway network includes the completion of Campus Parkway from its current terminus north to Yosemite Avenue. This work has currently begun construction. Based on the estimated campus trip distribution and assignment, relatively few campus trips (less than 50 per direction per peak hour) are expected to use Campus Parkway; therefore, intersections along Campus Parkway were not selected for analysis in this document.

2035 No Project and With Project Traffic Volumes

Figure 12 shows the 2035 No Project traffic volumes, which result from adding the volumes in Figure 11 to the existing volumes (Figure 3). **Figure 13** shows the 2035 With Project traffic volumes, which result from adding the volumes in Figure 5 (2020 Project), Figure 6 (2020 LRDP Project) and Figure 7 (Campus Growth to 2035) to the volumes in Figure 12.





Source: City of Merced and Merced County.

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

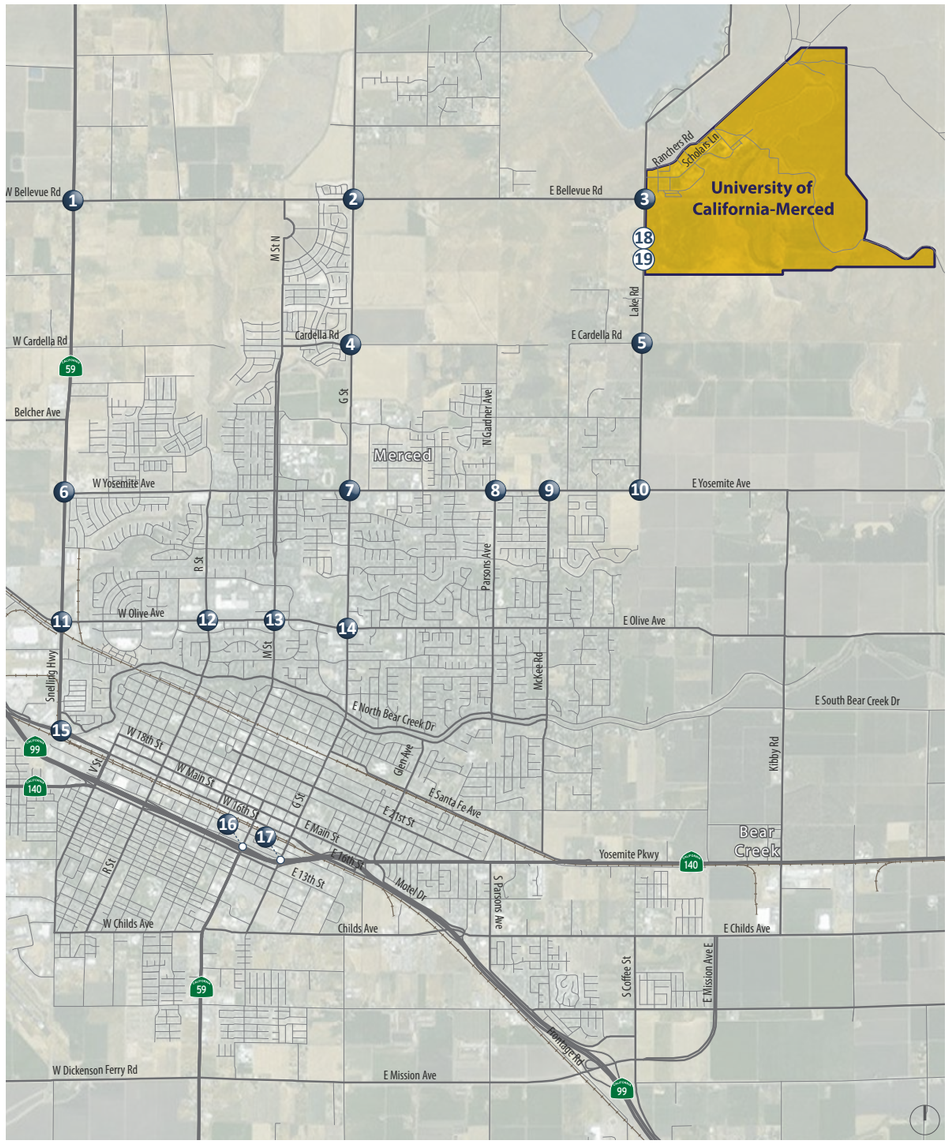
Stop Sign

Project Site

Study Intersection

Figure 11

2035 Approved/Anticipated Development Trip Assignment



XX (YY) AM (PM) Peak Hour Traffic Volumes

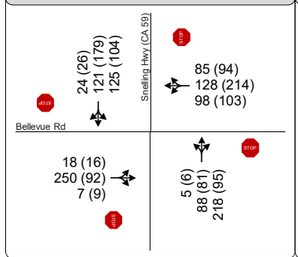
Signalized Intersection

Stop Sign

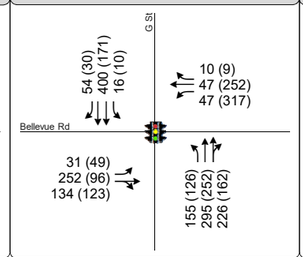
Project Site

Study Intersection

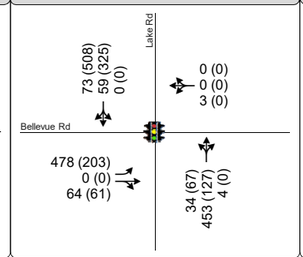
1. Snelling Hwy (CA 59)/Bellevue Rd



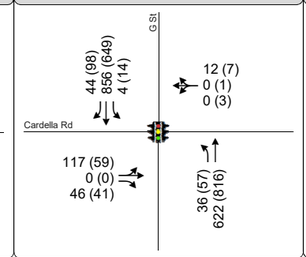
2. G St/Bellevue Rd



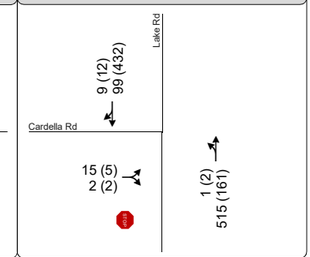
3. Lake Rd/Bellevue Rd



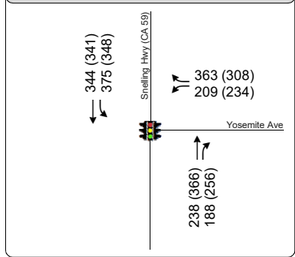
4. G St/Cardella Rd



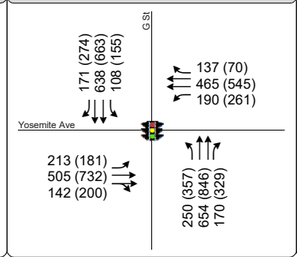
5. Lake Rd/Cardella Rd



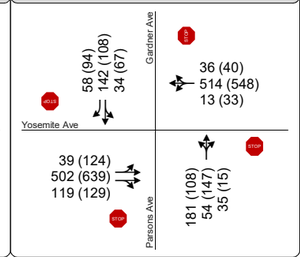
6. Snelling Hwy (CA 59)/Yosemite Ave



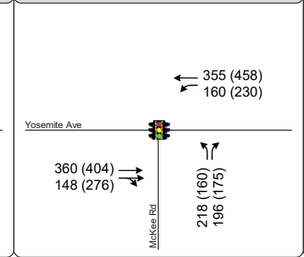
7. G St/Yosemite Ave



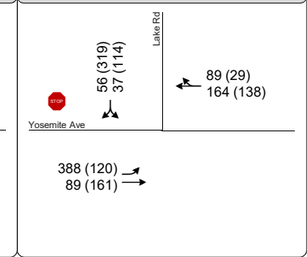
8. Gardner Ave/Parsons Ave/Yosemite Ave



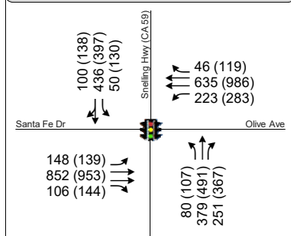
9. McKee Rd/Yosemite Ave



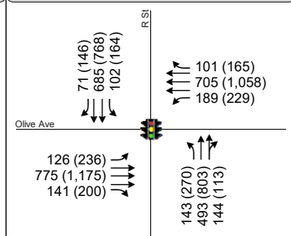
10. Lake Rd/Yosemite Ave



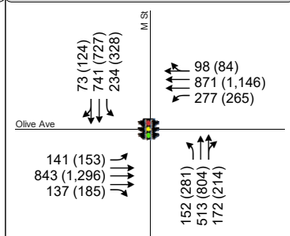
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



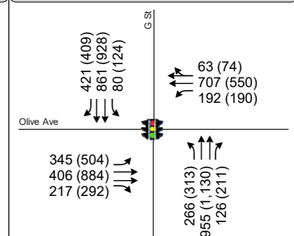
12. R St/Olive Ave



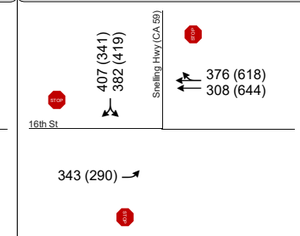
13. M St/Olive Ave



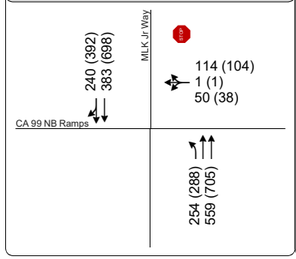
14. G St/Olive Ave



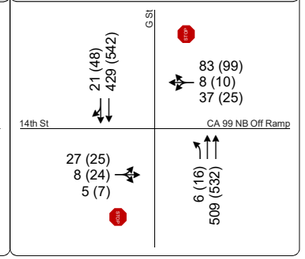
15. Snelling Hwy (CA 59)/16th St



16. MLK Jr Way/CA 99 NB Ramps



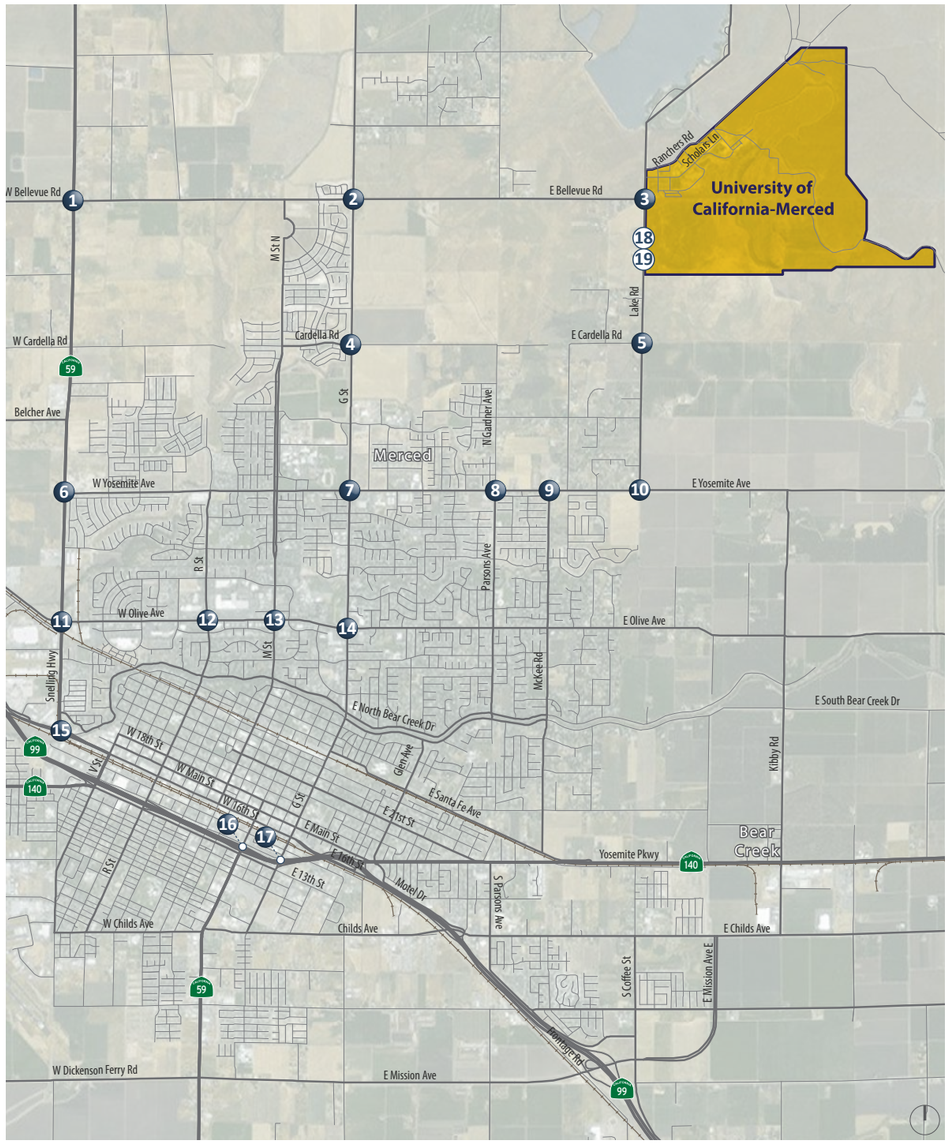
17. G St/14th St/CA 99 NB Off Ramp



Note: This figure includes traffic volumes associated with approved and anticipated projects through the year 2035.

Figure 12

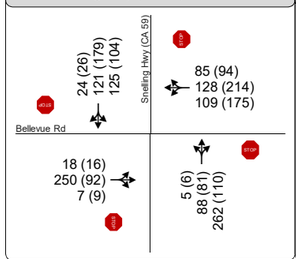
Year 2035 No Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls



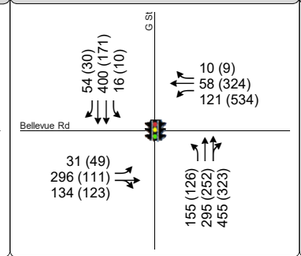
XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection — Stop Sign

Project Site — Study Intersection — With Project Study Intersection

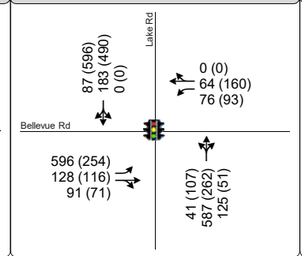
1. Snelling Hwy (CA 59)/Bellevue Rd



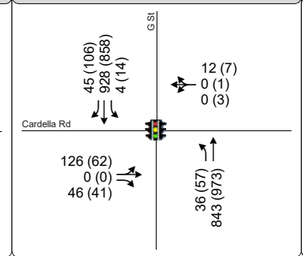
2. G St/Bellevue Rd



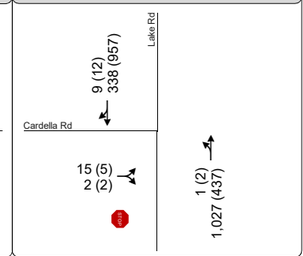
3. Lake Rd/Bellevue Rd



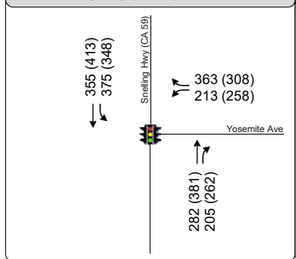
4. G St/Cardella Rd



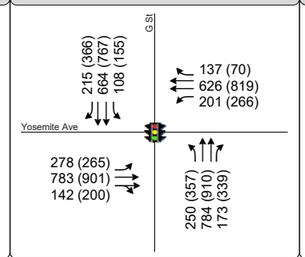
5. Lake Rd/Cardella Rd



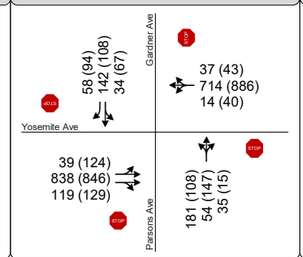
6. Snelling Hwy (CA 59)/Yosemite Ave



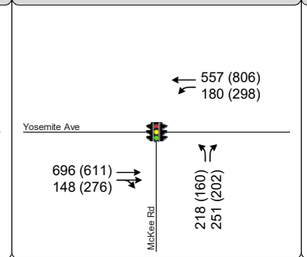
7. G St/Yosemite Ave



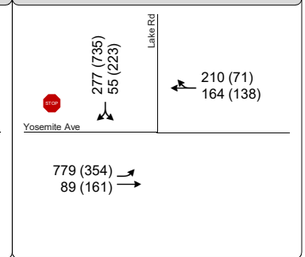
8. Gardner Ave/Parsons Ave/Yosemite Ave



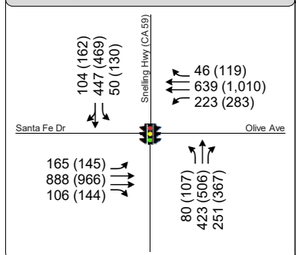
9. McKee Rd/Yosemite Ave



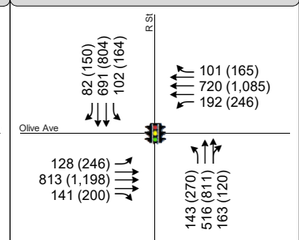
10. Lake Rd/Yosemite Ave



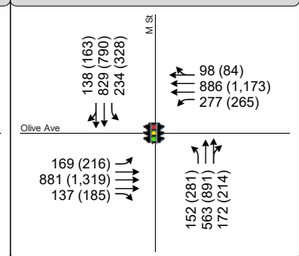
11. Snelling Hwy (CA 59)/Santa Fe Dr/Olive Ave



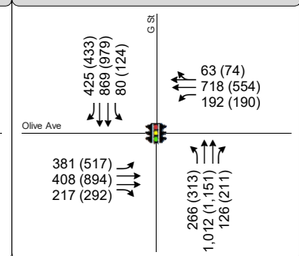
12. R St/Olive Ave



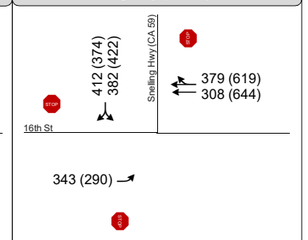
13. M St/Olive Ave



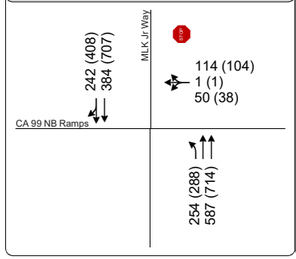
14. G St/Olive Ave



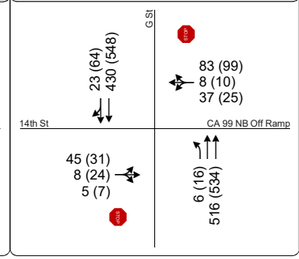
15. Snelling Hwy (CA 59)/16th St



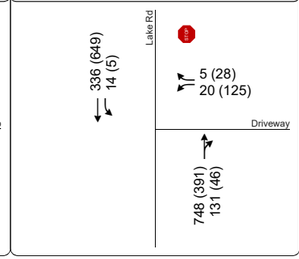
16. MLK Jr Way/CA 99 NB Ramps



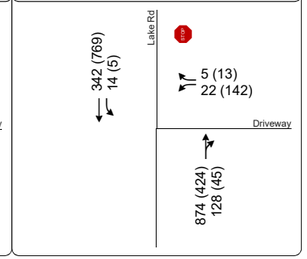
17. G St/14th St/CA 99 NB Off Ramp



18. Lake Rd/Project Driveway



19. Lake Rd/Project Driveway



Note: This figure includes traffic volumes associated with approved and anticipated projects through the year 2035, completion of the 2020 Project, completion of the LRDP Project (additional campus growth to 15,000 students), and additional growth to 17,500 students.

Figure 13

Year 2035 with Project (17,500-Student Campus) Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

2035 Intersection Levels of Service

2035 Without Project and 2035 With Project peak hour intersection operations are presented in **Table 11** along with the Existing Conditions results. The following intersections operate deficiently in at least one peak hour:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59)
- Intersection #2: Bellevue Road/G Street
- Intersection #3: East Bellevue Road/Lake Road
- Intersection #4: G Street/Cardella Road
- Intersection #7: Yosemite Avenue/G Street
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue
- Intersection #10: East Yosemite Avenue/Lake Road
- Intersection #11: West Olive Avenue/Snelling Highway (SR-59)
- Intersection #13: West Olive Avenue/M Street
- Intersection #14: Olive/G Street
- Intersection #15: West 16th Street/Snelling Highway (SR-59)
- Intersection #16: SR 99 Northbound Ramps/MLK Jr. Way
- Intersection #17: SR 99 Northbound Off-Ramp/West 14th Street/G Street
- Intersection #18: Lake Road/Project Driveway #1
- Intersection #19: Lake Road/Project Driveway #2

At intersections #8, #15 and #16, the peak hour signal warrants are met under 2035 No Project conditions in one or both peak hours, and would continue to be met under 2035 With Project conditions. At intersections #10, #17, #18 and #19, the addition of Project traffic causes the peak hour signal warrant to be met.

Based on the significance thresholds presented in Section 2, the following 15 intersections are significantly impacted in the 2035 With Project (17,500-Student Campus) case:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #2: Bellevue Road/G Street (Signal) – AM Peak Hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #3: East Bellevue Road/Lake Road (Signal) – AM and PM peak hours, Project traffic causes the LOS to degrade from B (AM) and A (PM) to E (AM) and F (PM)
- Intersection #4: G Street/Cardella Road (Signal) – AM peak hour, Project traffic causes the LOS to degrade from C to E
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours, Project traffic causes the worst approach to fall from LOS C to LOS F in both peak hours
- Intersection #11: West Olive Avenue/Snelling Highway (SR-59) (Signal) – PM peak hour, Project traffic causes the LOS to degrade from D to E
- Intersection #13: West Olive Avenue/M Street (Signal) – AM peak hour, Project traffic causes the LOS to degrade from D to E; PM peak hour, LOS is E without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #14: G Street/Olive Avenue (Signal) – AM and PM peak hours, LOS is E/F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour, LOS is F without Project and Project adds more than five seconds to the intersection delay
- Intersection #16: Martin Luther King, Jr. Way/SR 99 Northbound Ramps (Side-street stop controlled) – PM peak hour, worst approach is LOS F and Project adds more than five seconds to the worst approach delay
- Intersection #17: G Street/14th Street/SR 99 Northbound Off-Ramp (Side-street stop controlled) – PM peak hour, Project traffic causes worst approach LOS to degrade from D to E

- Intersection #18: Lake Road/Project Driveway #1 (Side-street stop controlled) – PM peak hour, project traffic causes worst approach to operate at LOS E
- Intersection #19: Lake Road/Project Driveway #2 (Side-street stop controlled) – PM peak hour, Project traffic causes worst approach LOS to operate at LOS F

Impact TRA-2: **The implementation of the Project under 2035 With Project conditions is projected to significantly impact 15 intersections during peak commute hours.**

The Project would significantly impact the following intersections in the AM and/or PM peak hours:

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) (All-way stop controlled) -- AM peak hour, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #2: Bellevue Road/G Street (Signal) – AM Peak Hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #3: East Bellevue Road/Lake Road (Signal) – AM and PM peak hours, Project traffic causes the LOS to degrade from B (AM) and A (PM) to E (AM) and F (PM)
- Intersection #4: G Street/Cardella Road (Signal) – AM peak hour, Project traffic causes the LOS to degrade from C to E
- Intersection #7: Yosemite Avenue/G Street (Signal) – PM peak hour, Project traffic causes the intersection LOS to degrade from D to E
- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue (All-way stop controlled) -- AM and PM peak hours, LOS is F without the Project and the Project adds more than five seconds to the intersection delay
- Intersection # 10: East Yosemite Avenue/Lake Road (Side-street stop controlled) -- AM and PM peak hours, Project traffic causes the worst approach to fall from LOS C to LOS F in both peak hours
- Intersection #11: West Olive Avenue/Snelling Highway (SR-59) (Signal) – PM peak hour, Project traffic causes the LOS to degrade from D to E
- Intersection #13: West Olive Avenue/M Street (Signal) – AM peak hour, Project traffic causes the LOS to degrade from D to E; PM peak hour, LOS is E without the Project and the Project adds more than five seconds to the intersection delay
- Intersection #14: G Street/Olive Avenue (Signal) – AM and PM peak hours, LOS is E/F without the Project and the Project adds more than five seconds to the intersection delay

- Intersection #15: West 16th Street/Snelling Highway (SR-59) (All-way stop controlled) -- PM peak hour, LOS is F without Project and Project adds more than five seconds to the intersection delay

- Intersection #16: Martin Luther King, Jr. Way/SR 99 Northbound Ramps (Side-street stop controlled) – PM peak hour, worst approach is LOS F and Project adds more than five seconds to the worst approach delay

- Intersection #17: G Street/14th Street/SR 99 Northbound Off-Ramp (Side-street stop controlled) – PM peak hour, Project traffic causes worst approach LOS to degrade from D to E

- Intersection #18: Lake Road/Project Driveway #1 (Side-street stop controlled) – PM peak hour, Project traffic causes worst approach to operate at LOS E

- Intersection #19: Lake Road/Project Driveway #2 (Side-street stop controlled) – PM peak hour, Project traffic causes worst approach to operate at LOS F

Mitigation Meaure TRA-2: The following improvements are recommended to mitigate the 2035 With Project Cumulative impacts.

- Intersection #1: West Bellevue Road/Snelling Highway (SR-59) – Add a northbound right turn pocket lane *(note: this improvement is also recommended as mitigation for the 2030 With Project case)*

- Intersection #2: Bellevue Road/G Street – Add an eastbound right turn pocket lane *(note: this improvement is also recommeneded as mitigation for the 2030 With Project case)*

- Intersection #3: East Bellevue Road/Lake Road – (a) Add northbound and southbound right turn pocket lanes *(note: this improvement is also recommeneded as mitigation for the 2030 With Project case);* (b) If determined to be necessary based on annual monitoring of traffic congestion, and in conjunction with the mitigations identified at intersections #3(a), #18 and #19, widen Lake Road to provide four through lanes between East Bellevue Road and the southern LRDP boundary, to facilitate traffic flow between the intersections serving campus access on Lake Road.

- Intersection #4: G Street/Cardella Road – Optimize signal timing

- Intersection #7: Yosemite Avenue/G Street – Remove westbound right turn pocket lane and add westbound left turn pocket lane, and add an eastbound left turn pocket lane *(note: the westbound improvements are also recommended as mitigation for the 2030 With Project case)*

- Intersection #8: East Yosemite Avenue/Parsons Avenue/North Gardner Avenue – Install a signal and widen the westbound approach to provide one left/through lane and one through/right lane *(note: these improvements are also recommended as mitigation for the 2030 With Project case)*

- Intersection #10: East Yosemite Avenue/Lake Road – Install a signal, widen the southbound approach to provide separate left turn and right turn lanes, add a second eastbound left turn lane, and widen the northbound departure to provide two acceptance lanes *(note: these improvements are also recommended for the 2030 With Project case)*

- Intersection #11: West Olive Avenue/Snelling Highway (SR-59) – Add a southbound right turn pocket lane

- Intersection #13: West Olive Avenue/M Street – Construct a second southbound left turn lane *(note: this improvement is also recommended as mitigation for the 2030 With Project case)*

- Intersection #14: G Street/Olive Avenue – Add an overlap phase for the southbound right turn *(note: this improvement is also recommended for the 2030 With Project case)*

- Intersection #15: West 16th Street/Snelling Highway (SR-59) – Modify the geometry of the southbound right turn lane to provide a full 200 feet of storage, such that the southbound right turn queues do not interfere with vehicles in the left turn lane *(note: this improvement is also recommended as mitigation for the 2030 With Project case)*

- Intersection #16: Martin Luther King, Jr. Way/SR 99 Northbound Ramps – Install a signal

- Intersection #17: G Street/14th Street/SR 99 Northbound Off-Ramp – Install a signal

- Intersection #18: Lake Road/Project Driveway #1 – Install a signal; see also Intersection #3 Mitigation Measure (b)

- Intersection #19: Lake Road/Project Driveway #2 – Install a signal; see also Intersection #3 Mitigation Measure (b)

With the improvements described above, all intersection impacts can be mitigated to a less than significant level. **Table 13** in Section 7 provides an overview of the mitigated service levels for the 2030 Plus Project and 2035 Plus Project cases.

Because the impacts identified in impact TRA-2 are the result of cumulative traffic growth along with Project traffic, the University should contribute a fair-share contribution to the identified improvements, based on its proportion of traffic growth at each intersection in the year 2035. Certain improvements are the same as, or similar to, improvements identified in the 2030 With Project case; therefore, a fair share should be calculated that takes into account the redundant mitigations. Because the implementation of the improvements depends on funding from other sources and implementation by the responsible agencies (the City of Merced, Merced County, and/or Caltrans), the impacts would remain significant and unavoidable with mitigation.

Table 11: Intersection Levels of Service — 2035 No Project and 2035 With Project

Intersection	Control[1, 2]	Peak Hour	Existing[3]		2030 Without Project[3]		2030 With Project[3]		2035 Without Project[3]		2035 With Project[3]	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
1. West Bellevue Road/Snelling Highway (SR-59)	AWS	AM	**41.3**	**E**	**77.6**	**F**	**83.4**	**F**	**83.5**	**F**	**103.0**	**F**
		PM	13.2	B	14.2	B	16.4	C	15.2	C	20.2	C
2. Bellevue Road/ G Street	Signal	AM	36.6	D	40.7	D	**60.8**	**E**	42.7	D	**75.6**	**E**
		PM	21.0	C	22.0	C	26.8	C	22.4	C	30.6	C
3. East Bellevue Road/Lake Road[4]	AWS/ Signal	AM	53.6	F	10.9	B	37.5	D	10.9	B	**58.0**	**E**
		PM	70.8	F	9.4	A	**>120**	**F**	9.4	A	**>120**	**F**
4. Cardella Road/ G Street	Signal	AM	11.4	B	21.1	C	30.5	C	33.0	C	**57.8**	**E**
		PM	6.8	A	7.4	A	7.9	A	8.0	A	9.8	A
5. East Cardella Road/Lake Road	SSS	AM	0.4 (13.4)	A (B)	0.4 (13.5)	A (B)	0.4 (24.9)	A (C)	0.4 (13.6)	A (B)	0.4 (34.5)	A (D)
		PM	0.2 (12.4)	A (B)	0.2 (12.6)	A (B)	0.2 (21.2)	A (C)	0.2 (12.6)	A (B)	0.1 (28.1)	A (D)
6. West Yosemite Avenue/ Snelling Highway (SR-59)	Signal	AM	13.1	B	16.2	B	17.3	B	17.7	B	19.4	B
		PM	11.4	B	13.8	B	14.2	B	15.3	B	16.3	B
7. Yosemite Avenue/G Street	Signal	AM	40.1	D	36.7	D	41.9	D	41.2	D	53.8	D
		PM	43.1	D	48.7	D	**56.6**	**E**	**57.1**	**E**	**76.4**	**E**
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue	AWS	AM	28.7	D	**71.9**	**F**	**>120**	**F**	**101.9**	**F**	**>120**	**F**
		PM	21.2	C	**75.5**	**F**	**>120**	**F**	**118.9**	**F**	**>120**	**F**
9. East Yosemite Avenue/McKee Road	Signal	AM	8.6	A	10.3	B	11.4	B	11.1	B	13.3	B
		PM	8.2	A	10.7	B	12.8	B	12.2	B	15.2	B
10. East Yosemite Avenue/Lake Road	SSS	AM	6.4 (17.3)	B (C)	6.3 (17.1)	A (C)	34 **(>120)**	D **(F)**	6.3 (17.5)	A (C)	**>120 (>120)**	**F (F)**
		PM	10.2 (16.8)	B (C)	10.3 (18.4)	B (C)	**>120(>120)**	**F (F)**	10.5 (19.1)	B (C)	**>120 (>120)**	**F (F)**
11. West Olive Avenue/Snelling Highway (SR-59)	Signal	AM	48.4	D	48.3	D	49.5	D	48.7	D	54.5	D
		PM	49.8	D	50.5	D	51.1	D	50.7	D	**56.4**	**E**

Table 11: Intersection Levels of Service — 2035 No Project and 2035 With Project

Intersection	Control[1, 2]	Peak Hour	Existing[3]		2030 Without Project[3]		2030 With Project[3]		2035 Without Project[3]		2035 With Project[3]	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
12. West Olive Avenue/R Street	Signal	AM	46.6	D	47.5	D	47.6	D	48.1	D	48.6	D
		PM	**56.4**	**E**	**61.3**	**E**	**62.2**	**E**	**63.5**	**E**	**64.9**	**E**
13. West Olive Avenue/M Street	Signal	AM	48.1	D	50.9	D	53.9	D	53.5	D	**59.3**	**E**
		PM	55.0	D	**63.0**	**E**	**68.0**	**E**	**69.8**	**E**	**79.7**	**E**
14. Olive Avenue/G Street	Signal	AM	45.5	D	**61.2**	**E**	**66.7**	**E**	**75.9**	**E**	**86.4**	**F**
		PM	47.0	D	**67.9**	**E**	**71.9**	**E**	**90.9**	**F**	**102.3**	**F**
15. West 16th Street/Snelling Highway (SR-59)[5]	AWS	AM	**78.7**	**F**	**108.0**	**F**	**109.9**	**F**	**>120**	**F**	**>120**	**F**
		PM	**95.0**	**F**	**>120**	**F**	**>120**	**F**	**>120**	**F**	**>120**	**F**
16. SR 99 Northbound Ramps/MLK Jr. Way	SSS	AM	3.5 (16.5)	A (C)	5.1 (32.5)	A (D)	5.2 (34.4)	A (D)	7.3 **(55.8)**	A **(F)**	7.6 **(60.2)**	A **(F)**
		PM	2.8 (18.3)	A (C)	6.1 **(68.2)**	A **(F)**	6.3 **(73.0)**	A **(F)**	15.3 **(>120)**	C **(F)**	16.8 **(>120)**	C **(F)**
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street	SSS	AM	2.4 (20.1)	A (C)	2.7 (21.7)	A (C)	3 (23.4)	A (C)	2.9 (22.8)	A (C)	3.3 (25.6)	A (D)
		PM	2.0 (22.5)	A (C)	3.0 (30.6)	A (D)	3.2 (32.6)	A (D)	3.5 (34.5)	A (D)	3.8 **(38.0)**	A **(E)**
18. Lake Road/Project Driveway #1	SSS	AM	-	-	-	-	0.4 (17.6)	A (C)	-	-	0.6 (25.4)	A (D)
		PM					2.6 (11.4)	A (B)			5.1 **(40.9)**	A **(E)**
19. Lake Road/Project Driveway #2	SSS	AM	-	-	-	-	0.4 (24.5)	A (C)	-	-	0.7 (31.3)	A (D)
		PM					2.4 (13.1)	A (B)			10.6 **(94.8)**	B **(F)**

Notes:
1. Signal = signalized intersection; AWS=all-way stop; SSS=side street stop
2. For side-street stop-controlled intersections, two service levels are listed: Average intersection LOS (LOS for worst side-street movement)
3. **Bold** indicates below-standard service level. Shaded indicates a significant impact.
4. This intersection is analyzed as an all-way stop with three legs for Existing conditions, and as a signal with a fourth leg for all other cases.
5. AM impact is less than significant because delay increase is less than 5 seconds (technical appendix contains the delay results).

Source: Fehr & Peers, February 2019.

2035 Freeway Operations

2035 No Project and 2035 with Project operations were evaluated using the methodology described in Section 2 for the weekday AM and PM peak hours. Project trips were manually added to the freeway segments in the methods described above. The results are summarized in **Table 12.**

Under 2035 No Project conditions, the all freeway segments operated with a V/C ratio of 0.62 or less in the AM peak hour, and 0.77 or less in the PM peak hour. Under 2035 with Project conditions, the V/C ratio increases on some freeway segments in and AM and PM peak hours with the addition of project traffic. However, all freeway segments operated with a V/C ratio of 0.62 or less in the AM peak hour, and 0.78 or less in the PM peak hour. Based on this assessment, there is excess freeway capacity, and typical conditions would not incur substantial delays to drivers. All intersections operate better than LOS E (V/C = 0.90), so no significant freeway impacts are identified.

Table 12: Freeway Operations — 2035 No Project and 2035 with Project Conditions

Location	Direction	Peak Hour	2035 No Project Conditions	2035 with Project Conditions
			V/C Ratio	V/C Ratio
1. SR 99 North of 16th Street	NB	AM	0.62	0.62
		PM	0.71	0.74
	SB	AM	0.56	0.57
		PM	0.76	0.76
2. SR 99 North of SR 140	NB	AM	0.56	0.56
		PM	0.67	0.69
	SB	AM	0.56	0.57
		PM	0.76	0.76
3. SR 99 North of MLK	NB	AM	0.57	0.58
		PM	0.68	0.70
	SB	AM	0.58	0.60
		PM	0.77	0.78
4. SR 99 South of MLK	NB	AM	0.56	0.56
		PM	0.67	0.68
	SB	AM	0.56	0.56
		PM	0.69	0.70
5. SR 99 South of G Street	NB	AM	0.57	0.57
		PM	0.68	0.69
	SB	AM	0.57	0.58
		PM	0.72	0.72
6. SR 99 South of Mission Street	NB	AM	0.54	0.54
		PM	0.66	0.66
	SB	AM	0.41	0.40
		PM	0.57	0.57

Source Fehr & Peers, February 2019.

7. Intersection Mitigation Summary

In Sections 5 and 6, mitigation measures are identified for intersection impacts under 2030 With Project and 2035 With Project conditions, respectively. **Table 13** summarizes the mitigation measures and resulting mitigated service levels. **Table 14** provides the Project's fair share contribution to each measure, based on the Project traffic at the intersection as a share of the total projected traffic growth at the intersection

Table 13: Intersection Mitigation Summary

Intersection	Control[1, 2]	Peak Hour	2030 With Project[3]					2035 With Project[3]				
			Delay (seconds)	LOS	Mitigation	Mitigated Delay (seconds)	Mitigated LOS	Delay (seconds)	LOS	Mitigation	Mitigated Delay (seconds)	Mitigated LOS
1. West Bellevue Road/Snelling Highway (SR-59)	AWS	AM PM	**83.4** 16.4	**F** C	Add a northbound right turn pocket lane	24.5 12.5	C B	**103.0** 20.2	**F** C	Same as mitigation for 2030+P	27.3 13.1	D B
2. Bellevue Road/ G Street	Signal	AM PM	**60.8** 26.8	**E** C	Add an eastbound right turn pocket lane	36.1 22.5	D C	**75.6** 30.6	**E** C	Same as mitigation for 2030+P	43.1 26.6	D C
3. East Bellevue Road/Lake Road[4]	AWS/ Signal	AM PM	44.7 **>120**	D **F**	Add northbound and southbound right turn pocket lanes	33.5 15.0	C B	**70.4** **>120**	**E** **F**	Same as mitigation for 2030+P, plus: widen Lake Road to four lanes between East Bellevue Road and the southern LRDP boundary, if necessary based on annual monitoring of traffic congestion	38.4 19.9	D B
4. Cardella Road/ G Street	Signal	AM PM	30.5 7.9	C A				**57.8** 9.8	**E** A	Optimize signal timing	34.4 9.1	C A
5. East Cardella Road/Lake Road	SSS	AM PM	0.4 (24.9) 0.2 (21.2)	A (C) A (C)				0.4 (34.5) 0.1 (28.1)	A (D) A (D)			
6. West Yosemite Avenue/ Snelling Highway (SR-59)	Signal	AM PM	17.3 14.2	B B				19.4 16.3	B B			
7. Yosemite Avenue/G Street	Signal	AM PM	41.9 **56.6**	D **E**	Remove westbound right turn pocket lane and add westbound left turn pocket lane	40.4 48.3	D D	53.8 **76.4**	D **E**	Same as mitigation for 2030+P, plus add an eastbound left turn pocket lane	42.5 57.3	D E
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue	AWS	AM PM	**>120** **>120**	**F** **F**	Install a signal, widen the westbound approach to provide one left/through lane and one through/right lane	9.2 7.7	A A	**>120** **>120**	**F** **F**	Same as mitigation for 2030+P	10.6 10.3	B B
9. East Yosemite Avenue/McKee Road	Signal	AM PM	11.4 12.8	B B				13.3 15.2	B B			
10. East Yosemite Avenue/Lake Road	SSS	AM PM	34 **(>120)** **>120(>120)**	D **(F)** **F (F)**	Install a signal, widen the southbound approach to provide separate left turn and right turn lanes, add a second eastbound left turn lane, and widen the northbound departure to provide two acceptance lanes	14.0 11.2	B B	**>120 (>120)** **>120 (>120)**	**F (F)** **F (F)**	Same as mitigation for 2030+P	15.5 13.0	B B
11. West Olive Avenue/Snelling Highway (SR-59)	Signal	AM PM	49.5 51.1	D D				54.5 **56.4**	D **E**	Add a southbound right turn pocket lane	48.0 48.7	D D
12. West Olive Avenue/R Street	Signal	AM PM	47.6 **62.2**	D **E**				48.6 **64.9**	D **E**			
13. West Olive Avenue/M Street	Signal	AM PM	53.9 **68.0**	D **E**	Construct a second southbound left turn lane	49.4 59.5	D E	**59.3** **79.7**	**E** **E**	Same as mitigation for 2030+P	53.9 66.7	D E
14. Olive Avenue/G Street	Signal	AM PM	**66.7** **71.9**	**E** **E**	Add an overlap phase for the southbound right turn	63.0 68.2	E E	**86.4** **102.3**	**F** **F**	Same as mitigation for 2030+P	79.8 95.2	E F
15. West 16th Street/Snelling Highway (SR-59)	AWS	AM PM	**109.9** **151.1**	**F** **F**	Modify the geometry of the southbound right turn lane to provide a full 200 feet of storage	39.2 121.6	E F	**>120** **>183.7**	**F** **F**	Same as mitigation for 2030+P	47.0 147.8	E F

Table 13: Intersection Mitigation Summary

Intersection	Control[1, 2]	Peak Hour	2030 With Project[3]					2035 With Project[3]				
			Delay (seconds)	LOS	Mitigation	Mitigated Delay (seconds)	Mitigated LOS	Delay (seconds)	LOS	Mitigation	Mitigated Delay (seconds)	Mitigated LOS
16. SR 99 Northbound Ramps/MLK Jr. Way	SSS	AM PM	5.2 (34.4) 6.3 **(73.0)**	A (D) A **(F)**				7.6 **(60.2)** 16.8 **(>120)**	A **(F)** C **(F)**	Install a signal	12.6 14.7	B B
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street	SSS	AM PM	3 (23.4) 3.2 (32.6)	A (C) A (D)				3.3 (25.6) 3.8 **(38.0)**	A (D) A **(E)**[5]	Install a signal	9.1 8.8	A A
18. Lake Road/Project Driveway #1	SSS	AM PM	0.4 (17.6) 2.6 (11.4)	A (C) A (B)				0.6 (25.4) 5.1 **(40.9)**	A (D) A **(E)**	Install a signal; see also Intersection #3 Mitigation Meaure regarding widening of Lake Road	3.7 5.8	A A
19. Lake Road/Project Driveway #2	SSS	AM PM	0.4 (24.5) 2.4 (13.1)	A (C) A (B)				0.7 (31.3) 10.6 **(94.8)**	A (D) B **(F)**[5]	Install a signal; see also Intersection #3 Mitigation Meaure regarding widening of Lake Road	6.5 7.4	A A

Notes:
1. Signal = signalized intersection; AWS=all-way stop; SSS=side street stop
2. For side-street stop-controlled intersections, two service levels are listed: Average intersection LOS (LOS for worst side-street movement)
3. **Bold** indicates below-standard service level. Shaded indicates a significant impact.
4. This intersection is analyzed as an all-way stop with three legs for Existing conditions, and as a signal with a fourth leg for all other cases.

Source: Fehr & Peers, February 2019.

Table 14: Mitigation Fair Shares

Intersection	Project Fair Shares[1]			
	2030 With Project		2035 With Project	
	Mitgation	Fair Share	Mitgation	Fair Share
1. West Bellevue Road/Snelling Highway (SR-59)	Add a northbound right turn pocket lane	33%	Same as mitigation for 2030+P	38%
2. Bellevue Road/ G Street	Add an eastbound right turn pocket lane	58%	Same as mitigation for 2030+P	62%
3. East Bellevue Road/Lake Road[3]	Add northbound and southbound right turn pocket lanes	72%	Same as mitigation for 2030+P, plus: widen Lake Road to four lanes between East Bellevue and the southern LRDP boundary, if necessary based on annual monitoring of traffic congestion	79%
4. Cardella Road/ G Street			Optimize signal timing	36%
5. East Cardella Road/Lake Road				
6. West Yosemite Avenue/ Snelling Highway (SR-59)				
7. Yosemite Avenue/G Street	Remove westbound right turn pocket lane and add westbound left turn pocket lane	29%	Same as mitigation for 2030+P, plus add an eastbound left turn pocket lane	31%
8. East Yosemite Avenue/Parsons Avenue/North Gardner Avenue	Widen the westbound approach to provide one left/through lane and one through/right lane, and install a signal	43%	Same as mitigation for 2030+P	46%
9. East Yosemite Avenue/McKee Road				
10. East Yosemite Avenue/Lake Road	Install a signal, widen the southbound approach to provide separate left turn and right turn lanes, add a second eastbound left turn lane, and widen the northbound departure to provide two acceptance lanes	73%	Same as mitigation for 2030+P	78%
11. West Olive Avenue/Snelling Highway (SR-59)			Add a southbound right turn pocket lane	13%
12. West Olive Avenue/R Street				
13. West Olive Avenue/M Street	Construct a second southbound left turn lane	12%	Same as mitigation for 2030+P	17%

Table 14: Mitigation Fair Shares

Intersection	Project Fair Shares[1]			
	2030 With Project		2035 With Project	
	Mitgation	Fair Share	Mitgation	Fair Share
14. Olive Avenue/G Street	Add an overlap phase for the southbound right turn	9%	Same as mitigation for 2030+P	9%
15. West 16th Street/Snelling Highway (SR-59)	Modify the geometry of the southbound right turn lane to provide a full 200 feet of storage	8%	Same as mitigation for 2030+P	10%
16. SR 99 Northbound Ramps/MLK Jr. Way			Install a signal	4%
17. SR 99 Northbound Off-Ramp/West 14th Street/G Street			Install a signal	16%
18. Lake Road/Project Driveway #1			Install a signal; see also Intersection 3 Mitigation Measure regarding widening of Lake Road	76%
19. Lake Road/Project Driveway #2			Install a signal; see also Intersection 3 Mitigation Measure regarding widening of Lake Road	87%

Notes:
1. Fair-share calculated as (Project traffic/All traffic growth) for each scenario. Note that the 2020 Project traffic is not included in the Project traffic, as it is part of an already-entitled project. The peak hour for which the impact is identified is used in the calculation; where both peak hours are significantly impacted, the higher proportion is reported.

Source: Fehr & Peers, February 2019.

Appendix A:
Traffic Counts

Prepared by National Data & Surveying Services

SR-59 & Bellevue Rd

Peak Hour Turning Movement Count

ID: 17-07933-001
City: Merced

Day: Thursday
Date: 11/09/2017

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

SR-59 SOUTHBOUND

AM	24	112	113	0	132	AM
NOON	0	0	0	0	0	NOON
PM	26	152	64	0	151	PM

EASTBOUND (Bellevue Rd)

AM	NOON	PM	
148	0	240	⇦
0	0	0	↶ 0
18	0	16	↱ 0
247	0	82	→ 0
7	0	9	↴ 0
AM	NOON	PM	

WESTBOUND (Bellevue Rd)

PM	NOON	AM	
70	0	50	0 ↰
208	0	119	0 ←
100	0	94	0 ↰
0	0	0	0 ↰
236	0	577	⇨
PM	NOON	AM	

CONTROL

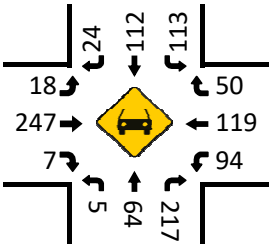
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TEV	1070	0	888
	AM	NOON	PM
PHF	0.76		0.94

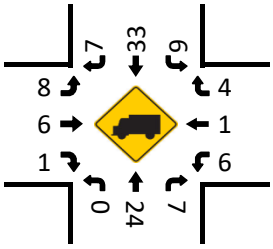
NORTHBOUND (SR-59)

PM	261	0	6	65	90	PM
NOON	0	0	0	0	0	NOON
AM	213	0	5	64	217	AM

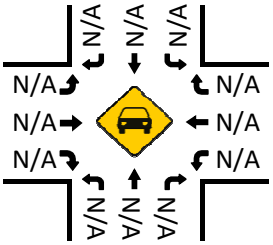
Total Vehicles (AM)



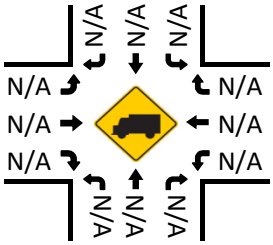
HT (AM)



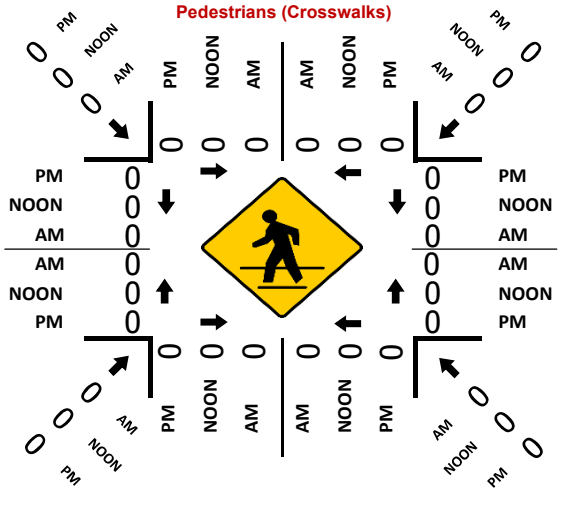
Total Vehicles (Noon)



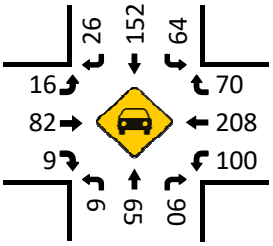
HT (NOON)



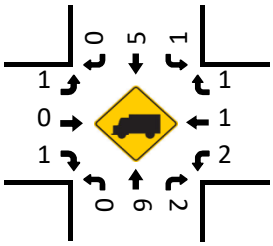
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

G St & Bellevue Rd

Peak Hour Turning Movement Count

ID: 17-07933-002
City: Merced

Day: Thursday
Date: 11/09/2017

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

G St – SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	37	334	14	0	309
NOON	0	0	0	0	0
PM	18	128	8	0	218
Bikes	0	0	0	0	

Bellevue Rd – EASTBOUND

Movement	AM	NOON	PM	Bikes
Departing	219	0	381	
U-Turn	0	0	0	0
Left	26	0	29	0
Through	249	0	88	0
Right	129	0	108	0

Bellevue Rd – WESTBOUND

Movement	PM	NOON	AM	Bikes
Right	6	0	9	0
Through	247	0	40	0
Left	317	0	47	0
U-Turn	0	0	0	0
Departing	253	0	488	

G St – NORTHBOUND

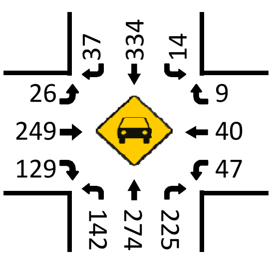
	Departing	U-Turn	Left	Through	Right
Bikes		0	0	0	0
PM	554	1	116	183	157
NOON	0	0	0	0	0
AM	510	0	142	274	225

CONTROL

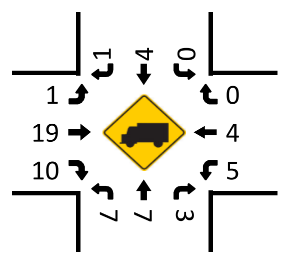
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	AM	NOON	PM
TEV	1526	0	1406
PHF	0.68		0.97

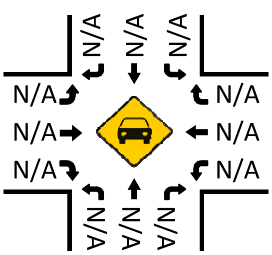
Total Vehicles (AM)



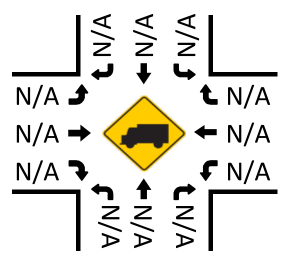
HT (AM)



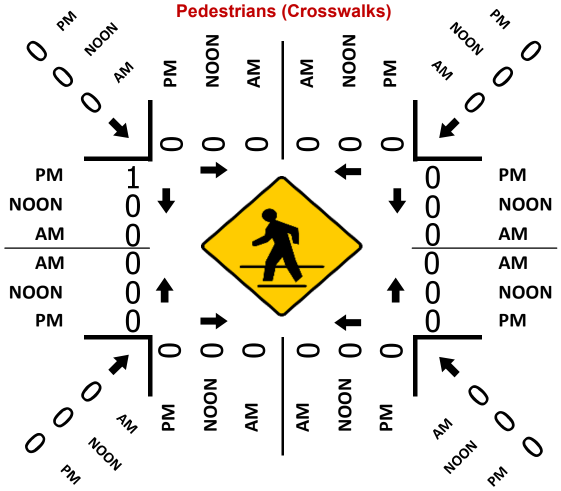
Total Vehicles (Noon)



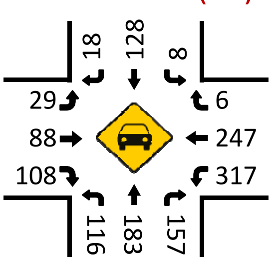
HT (NOON)



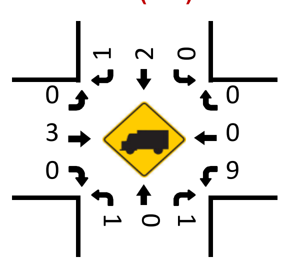
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Lake Rd & Bellevue Rd

Peak Hour Turning Movement Count

ID: 17-07933-003
City: Merced

Day: Thursday
Date: 11/09/2017

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

Lake Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Total
AM	73	59	0	0	931
NOON	0	0	0	0	0
PM	508	325	0	0	330
Red values	0	0	0	0	

Bellevue Rd — EASTBOUND

	AM	NOON	PM	Red values
Total	99	0	568	
U-Turn	0	0	0	0
Left	478	0	203	0
Thru	0	0	0	0
Right	59	0	52	0

Bellevue Rd — WESTBOUND

	Red values	PM	NOON	AM
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	3
U-Turn	0	0	0	0
Total		0	0	4

Lake Rd — NORTHBOUND

	Total	U-Turn	Left	Thru	Right
Red values		0	0	0	0
PM	377	0	60	127	0
NOON	0	0	0	0	0
AM	121	0	26	453	4

CONTROL

0

	AM	NOON	PM
TEV	1155	0	1275
PHF	0.91		0.97

Total Vehicles (AM)

Approach	U-Turn	Left	Thru	Right
Southbound	0	0	59	73
Eastbound		478	0	59
Westbound		3	0	0
Northbound	4	26	453	

HT (AM)

Approach	U-Turn	Left	Thru	Right
Southbound	0		7	6
Eastbound		8	0	11
Westbound		2	0	0
Northbound	2	2	10	

Total Vehicles (Noon)

All movements: N/A

HT (NOON)

All movements: N/A

Total Vehicles (PM)

Approach	U-Turn	Left	Thru	Right
Southbound	0		325	508
Eastbound		203	0	52
Westbound		0	0	0
Northbound	0	60	127	

HT (PM)

Approach	U-Turn	Left	Thru	Right
Southbound	0		3	8
Eastbound		4	0	0
Westbound		0	0	0
Northbound	0	0	5	

Pedestrians (Crosswalks)

Crosswalk	PM	NOON	AM
North leg (west half)	0	0	2
North leg (east half)	0	0	2
West leg (north)	0	0	0
West leg (south)	0	0	0
East leg (north)	0	0	0
East leg (south)	0	0	4
South leg (west half)	0	0	2
South leg (east half)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

G St & Cardella Rd

Peak Hour Turning Movement Count

ID: 17-07933-004
City: Merced

Day: Thursday
Date: 11/09/2017

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

G St — SOUTHBOUND

AM	43	595	0	0	627	AM
NOON	0	0	0	0	0	NOON
PM	95	476	1	1	511	PM

Cardella Rd — EASTBOUND

AM	NOON	PM	
75	0	136	⇦
2	0	0	↶ 0
113	0	57	↱ 0
0	0	0	→ 0
32	0	31	↴ 0

CONTROL

0

TEV	1329	0	1160
	AM	NOON	PM
PHF	0.70		0.94

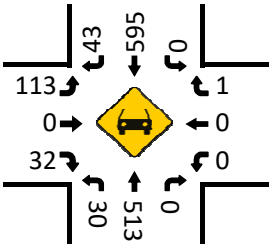
Cardella Rd — WESTBOUND

PM	NOON	AM	
0	0	1	↰ 0
1	0	0	← 0
3	0	0	↶ 0
0	0	0	↶ 0
3	0	0	⇨

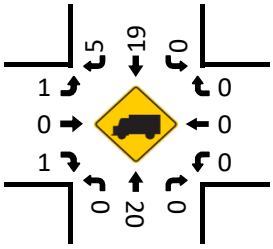
PM	510	0	40	453	2	PM
NOON	0	0	0	0	0	NOON
AM	627	0	30	513	0	AM

G St — NORTHBOUND

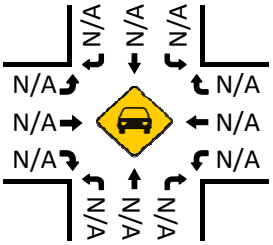
Total Vehicles (AM)



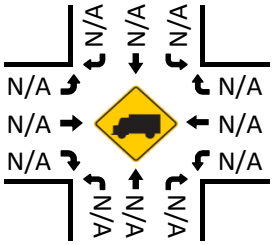
HT (AM)



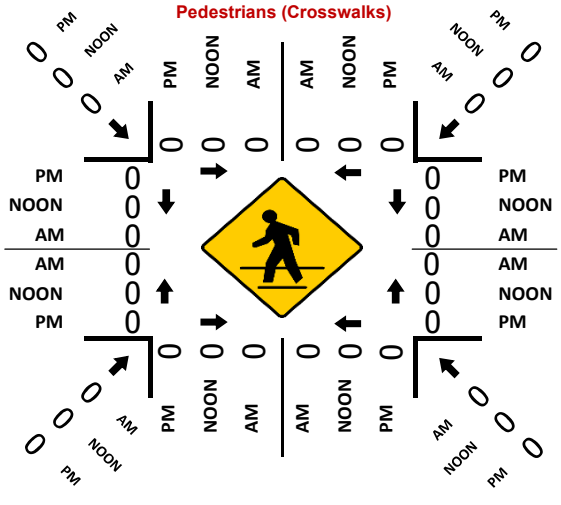
Total Vehicles (Noon)



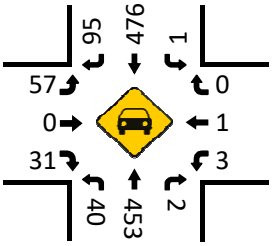
HT (NOON)



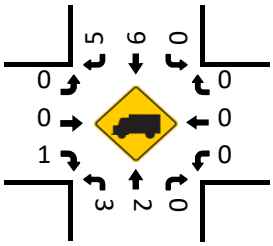
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Lake Rd & Cardella Rd

Peak Hour Turning Movement Count

ID: 17-07933-005
City: Merced

Day: Thursday
Date: 11/09/2017

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

Lake Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Approach total (northbound departures)
AM	9	94	0	0	522
NOON	0	0	0	0	0
PM	12	423	0	0	159
(red counts)	0	0	0	0	

Cardella Rd — EASTBOUND

	AM	NOON	PM
Departing (westbound)	10	0	14
U-Turn (0)	0	0	0
Left (0)	15	0	5
Thru (0)	0	0	0
Right (0)	2	0	2

Cardella Rd — WESTBOUND

	PM	NOON	AM
Right (0)	0	0	0
Thru (0)	0	0	0
Left (0)	0	0	0
U-Turn (0)	0	0	0
Departing (eastbound)	0	0	0

Lake Rd — NORTHBOUND

	Approach total (southbound departures)	U-Turn	Left	Thru	Right
(red counts)		0	0	0	0
PM	425	0	2	154	0
NOON	0	0	0	0	0
AM	96	0	1	507	0

CONTROL

0

	AM	NOON	PM
TEV	628	0	598
PHF	0.89		0.95

Total Vehicles (AM)

Approach	Left	Thru	Right	U-Turn
Southbound	0	94	9	
Eastbound	15	0	2	
Westbound	0	0	0	0
Northbound	1	507	0	

HT (AM)

Approach	Left	Thru	Right
Southbound	0	18	1
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	13	0

Total Vehicles (Noon)

All movements: N/A

HT (NOON)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	0	423	12
Eastbound	5	0	2
Westbound	0	0	0
Northbound	2	154	0

HT (PM)

Approach	Left	Thru	Right
Southbound	0	4	1
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	3	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0 0	0 0	0 0
South leg	0 0	0 0	0 0
West leg	0 0	0 0	0 0
East leg	0 0	0 0	0 0
NW corner (diagonal)	0	0	0
NE corner (diagonal)	0	0	0
SW corner (diagonal)	0	0	0
SE corner (diagonal)	0	0	0

Prepared by National Data & Surveying Services

SR-59 & Yosemite Ave

Peak Hour Turning Movement Count

ID: 17-07933-006
City: Merced

Day: Thursday
Date: 11/09/2017

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SR-59 SOUTHBOUND

	U-turn	Left	Through	Right	Exit
AM	0	237	347	0	532
NOON	0	0	0	0	0
PM	0	264	320	0	481
	0	0	0	0	

Yosemite Ave EASTBOUND

	AM	NOON	PM	
Exit	0	0	0	
U-turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

Yosemite Ave WESTBOUND

		PM	NOON	AM
Right	0	272	0	341
Through	0	0	0	0
Left	0	176	0	162
U-turn	0	0	0	0
Exit		508	0	513

SR-59 NORTHBOUND

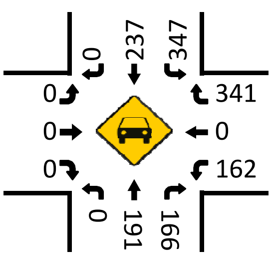
	Exit	U-turn	Left	Through	Right
		0	0	0	0
PM	440	0	0	209	188
NOON	0	0	0	0	0
AM	399	0	0	191	166

CONTROL

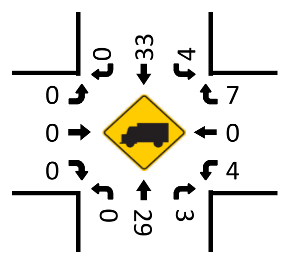
0

	AM	NOON	PM
TEV	1444	0	1429
PHF	0.87		0.98

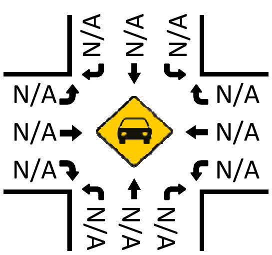
Total Vehicles (AM)



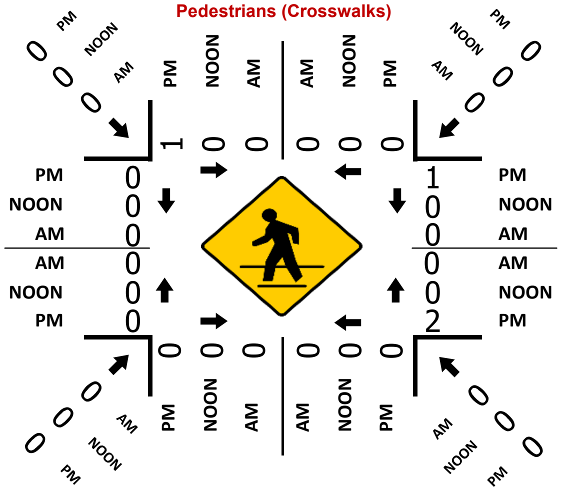
HT (AM)



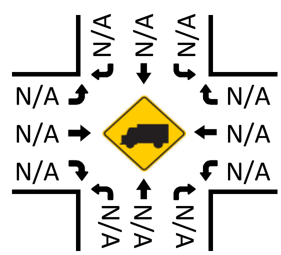
Total Vehicles (Noon)



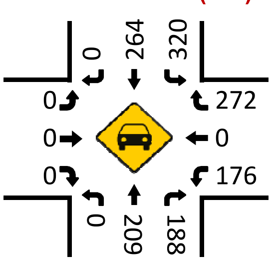
Pedestrians (Crosswalks)



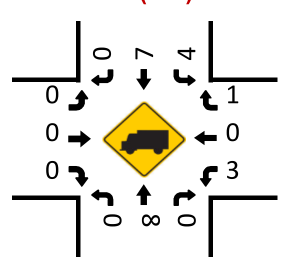
HT (NOON)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

G St & Yosemite Ave

Peak Hour Turning Movement Count

ID: 17-07933-007
City: Merced

Day: Thursday
Date: 11/09/2017

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

SOUTHBOUND (G St)

AM	132	352	99	0	681	AM
NOON	0	0	0	0	0	NOON
PM	182	370	119	0	592	PM

EASTBOUND (Yosemite Ave)

AM	NOON	PM	
767	0	955	⇦
0	0	0	↶ 0
137	0	121	↱ 0
443	0	536	→ 0
134	0	195	↴ 0
AM	NOON	PM	

WESTBOUND (Yosemite Ave)

PM	NOON	AM	
55	0	107	0 ↰
422	0	387	0 ←
186	0	115	0 ↰
0	0	0	0 ↰
861	0	675	⇨
PM	NOON	AM	

NORTHBOUND (G St)

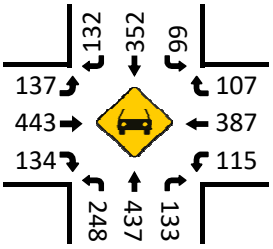
PM	751	0	351	416	206	PM
NOON	0	0	0	0	0	NOON
AM	601	0	248	437	133	AM

CONTROL

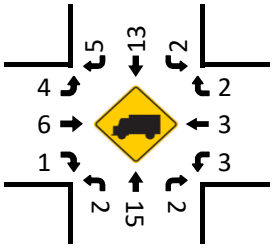
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TEV	2724 AM	0 NOON	3159 PM
PHF	0.79		0.96

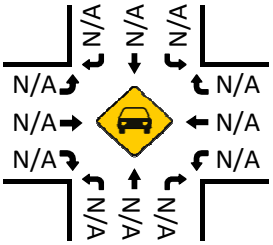
Total Vehicles (AM)



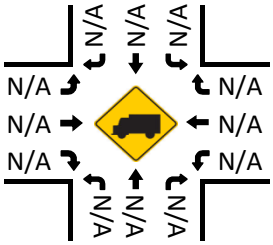
HT (AM)



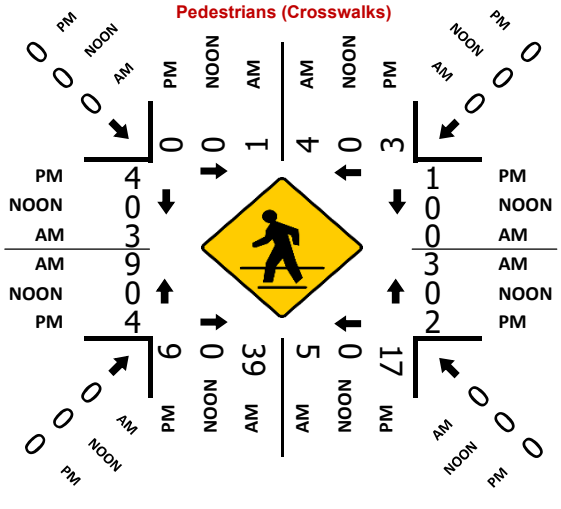
Total Vehicles (Noon)



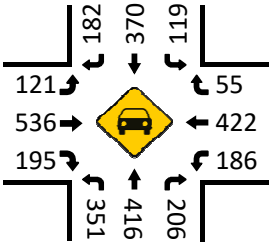
HT (NOON)



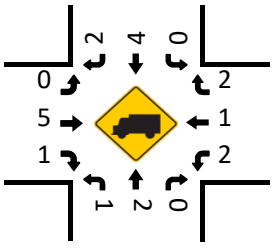
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Gardner Ave & Yosemite Ave

Peak Hour Turning Movement Count

ID: 17-07933-008
City: Merced

Day: Thursday
Date: 11/09/2017

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

Gardner Ave — SOUTHBOUND

AM	23	42	17	0	54	AM
NOON	0	0	0	0	0	NOON
PM	30	27	13	0	98	PM

Yosemite Ave — EASTBOUND

AM	NOON	PM		
583	0	532	⇦	
0	0	0	↶	0
10	0	33	↱	0
415	0	380	→	0
119	0	129	↳	0
AM	NOON	PM		

CONTROL

0

TEV	1278	0	1227
	AM	NOON	PM
PHF	0.89		0.94

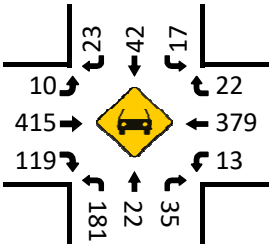
Yosemite Ave — WESTBOUND

PM	NOON	AM		
18	0	22	↰	0
394	0	379	←	0
33	0	13	↰	0
0	0	0	↰	0
408	0	467	⇨	
PM	NOON	AM		

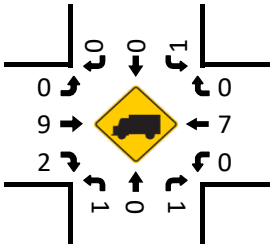
Gardner Ave — NORTHBOUND

PM	189	0	108	47	15	PM
NOON	0	0	0	0	0	NOON
AM	174	0	181	22	35	AM

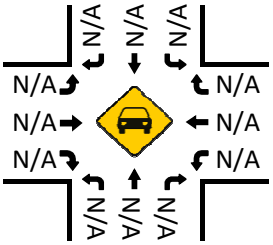
Total Vehicles (AM)



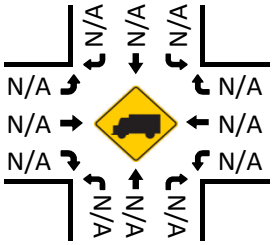
HT (AM)



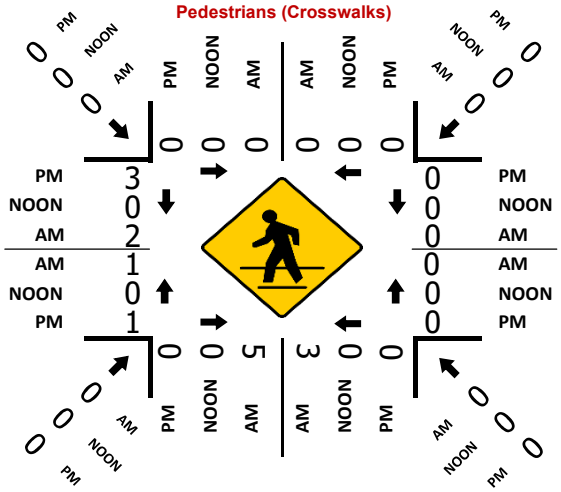
Total Vehicles (Noon)



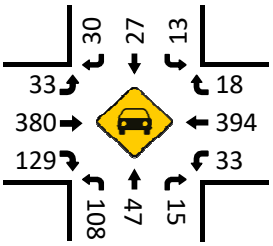
HT (NOON)



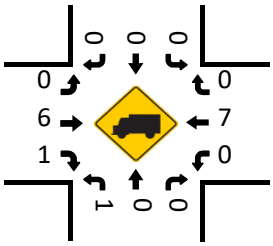
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

McKee Rd & Yosemite Ave

Peak Hour Turning Movement Count

ID: 17-07933-009
City: Merced

Day: Thursday
Date: 11/09/2017

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

McKee Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
(red)	0	0	0	0	

Yosemite Ave — EASTBOUND

	AM	NOON	PM	(red)
Departing	424	0	442	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	299	0	211	0
Right	105	0	156	0

Yosemite Ave — WESTBOUND

	(red)	PM	NOON	AM
Right	0	0	0	0
Through	0	324	0	246
Left	0	137	0	67
U-Turn	0	0	0	6
Departing		272	0	465

McKee Rd — NORTHBOUND

	Departing	U-Turn	Left	Through	Right
(red)		0	0	0	0
PM	293	0	118	0	61
NOON	0	0	0	0	0
AM	172	0	178	0	160

CONTROL

0

	AM	NOON	PM
TEV	1061	0	1007
PHF	0.96		0.90

Total Vehicles (AM)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	299	105
Westbound	67	246	0
Northbound	178	0	160

HT (AM)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	9	2
Westbound	1	4	0
Northbound	3	0	0

Total Vehicles (Noon)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

HT (NOON)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	211	156
Westbound	137	324	0
Northbound	118	0	61

HT (PM)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	6	0
Westbound	0	6	0
Northbound	1	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (eastbound direction)	0	0	0
North (westbound direction)	0	0	0
West (southbound direction)	0	0	0
West (northbound direction)	0	0	0
East (southbound direction)	0	0	0
East (northbound direction)	0	0	0
South (eastbound direction)	0	0	0
South (westbound direction)	1	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Lake Rd & Yosemite Ave

Peak Hour Turning Movement Count

ID: 17-07933-010
City: Merced

Day: Thursday
Date: 11/09/2017

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Lake Rd — SOUTHBOUND

AM	53	0	35	0	469	AM
NOON	0	0	0	0	0	NOON
PM	311	0	112	0	141	PM

EASTBOUND — Yosemite Ave

AM	NOON	PM	
194	0	427	⇦
0	0	0	↶ 0
381	0	115	↱ 0
71	0	105	→ 0
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND — Yosemite Ave

PM	NOON	AM	
26	0	88	0 ↰
116	0	141	0 ←
0	0	0	0 ↰
0	0	0	0 ↶
217	0	106	⇨
PM	NOON	AM	

CONTROL

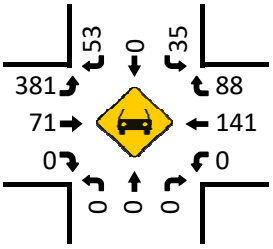
0

TEV	769 AM	0 NOON	785 PM
PHF	0.92		0.90

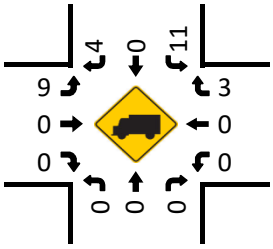
NORTHBOUND — Lake Rd

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

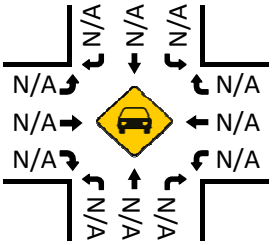
Total Vehicles (AM)



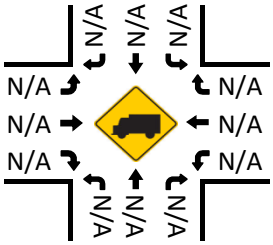
HT (AM)



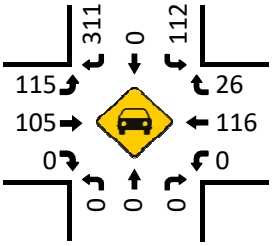
Total Vehicles (Noon)



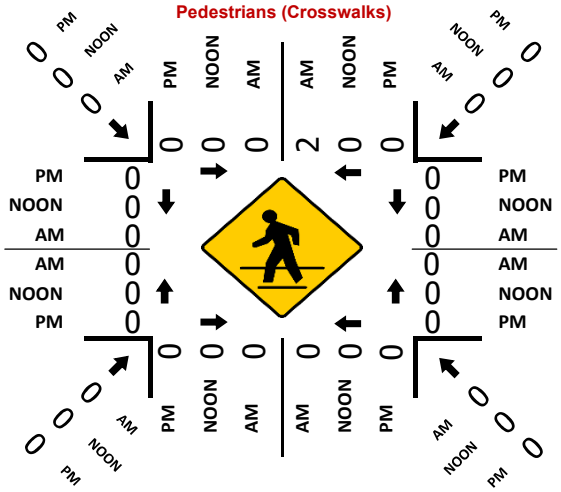
HT (NOON)



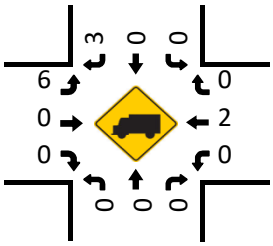
Total Vehicles (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

CA-59 & Olive Ave

Peak Hour Turning Movement Count

ID: 17-07933-011
City: Merced

Day: Thursday
Date: 11/09/2017

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

CA-59 SOUTHBOUND

AM	59	330	38	0	492	AM
NOON	0	0	0	0	0	NOON
PM	108	288	101	0	493	PM

Olive Ave EASTBOUND

AM	NOON	PM	
507	0	955	⇦
0	0	0	↶ 0
134	0	90	↱ 0
733	0	623	→ 0
83	0	108	↴ 0
AM	NOON	PM	

WESTBOUND Olive Ave

PM	NOON	AM	
89	0	35	0 ↰
761	0	382	0 ←
271	0	205	0 ↙
0	0	0	0 ↶
1090	0	1022	⇨
PM	NOON	AM	

CONTROL

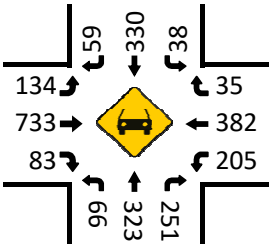
0

TEV	2639 AM	0 NOON	3205 PM
PHF	0.84		0.96

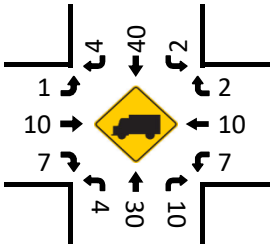
NORTHBOUND CA-59

PM	667	0	86	314	366	PM
NOON	0	0	0	0	0	NOON
AM	618	0	66	323	251	AM

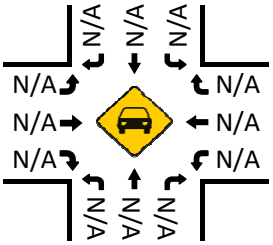
Total Vehicles (AM)



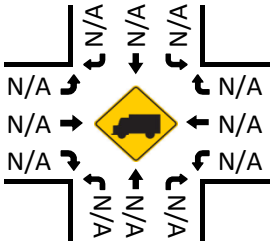
HT (AM)



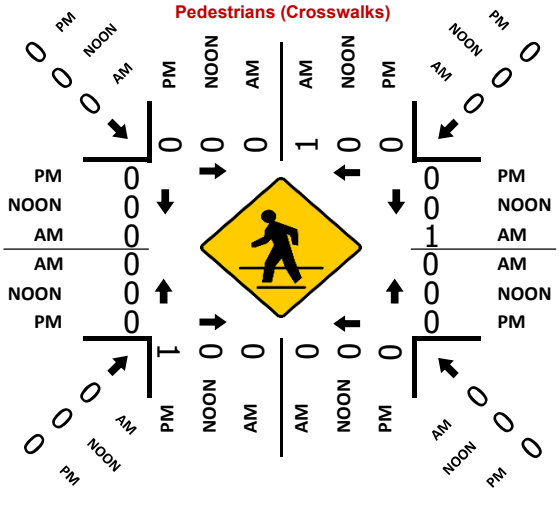
Total Vehicles (Noon)



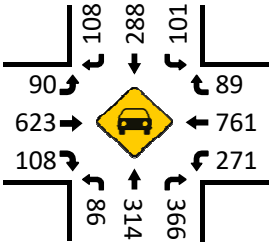
HT (NOON)



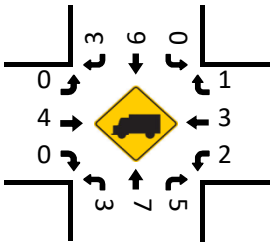
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

R St & Olive Ave

Peak Hour Turning Movement Count

ID: 17-07933-012
City: Merced

Day: Thursday
Date: 11/09/2017

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

R St — SOUTHBOUND

AM	50	432	95	1	536	AM
NOON	0	0	0	0	0	NOON
PM	125	402	152	4	900	PM

Olive Ave — EASTBOUND

AM	NOON	PM	
646	0	1214	⇦
9	0	7	↰ 0
109	0	200	↱ 0
656	0	857	→ 0
137	0	188	↳ 0

Olive Ave — WESTBOUND

PM	NOON	AM	
157	0	93	0 ↰
821	0	453	0 ←
206	0	178	0 ↰
15	0	9	0 ↱
1130	0	902	⇨

CONTROL

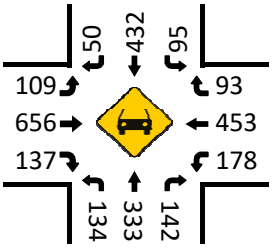
0

TEV	2831 AM	0 NOON	4040 PM
PHF	0.87		0.99

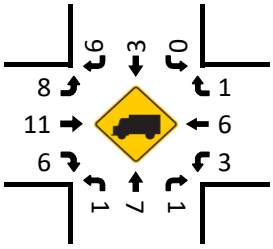
PM	796	0	261	539	106	PM
NOON	0	0	0	0	0	NOON
AM	747	0	134	333	142	AM

R St — NORTHBOUND

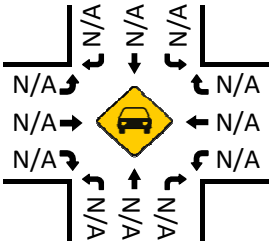
Total Vehicles (AM)



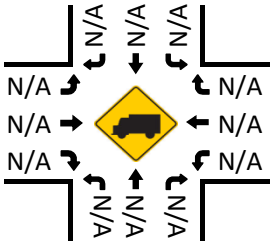
HT (AM)



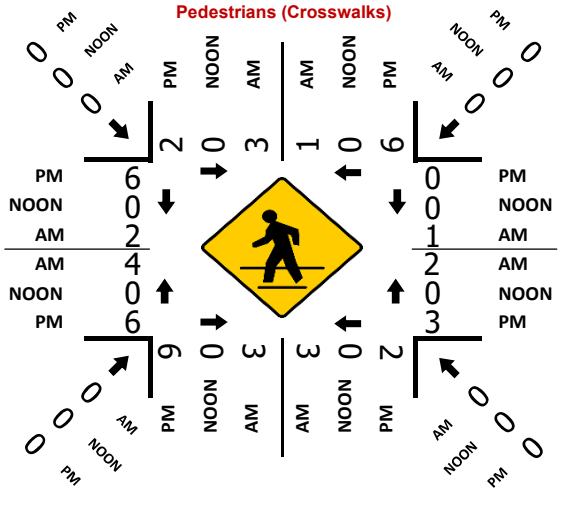
Total Vehicles (Noon)



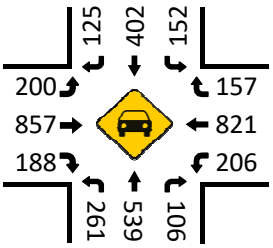
HT (NOON)



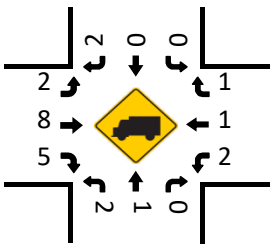
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

M St & Olive Ave

Peak Hour Turning Movement Count

ID: 17-07933-013
City: Merced

Day: Thursday
Date: 11/09/2017

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

M St — SOUTHBOUND

AM	58	450	226	0	658	AM
NOON	0	0	0	0	0	NOON
PM	106	503	324	0	718	PM

EASTBOUND — Olive Ave

AM	NOON	PM	
820	0	1261	⇦
4	0	17	0
131	0	111	0
699	0	902	0
130	0	148	0

WESTBOUND — Olive Ave

PM	NOON	AM	
74	0	94	0
889	0	620	0
171	0	185	0
40	0	29	0
1410	0	1091	⇨

CONTROL

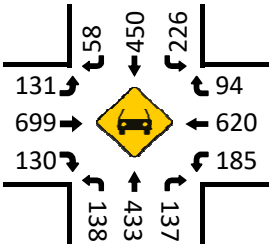
0

TEV	3334 AM	0 NOON	4211 PM
PHF	0.80		0.94

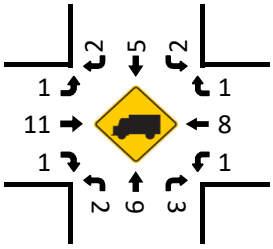
M St — NORTHBOUND

PM	822	0	249	533	144	PM
NOON	0	0	0	0	0	NOON
AM	765	0	138	433	137	AM

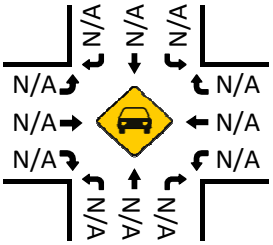
Total Vehicles (AM)



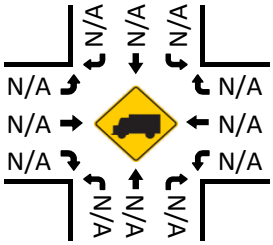
HT (AM)



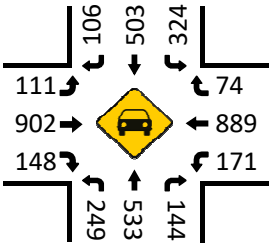
Total Vehicles (Noon)



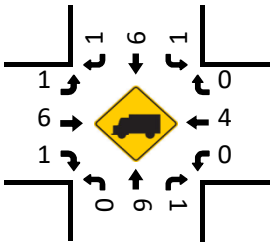
HT (NOON)



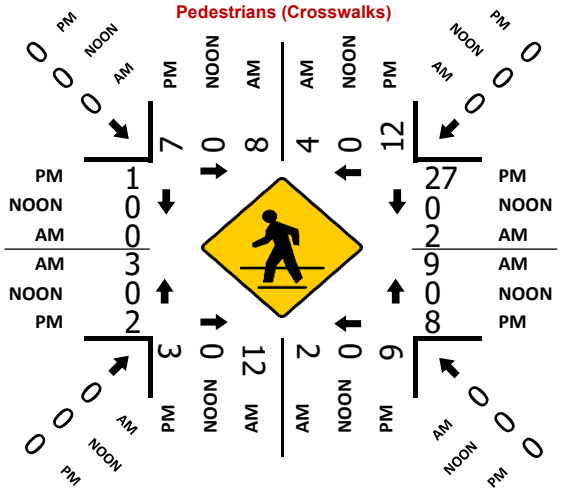
Total Vehicles (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

G St & Olive Ave

Peak Hour Turning Movement Count

ID: 17-07933-014
City: Merced

Day: Thursday
Date: 11/09/2017

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

G St — SOUTHBOUND

	Right	Thru	Left	U-Turn	Total (departing)
AM	308	577	54	17	1114
NOON	0	0	0	0	0
PM	307	653	64	29	1143
Red	0	0	0	0	

G St — NORTHBOUND

	Total (departing)	U-Turn	Left	Thru	Right
PM	1111	0	301	685	195
NOON	0	0	0	0	0
AM	971	0	260	770	121
Red		0	0	0	0

Olive Ave — EASTBOUND

Movement	AM	NOON	PM	Red
Total (departing)	1076	0	960	
U-Turn	4	0	4	0
Left	278	0	364	0
Thru	295	0	560	0
Right	209	0	283	0

Olive Ave — WESTBOUND

Movement	PM	NOON	AM	Red
Right	65	0	49	0
Thru	348	0	504	0
Left	175	0	185	0
U-Turn	0	0	0	0
Total (departing)	819	0	470	

CONTROL

0

	AM	NOON	PM
TEV	3631	0	4033
PHF	0.90		0.96

Total Vehicles (AM)

SB: 308 (right), 577 (thru), 54 (left); EB: 278 (left), 295 (thru), 209 (right); WB: 49 (right), 504 (thru), 185 (left); NB: 260 (left), 770 (thru), 121 (right)

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

SB: 307 (right), 653 (thru), 64 (left); EB: 364 (left), 560 (thru), 283 (right); WB: 65 (right), 348 (thru), 175 (left); NB: 301 (left), 685 (thru), 195 (right)

HT (AM)

SB: 8 (right), 10 (thru), 1 (left); EB: 4 (left), 4 (thru), 2 (right); WB: 0 (right), 4 (thru), 3 (left); NB: 10 (left), 16 (thru), 0 (right)

HT (NOON)

All movements: N/A

HT (PM)

SB: 2 (right), 4 (thru), 0 (left); EB: 0 (left), 1 (thru), 0 (right); WB: 0 (right), 2 (thru), 2 (left); NB: 0 (left), 1 (thru), 0 (right)

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west half)	0	0	6
North leg (east half)	21	0	6
West leg (north)	2	0	6
West leg (south)	4	0	5
East leg (north)	4	0	4
East leg (south)	8	0	2
South leg (west half)	2	0	7
South leg (east half)	5	0	2
Diagonals (all)	0	0	0

Prepared by National Data & Surveying Services

CA-59 & 16th St

Peak Hour Turning Movement Count

ID: 17-07933-015
City: Merced

Day: Thursday
Date: 11/09/2017

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

CA-59 SOUTHBOUND

	U-turn	Right	Thru	Left	Departing
AM	353	0	311	0	645
NOON	0	0	0	0	0
PM	299	0	318	0	738
Peds/Other	0	0	0	0	

16th St EASTBOUND

	AM	NOON	PM	
Departing	616	0	905	
U-turn	3	0	1	0
Left	340	0	289	0
Thru	704	0	555	0
Right	0	0	0	0

16th St WESTBOUND

	PM	NOON	AM	
Right	449	0	305	0
Thru	605	0	260	0
Left	0	0	0	0
U-turn	0	0	0	0
Departing	873	0	1015	

CA-59 NORTHBOUND

	Departing	U-turn	Left	Thru	Right
Peds/Other		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

0

	AM	NOON	PM
TEV	2276	0	2516
PHF	0.95		0.96

Total Vehicles (AM)

Approach	Left	Thru	Right	U-turn
SB	0	0	311	353
EB	340	704	0	
WB	0	260	305	
NB	0	0	0	

HT (AM)

Approach	Left	Thru	Right	U-turn
SB		0	16	40
EB	17	17	0	
WB	0	6	37	
NB	0	0	0	

Total Vehicles (Noon)

All movements: N/A

HT (NOON)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right	U-turn
SB		0	318	299
EB	289	555	0	
WB	0	605	449	
NB	0	0	0	

HT (PM)

Approach	Left	Thru	Right	U-turn
SB		0	3	10
EB	3	2	0	
WB	0	3	8	
NB	0	0	0	

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North	0	0	0
South	0	0	0
East	0	0	0
West	0	0	0
Diagonals (each)	0	0	0

Prepared by National Data & Surveying Services

Martin Luther King Jr Way & SR-99 Ramps

Peak Hour Turning Movement Count

ID: 17-07933-016
City: Merced

Day: Wednesday
Date: 01/10/2018

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Martin Luther King Jr Way — SOUTHBOUND

AM	200	230	0	0	451	AM
NOON	0	0	0	0	0	NOON
PM	326	414	0	0	582	PM

SR-99 Ramps — EASTBOUND

AM	NOON	PM	
372	0	559	⇦
0	0	0	0 ↶
0	0	0	0 ↱
0	0	0	0 →
0	0	0	0 ↷
AM	NOON	PM	

WESTBOUND — SR-99 Ramps

PM	NOON	AM	
80	0	91	0 ↶
0	0	1	0 ←
19	0	44	0 ↰
0	0	0	0 ↷
0	0	0	⇨
PM	NOON	AM	

CONTROL

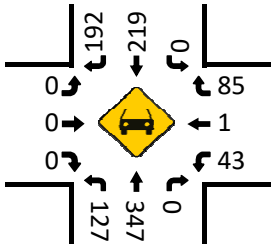
0

TEV	1097 AM	0 NOON	1574 PM
PHF	0.95		0.96

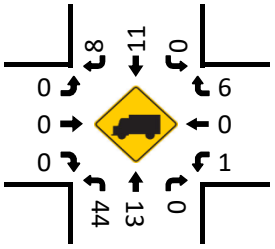
Martin Luther King Jr Way — NORTHBOUND

PM	433	0	233	502	0	PM
NOON	0	0	0	0	0	NOON
AM	274	0	171	360	0	AM

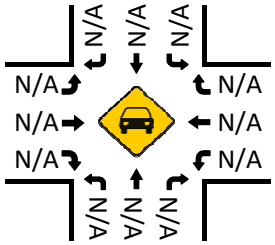
Cars (AM)



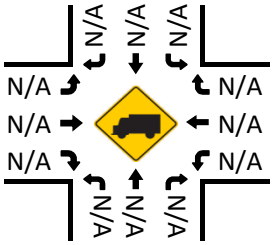
HT (AM)



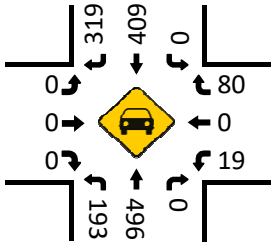
Cars (NOON)



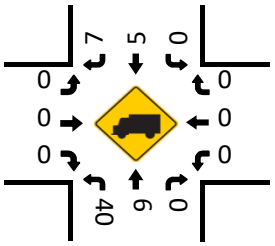
HT (NOON)



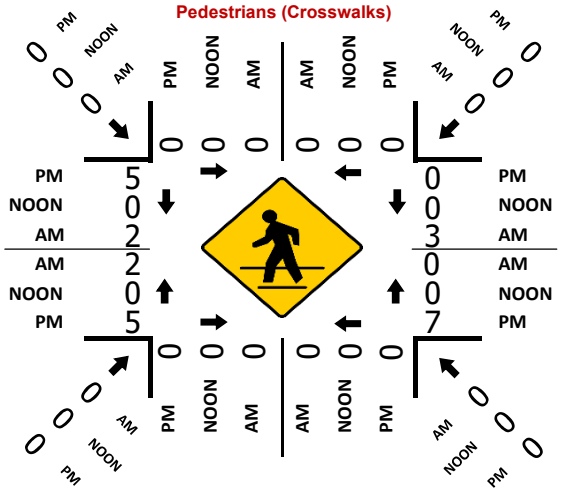
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

G St & 14th St

Peak Hour Turning Movement Count

ID: 17-07933-017
City: Merced

Day: Thursday
Date: 11/09/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

G St — SOUTHBOUND

AM	21	393	0	0	592	AM
NOON	0	0	0	0	0	NOON
PM	47	496	0	0	603	PM

14th St — EASTBOUND

AM	NOON	PM	
30	0	68	⇦
0	0	0	↶ 0
26	0	24	↱ 0
0	0	0	→ 0
5	0	7	↴ 0
AM	NOON	PM	

CONTROL

0

TEV	1057 AM	0 NOON	1199 PM
PHF	0.88		0.90

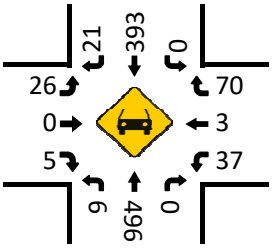
14th St — WESTBOUND

PM	NOON	AM	
60	0	70	↰ 0
5	0	3	← 0
25	0	37	↰ 0
0	0	0	↶ 0
0	0	0	⇨
PM	NOON	AM	

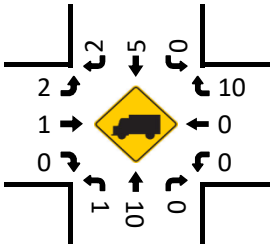
G St — NORTHBOUND

PM	528	0	16	519	0	PM
NOON	0	0	0	0	0	NOON
AM	435	0	6	496	0	AM

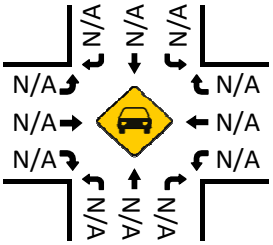
Total Vehicles (AM)



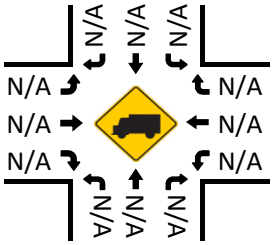
HT (AM)



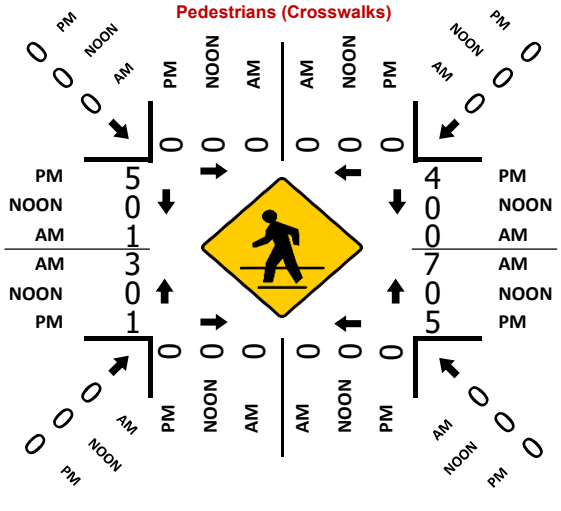
Total Vehicles (Noon)



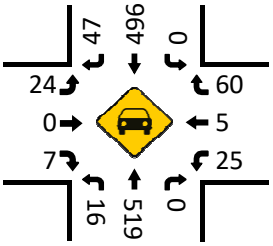
HT (NOON)



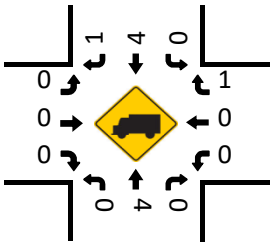
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Appendix B:
Project Trip Generation

Population	Additional Population		
	2020	2030	2035
Commuter Students	(252)	2,900	1,300
Resident Students	1,985	2,400	1,200
Staff	190	1,081	564

Population	AM Peak Hour Rates			PM Peak Hour Rates		
	In	Out	Total	In	Out	Total
Commuter Students	0.12	0.02	0.14	0.04	0.11	0.15
Resident Students	0.01	0.04	0.04	0.03	0.01	0.05
Staff	0.19	0.03	0.21	0.07	0.17	0.23

Population	Additional Trips: 2020 Project						Additional Trips: 2020 -- 2030						Additional Trips: 2030 -- 2035					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Commuter Students	-31	-4	-36	-11	-28	-39	358	51	409	127	320	447	161	23	183	57	144	200
Resident Students	10	74	84	66	26	92	13	89	101	80	32	111	6	44	51	40	16	56
Staff	35	5	40	12	31	44	200	28	229	71	179	250	104	15	119	37	93	130
Total	14	74	89	67	30	97	571	168	739	277	531	808	271	82	353	134	253	387
Cumulative Totals	14	74	89	67	30	97	585	242	827	345	561	905	857	324	1,181	478	814	1,292

Population	Total Trips : 2020 Project						Total Trips : 2030 Project						Total Trips : 2035 Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Commuter Students	-31	-4	-36	-11	-28	-39	327	46	373	116	293	408	487	69	557	173	436	609
Resident Students	10	74	84	66	26	92	23	162	185	145	58	203	29	207	236	185	73	258
Staff	35	5	40	12	31	44	235	33	269	83	211	294	340	48	388	120	304	425
Total	14	74	89	67	30	97	585	242	827	345	561	905	857	324	1,181	478	814	1,292

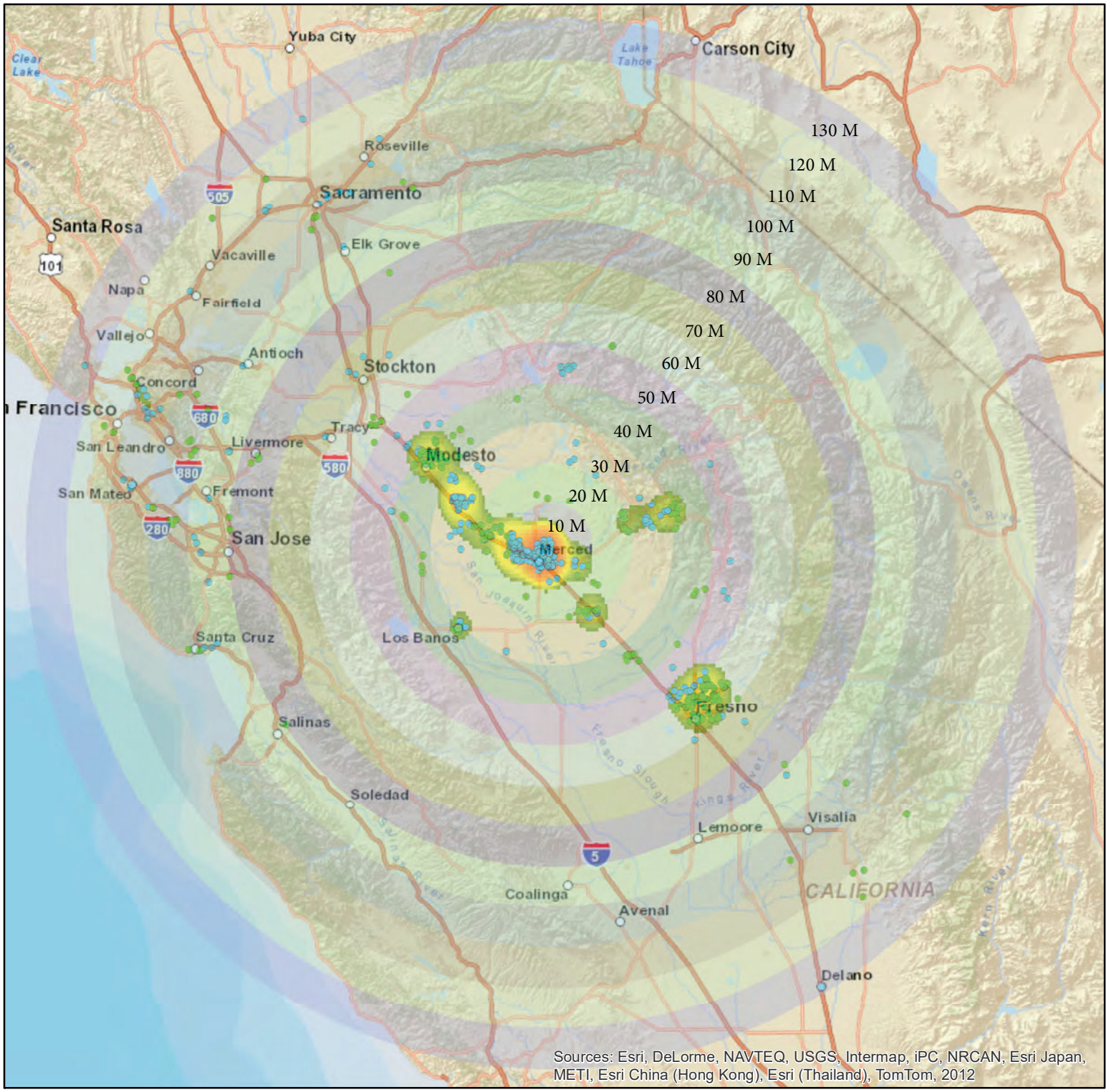
Appendix C:
Project Trip Distribution Methodology

Project Trip Distribution Methodology

Addresses of students, faculty, and staff from fall 2013 were geocoded with ArcGIS software. The resulting maps were used to create origin distribution percentages for students and faculty/staff/other academic separately. The distributions only include addresses within 60 miles of the Campus. Addresses further than 60 miles of the Campus are likely to either correspond to parent home addresses for students or too small in number to have an effect on faculty/staff/other address distribution. The fall 2013 data were checked against fall 2018 data (not geocoded) and it was determined that the distribution of residences was sufficiently similar for the purposes of trip distribution to the study area network.

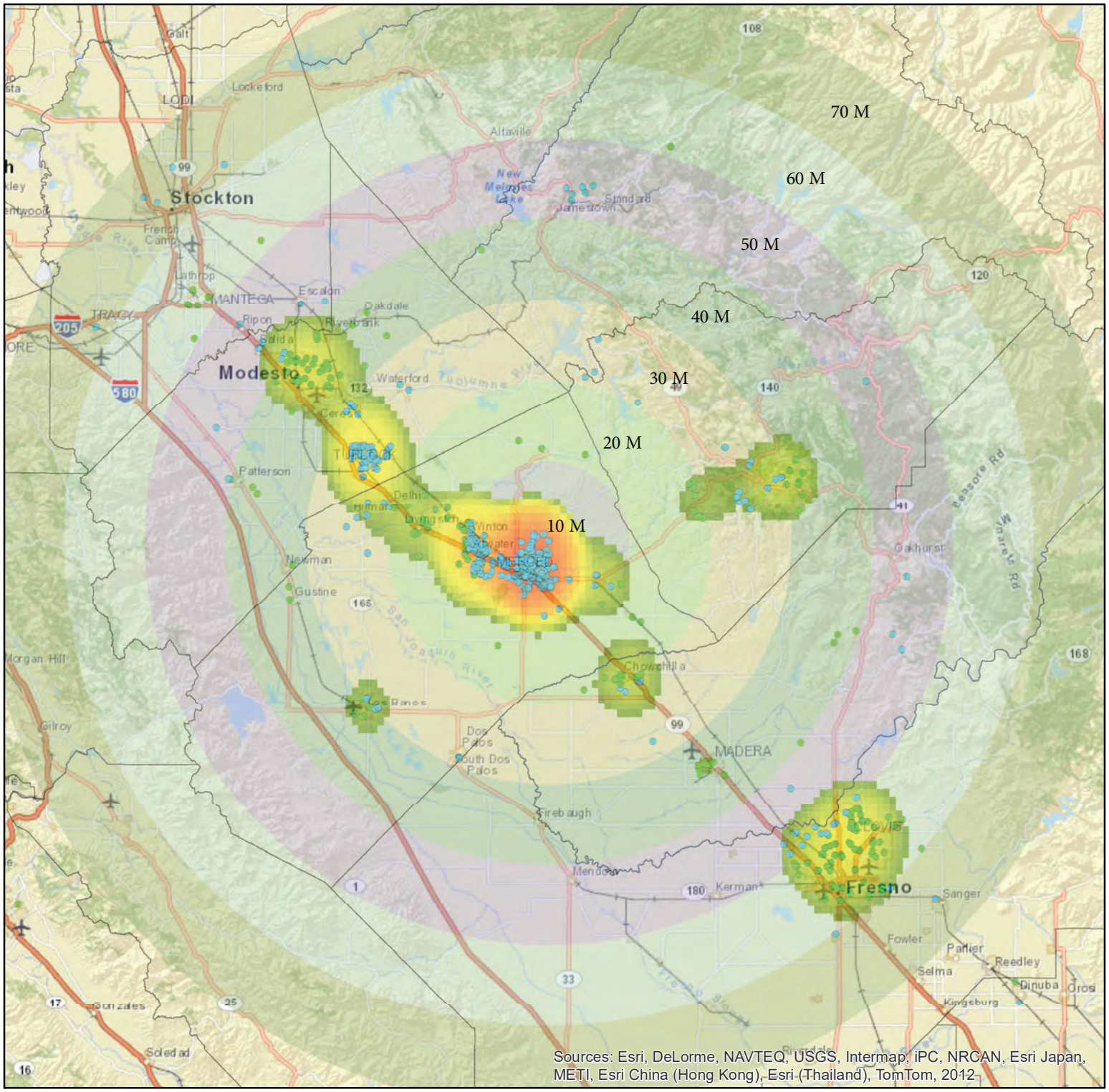
The following distributions were assumed for the Project trips:

Origin		**Faculty/Staff/Other**	**Students**
1	SR 59 NB	0%	0%
2	West of Merced on Santa Fe Dr.	10%	4%
3	SR 99 NB	13%	15%
4	SR 140 WB	1%	0%
5	SR 59 SB	2%	2%
6	SR 140 EB	7%	2%
7	SR 99 SB	14%	8%
8	Olive Ave. east of McKee Rd.	2%	2%
9	North of Yosemite Ave. between SR 59 and R St.	8%	17%
10	Downtown Merced	2%	1%
11	Northwest Merced	5%	13%
12	North of Yosemite Ave. between G St. and Parsons Ave.	8%	3%
13	South of Yosemite Ave. between G St. and Parsons Ave.	10%	6%
14	South of Olive Ave. between M St. and G St.	3%	5%
15	Central Merced	4%	8%
16	SR 59 - Downtown	2%	3%
17	South of Yosemite Ave. between SR 59 and R St.	4%	8%
18	V St. south of SR 99	1%	1%
19	Santa Fe Ave. north of Yosemite Pkwy	4%	2%



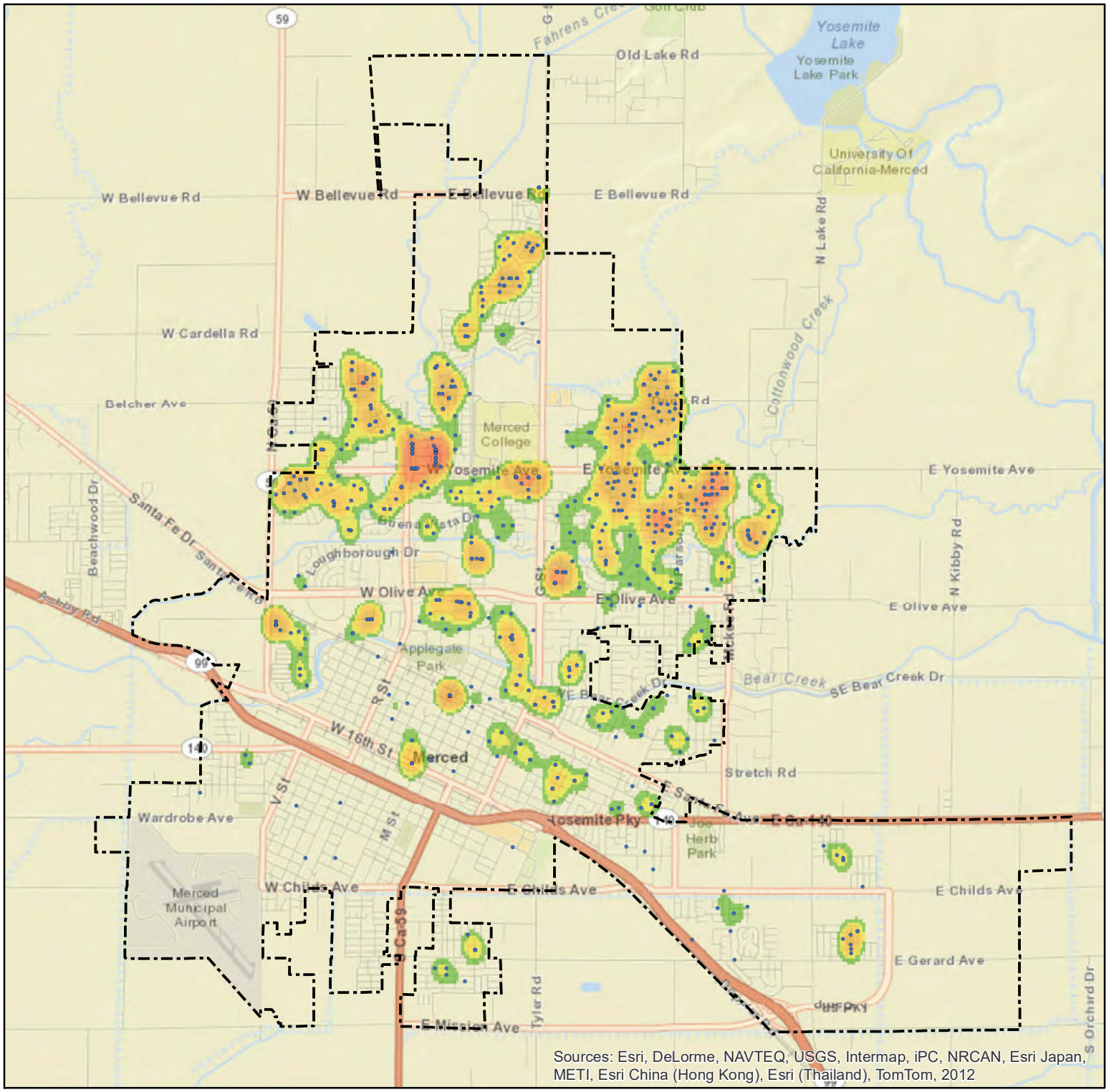
Fall 2013 Distribution of UC Merced Faculty / Staff Households within 130 Mile Radius

	Merced/Atwater	Livingston Chowchilla/ Delhi	Turlock / Los Banos / Mariposa	Madera / Modesto	Sonora / Manteca/ Oakhurst	Fresno / Tracy	Stockton / Fowler	Livermore / San Jose/ Kingsburg	Salinas / Lemoore / Fremont	Monterey / Walnut Creek / Elk Grove / Visalia	Oakland / Sacramento / Tipton	San Francisco / Roseville / Pixley	Napa / Delano	
DISTANCE	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**Total**
Faculty	196	11	22	22	7	13	3	5	7	10	10	7	0	313
Other Academic	52	0	1	1	1	1	0	1	0	5	5	1	0	68
Staff	538	56	91	49	26	63	5	4	8	7	10	5	3	865
TOTAL	**786**	**67**	**114**	**72**	**34**	**77**	**8**	**10**	**15**	**22**	**25**	**13**	**3**	**1246**



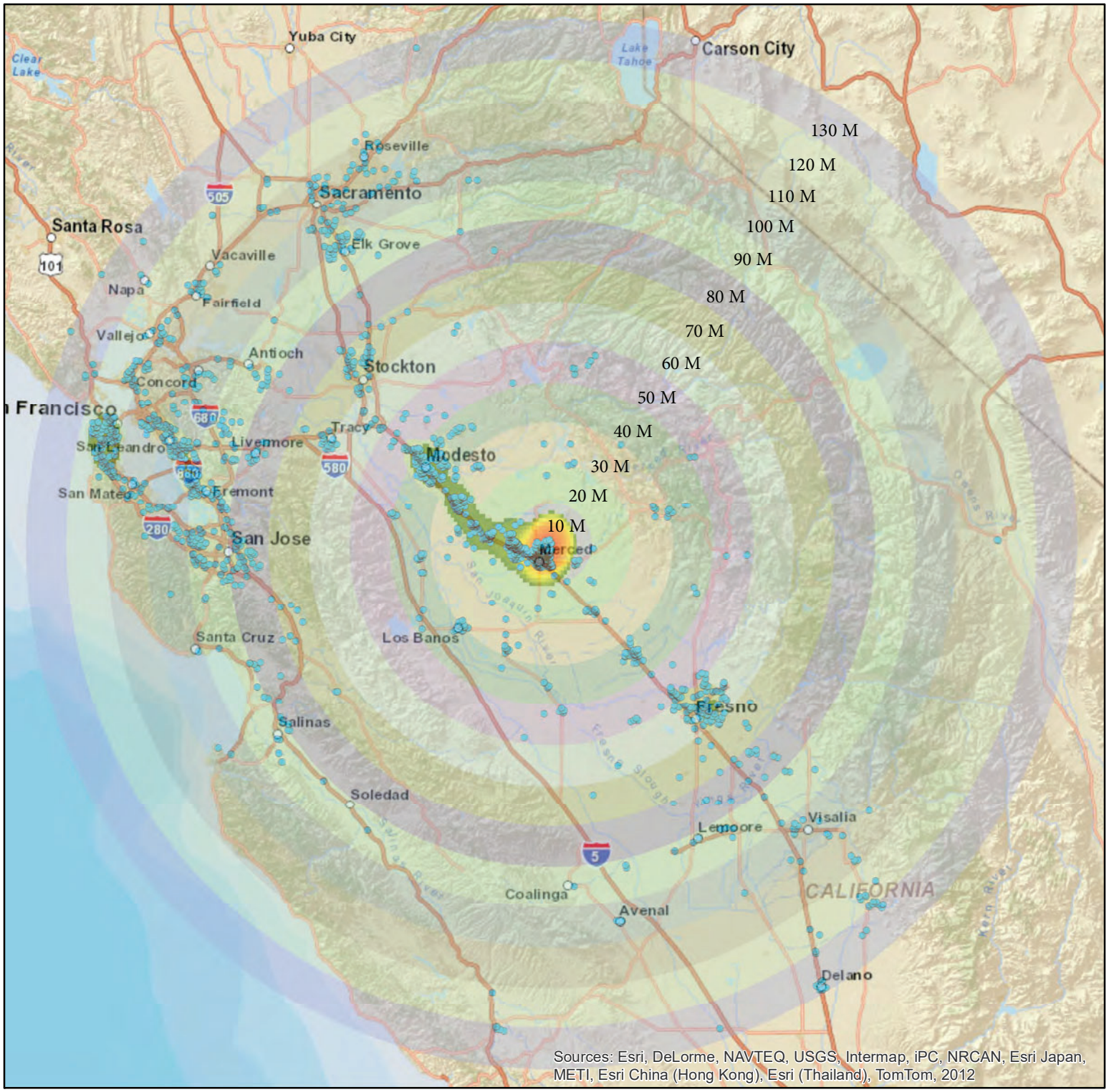
Fall 2013 Distribution of UC Merced Faculty / Staff Households within 70 Mile Radius

	Merced/Atwater	Livingston Chowchilla/ Delhi	Turlock / Los Banos / Mariposa	Madera / Modesto	Sonora / Manteca/ Oakhurst	Fresno / Tracy	Stockton / Fowler	
DISTANCE	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**Total**
Faculty	196	11	22	22	7	13	3	274
Other Academic	52	0	1	1	1	1	0	56
Staff	538	56	91	49	26	63	5	828
TOTAL	**786**	**67**	**114**	**72**	**34**	**77**	**8**	**1158**



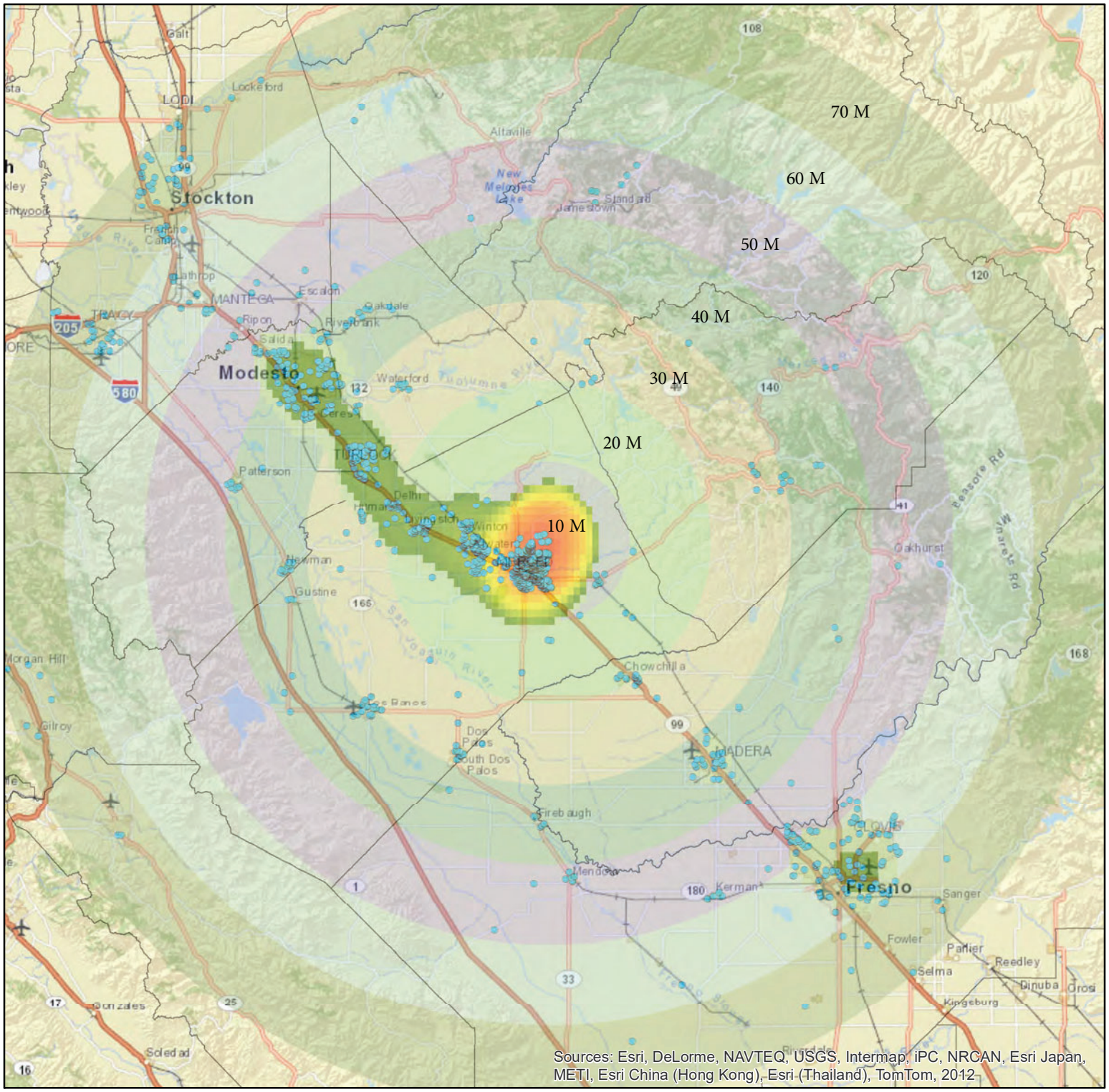
Fall 2013 Distribution of UC Merced Faculty / Staff Households within Merced City Limits

Faculty	161
Other Academic	49
Staff	405
TOTAL	**615**



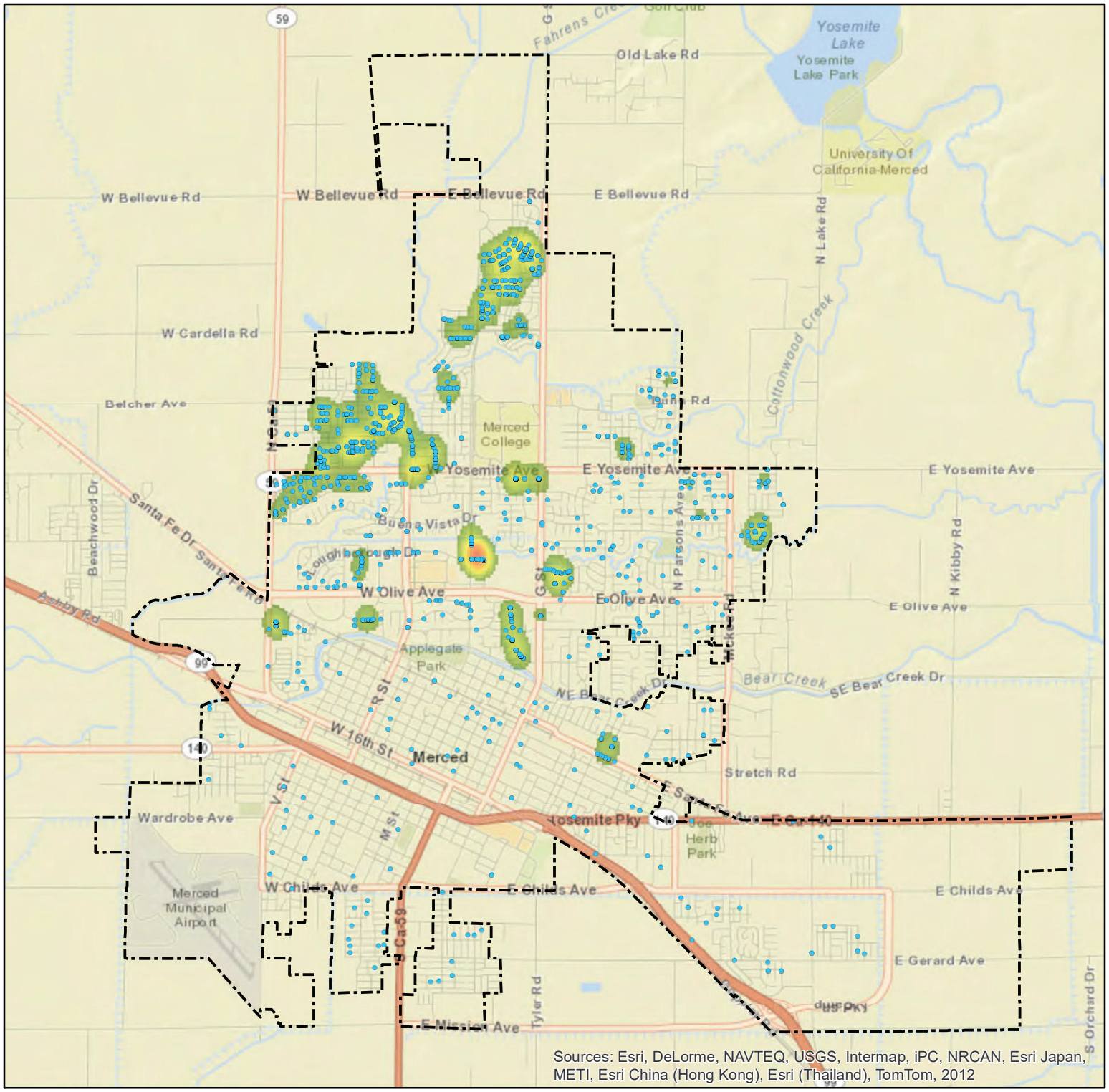
Fall 2013 Distribution of UC Student Households within 130 Mile Radius

	Merced/Atwater	Livingston Chowchilla/ Delhi	Turlock / Los Banos / Mariposa	Madera / Modesto	Somora / Manteca/ Oakhurst	Fresno / Tracy	Stockton / Fowler	Livermore / San Jose/ Kingsburg	Salinas / Lemoore / Fremont	Monterey / Walnut Creek / Elk Grove / Visalia	Oakland / Sacramento / Tipton	San Francisco / Roseville / Pixley	Napa / Delano	
DISTANCE	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**Total**
Graduate	242	4	15	11	6	7	6	1	10	10	7	1	1	321
Undergraduate	3737	112	106	160	65	84	81	84	154	176	125	153	33	5070
TOTAL	**3979**	**116**	**121**	**171**	**71**	**91**	**87**	**85**	**164**	**186**	**132**	**154**	**34**	**5391**



Fall 2013 Distribution of UC Student Households within 70 Mile Radius

	Merced/Atwater	Livingston Chowchilla/ Delhi	Turlock / Los Banos / Mariposa	Madera / Modesto	Sonora / Manteca/ Oakhurst	Fresno / Tracy	Stockton / Fowler	
DISTANCE	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**Total**
Graduate	242	4	15	11	6	7	6	291
Undergraduate	3737	112	106	160	65	84	81	4345
TOTAL	**3979**	**116**	**121**	**171**	**71**	**91**	**87**	**4636**



Fall 2013Distribution of UC Student Households within Merced City Limits

Graduate	226
Undergraduate	1478
TOTAL	**1704**

Appendix D:
Approved/Anticipated Development Trip Generation

Project ID	Project Name	Land Use Type	ITE Code	Size	Units	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	Bellevue Ranch West Village 12	Residential - SF	210	242	DU	45	134	179	151	89	240
2	Regency Court Apartments	Residential - MF	221	180	DU	17	48	65	48	31	79
3	Compass Pointe II Apartments	Residential - MF	221	136	DU	13	36	49	37	23	60
4	Mansionette Estates Unit 5	Residential - SF	210	20	DU	4	11	15	13	7	20
5	University Village Merced Annexation	Mixed Use (MF)	221	330	DU	31	88	119	88	57	145
5	University Village Merced Annexation	Mixed Use (Retail)	820	40	KSF	24	14	38	73	79	152
6	Bianchi/Norcal Cajun Annexation	Retail	820	42	KSF	24	15	39	77	83	160
8	Yosemite & McKee Commercial Center	Retail	820	62	KSF	36	22	58	113	123	236
9	University Village Merced - Lake ("Merced Station")	Mixed Use (MF)	221	225	DU	21	60	81	60	39	99
9	University Village Merced - Lake ("Merced Station")	Mixed Use (Retail)	820	6.6	KSF	4	2	6	12	13	25
10	Prime Shine	Auto Shop	943	5.5	KSF	8	3	11	5	7	12
11	Pro Lube	Auto Shop	943	15.7	KSF	23	8	31	14	21	35
12	Gas Station/Conv. Market/Car Wash - Carol Ave	Gas Station/Conv. Market/Retail	950	6.4	KSF	43	42	85	39	34	73
13	Towne Place Suites	Hotel	310	87	Rooms	24	17	41	27	25	52
14	Childs and Parsons (Old Bowling Alley)	Gas Station/Conv. Market/Retail	950	12	KSF	80	79	159	72	64	136
15	Merced Gateway Center	Mixed Use (MF)	221	178	DU	17	47	64	48	30	78
15	Merced Gateway Center	Mixed Use (Retail)	820	523	KSF	305	187	492	957	1,036	1,993
16	Super Shop	Auto Shop	943	15	KSF	21	8	29	14	20	34
17	Mainzer Theater	Retail	820	11.2	KSF	7	4	11	21	22	43
18	El Capitan Hotel	Mixed Use (Hotel)	310	100	Rooms	28	19	47	31	29	60
18	El Capitan Hotel	Mixed Use (Retail)	820	74	KSF	43	27	70	135	147	282
19	Advanced Chemical Transportation (ACT)	Industrial	150	21	KSF	3	2	5	1	4	5
20	Bellevue Ranch East Village 15 (Remaining Lots)	Residential - SF	210	65	DU	12	36	48	40	24	64
21	Bellevue Ranch East Village 7 (Remaining Lots)	Residential - SF	210	134	DU	25	74	99	84	49	133
22	Bellevue Ranch East Lot Q (Remaining Lots)	Residential - SF	210	100	DU	19	55	74	62	37	99
23	Bellevue Ranch West Village 1	Residential - SF	210	67	DU	13	37	50	42	24	66
24	Campus Vista Unit 2 (Remaining Lots)	Residential - SF	210	61	DU	11	34	45	38	22	60
25	Lantana Estates South (Phase 1)	Residential - SF	210	60	DU	11	33	44	37	22	59
26	The Meadows Subdivision (Remaining Lots)	Residential - SF	210	58	DU	11	32	43	36	21	57
27	Mission Ranch (Remaining Lots)	Residential - SF	210	134	DU	25	74	99	84	49	133
28	Golden Valley Health Centers (Part of Northview)	Medical Office	720	27	KSF	59	16	75	26	67	93
29	Northview Medical Offices	Medical Office	720	66.45	KSF	144	41	185	64	166	230
30	PG&E Regional Utility Center	Industrial	150	48	KSF	7	4	11	3	9	12
31	Merced Mall Expansion	Mixed Use (Theater)	445	7	Screens	0	0	0	49	47	96
31	Merced Mall Expansion	Mixed Use (Retail)	820	50	KSF	29	18	47	92	99	191
32	Stoneridge South Subdivision	Residential - SF	210	160	DU	30	88	118	100	58	158
32	Stoneridge South Subdivision	Residential - MF	221	100	DU	9	27	36	27	17	44
33	Bellevue Ranch East Village 16 (Remaining Lots)	Residential - SF	210	71	DU	13	40	53	44	26	70
34	Bellevue Ranch East Village 8 (Remaining Lots)	Residential - SF	210	37	DU	7	20	27	23	14	37
35	University Park II, Phase 2 Subdivision (Remaining Lots)	Residential - SF	210	125	DU	23	70	93	78	46	124
36	Sierra Vista Units 2 and 3 (Remaining Lots)	Residential - SF	210	44	DU	8	25	33	28	16	44
37	Bellevue Ranch East Village 14 (Remaining Lots)	Residential - SF	210	48	DU	9	27	36	30	18	48
38	Moraga Subdivision Phase 1 (Remaining Lots)	Residential - SF	210	249	DU	46	138	184	156	91	247
39	Cypress Terrace East (Remaining Lots)	Residential - SF	210	101	DU	19	56	75	63	37	100
40	Sandcastle Phase 2 & 3 Subdivision (Remaining Lots)	Residential - SF	210	144	DU	27	80	107	90	53	143
41	Cypress Terrace East Phase 4 (Remaining Lots)	Residential - SF	210	101	DU	19	56	75	63	37	100
42	Tuscany East Subdivision (Remaining Lots)	Residential - SF	210	47	DU	9	26	35	30	17	47
43	Shadow Creek at Compass Point (Remaining Lots)	Residential - SF	210	293	DU	54	163	217	183	107	290
44	County Housing Project	Residential - SF	210	127	DU	24	70	94	79	47	126
45	County Housing Project	Residential - SF	210	25	DU	5	14	19	16	9	25
46	UC Merced Admin Building	Office	710	300	Emp	127	17	144	23	115	138
Totals						**1,616**	**2,244**	**3,860**	**3,726**	**3,327**	**7,053**

Appendix E:
LOS Calculations

1. Existing

2. Existing With Project

3. 2030 Without Project

4. 2030 With Project

5. 2035 Without Project

6. 2035 With Project

Intersection	
Intersection Delay, s/veh	41.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	247	7	94	119	50	5	64	217	113	112	24
Future Vol, veh/h	18	247	7	94	119	50	5	64	217	113	112	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	325	9	124	157	66	7	84	286	149	147	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	43.2	39.5	42.2	39.9
HCM LOS	E	E	E	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	7%	36%	45%
Vol Thru, %	22%	91%	45%	45%
Vol Right, %	76%	3%	19%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	286	272	263	249
LT Vol	5	18	94	113
Through Vol	64	247	119	112
RT Vol	217	7	50	24
Lane Flow Rate	376	358	346	328
Geometry Grp	1	1	1	1
Degree of Util (X)	0.846	0.842	0.813	0.805
Departure Headway (Hd)	8.09	8.471	8.457	8.84
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	448	426	426	410
Service Time	6.175	6.562	6.549	6.928
HCM Lane V/C Ratio	0.839	0.84	0.812	0.8
HCM Control Delay	42.2	43.2	39.5	39.9
HCM Lane LOS	E	E	E	E
HCM 95th-tile Q	8.3	8.1	7.4	7.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	249	129	47	40	9	142	274	225	14	334	37
Future Volume (veh/h)	26	249	129	47	40	9	142	274	225	14	334	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1900	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	38	366	183	69	59	6	209	403	259	21	491	14
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	74	402	201	96	652	554	254	833	529	40	1010	452
Arrive On Green	0.04	0.36	0.34	0.06	0.37	0.37	0.14	0.40	0.39	0.02	0.28	0.28
Sat Flow, veh/h	1691	1118	559	1660	1743	1482	1757	2058	1308	1792	3574	1599
Grp Volume(v), veh/h	38	0	549	69	59	6	209	343	319	21	491	14
Grp Sat Flow(s),veh/h/ln	1691	0	1677	1660	1743	1482	1757	1752	1614	1792	1787	1599
Q Serve(g_s), s	2.3	0.0	32.1	4.2	2.3	0.3	11.9	14.9	15.4	1.2	11.7	0.7
Cycle Q Clear(g_c), s	2.3	0.0	32.1	4.2	2.3	0.3	11.9	14.9	15.4	1.2	11.7	0.7
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	74	0	603	96	652	554	254	709	653	40	1010	452
V/C Ratio(X)	0.52	0.00	0.91	0.72	0.09	0.01	0.82	0.48	0.49	0.52	0.49	0.03
Avail Cap(c_a), veh/h	600	0	620	589	652	554	624	1057	973	601	2155	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	31.7	47.6	20.9	20.2	42.7	22.7	23.4	49.7	30.7	26.7
Incr Delay (d2), s/veh	5.5	0.0	17.9	9.5	0.1	0.0	6.6	0.8	0.9	10.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	17.8	2.2	1.1	0.1	6.2	7.3	7.0	0.7	5.9	0.3
LnGrp Delay(d),s/veh	53.6	0.0	49.6	57.1	21.0	20.3	49.3	23.4	24.3	59.9	31.2	26.7
LnGrp LOS	D		D	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		587			134			871			526	
Approach Delay, s/veh		49.9			39.5			29.9			32.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	45.6	10.0	41.0	18.9	33.1	8.5	42.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	13.2	17.4	6.2	34.1	13.9	13.7	4.3	4.3
Green Ext Time (p_c), s	0.0	13.1	0.1	0.8	0.5	13.3	0.1	6.0

Intersection Summary		
HCM 2010 Ctrl Delay		36.6
HCM 2010 LOS		D

Intersection	
Intersection Delay, s/veh	53.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	478	0	59	3	0	0	26	453	4	0	59	73
Future Vol, veh/h	478	0	59	3	0	0	26	453	4	0	59	73
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	4	4	4	67	67	67	3	3	3	12	12	12
Mvmt Flow	525	0	65	3	0	0	29	498	4	0	65	80
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	72.7	12.3	43.8	12.6
HCM LOS	F	B	E	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	5%	100%	0%	100%	0%
Vol Thru, %	94%	0%	0%	0%	45%
Vol Right, %	1%	0%	100%	0%	55%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	483	478	59	3	132
LT Vol	26	478	0	3	0
Through Vol	453	0	0	0	59
RT Vol	4	0	59	0	73
Lane Flow Rate	531	525	65	3	145
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.909	1.049	0.107	0.008	0.272
Departure Headway (Hd)	6.348	7.188	5.965	9.215	7.001
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	573	504	599	391	516
Service Time	4.348	4.947	3.722	7.215	5.001
HCM Lane V/C Ratio	0.927	1.042	0.109	0.008	0.281
HCM Control Delay	43.8	80.5	9.4	12.3	12.6
HCM Lane LOS	E	F	A	B	B
HCM 95th-tile Q	11	15.6	0.4	0	1.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	0	32	0	0	1	30	513	0	0	595	43
Future Volume (veh/h)	115	0	32	0	0	1	30	513	0	0	595	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	0	1827	1827	1827
Adj Flow Rate, veh/h	164	0	7	0	0	0	43	733	0	0	850	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	0	4	4	4
Cap, veh/h	325	0	251	0	288	0	68	1335	0	2	1142	943
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.00	0.04	0.73	0.00	0.00	0.63	0.00
Sat Flow, veh/h	1426	0	1599	0	1900	0	1740	1827	0	1740	1827	1553
Grp Volume(v), veh/h	164	0	7	0	0	0	43	733	0	0	850	0
Grp Sat Flow(s),veh/h/ln	1426	0	1599	0	1900	0	1740	1827	0	1740	1827	1553
Q Serve(g_s), s	7.8	0.0	0.3	0.0	0.0	0.0	1.7	12.9	0.0	0.0	23.2	0.0
Cycle Q Clear(g_c), s	7.8	0.0	0.3	0.0	0.0	0.0	1.7	12.9	0.0	0.0	23.2	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	251	0	288	0	68	1335	0	2	1142	943
V/C Ratio(X)	0.50	0.00	0.03	0.00	0.00	0.00	0.63	0.55	0.00	0.00	0.74	0.00
Avail Cap(c_a), veh/h	800	0	784	0	654	0	844	1438	0	599	1420	1178
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	0.0	25.4	0.0	0.0	0.0	33.7	4.3	0.0	0.0	9.3	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.0	0.0	0.0	9.2	0.6	0.0	0.0	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.1	0.0	0.0	0.0	1.0	6.5	0.0	0.0	12.2	0.0
LnGrp Delay(d),s/veh	29.8	0.0	25.4	0.0	0.0	0.0	42.9	4.9	0.0	0.0	11.4	0.0
LnGrp LOS	C		C				D	A			B	
Approach Vol, veh/h		171			0			776			850	
Approach Delay, s/veh		29.6			0.0			7.0			11.4	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	56.0		15.2	6.8	49.2		15.2
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	10.0	14.9		9.8	3.7	25.2		0.0
Green Ext Time (p_c), s	0.0	21.7		0.8	0.1	18.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	2	1	507	94	9
Future Vol, veh/h	15	2	1	507	94	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	3	18	18
Mvmt Flow	17	2	1	570	106	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	683	111	116	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	418	948	1466	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	418	948	1466	-	-	-
Mov Cap-2 Maneuver	418	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1466	-	447	-	-
HCM Lane V/C Ratio	0.001	-	0.043	-	-
HCM Control Delay (s)	7.5	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	162	341	191	166	347	237
Future Volume (veh/h)	162	341	191	166	347	237
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1743	1743	1792	1792
Adj Flow Rate, veh/h	186	103	220	50	399	272
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	9	9	6	6
Cap, veh/h	312	279	475	404	469	1146
Arrive On Green	0.18	0.18	0.27	0.27	0.27	0.64
Sat Flow, veh/h	1774	1583	1743	1482	1707	1792
Grp Volume(v), veh/h	186	103	220	50	399	272
Grp Sat Flow(s),veh/h/ln	1774	1583	1743	1482	1707	1792
Q Serve(g_s), s	4.2	2.5	4.6	1.1	9.6	2.8
Cycle Q Clear(g_c), s	4.2	2.5	4.6	1.1	9.6	2.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	312	279	475	404	469	1146
V/C Ratio(X)	0.60	0.37	0.46	0.12	0.85	0.24
Avail Cap(c_a), veh/h	871	778	2090	1777	787	2149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	15.7	13.1	11.9	14.9	3.3
Incr Delay (d2), s/veh	0.7	0.3	0.8	0.1	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.1	2.3	0.5	4.7	1.4
LnGrp Delay(d),s/veh	17.1	16.1	13.9	12.0	16.9	3.4
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	289		270			671
Approach Delay, s/veh	16.7		13.5			11.4
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.9	15.8				31.7		11.6
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	11.6	6.6				4.8		6.2
Green Ext Time (p_c), s	0.4	3.3				3.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	443	134	115	387	107	248	437	133	99	352	132
Future Volume (veh/h)	137	443	134	115	387	107	248	437	133	99	352	132
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1881	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	173	561	156	146	490	51	314	553	90	125	446	37
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	206	880	244	176	1102	483	350	1250	551	153	853	376
Arrive On Green	0.12	0.33	0.31	0.10	0.31	0.31	0.20	0.35	0.35	0.09	0.24	0.24
Sat Flow, veh/h	1774	2701	748	1792	3574	1569	1774	3539	1559	1757	3505	1545
Grp Volume(v), veh/h	173	367	350	146	490	51	314	553	90	125	446	37
Grp Sat Flow(s),veh/h/ln	1774	1770	1679	1792	1787	1569	1774	1770	1559	1757	1752	1545
Q Serve(g_s), s	11.3	20.8	21.1	9.5	13.0	2.8	20.4	14.2	4.7	8.3	13.1	2.2
Cycle Q Clear(g_c), s	11.3	20.8	21.1	9.5	13.0	2.8	20.4	14.2	4.7	8.3	13.1	2.2
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	577	547	176	1102	483	350	1250	551	153	853	376
V/C Ratio(X)	0.84	0.64	0.64	0.83	0.44	0.11	0.90	0.44	0.16	0.82	0.52	0.10
Avail Cap(c_a), veh/h	810	833	790	363	1683	739	810	1367	602	356	1443	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	51.2	33.9	34.3	52.4	32.8	29.3	46.3	29.3	26.3	53.1	38.8	34.7
Incr Delay (d2), s/veh	8.9	1.8	2.0	9.5	0.4	0.2	8.3	0.4	0.2	10.0	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	10.5	10.1	5.2	6.5	1.2	10.8	7.0	2.0	4.5	6.4	1.0
LnGrp Delay(d),s/veh	60.1	35.8	36.3	61.9	33.3	29.4	54.6	29.7	26.5	63.1	39.6	34.9
LnGrp LOS	E	D	D	E	C	C	D	C	C	E	D	C
Approach Vol, veh/h		890			687			957			608	
Approach Delay, s/veh		40.7			39.1			37.6			44.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	45.8	15.6	42.6	27.3	32.8	17.7	40.5
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	24.0	44.0	24.0	54.0	54.0	47.0	54.0	54.0
Max Q Clear Time (g_c+I1), s	10.3	16.2	11.5	23.1	22.4	15.1	13.3	15.0
Green Ext Time (p_c), s	0.2	11.2	0.3	13.7	0.9	11.9	0.5	15.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.1
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	28.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	415	119	13	379	22	181	22	35	17	42	23
Future Vol, veh/h	10	415	119	13	379	22	181	22	35	17	42	23
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	11	466	134	15	426	25	203	25	39	19	47	26
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	20.2	47	21.8	12.5
HCM LOS	C	E	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	76%	5%	0%	3%	29%	0%
Vol Thru, %	9%	95%	64%	92%	71%	0%
Vol Right, %	15%	0%	36%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	218	327	414	59	23
LT Vol	181	10	0	13	17	0
Through Vol	22	208	208	379	42	0
RT Vol	35	0	119	22	0	23
Lane Flow Rate	267	244	367	465	66	26
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.589	0.477	0.686	0.908	0.16	0.056
Departure Headway (Hd)	7.923	7.021	6.736	7.029	8.684	7.809
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	511	536	516	412	457
Service Time	5.984	4.783	4.498	5.084	6.464	5.588
HCM Lane V/C Ratio	0.587	0.477	0.685	0.901	0.16	0.057
HCM Control Delay	21.8	16.1	23	47	13.1	11.1
HCM Lane LOS	C	C	C	E	B	B
HCM 95th-tile Q	3.7	2.5	5.2	10.6	0.6	0.2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	299	105	73	246	178	160
Future Volume (veh/h)	299	105	73	246	178	160
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1845	1900	1863	1863	1881	1881
Adj Flow Rate, veh/h	311	72	76	256	185	44
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	2	2	1	1
Cap, veh/h	1034	236	143	1069	310	277
Arrive On Green	0.37	0.33	0.08	0.57	0.17	0.17
Sat Flow, veh/h	2915	643	1774	1863	1792	1599
Grp Volume(v), veh/h	191	192	76	256	185	44
Grp Sat Flow(s),veh/h/ln	1752	1713	1774	1863	1792	1599
Q Serve(g_s), s	2.4	2.6	1.3	2.1	3.0	0.7
Cycle Q Clear(g_c), s	2.4	2.6	1.3	2.1	3.0	0.7
Prop In Lane		0.38	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	642	628	143	1069	310	277
V/C Ratio(X)	0.30	0.31	0.53	0.24	0.60	0.16
Avail Cap(c_a), veh/h	2735	2673	1382	2907	1395	1245
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	7.1	7.3	13.9	3.3	12.0	11.1
Incr Delay (d2), s/veh	0.4	0.4	3.0	0.2	1.8	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	1.2	1.3	0.8	1.1	1.6	0.3
LnGrp Delay(d),s/veh	7.5	7.7	17.0	3.5	13.9	11.4
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	383			332	229	
Approach Delay, s/veh	7.6			6.6	13.4	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.5	15.6		9.5		22.1		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	3.3	4.6		5.0		4.1		
Green Ext Time (p_c), s	0.1	5.6		0.6		5.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	381	71	141	88	35	53
Future Vol, veh/h	381	71	141	88	35	53
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	17	17
Mvmt Flow	414	77	153	96	38	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	251	0	-	0	1108	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	905	-
Critical Hdwy	4.12	-	-	-	6.57	6.37
Critical Hdwy Stg 1	-	-	-	-	5.57	-
Critical Hdwy Stg 2	-	-	-	-	5.57	-
Follow-up Hdwy	2.218	-	-	-	3.653	3.453
Pot Cap-1 Maneuver	1314	-	-	-	217	801
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	371	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1314	-	-	-	148	799
Mov Cap-2 Maneuver	-	-	-	-	218	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	254	-

Approach	EB	WB	SB
HCM Control Delay, s	7.6	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1314	-	-	-	388
HCM Lane V/C Ratio	0.315	-	-	-	0.247
HCM Control Delay (s)	9	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.4	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	733	83	205	382	35	66	323	251	38	330	59
Future Volume (veh/h)	134	733	83	205	382	35	66	323	251	38	330	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1900
Adj Flow Rate, veh/h	160	873	34	244	455	17	79	385	111	45	393	65
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	187	1361	609	276	1528	683	99	517	439	56	381	63
Arrive On Green	0.11	0.38	0.38	0.16	0.44	0.44	0.06	0.29	0.29	0.03	0.27	0.26
Sat Flow, veh/h	1774	3539	1583	1757	3505	1566	1691	1776	1508	1630	1430	236
Grp Volume(v), veh/h	160	873	34	244	455	17	79	385	111	45	0	458
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1566	1691	1776	1508	1630	0	1666
Q Serve(g_s), s	10.6	24.2	1.6	16.3	10.1	0.7	5.5	23.6	6.8	3.3	0.0	32.0
Cycle Q Clear(g_c), s	10.6	24.2	1.6	16.3	10.1	0.7	5.5	23.6	6.8	3.3	0.0	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	187	1361	609	276	1528	683	99	517	439	56	0	444
V/C Ratio(X)	0.86	0.64	0.06	0.89	0.30	0.02	0.80	0.75	0.25	0.80	0.00	1.03
Avail Cap(c_a), veh/h	237	1361	609	439	1528	683	197	518	440	149	0	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	30.2	23.2	49.5	21.9	19.3	55.8	38.5	32.6	57.5	0.0	44.1
Incr Delay (d2), s/veh	18.1	2.3	0.2	12.4	0.5	0.1	5.4	6.2	0.4	9.6	0.0	50.8
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	6.1	12.2	0.7	8.9	5.0	0.3	2.7	12.4	2.9	1.6	0.0	21.0
LnGrp Delay(d),s/veh	70.9	32.5	23.4	61.9	22.4	19.4	61.2	44.8	33.0	67.1	0.0	94.9
LnGrp LOS	E	C	C	E	C	B	E	D	C	E		F
Approach Vol, veh/h		1067			716			575			503	
Approach Delay, s/veh		38.0			35.8			44.7			92.4	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	50.2	11.0	36.0	16.6	56.3	8.1	38.9
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	30.0	26.0	14.0	31.1	16.0	40.0	11.0	34.1
Max Q Clear Time (g_c+I1), s	18.3	26.2	7.5	34.0	12.6	12.1	5.3	25.6
Green Ext Time (p_c), s	0.5	0.0	0.0	0.0	0.1	19.6	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	656	137	187	453	93	134	333	142	96	432	50
Future Volume (veh/h)	118	656	137	187	453	93	134	333	142	96	432	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1881	1881	1881	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	136	754	64	215	521	48	154	383	124	110	497	11
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	2	2	2
Cap, veh/h	162	2220	678	245	2492	764	180	619	198	133	736	322
Arrive On Green	0.09	0.44	0.44	0.05	0.16	0.16	0.10	0.23	0.22	0.07	0.21	0.21
Sat Flow, veh/h	1757	5036	1539	1792	5136	1575	1792	2653	847	1774	3539	1549
Grp Volume(v), veh/h	136	754	64	215	521	48	154	256	251	110	497	11
Grp Sat Flow(s),veh/h/ln	1757	1679	1539	1792	1712	1575	1792	1787	1714	1774	1770	1549
Q Serve(g_s), s	10.7	13.8	3.4	16.7	12.3	3.6	11.8	18.0	18.4	8.6	18.1	0.8
Cycle Q Clear(g_c), s	10.7	13.8	3.4	16.7	12.3	3.6	11.8	18.0	18.4	8.6	18.1	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	162	2220	678	245	2492	764	180	417	400	133	736	322
V/C Ratio(X)	0.84	0.34	0.09	0.88	0.21	0.06	0.86	0.61	0.63	0.83	0.68	0.03
Avail Cap(c_a), veh/h	373	2220	678	380	2492	764	303	578	554	186	918	402
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	25.7	22.8	65.7	35.4	31.8	62.0	48.0	48.5	63.9	51.1	44.2
Incr Delay (d2), s/veh	11.0	0.4	0.3	11.4	0.2	0.1	11.5	2.0	2.2	18.7	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	6.4	1.5	9.1	5.9	1.6	6.4	9.1	9.0	4.9	9.0	0.3
LnGrp Delay(d),s/veh	73.6	26.2	23.1	77.1	35.6	31.9	73.5	50.0	50.7	82.6	52.9	44.3
LnGrp LOS	E	C	C	E	D	C	E	D	D	F	D	D
Approach Vol, veh/h		954			784			661			618	
Approach Delay, s/veh		32.7			46.7			55.8			58.0	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	65.7	18.1	33.1	16.9	71.9	14.5	36.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	29.7	33.0	23.7	35.0	29.7	33.0	14.7	44.0
Max Q Clear Time (g_c+I1), s	19.1	15.8	13.8	20.1	12.7	14.3	10.6	20.4
Green Ext Time (p_c), s	0.4	10.0	0.3	6.9	0.3	10.5	0.1	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	699	130	214	620	94	138	433	137	226	450	58
Future Volume (veh/h)	135	699	130	214	620	94	138	433	137	226	450	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	169	874	56	268	775	106	172	541	150	282	562	65
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	194	1656	501	296	1730	235	198	616	170	308	923	107
Arrive On Green	0.22	0.65	0.65	0.16	0.38	0.37	0.11	0.23	0.22	0.17	0.29	0.28
Sat Flow, veh/h	1792	5136	1554	1792	4560	619	1774	2721	751	1792	3223	372
Grp Volume(v), veh/h	169	874	56	268	580	301	172	351	340	282	311	316
Grp Sat Flow(s),veh/h/ln	1792	1712	1554	1792	1712	1755	1774	1770	1702	1792	1787	1807
Q Serve(g_s), s	12.8	12.8	1.9	20.6	17.7	18.0	13.4	26.8	27.1	21.7	21.0	21.2
Cycle Q Clear(g_c), s	12.8	12.8	1.9	20.6	17.7	18.0	13.4	26.8	27.1	21.7	21.0	21.2
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.44	1.00		0.21
Lane Grp Cap(c), veh/h	194	1656	501	296	1299	666	198	400	385	308	512	518
V/C Ratio(X)	0.87	0.53	0.11	0.91	0.45	0.45	0.87	0.88	0.88	0.92	0.61	0.61
Avail Cap(c_a), veh/h	418	1656	501	418	1299	666	326	421	405	380	512	518
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)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	19.1	17.2	57.4	32.5	32.7	61.2	52.3	52.7	57.0	43.1	43.3
Incr Delay (d2), s/veh	10.7	1.1	0.4	18.1	1.1	2.2	12.8	18.4	19.8	23.3	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	6.2	0.9	11.7	8.6	9.1	7.2	15.1	14.9	12.7	10.7	10.9
LnGrp Delay(d),s/veh	64.6	20.2	17.6	75.5	33.6	34.9	74.0	70.7	72.5	80.3	45.5	45.7
LnGrp LOS	E	C	B	E	C	C	E	E	E	F	D	D
Approach Vol, veh/h		1099			1149			863			909	
Approach Delay, s/veh		26.9			43.7			72.0			56.4	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.1	49.2	19.6	44.1	19.1	57.1	28.1	35.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.1	27.0	25.7	36.0	32.7	27.0	29.7	32.0
Max Q Clear Time (g_c+I1), s	22.6	14.8	15.4	23.2	14.8	20.0	23.7	29.1
Green Ext Time (p_c), s	0.5	9.4	0.3	7.8	0.4	5.8	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	48.1
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	295	209	185	504	49	260	770	121	71	577	308
Future Volume (veh/h)	282	295	209	185	504	49	260	770	121	71	577	308
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	313	328	153	206	560	51	289	856	84	79	641	261
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	345	1089	751	236	805	73	320	1366	595	101	928	407
Arrive On Green	0.19	0.30	0.29	0.13	0.24	0.23	0.18	0.39	0.39	0.06	0.26	0.26
Sat Flow, veh/h	1792	3574	1567	1792	3301	300	1774	3539	1543	1774	3539	1552
Grp Volume(v), veh/h	313	328	153	206	302	309	289	856	84	79	641	261
Grp Sat Flow(s),veh/h/ln	1792	1787	1567	1792	1787	1814	1774	1770	1543	1774	1770	1552
Q Serve(g_s), s	22.6	9.3	7.5	14.9	20.4	20.6	21.1	26.0	4.7	5.8	21.6	19.8
Cycle Q Clear(g_c), s	22.6	9.3	7.5	14.9	20.4	20.6	21.1	26.0	4.7	5.8	21.6	19.8
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	1089	751	236	436	442	320	1366	595	101	928	407
V/C Ratio(X)	0.91	0.30	0.20	0.87	0.69	0.70	0.90	0.63	0.14	0.78	0.69	0.64
Avail Cap(c_a), veh/h	865	1222	809	595	611	620	589	1366	595	321	1221	535
HCM Platoon Ratio	1.00	1.00	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	52.3	35.3	20.2	56.4	45.6	45.8	53.2	33.0	26.4	61.7	44.0	43.4
Incr Delay (d2), s/veh	9.0	0.2	0.2	9.5	2.7	2.7	9.3	1.1	0.2	12.4	1.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	4.6	3.3	8.0	10.4	10.6	11.2	12.9	2.0	3.2	10.8	8.8
LnGrp Delay(d),s/veh	61.3	35.5	20.4	65.9	48.3	48.5	62.4	34.1	26.6	74.1	45.7	46.0
LnGrp LOS	E	D	C	E	D	D	E	C	C	E	D	D
Approach Vol, veh/h		794			817			1229			981	
Approach Delay, s/veh		42.7			52.8			40.2			48.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.5	44.4	27.9	38.7	29.6	36.3	11.5	55.1
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	16.9	11.3	23.1	23.6	24.6	22.6	7.8	28.0
Green Ext Time (p_c), s	0.6	9.9	0.8	9.4	0.9	8.4	0.1	12.5

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	78.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	260	305	311	353
Future Vol, veh/h	343	0	260	305	311	353
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	361	0	274	321	327	372
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	28.7	27.4	148.2
HCM LOS	D	D	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	47%
Vol Thru, %	0%	100%	22%	0%
Vol Right, %	0%	0%	78%	53%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	173	392	664
LT Vol	343	0	0	311
Through Vol	0	173	87	0
RT Vol	0	0	305	353
Lane Flow Rate	361	182	412	699
Geometry Grp	5	7	7	2
Degree of Util (X)	0.719	0.374	0.783	1.25
Departure Headway (Hd)	7.94	8.162	7.598	6.436
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	459	443	478	566
Service Time	5.94	5.862	5.298	4.469
HCM Lane V/C Ratio	0.786	0.411	0.862	1.235
HCM Control Delay	28.7	15.7	32.6	148.2
HCM Lane LOS	D	C	D	F
HCM 95th-tile Q	5.7	1.7	7	27

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	44	1	91	171	360	0	0	230	200
Future Vol, veh/h	0	0	0	44	1	91	171	360	0	0	230	200
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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, %	0	0	0	5	5	5	12	12	12	5	5	5
Mvmt Flow	0	0	0	46	1	96	180	379	0	0	242	211

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	860	1195	189	456	0	-	-	-	0
Stage 1	739	739	-	-	-	-	-	-	-
Stage 2	121	456	-	-	-	-	-	-	-
Critical Hdwy	6.9	6.6	7	4.34	-	-	-	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.9	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	2.32	-	-	-	-	-
Pot Cap-1 Maneuver	289	181	811	1034	-	0	0	-	-
Stage 1	425	415	-	-	-	0	0	-	-
Stage 2	882	559	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	239	0	811	1034	-	-	-	-	-
Mov Cap-2 Maneuver	239	0	-	-	-	-	-	-	-
Stage 1	351	0	-	-	-	-	-	-	-
Stage 2	882	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1034	-	456	-	-
HCM Lane V/C Ratio	0.174	-	0.314	-	-
HCM Control Delay (s)	9.2	-	16.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.3	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	5	37	3	70	6	496	0	0	393	21
Future Vol, veh/h	26	0	5	37	3	70	6	496	0	0	393	21
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	7	7	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	10	10	10	9	9	9	2	2	2	2	2	2
Mvmt Flow	30	0	6	42	3	80	7	564	0	0	447	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	760	1040	239	800	1051	282	474	0	-	-	-	0
Stage 1	463	463	-	577	577	-	-	-	-	-	-	-
Stage 2	297	577	-	223	474	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.7	7.1	7.68	6.68	7.08	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	3.59	4.09	3.39	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	281	216	738	264	214	694	1084	-	0	0	-	-
Stage 1	528	543	-	452	483	-	-	-	0	0	-	-
Stage 2	665	480	-	739	539	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	244	214	735	261	212	694	1084	-	-	-	-	-
Mov Cap-2 Maneuver	244	214	-	261	212	-	-	-	-	-	-	-
Stage 1	523	541	-	449	480	-	-	-	-	-	-	-
Stage 2	581	477	-	733	537	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	16.8	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1084	-	273	428	-	-
HCM Lane V/C Ratio	0.006	-	0.129	0.292	-	-
HCM Control Delay (s)	8.3	-	20.1	16.8	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	1.2	-	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	82	9	100	208	70	6	65	90	64	152	26
Future Vol, veh/h	16	82	9	100	208	70	6	65	90	64	152	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	17	87	10	106	221	74	6	69	96	68	162	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	15.7	10.6	12.5
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	15%	26%	26%
Vol Thru, %	40%	77%	55%	63%
Vol Right, %	56%	8%	19%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	107	378	242
LT Vol	6	16	100	64
Through Vol	65	82	208	152
RT Vol	90	9	70	26
Lane Flow Rate	171	114	402	257
Geometry Grp	1	1	1	1
Degree of Util (X)	0.264	0.184	0.589	0.404
Departure Headway (Hd)	5.546	5.807	5.272	5.643
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	644	615	684	636
Service Time	3.608	3.872	3.32	3.699
HCM Lane V/C Ratio	0.266	0.185	0.588	0.404
HCM Control Delay	10.6	10.2	15.7	12.5
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.1	0.7	3.9	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	88	108	317	247	6	117	183	157	8	128	18
Future Volume (veh/h)	29	88	108	317	247	6	117	183	157	8	128	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	91	88	327	255	3	121	189	77	8	132	4
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	86	186	180	409	733	623	177	684	269	30	670	291
Arrive On Green	0.05	0.21	0.18	0.23	0.39	0.39	0.10	0.27	0.24	0.02	0.19	0.19
Sat Flow, veh/h	1792	880	851	1774	1863	1583	1810	2533	996	1774	3539	1538
Grp Volume(v), veh/h	30	0	179	327	255	3	121	133	133	8	132	4
Grp Sat Flow(s),veh/h/ln	1792	0	1731	1774	1863	1583	1810	1805	1724	1774	1770	1538
Q Serve(g_s), s	1.0	0.0	5.4	10.2	5.7	0.1	3.8	3.4	3.7	0.3	1.8	0.1
Cycle Q Clear(g_c), s	1.0	0.0	5.4	10.2	5.7	0.1	3.8	3.4	3.7	0.3	1.8	0.1
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	86	0	365	409	733	623	177	488	466	30	670	291
V/C Ratio(X)	0.35	0.00	0.49	0.80	0.35	0.00	0.68	0.27	0.29	0.27	0.20	0.01
Avail Cap(c_a), veh/h	1111	0	1117	1100	1202	1022	1122	1900	1815	1039	3726	1620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.9	21.4	12.6	10.9	25.7	16.9	17.5	28.6	20.1	19.4
Incr Delay (d2), s/veh	2.4	0.0	1.6	3.7	0.4	0.0	4.6	0.5	0.5	4.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.7	5.4	3.0	0.0	2.1	1.8	1.8	0.2	0.9	0.1
LnGrp Delay(d),s/veh	29.5	0.0	22.5	25.0	13.0	10.9	30.3	17.4	18.0	33.3	20.3	19.4
LnGrp LOS	C		C	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		209			585			387			144	
Approach Delay, s/veh		23.5			19.7			21.6			21.0	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	19.9	17.6	16.4	9.8	15.1	6.8	27.2
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.3	5.7	12.2	7.4	5.8	3.8	3.0	7.7
Green Ext Time (p_c), s	0.0	3.6	0.9	3.6	0.3	3.6	0.0	3.6

Intersection Summary		
HCM 2010 Ctrl Delay		21.0
HCM 2010 LOS		C

Intersection	
Intersection Delay, s/veh	70.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	203	0	52	0	0	0	60	127	0	0	325	508
Future Vol, veh/h	203	0	52	0	0	0	60	127	0	0	325	508
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	1	1	1
Mvmt Flow	209	0	54	0	0	0	62	131	0	0	335	524
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	14.7	0	12	101.1
HCM LOS	B	-	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	32%	100%	0%	0%	0%
Vol Thru, %	68%	0%	0%	100%	39%
Vol Right, %	0%	0%	100%	0%	61%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	203	52	0	833
LT Vol	60	203	0	0	0
Through Vol	127	0	0	0	325
RT Vol	0	0	52	0	508
Lane Flow Rate	193	209	54	0	859
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.316	0.427	0.091	0	1.148
Departure Headway (Hd)	6.156	7.671	6.444	7.55	4.812
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	588	473	560	0	764
Service Time	4.156	5.371	4.144	5.55	2.812
HCM Lane V/C Ratio	0.328	0.442	0.096	0	1.124
HCM Control Delay	12	16	9.8	10.6	101.1
HCM Lane LOS	B	C	A	N	F
HCM 95th-tile Q	1.3	2.1	0.3	0	26.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	0	31	3	1	0	40	453	2	2	476	95
Future Volume (veh/h)	57	0	31	3	1	0	40	453	2	2	476	95
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	61	0	5	3	1	0	43	482	2	2	506	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	316	0	122	192	9	0	92	1114	5	27	1007	802
Arrive On Green	0.05	0.00	0.08	0.05	0.07	0.00	0.05	0.59	0.54	0.02	0.54	0.00
Sat Flow, veh/h	1675	0	1599	420	140	0	1792	1872	8	1774	1863	1583
Grp Volume(v), veh/h	61	0	5	4	0	0	43	0	484	2	506	0
Grp Sat Flow(s),veh/h/ln	1675	0	1599	560	0	0	1792	0	1880	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.1	0.0	0.0	0.9	0.0	5.4	0.0	6.6	0.0
Cycle Q Clear(g_c), s	1.3	0.0	0.1	1.4	0.0	0.0	0.9	0.0	5.4	0.0	6.6	0.0
Prop In Lane	1.00		1.00	0.75		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	122	194	0	0	92	0	1118	27	1007	802
V/C Ratio(X)	0.22	0.00	0.04	0.02	0.00	0.00	0.47	0.00	0.43	0.07	0.50	0.00
Avail Cap(c_a), veh/h	1467	0	1458	1071	0	0	1615	0	2750	1136	2691	2234
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.4	0.0	16.4	18.2	0.0	0.0	17.6	0.0	4.2	18.6	5.5	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.0	0.0	0.0	3.6	0.0	0.4	1.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.1	0.0	0.0	0.0	0.5	0.0	2.8	0.0	3.4	0.0
LnGrp Delay(d),s/veh	17.8	0.0	16.5	18.2	0.0	0.0	21.3	0.0	4.6	19.7	6.1	0.0
LnGrp LOS	B		B	B			C		A	B	A	
Approach Vol, veh/h		66			4			527			508	
Approach Delay, s/veh		17.7			18.2			6.0			6.2	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	26.8		6.9	6.0	25.4		6.9
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.0	7.4		3.3	2.9	8.6		3.4
Green Ext Time (p_c), s	0.0	10.9		0.3	0.1	10.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Notes

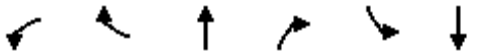
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	154	423	12
Future Vol, veh/h	5	2	2	154	423	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	5	2	2	162	445	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	618	452	458	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	456	612	1103	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	612	1103	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1103	-	491	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	8.3	0	12.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	176	272	209	188	320	264
Future Volume (veh/h)	176	272	209	188	320	264
Number	3	18	2	12	1	6
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
Adj Sat Flow, veh/h/ln	1881	1881	1863	1863	1863	1863
Adj Flow Rate, veh/h	180	69	213	50	327	269
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	2	2	2	2
Cap, veh/h	313	280	530	448	405	1150
Arrive On Green	0.17	0.17	0.28	0.28	0.23	0.62
Sat Flow, veh/h	1792	1599	1863	1575	1774	1863
Grp Volume(v), veh/h	180	69	213	50	327	269
Grp Sat Flow(s),veh/h/ln	1792	1599	1863	1575	1774	1863
Q Serve(g_s), s	3.5	1.4	3.6	0.9	6.7	2.5
Cycle Q Clear(g_c), s	3.5	1.4	3.6	0.9	6.7	2.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	313	280	530	448	405	1150
V/C Ratio(X)	0.57	0.25	0.40	0.11	0.81	0.23
Avail Cap(c_a), veh/h	992	886	2519	2130	923	2519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	13.7	11.1	10.2	14.0	3.3
Incr Delay (d2), s/veh	0.6	0.2	0.5	0.1	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.6	1.9	0.4	3.4	1.3
LnGrp Delay(d),s/veh	15.2	13.9	11.6	10.3	15.5	3.4
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	249		263			596
Approach Delay, s/veh	14.8		11.4			10.0
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.8	14.9				27.7		10.7
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	8.7	5.6				4.5		5.5
Green Ext Time (p_c), s	0.4	3.2				3.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	536	195	186	422	55	351	416	206	119	370	182
Future Volume (veh/h)	121	536	195	186	422	55	351	416	206	119	370	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	126	558	185	194	440	20	366	433	84	124	385	34
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	155	832	275	223	1275	561	401	1240	553	152	738	320
Arrive On Green	0.09	0.32	0.31	0.12	0.36	0.36	0.22	0.34	0.34	0.08	0.21	0.21
Sat Flow, veh/h	1792	2611	862	1792	3574	1572	1810	3610	1611	1792	3574	1551
Grp Volume(v), veh/h	126	381	362	194	440	20	366	433	84	124	385	34
Grp Sat Flow(s),veh/h/ln	1792	1787	1686	1792	1787	1572	1810	1805	1611	1792	1787	1551
Q Serve(g_s), s	8.6	23.0	23.3	13.3	11.3	1.0	24.6	11.2	4.5	8.5	11.9	2.2
Cycle Q Clear(g_c), s	8.6	23.0	23.3	13.3	11.3	1.0	24.6	11.2	4.5	8.5	11.9	2.2
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	155	570	538	223	1275	561	401	1240	553	152	738	320
V/C Ratio(X)	0.81	0.67	0.67	0.87	0.34	0.04	0.91	0.35	0.15	0.82	0.52	0.11
Avail Cap(c_a), veh/h	776	798	753	345	1597	702	784	1323	590	345	1396	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	36.8	37.2	53.6	29.4	26.1	47.3	30.5	28.4	56.1	44.0	40.1
Incr Delay (d2), s/veh	9.7	2.2	2.3	13.6	0.3	0.0	8.3	0.3	0.2	10.2	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.7	11.2	7.4	5.6	0.5	13.2	5.6	2.0	4.6	6.0	1.0
LnGrp Delay(d),s/veh	65.6	38.9	39.6	67.1	29.7	26.2	55.7	30.8	28.6	66.3	44.9	40.4
LnGrp LOS	E	D	D	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		869			654			883			543	
Approach Delay, s/veh		43.1			40.7			40.9			49.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	46.8	19.5	43.7	31.6	29.7	14.8	48.5
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	24.6	44.0	24.0	54.0	54.0	47.0	54.0	54.0
Max Q Clear Time (g_c+I1), s	10.6	13.2	15.3	25.3	26.6	13.9	10.6	13.3
Green Ext Time (p_c), s	0.2	9.3	0.3	12.8	1.0	9.5	0.3	14.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	380	129	33	394	18	108	47	15	13	27	30
Future Vol, veh/h	33	380	129	33	394	18	108	47	15	13	27	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	35	404	137	35	419	19	115	50	16	14	29	32
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	15	32.7	15.2	11
HCM LOS	B	D	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	64%	15%	0%	7%	33%	0%
Vol Thru, %	28%	85%	60%	89%	68%	0%
Vol Right, %	9%	0%	40%	4%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	223	319	445	40	30
LT Vol	108	33	0	33	13	0
Through Vol	47	190	190	394	27	0
RT Vol	15	0	129	18	0	30
Lane Flow Rate	181	237	339	473	43	32
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.381	0.414	0.558	0.826	0.095	0.063
Departure Headway (Hd)	7.581	6.282	5.918	6.278	8.048	7.158
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	567	604	573	448	503
Service Time	5.581	4.079	3.716	4.367	5.756	4.867
HCM Lane V/C Ratio	0.379	0.418	0.561	0.825	0.096	0.064
HCM Control Delay	15.2	13.5	16	32.7	11.6	10.3
HCM Lane LOS	C	B	C	D	B	B
HCM 95th-tile Q	1.8	2	3.4	8.4	0.3	0.2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	211	156	137	324	118	61
Future Volume (veh/h)	211	156	137	324	118	61
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1863	1900	1881	1881	1881	1881
Adj Flow Rate, veh/h	234	64	152	360	131	12
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	987	263	238	1167	218	195
Arrive On Green	0.36	0.32	0.13	0.62	0.12	0.12
Sat Flow, veh/h	2844	734	1792	1881	1792	1599
Grp Volume(v), veh/h	148	150	152	360	131	12
Grp Sat Flow(s),veh/h/ln	1770	1715	1792	1881	1792	1599
Q Serve(g_s), s	1.8	1.9	2.5	2.8	2.2	0.2
Cycle Q Clear(g_c), s	1.8	1.9	2.5	2.8	2.2	0.2
Prop In Lane		0.43	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	635	615	238	1167	218	195
V/C Ratio(X)	0.23	0.24	0.64	0.31	0.60	0.06
Avail Cap(c_a), veh/h	2808	2720	1418	2985	1418	1266
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	7.0	7.2	12.8	2.8	12.9	12.1
Incr Delay (d2), s/veh	0.3	0.3	2.8	0.2	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	1.4	1.5	1.2	0.1
LnGrp Delay(d),s/veh	7.2	7.5	15.6	3.0	15.6	12.2
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	298			512	143	
Approach Delay, s/veh	7.4			6.7	15.3	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.1	15.2		7.8		23.3		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	4.5	3.9		4.2		4.8		
Green Ext Time (p_c), s	0.3	5.9		0.3		5.9		

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	115	105	116	26	112	311
Future Vol, veh/h	115	105	116	26	112	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	128	117	129	29	124	346

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	158	0	-	0	515	143
Stage 1	-	-	-	-	143	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1416	-	-	-	522	907
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1416	-	-	-	475	907
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	768
HCM Lane V/C Ratio	0.09	-	-	-	0.612
HCM Control Delay (s)	7.8	-	-	-	16.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	623	108	271	761	89	86	314	366	101	288	108
Future Volume (veh/h)	90	623	108	271	761	89	86	314	366	101	288	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	94	649	59	282	793	41	90	327	119	105	300	102
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	298	1518	678	313	1485	664	112	390	326	128	290	99
Arrive On Green	0.16	0.42	0.42	0.17	0.42	0.42	0.06	0.21	0.21	0.07	0.22	0.21
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1559	1774	1331	452
Grp Volume(v), veh/h	94	649	59	282	793	41	90	327	119	105	0	402
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1559	1774	0	1783
Q Serve(g_s), s	6.0	16.5	2.9	20.0	21.7	1.4	6.5	21.9	8.5	7.6	0.0	28.4
Cycle Q Clear(g_c), s	6.0	16.5	2.9	20.0	21.7	1.4	6.5	21.9	8.5	7.6	0.0	28.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	298	1518	678	313	1485	664	112	390	326	128	0	389
V/C Ratio(X)	0.32	0.43	0.09	0.90	0.53	0.06	0.80	0.84	0.36	0.82	0.00	1.03
Avail Cap(c_a), veh/h	298	1518	678	537	1485	664	218	444	372	177	0	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.8	26.6	22.7	52.5	28.5	11.8	60.1	49.3	44.0	59.5	0.0	50.9
Incr Delay (d2), s/veh	0.2	0.9	0.3	10.6	1.4	0.2	4.9	13.0	1.0	13.5	0.0	54.4
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	3.0	8.4	1.3	10.9	11.0	0.7	3.4	12.7	3.8	4.2	0.0	19.8
LnGrp Delay(d),s/veh	48.1	27.5	22.9	63.1	29.9	11.9	65.0	62.3	45.0	73.0	0.0	105.3
LnGrp LOS	D	C	C	E	C	B	E	E	D	E		F
Approach Vol, veh/h		802			1116			536			507	
Approach Delay, s/veh		29.6			37.7			58.9			98.6	
Approach LOS		C			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.7	58.7	12.2	32.4	27.4	58.0	13.4	31.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	39.0	29.0	16.0	27.1	16.0	* 52	13.0	30.1
Max Q Clear Time (g_c+I1), s	22.0	18.5	8.5	30.4	8.0	23.7	9.6	23.9
Green Ext Time (p_c), s	0.7	5.5	0.0	0.0	0.5	12.8	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	49.8
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	857	188	221	821	157	261	539	106	156	402	125
Future Volume (veh/h)	207	857	188	221	821	157	261	539	106	156	402	125
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	209	866	72	223	829	61	264	544	96	158	406	23
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	2158	660	249	2218	678	290	741	130	182	658	283
Arrive On Green	0.13	0.42	0.42	0.05	0.14	0.14	0.16	0.24	0.23	0.10	0.18	0.18
Sat Flow, veh/h	1792	5136	1570	1810	5187	1585	1810	3068	539	1810	3610	1555
Grp Volume(v), veh/h	209	866	72	223	829	61	264	319	321	158	406	23
Grp Sat Flow(s),veh/h/ln	1792	1712	1570	1810	1729	1585	1810	1805	1802	1810	1805	1555
Q Serve(g_s), s	18.4	18.8	4.5	19.6	23.2	5.4	23.0	26.1	26.3	13.8	16.6	2.0
Cycle Q Clear(g_c), s	18.4	18.8	4.5	19.6	23.2	5.4	23.0	26.1	26.3	13.8	16.6	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	233	2158	660	249	2218	678	290	436	436	182	658	283
V/C Ratio(X)	0.90	0.40	0.11	0.89	0.37	0.09	0.91	0.73	0.74	0.87	0.62	0.08
Avail Cap(c_a), veh/h	389	2158	660	359	2218	678	460	511	510	347	796	343
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	32.4	28.2	75.2	49.3	41.6	66.1	55.9	56.2	70.9	60.3	54.3
Incr Delay (d2), s/veh	14.1	0.6	0.3	14.3	0.4	0.2	15.4	5.1	5.3	11.8	1.4	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	10.0	9.0	2.0	10.8	11.2	2.4	12.7	13.7	13.7	7.5	8.4	0.9
LnGrp Delay(d),s/veh	82.6	32.9	28.5	89.5	49.6	41.8	81.4	61.0	61.4	82.7	61.7	54.5
LnGrp LOS	F	C	C	F	D	D	F	E	E	F	E	D
Approach Vol, veh/h		1147			1113			904			587	
Approach Delay, s/veh		41.7			57.2			67.1			67.0	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	71.2	29.6	33.1	24.8	72.4	20.1	42.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	21.7	35.0	40.7	34.0	34.7	32.0	30.7	44.0
Max Q Clear Time (g_c+I1), s	21.6	20.8	25.0	18.6	20.4	25.2	15.8	28.3
Green Ext Time (p_c), s	0.4	10.8	0.6	7.3	0.5	5.7	0.3	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	56.4
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	902	148	211	889	74	249	533	144	324	503	106
Future Volume (veh/h)	128	902	148	211	889	74	249	533	144	324	503	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.94	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	136	960	77	224	946	74	265	567	137	345	535	103
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	157	1731	527	248	1891	147	290	618	149	370	787	151
Arrive On Green	0.18	0.67	0.67	0.14	0.39	0.38	0.16	0.22	0.21	0.21	0.26	0.26
Sat Flow, veh/h	1792	5136	1564	1810	4896	382	1792	2816	677	1792	2984	572
Grp Volume(v), veh/h	136	960	77	224	667	353	265	359	345	345	320	318
Grp Sat Flow(s),veh/h/ln	1792	1712	1564	1810	1729	1820	1792	1787	1707	1792	1787	1768
Q Serve(g_s), s	11.8	15.6	2.8	19.5	23.5	23.6	23.3	31.4	31.7	30.3	25.6	25.9
Cycle Q Clear(g_c), s	11.8	15.6	2.8	19.5	23.5	23.6	23.3	31.4	31.7	30.3	25.6	25.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.40	1.00		0.32
Lane Grp Cap(c), veh/h	157	1731	527	248	1335	703	290	392	375	370	471	467
V/C Ratio(X)	0.86	0.55	0.15	0.90	0.50	0.50	0.91	0.91	0.92	0.93	0.68	0.68
Avail Cap(c_a), veh/h	355	1731	527	359	1335	703	478	394	377	478	471	467
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)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	19.8	17.8	68.0	37.4	37.5	65.9	61.0	61.4	62.4	52.8	53.1
Incr Delay (d2), s/veh	11.5	1.1	0.5	19.3	1.3	2.5	14.3	25.8	27.9	22.0	4.3	4.5
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	6.3	7.5	1.3	11.1	11.5	12.4	12.7	18.4	17.9	17.3	13.3	13.2
LnGrp Delay(d),s/veh	76.5	20.9	18.3	87.3	38.7	40.1	80.2	86.8	89.2	84.4	57.1	57.5
LnGrp LOS	E	C	B	F	D	D	F	F	F	F	E	E
Approach Vol, veh/h		1173			1244			969			983	
Approach Delay, s/veh		27.2			47.8			85.8			66.8	
Approach LOS		C			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	57.9	29.9	46.2	18.1	65.8	37.0	39.1
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	21.7	33.0	42.7	34.0	31.7	33.0	42.7	34.0
Max Q Clear Time (g_c+I1), s	21.5	17.6	25.3	27.9	13.8	25.6	32.3	33.7
Green Ext Time (p_c), s	0.4	12.4	0.7	4.4	0.3	6.4	0.8	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	55.0
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	560	283	175	348	65	301	685	195	93	653	307
Future Volume (veh/h)	368	560	283	175	348	65	301	685	195	93	653	307
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	383	583	206	182	362	61	314	714	114	97	680	249
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	415	1166	798	211	643	107	345	1356	595	121	903	392
Arrive On Green	0.23	0.32	0.31	0.12	0.21	0.20	0.19	0.38	0.38	0.07	0.25	0.25
Sat Flow, veh/h	1810	3610	1578	1792	3047	508	1810	3610	1584	1792	3574	1551
Grp Volume(v), veh/h	383	583	206	182	211	212	314	714	114	97	680	249
Grp Sat Flow(s),veh/h/ln	1810	1805	1578	1792	1787	1767	1810	1805	1584	1792	1787	1551
Q Serve(g_s), s	28.5	18.0	10.3	13.7	14.5	14.9	23.4	21.2	6.7	7.4	24.2	19.7
Cycle Q Clear(g_c), s	28.5	18.0	10.3	13.7	14.5	14.9	23.4	21.2	6.7	7.4	24.2	19.7
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	1166	798	211	377	373	345	1356	595	121	903	392
V/C Ratio(X)	0.92	0.50	0.26	0.86	0.56	0.57	0.91	0.53	0.19	0.80	0.75	0.64
Avail Cap(c_a), veh/h	841	1197	812	572	593	586	578	1356	595	312	1175	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	37.6	19.7	59.7	48.6	49.0	54.6	33.5	28.9	63.3	47.5	45.8
Incr Delay (d2), s/veh	8.8	0.5	0.2	10.0	1.8	1.9	11.7	0.6	0.2	11.6	2.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	9.1	4.6	7.4	7.4	7.5	12.8	10.7	3.0	4.0	12.2	8.7
LnGrp Delay(d),s/veh	60.7	38.1	19.9	69.7	50.4	50.8	66.3	34.0	29.2	74.9	50.2	48.5
LnGrp LOS	E	D	B	E	D	D	E	C	C	E	D	D
Approach Vol, veh/h		1172			605			1142			1026	
Approach Delay, s/veh		42.3			56.3			42.4			52.1	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	48.1	30.3	39.2	35.6	32.7	13.3	56.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	15.7	20.0	25.4	26.2	30.5	16.9	9.4	23.2
Green Ext Time (p_c), s	0.5	10.0	0.8	7.3	1.1	10.5	0.2	14.7

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	95
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	605	449	318	299
Future Vol, veh/h	290	0	605	449	318	299
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	302	0	630	468	331	311
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	22.7	108.4	106.2
HCM LOS	C	F	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	52%
Vol Thru, %	0%	100%	31%	0%
Vol Right, %	0%	0%	69%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	403	651	617
LT Vol	290	0	0	318
Through Vol	0	403	202	0
RT Vol	0	0	449	299
Lane Flow Rate	302	420	678	643
Geometry Grp	5	7	7	2
Degree of Util (X)	0.615	0.834	1.253	1.138
Departure Headway (Hd)	7.875	7.616	7.118	6.533
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	462	479	515	559
Service Time	5.875	5.316	4.818	4.533
HCM Lane V/C Ratio	0.654	0.877	1.317	1.15
HCM Control Delay	22.7	38.2	151.9	106.2
HCM Lane LOS	C	E	F	F
HCM 95th-tile Q	4	8.2	25.4	20.8

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	19	1	80	233	502	0	0	414	326
Future Vol, veh/h	0	0	0	19	1	80	233	502	0	0	414	326
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	2	2	2
Mvmt Flow	0	0	0	20	1	83	243	523	0	0	431	340

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	1224	1786	261	778	0	-	-	-	0
Stage 1	1008	1008	-	-	-	-	-	-	-
Stage 2	216	778	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	4.24	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.27	-	-	-	-	-
Pot Cap-1 Maneuver	174	82	744	803	-	0	0	-	-
Stage 1	318	321	-	-	-	0	0	-	-
Stage 2	805	410	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	121	0	744	803	-	-	-	-	-
Mov Cap-2 Maneuver	121	0	-	-	-	-	-	-	-
Stage 1	222	0	-	-	-	-	-	-	-
Stage 2	805	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	3.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	803	-	374	-	-
HCM Lane V/C Ratio	0.302	-	0.279	-	-
HCM Control Delay (s)	11.4	-	18.3	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	1.3	-	1.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	0	7	25	5	60	16	519	0	0	496	47
Future Vol, veh/h	24	0	7	25	5	60	16	519	0	0	496	47
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	9	9	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	1	1	1	1	1	1	1	1
Mvmt Flow	27	0	8	28	6	67	18	577	0	0	551	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	910	1195	308	888	1221	288	609	0	-	-	-	0
Stage 1	583	583	-	612	612	-	-	-	-	-	-	-
Stage 2	327	612	-	276	609	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	233	188	694	240	180	712	972	-	0	0	-	-
Stage 1	470	502	-	450	484	-	-	-	0	0	-	-
Stage 2	665	487	-	710	486	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	202	183	690	234	176	712	972	-	-	-	-	-
Mov Cap-2 Maneuver	202	183	-	234	176	-	-	-	-	-	-	-
Stage 1	459	499	-	442	475	-	-	-	-	-	-	-
Stage 2	585	478	-	702	483	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	16.6	0.3	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	972	-	240	410	-	-
HCM Lane V/C Ratio	0.018	-	0.144	0.244	-	-
HCM Control Delay (s)	8.8	-	22.5	16.6	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	247	7	101	119	50	5	64	246	113	112	24
Future Volume (veh/h)	18	247	7	101	119	50	5	64	246	113	112	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1827	1827	1900	1712	1712	1900	1583	1583	1900
Adj Flow Rate, veh/h	24	325	8	133	157	55	7	84	204	149	147	27
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	6	6	6	4	4	4	11	11	11	20	20	20
Cap, veh/h	46	431	11	172	412	144	15	110	268	183	470	86
Arrive On Green	0.03	0.25	0.25	0.10	0.32	0.32	0.01	0.25	0.25	0.12	0.36	0.36
Sat Flow, veh/h	1707	1742	43	1740	1294	453	1630	444	1078	1508	1302	239
Grp Volume(v), veh/h	24	0	333	133	0	212	7	0	288	149	0	174
Grp Sat Flow(s),veh/h/ln	1707	0	1785	1740	0	1747	1630	0	1522	1508	0	1541
Q Serve(g_s), s	0.9	0.0	10.9	4.7	0.0	6.0	0.3	0.0	11.1	6.1	0.0	5.2
Cycle Q Clear(g_c), s	0.9	0.0	10.9	4.7	0.0	6.0	0.3	0.0	11.1	6.1	0.0	5.2
Prop In Lane	1.00		0.02	1.00		0.26	1.00		0.71	1.00		0.16
Lane Grp Cap(c), veh/h	46	0	442	172	0	557	15	0	378	183	0	556
V/C Ratio(X)	0.52	0.00	0.75	0.78	0.00	0.38	0.47	0.00	0.76	0.81	0.00	0.31
Avail Cap(c_a), veh/h	418	0	1000	426	0	979	399	0	853	369	0	864
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	22.0	27.9	0.0	16.7	31.2	0.0	22.1	27.1	0.0	14.6
Incr Delay (d2), s/veh	8.6	0.0	2.6	7.3	0.0	0.4	21.2	0.0	3.2	8.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.7	2.6	0.0	3.0	0.2	0.0	5.0	3.0	0.0	2.2
LnGrp Delay(d),s/veh	39.0	0.0	24.7	35.2	0.0	17.2	52.4	0.0	25.3	35.5	0.0	14.9
LnGrp LOS	D		C	D		B	D		C	D		B
Approach Vol, veh/h		357			345			295			323	
Approach Delay, s/veh		25.6			24.1			25.9			24.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	20.2	10.7	20.2	5.1	27.3	6.2	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	35.5	15.5	35.5	15.5	35.5	15.5	35.5
Max Q Clear Time (g_c+I1), s	8.1	13.1	6.7	12.9	2.3	7.2	2.9	8.0
Green Ext Time (p_c), s	0.2	2.6	0.2	2.7	0.0	2.7	0.0	2.8

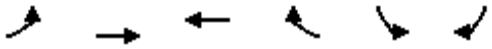
Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	34.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	645	119	14	530	22	181	22	35	17	42	23
Future Vol, veh/h	10	645	119	14	530	22	181	22	35	17	42	23
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	11	725	134	16	596	25	203	25	39	19	47	26
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	47.6	24.2	23.2	13.4
HCM LOS	E	C	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	76%	3%	0%	5%	0%	29%	0%
Vol Thru, %	9%	97%	73%	95%	92%	71%	0%
Vol Right, %	15%	0%	27%	0%	8%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	333	442	279	287	59	23
LT Vol	181	10	0	14	0	17	0
Through Vol	22	323	323	265	265	42	0
RT Vol	35	0	119	0	22	0	23
Lane Flow Rate	267	374	496	313	322	66	26
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.608	0.758	0.978	0.661	0.672	0.171	0.06
Departure Headway (Hd)	8.186	7.307	7.098	7.586	7.505	9.281	8.403
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	497	511	476	480	386	426
Service Time	6.219	5.051	4.842	5.33	5.249	7.037	6.159
HCM Lane V/C Ratio	0.605	0.753	0.971	0.658	0.671	0.171	0.061
HCM Control Delay	23.2	29.6	61.2	24	24.4	14	11.7
HCM Lane LOS	C	D	F	C	C	B	B
HCM 95th-tile Q	3.9	6.5	12.9	4.7	4.9	0.6	0.2



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	650	71	141	170	48	220
Future Volume (veh/h)	650	71	141	170	48	220
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1881	1900	1624	1900
Adj Flow Rate, veh/h	707	77	153	151	52	32
Adj No. of Lanes	1	1	1	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	1	1	0	0
Cap, veh/h	761	1379	199	196	87	53
Arrive On Green	0.43	0.74	0.23	0.23	0.10	0.10
Sat Flow, veh/h	1774	1863	868	857	906	557
Grp Volume(v), veh/h	707	77	0	304	85	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1726	1480	0
Q Serve(g_s), s	20.8	0.6	0.0	9.0	3.0	0.0
Cycle Q Clear(g_c), s	20.8	0.6	0.0	9.0	3.0	0.0
Prop In Lane	1.00			0.50	0.61	0.38
Lane Grp Cap(c), veh/h	761	1379	0	395	142	0
V/C Ratio(X)	0.93	0.06	0.00	0.77	0.60	0.00
Avail Cap(c_a), veh/h	825	1885	0	802	1498	0
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	14.9	1.9	0.0	19.8	23.8	0.0
Incr Delay (d2), s/veh	16.0	0.0	0.0	3.2	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	13.4	0.3	0.0	4.7	1.4	0.0
LnGrp Delay(d),s/veh	30.9	1.9	0.0	23.0	27.8	0.0
LnGrp LOS	C	A		C	C	
Approach Vol, veh/h		784	304		85	
Approach Delay, s/veh		28.0	23.0		27.8	
Approach LOS		C	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		45.1		9.8	28.0	17.1		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		55.5		55.5	25.5	25.5		
Max Q Clear Time (g_c+I1), s		2.6		5.0	22.8	11.0		
Green Ext Time (p_c), s		0.4		0.2	0.8	1.4		

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	725	130	214	631	94	138	468	137	226	519	108
Future Volume (veh/h)	155	725	130	214	631	94	138	468	137	226	519	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	194	906	60	268	789	106	172	585	151	282	649	123
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	217	1768	535	295	1771	236	197	777	200	335	795	151
Arrive On Green	0.24	0.69	0.69	0.16	0.39	0.38	0.11	0.28	0.27	0.10	0.27	0.26
Sat Flow, veh/h	1792	5136	1556	1792	4571	610	1774	2770	713	3476	2989	566
Grp Volume(v), veh/h	194	906	60	268	589	306	172	373	363	282	388	384
Grp Sat Flow(s),veh/h/ln	1792	1712	1556	1792	1712	1757	1774	1770	1714	1738	1787	1768
Q Serve(g_s), s	14.7	11.9	1.8	20.6	17.8	18.1	13.4	26.9	27.1	11.2	28.5	28.6
Cycle Q Clear(g_c), s	14.7	11.9	1.8	20.6	17.8	18.1	13.4	26.9	27.1	11.2	28.5	28.6
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.42	1.00		0.32
Lane Grp Cap(c), veh/h	217	1768	535	295	1327	681	197	497	481	335	476	470
V/C Ratio(X)	0.89	0.51	0.11	0.91	0.44	0.45	0.87	0.75	0.75	0.84	0.82	0.82
Avail Cap(c_a), veh/h	320	1768	535	384	1327	681	266	544	526	422	498	493
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	16.2	14.6	57.5	31.7	32.0	61.3	45.9	46.2	62.2	48.1	48.4
Incr Delay (d2), s/veh	17.7	1.0	0.4	21.3	1.1	2.1	20.6	5.8	6.2	11.7	10.2	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	5.7	0.8	11.9	8.6	9.2	7.7	14.0	13.6	5.9	15.3	15.4
LnGrp Delay(d),s/veh	69.9	17.1	15.0	78.8	32.8	34.1	81.9	51.7	52.4	73.9	58.4	58.9
LnGrp LOS	E	B	B	E	C	C	F	D	D	E	E	E
Approach Vol, veh/h		1160			1163			908			1054	
Approach Delay, s/veh		25.8			43.7			57.7			62.7	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	52.2	19.5	41.3	21.0	58.2	17.5	43.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	32.7	21.0	37.7	25.0	37.7	17.0	41.7
Max Q Clear Time (g_c+I1), s	22.6	13.9	15.4	30.6	16.7	20.1	13.2	29.1
Green Ext Time (p_c), s	0.4	13.6	0.2	5.4	0.3	12.9	0.3	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	26.5
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	260	307	311	357
Future Vol, veh/h	343	0	260	307	311	357
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	361	0	274	323	327	376
Number of Lanes	1	0	2	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	28.7	26	25.7
HCM LOS	D	D	D

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	22%	0%	0%
Vol Right, %	0%	0%	78%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	173	394	311	357
LT Vol	343	0	0	311	0
Through Vol	0	173	87	0	0
RT Vol	0	0	307	0	357
Lane Flow Rate	361	182	414	327	376
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.739	0.376	0.79	0.717	0.695
Departure Headway (Hd)	7.366	7.424	6.864	7.883	6.656
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	487	482	522	458	541
Service Time	5.444	5.215	4.654	5.666	4.438
HCM Lane V/C Ratio	0.741	0.378	0.793	0.714	0.695
HCM Control Delay	28.7	14.7	31	28.4	23.4
HCM Lane LOS	D	B	D	D	C
HCM 95th-tile Q	6.1	1.7	7.3	5.6	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	82	9	148	208	70	6	65	101	64	152	26
Future Volume (veh/h)	16	82	9	148	208	70	6	65	101	64	152	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1900	1810	1810	1900	1863	1863	1900
Adj Flow Rate, veh/h	17	87	6	157	221	65	6	69	56	68	162	23
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	1	1	1	5	5	5	2	2	2
Cap, veh/h	38	263	18	209	346	102	14	155	126	121	364	52
Arrive On Green	0.02	0.15	0.15	0.12	0.25	0.25	0.01	0.17	0.17	0.07	0.23	0.23
Sat Flow, veh/h	1774	1723	119	1792	1398	411	1723	926	751	1774	1596	227
Grp Volume(v), veh/h	17	0	93	157	0	286	6	0	125	68	0	185
Grp Sat Flow(s),veh/h/ln	1774	0	1842	1792	0	1809	1723	0	1677	1774	0	1823
Q Serve(g_s), s	0.3	0.0	1.6	3.1	0.0	5.1	0.1	0.0	2.4	1.4	0.0	3.2
Cycle Q Clear(g_c), s	0.3	0.0	1.6	3.1	0.0	5.1	0.1	0.0	2.4	1.4	0.0	3.2
Prop In Lane	1.00		0.06	1.00		0.23	1.00		0.45	1.00		0.12
Lane Grp Cap(c), veh/h	38	0	281	209	0	448	14	0	282	121	0	416
V/C Ratio(X)	0.44	0.00	0.33	0.75	0.00	0.64	0.43	0.00	0.44	0.56	0.00	0.44
Avail Cap(c_a), veh/h	755	0	1795	762	0	1763	733	0	1635	755	0	1777
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	13.8	15.6	0.0	12.2	18.0	0.0	13.6	16.4	0.0	12.1
Incr Delay (d2), s/veh	7.8	0.0	0.7	5.3	0.0	1.5	19.6	0.0	1.1	4.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.9	1.8	0.0	2.7	0.1	0.0	1.2	0.8	0.0	1.7
LnGrp Delay(d),s/veh	25.4	0.0	14.4	20.9	0.0	13.8	37.6	0.0	14.7	20.5	0.0	12.8
LnGrp LOS	C		B	C		B	D		B	C		B
Approach Vol, veh/h		110			443			131			253	
Approach Delay, s/veh		16.1			16.3			15.8			14.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	10.6	8.8	10.1	4.8	12.8	5.3	13.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	35.5	15.5	35.5	15.5	35.5	15.5	35.5
Max Q Clear Time (g_c+I1), s	3.4	4.4	5.1	3.6	2.1	5.2	2.3	7.1
Green Ext Time (p_c), s	0.1	1.7	0.3	2.0	0.0	1.7	0.0	1.9

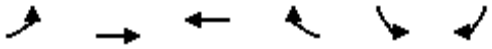
Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	22.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	531	129	38	630	20	108	47	15	13	27	30
Future Vol, veh/h	33	531	129	38	630	20	108	47	15	13	27	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	35	565	137	40	670	21	115	50	16	14	29	32
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	23.7	23.2	16.1	11.9
HCM LOS	C	C	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	64%	11%	0%	11%	0%	33%	0%
Vol Thru, %	28%	89%	67%	89%	94%	68%	0%
Vol Right, %	9%	0%	33%	0%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	299	395	353	335	40	30
LT Vol	108	33	0	38	0	13	0
Through Vol	47	266	266	315	315	27	0
RT Vol	15	0	129	0	20	0	30
Lane Flow Rate	181	318	420	376	356	43	32
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.395	0.601	0.76	0.711	0.665	0.103	0.069
Departure Headway (Hd)	7.967	6.812	6.522	6.818	6.72	8.718	7.826
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	454	533	558	533	538	412	459
Service Time	5.967	4.529	4.239	4.534	4.437	6.453	5.56
HCM Lane V/C Ratio	0.399	0.597	0.753	0.705	0.662	0.104	0.07
HCM Control Delay	16.1	19.3	27	24.6	21.8	12.5	11.1
HCM Lane LOS	C	C	D	C	C	B	B
HCM 95th-tile Q	1.9	3.9	6.7	5.7	4.9	0.3	0.2



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	286	105	116	55	188	600
Future Volume (veh/h)	286	105	116	55	188	600
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1881	1900	1881	1900
Adj Flow Rate, veh/h	318	117	129	45	209	581
Adj No. of Lanes	1	1	1	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	1	1	0	0
Cap, veh/h	362	709	167	58	222	616
Arrive On Green	0.21	0.38	0.13	0.13	0.51	0.51
Sat Flow, veh/h	1757	1845	1334	465	435	1209
Grp Volume(v), veh/h	318	117	0	174	791	0
Grp Sat Flow(s),veh/h/ln	1757	1845	0	1799	1646	0
Q Serve(g_s), s	14.9	3.5	0.0	7.9	38.5	0.0
Cycle Q Clear(g_c), s	14.9	3.5	0.0	7.9	38.5	0.0
Prop In Lane	1.00			0.26	0.26	0.73
Lane Grp Cap(c), veh/h	362	709	0	225	839	0
V/C Ratio(X)	0.88	0.17	0.00	0.77	0.94	0.00
Avail Cap(c_a), veh/h	528	1206	0	541	1077	0
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	32.7	17.2	0.0	36.0	19.6	0.0
Incr Delay (d2), s/veh	11.2	0.1	0.0	5.6	13.5	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	8.4	1.8	0.0	4.3	20.5	0.0
LnGrp Delay(d),s/veh	43.9	17.3	0.0	41.5	33.2	0.0
LnGrp LOS	D	B		D	C	
Approach Vol, veh/h		435	174		791	
Approach Delay, s/veh		36.7	41.5		33.2	
Approach LOS		D	D		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.1		47.8	22.0	15.1		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		55.5		55.5	25.5	25.5		
Max Q Clear Time (g_c+I1), s		5.5		40.5	16.9	9.9		
Green Ext Time (p_c), s		0.6		2.8	0.6	0.7		

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	632	108	271	778	89	86	325	366	101	336	125
Future Volume (veh/h)	94	632	108	271	778	89	86	325	366	101	336	125
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	98	658	59	282	810	41	90	339	129	105	350	120
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	272	1225	547	309	1237	554	112	545	456	128	401	137
Arrive On Green	0.15	0.34	0.34	0.17	0.35	0.35	0.06	0.29	0.29	0.07	0.30	0.29
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1327	455
Grp Volume(v), veh/h	98	658	59	282	810	41	90	339	129	105	0	470
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	0	1782
Q Serve(g_s), s	6.3	19.1	3.3	20.1	24.9	1.7	6.5	20.5	8.3	7.6	0.0	32.5
Cycle Q Clear(g_c), s	6.3	19.1	3.3	20.1	24.9	1.7	6.5	20.5	8.3	7.6	0.0	32.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	272	1225	547	309	1237	554	112	545	456	128	0	538
V/C Ratio(X)	0.36	0.54	0.11	0.91	0.65	0.07	0.80	0.62	0.28	0.82	0.00	0.87
Avail Cap(c_a), veh/h	272	1225	547	372	1237	554	150	573	480	205	0	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.6	34.7	29.4	52.8	35.9	16.0	60.1	39.8	35.5	59.4	0.0	43.1
Incr Delay (d2), s/veh	0.3	1.7	0.4	23.4	2.7	0.3	14.9	2.3	0.5	6.1	0.0	12.4
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	3.2	9.8	1.5	12.0	12.7	0.8	3.7	10.9	3.6	3.9	0.0	17.8
LnGrp Delay(d),s/veh	49.9	36.4	29.8	76.2	38.6	16.2	75.0	42.1	35.9	65.5	0.0	55.5
LnGrp LOS	D	D	C	E	D	B	E	D	D	E		E
Approach Vol, veh/h		815			1133			558			575	
Approach Delay, s/veh		37.5			47.2			46.0			57.4	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	48.1	12.2	43.2	25.6	49.0	13.4	42.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	27.0	30.0	11.0	43.1	14.0	* 43	15.0	39.1
Max Q Clear Time (g_c+I1), s	22.1	21.1	8.5	34.5	8.3	26.9	9.6	22.5
Green Ext Time (p_c), s	0.4	4.9	0.0	3.8	0.4	9.2	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	919	148	211	909	74	249	600	144	324	549	135
Future Volume (veh/h)	177	919	148	211	909	74	249	600	144	324	549	135
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	188	978	78	224	967	74	265	638	140	345	584	130
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	208	1833	559	247	1852	141	289	844	185	395	711	158
Arrive On Green	0.23	0.71	0.71	0.14	0.38	0.37	0.16	0.29	0.28	0.11	0.25	0.24
Sat Flow, veh/h	1792	5136	1565	1810	4905	374	1792	2885	632	3476	2898	643
Grp Volume(v), veh/h	188	978	78	224	681	360	265	395	383	345	359	355
Grp Sat Flow(s),veh/h/ln	1792	1712	1565	1810	1729	1821	1792	1787	1730	1738	1787	1754
Q Serve(g_s), s	16.3	14.1	2.5	19.5	24.4	24.6	23.3	32.1	32.3	15.6	30.4	30.6
Cycle Q Clear(g_c), s	16.3	14.1	2.5	19.5	24.4	24.6	23.3	32.1	32.3	15.6	30.4	30.6
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.37	1.00		0.37
Lane Grp Cap(c), veh/h	208	1833	559	247	1306	688	289	523	506	395	438	430
V/C Ratio(X)	0.90	0.53	0.14	0.91	0.52	0.52	0.92	0.75	0.76	0.87	0.82	0.82
Avail Cap(c_a), veh/h	280	1833	559	328	1306	688	381	581	562	500	458	449
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)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.6	16.7	15.1	68.1	38.6	38.7	66.1	51.4	51.7	69.8	57.1	57.4
Incr Delay (d2), s/veh	22.4	1.0	0.4	22.9	1.5	2.8	22.6	5.6	5.8	13.0	11.5	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	6.7	1.1	11.3	11.9	12.9	13.4	16.7	16.3	8.2	16.4	16.3
LnGrp Delay(d),s/veh	82.9	17.7	15.5	90.9	40.1	41.6	88.7	56.9	57.5	82.8	68.5	69.3
LnGrp LOS	F	B	B	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		1244			1265			1043			1059	
Approach Delay, s/veh		27.4			49.5			65.2			73.4	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	61.1	29.8	43.2	22.6	64.4	22.2	50.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	38.7	34.0	39.7	25.0	42.7	23.0	50.7
Max Q Clear Time (g_c+I1), s	21.5	16.1	25.3	32.6	18.3	26.6	17.6	34.3
Green Ext Time (p_c), s	0.3	17.2	0.5	5.3	0.3	13.0	0.6	10.4

Intersection Summary	
HCM 2010 Ctrl Delay	52.6
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	70.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	605	450	320	321
Future Vol, veh/h	290	0	605	450	320	321
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	302	0	630	469	333	334
Number of Lanes	1	0	2	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	22.2	110.7	26.2
HCM LOS	C	F	D

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	31%	0%	0%
Vol Right, %	0%	0%	69%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	403	652	320	321
LT Vol	290	0	0	320	0
Through Vol	0	403	202	0	0
RT Vol	0	0	450	0	321
Lane Flow Rate	302	420	679	333	334
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.62	0.842	1.267	0.741	0.632
Departure Headway (Hd)	7.604	7.213	6.718	8.315	7.086
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	477	504	543	437	512
Service Time	5.604	4.947	4.452	6.015	4.786
HCM Lane V/C Ratio	0.633	0.833	1.25	0.762	0.652
HCM Control Delay	22.2	37.7	155.9	31.3	21.2
HCM Lane LOS	C	E	F	D	C
HCM 95th-tile Q	4.1	8.5	27.1	6	4.3

Intersection	
Intersection Delay, s/veh	77.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	249	7	97	125	75	5	81	218	121	118	24
Future Vol, veh/h	18	249	7	97	125	75	5	81	218	121	118	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	328	9	128	164	99	7	107	287	159	155	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	71.5	84	82.7	71
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	7%	33%	46%
Vol Thru, %	27%	91%	42%	45%
Vol Right, %	72%	3%	25%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	274	297	263
LT Vol	5	18	97	121
Through Vol	81	249	125	118
RT Vol	218	7	75	24
Lane Flow Rate	400	361	391	346
Geometry Grp	1	1	1	1
Degree of Util (X)	1.02	0.967	1.021	0.959
Departure Headway (Hd)	9.4	9.895	9.629	10.207
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	388	368	379	356
Service Time	7.4	7.895	7.629	8.207
HCM Lane V/C Ratio	1.031	0.981	1.032	0.972
HCM Control Delay	82.7	71.5	84	71
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	12.6	10.8	12.5	10.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	251	133	47	45	10	151	289	226	15	381	49
Future Volume (veh/h)	30	251	133	47	45	10	151	289	226	15	381	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1900	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	44	369	187	69	66	5	222	425	266	22	560	19
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	76	385	195	96	625	531	264	892	553	40	1075	481
Arrive On Green	0.04	0.35	0.33	0.06	0.36	0.36	0.15	0.43	0.41	0.02	0.30	0.30
Sat Flow, veh/h	1691	1112	564	1660	1743	1482	1757	2079	1290	1792	3574	1599
Grp Volume(v), veh/h	44	0	556	69	66	5	222	358	333	22	560	19
Grp Sat Flow(s),veh/h/ln	1691	0	1676	1660	1743	1482	1757	1752	1617	1792	1787	1599
Q Serve(g_s), s	2.8	0.0	35.7	4.5	2.8	0.2	13.5	16.1	16.6	1.3	14.3	0.9
Cycle Q Clear(g_c), s	2.8	0.0	35.7	4.5	2.8	0.2	13.5	16.1	16.6	1.3	14.3	0.9
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	580	96	625	531	264	751	693	40	1075	481
V/C Ratio(X)	0.58	0.00	0.96	0.72	0.11	0.01	0.84	0.48	0.48	0.55	0.52	0.04
Avail Cap(c_a), veh/h	562	0	580	551	625	531	583	989	912	562	2016	902
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	35.5	50.9	23.5	22.7	45.4	22.5	23.2	53.2	31.9	27.2
Incr Delay (d2), s/veh	6.8	0.0	27.6	9.8	0.1	0.0	7.0	0.7	0.8	11.2	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	21.0	2.3	1.4	0.1	7.1	7.9	7.6	0.8	7.2	0.4
LnGrp Delay(d),s/veh	58.3	0.0	63.2	60.7	23.6	22.7	52.5	23.2	24.0	64.4	32.5	27.2
LnGrp LOS	E		E	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		600			140			913			601	
Approach Delay, s/veh		62.8			41.9			30.6			33.5	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	51.1	10.3	42.0	20.5	37.1	8.9	43.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	3.3	18.6	6.5	37.7	15.5	16.3	4.8	4.8
Green Ext Time (p_c), s	0.0	14.5	0.1	0.0	0.5	14.8	0.1	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	478	0	63	3	0	0	32	453	4	0	59	73
Future Volume (veh/h)	478	0	63	3	0	0	32	453	4	0	59	73
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	525	0	34	3	0	0	35	498	4	0	65	35
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	659	0	388	31	5	0	128	728	6	0	471	254
Arrive On Green	0.37	0.00	0.23	0.02	0.00	0.00	0.41	0.41	0.40	0.00	0.41	0.40
Sat Flow, veh/h	1774	0	1570	1774	1863	0	61	1758	14	0	1138	613
Grp Volume(v), veh/h	525	0	34	3	0	0	537	0	0	0	0	100
Grp Sat Flow(s),veh/h/ln	1774	0	1570	1774	1863	0	1833	0	0	0	0	1751
Q Serve(g_s), s	9.9	0.0	0.6	0.1	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.3
Cycle Q Clear(g_c), s	9.9	0.0	0.6	0.1	0.0	0.0	8.9	0.0	0.0	0.0	0.0	1.3
Prop In Lane	1.00		1.00	1.00		0.00	0.07		0.01	0.00		0.35
Lane Grp Cap(c), veh/h	659	0	388	31	5	0	862	0	0	0	0	725
V/C Ratio(X)	0.80	0.00	0.09	0.10	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.14
Avail Cap(c_a), veh/h	1710	0	1513	760	798	0	2823	0	0	0	0	2626
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	11.0	18.1	0.0	0.0	9.0	0.0	0.0	0.0	0.0	6.9
Incr Delay (d2), s/veh	2.3	0.0	0.1	1.3	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.3	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.7
LnGrp Delay(d),s/veh	12.7	0.0	11.1	19.4	0.0	0.0	9.8	0.0	0.0	0.0	0.0	6.9
LnGrp LOS	B		B	B			A					A
Approach Vol, veh/h		559			3			537			100	
Approach Delay, s/veh		12.6			19.4			9.8			6.9	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.7	13.2		19.5	17.9	0.0		19.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	2.1	2.6		10.9	11.9	0.0		3.3
Green Ext Time (p_c), s	0.0	0.1		3.9	1.6	0.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	0	42	0	0	9	34	590	5	3	779	44
Future Volume (veh/h)	116	0	42	0	0	9	34	590	5	3	779	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	166	0	11	0	0	2	49	843	7	4	1113	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	4	4	4	4
Cap, veh/h	307	0	249	0	0	243	73	1247	10	18	1187	984
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.14	0.04	0.69	0.67	0.01	0.65	0.00
Sat Flow, veh/h	1413	0	1599	0	0	1615	1740	1809	15	1740	1827	1553
Grp Volume(v), veh/h	166	0	11	0	0	2	49	0	850	4	1113	0
Grp Sat Flow(s),veh/h/ln	1413	0	1599	0	0	1615	1740	0	1824	1740	1827	1553
Q Serve(g_s), s	9.3	0.0	0.5	0.0	0.0	0.1	2.3	0.0	22.5	0.2	45.4	0.0
Cycle Q Clear(g_c), s	9.4	0.0	0.5	0.0	0.0	0.1	2.3	0.0	22.5	0.2	45.4	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	249	0	0	243	73	0	1258	18	1187	984
V/C Ratio(X)	0.54	0.00	0.04	0.00	0.00	0.01	0.67	0.00	0.68	0.22	0.94	0.00
Avail Cap(c_a), veh/h	683	0	672	0	0	477	723	0	1258	513	1217	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.6	0.0	29.8	0.0	0.0	30.2	39.2	0.0	7.5	40.8	13.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.1	0.0	0.0	0.0	10.2	0.0	1.7	6.2	13.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.2	0.0	0.0	0.0	1.3	0.0	11.7	0.1	26.8	0.0
LnGrp Delay(d),s/veh	35.1	0.0	29.9	0.0	0.0	30.2	49.5	0.0	9.2	46.9	26.7	0.0
LnGrp LOS	D		C			C	D		A	D	C	
Approach Vol, veh/h		177			2			899			1117	
Approach Delay, s/veh		34.8			30.2			11.4			26.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	61.3		16.9	7.5	58.6		16.9
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.2	24.5		11.4	4.3	47.4		2.1
Green Ext Time (p_c), s	0.0	23.6		0.9	0.1	5.3		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

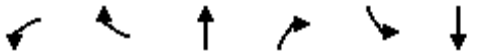
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	2	1	513	98	9
Future Vol, veh/h	15	2	1	513	98	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	3	18	18
Mvmt Flow	17	2	1	576	110	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	694	115	120	0	-	0
Stage 1	115	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	412	943	1462	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	412	943	1462	-	-	-
Mov Cap-2 Maneuver	412	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1462	-	441	-	-
HCM Lane V/C Ratio	0.001	-	0.043	-	-
HCM Control Delay (s)	7.5	0	13.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	357	224	182	367	313
Future Volume (veh/h)	195	357	224	182	367	313
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1743	1743	1792	1792
Adj Flow Rate, veh/h	224	164	257	58	422	360
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	9	9	6	6
Cap, veh/h	339	303	501	426	482	1164
Arrive On Green	0.19	0.19	0.29	0.29	0.28	0.65
Sat Flow, veh/h	1774	1583	1743	1482	1707	1792
Grp Volume(v), veh/h	224	164	257	58	422	360
Grp Sat Flow(s),veh/h/ln	1774	1583	1743	1482	1707	1792
Q Serve(g_s), s	5.9	4.7	6.2	1.5	11.8	4.4
Cycle Q Clear(g_c), s	5.9	4.7	6.2	1.5	11.8	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	339	303	501	426	482	1164
V/C Ratio(X)	0.66	0.54	0.51	0.14	0.88	0.31
Avail Cap(c_a), veh/h	752	671	1804	1533	679	1855
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	18.8	18.3	15.0	13.3	17.2	3.9
Incr Delay (d2), s/veh	0.8	0.6	0.9	0.2	7.1	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	2.9	2.1	3.0	0.6	6.5	2.2
LnGrp Delay(d),s/veh	19.6	18.9	15.8	13.4	24.3	4.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	388		315			782
Approach Delay, s/veh	19.3		15.4			14.9
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	18.2	18.5				36.6		13.6
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	13.8	8.2				6.4		7.9
Green Ext Time (p_c), s	0.4	4.3				4.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	487	140	168	442	128	249	590	159	105	554	160
Future Volume (veh/h)	191	487	140	168	442	128	249	590	159	105	554	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1881	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	208	529	129	183	480	39	271	641	58	114	602	39
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	244	891	216	220	1088	477	308	1107	488	143	774	340
Arrive On Green	0.14	0.32	0.30	0.12	0.30	0.30	0.17	0.31	0.31	0.08	0.22	0.22
Sat Flow, veh/h	1774	2789	676	1792	3574	1569	1774	3539	1559	1757	3505	1542
Grp Volume(v), veh/h	208	334	324	183	480	39	271	641	58	114	602	39
Grp Sat Flow(s),veh/h/ln	1774	1770	1695	1792	1787	1569	1774	1770	1559	1757	1752	1542
Q Serve(g_s), s	11.2	15.5	15.8	9.8	10.6	1.7	14.6	14.9	2.6	6.2	15.8	2.0
Cycle Q Clear(g_c), s	11.2	15.5	15.8	9.8	10.6	1.7	14.6	14.9	2.6	6.2	15.8	2.0
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	566	542	220	1088	477	308	1107	488	143	774	340
V/C Ratio(X)	0.85	0.59	0.60	0.83	0.44	0.08	0.88	0.58	0.12	0.80	0.78	0.11
Avail Cap(c_a), veh/h	381	688	659	385	1389	610	417	1122	494	252	789	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	27.9	28.3	41.9	27.3	24.3	39.4	28.2	24.0	44.1	35.8	30.5
Incr Delay (d2), s/veh	10.5	1.6	1.7	8.0	0.4	0.1	15.1	1.0	0.2	9.6	5.3	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	6.2	7.8	7.7	5.3	5.3	0.8	8.4	7.4	1.1	3.4	8.2	0.9
LnGrp Delay(d),s/veh	51.6	29.5	30.0	49.9	27.8	24.4	54.5	29.2	24.1	53.7	41.2	30.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	C
Approach Vol, veh/h		866			702			970			755	
Approach Delay, s/veh		35.0			33.4			36.0			42.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	34.6	16.0	35.2	21.0	25.6	17.5	33.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	13.2	16.9	11.8	17.8	16.6	17.8	13.2	12.6
Green Ext Time (p_c), s	0.1	8.2	0.3	9.7	0.4	2.0	0.3	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	71.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	476	119	13	474	32	181	45	35	29	113	48
Future Vol, veh/h	30	476	119	13	474	32	181	45	35	29	113	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	33	517	129	14	515	35	197	49	38	32	123	52
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	32.7	159.9	30.9	17.1
HCM LOS	D	F	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	69%	11%	0%	3%	20%	0%
Vol Thru, %	17%	89%	67%	91%	80%	0%
Vol Right, %	13%	0%	33%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	268	357	519	142	48
LT Vol	181	30	0	13	29	0
Through Vol	45	238	238	474	113	0
RT Vol	35	0	119	32	0	48
Lane Flow Rate	284	291	388	564	154	52
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.687	0.639	0.82	1.262	0.388	0.119
Departure Headway (Hd)	9.469	8.456	8.155	8.051	9.749	8.908
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	386	431	446	451	372	405
Service Time	7.469	6.156	5.855	6.095	7.449	6.608
HCM Lane V/C Ratio	0.736	0.675	0.87	1.251	0.414	0.128
HCM Control Delay	30.9	25	38.5	159.9	18.5	12.8
HCM Lane LOS	D	C	E	F	C	B
HCM 95th-tile Q	4.9	4.3	7.7	23.5	1.8	0.4



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	135	134	323	206	185
Future Volume (veh/h)	342	135	134	323	206	185
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1845	1900	1863	1863	1881	1881
Adj Flow Rate, veh/h	356	95	140	336	215	51
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	2	2	1	1
Cap, veh/h	1030	271	214	1123	335	299
Arrive On Green	0.38	0.34	0.12	0.60	0.19	0.19
Sat Flow, veh/h	2824	718	1774	1863	1792	1599
Grp Volume(v), veh/h	226	225	140	336	215	51
Grp Sat Flow(s),veh/h/ln	1752	1698	1774	1863	1792	1599
Q Serve(g_s), s	3.5	3.7	2.9	3.3	4.2	1.0
Cycle Q Clear(g_c), s	3.5	3.7	2.9	3.3	4.2	1.0
Prop In Lane		0.42	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	661	640	214	1123	335	299
V/C Ratio(X)	0.34	0.35	0.65	0.30	0.64	0.17
Avail Cap(c_a), veh/h	2271	2199	1147	2413	1158	1034
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	8.5	8.7	16.0	3.7	14.3	13.0
Incr Delay (d2), s/veh	0.4	0.5	3.4	0.2	2.1	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	1.8	1.8	1.6	1.7	2.3	0.5
LnGrp Delay(d),s/veh	8.9	9.2	19.3	3.9	16.3	13.3
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	451			476	266	
Approach Delay, s/veh	9.1			8.4	15.8	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.6	18.3		11.1		26.9		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	4.9	5.7		6.2		5.3		
Green Ext Time (p_c), s	0.3	7.3		0.7		7.3		

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	386	84	157	89	36	55
Future Vol, veh/h	386	84	157	89	36	55
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	420	91	171	97	39	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	269	0	-	0	1151	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	930	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1295	-	-	-	219	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	384	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1295	-	-	-	147	817
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	259	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1295	-	-	-	397
HCM Lane V/C Ratio	0.324	-	-	-	0.249
HCM Control Delay (s)	9.1	-	-	-	17.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.4	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	817	99	218	561	43	76	363	251	46	405	88
Future Volume (veh/h)	144	817	99	218	561	43	76	363	251	46	405	88
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1900
Adj Flow Rate, veh/h	157	888	46	237	610	15	83	395	109	50	440	89
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	183	1147	513	249	1270	567	99	644	547	62	473	96
Arrive On Green	0.10	0.32	0.32	0.14	0.36	0.36	0.06	0.36	0.36	0.04	0.34	0.34
Sat Flow, veh/h	1774	3539	1583	1757	3505	1566	1691	1776	1508	1630	1379	279
Grp Volume(v), veh/h	157	888	46	237	610	15	83	395	109	50	0	529
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1566	1691	1776	1508	1630	0	1658
Q Serve(g_s), s	10.4	27.2	2.4	16.1	16.1	0.7	5.8	21.9	6.0	3.7	0.0	37.0
Cycle Q Clear(g_c), s	10.4	27.2	2.4	16.1	16.1	0.7	5.8	21.9	6.0	3.7	0.0	37.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	183	1147	513	249	1270	567	99	644	547	62	0	568
V/C Ratio(X)	0.86	0.77	0.09	0.95	0.48	0.03	0.84	0.61	0.20	0.80	0.00	0.93
Avail Cap(c_a), veh/h	207	1147	513	249	1270	567	99	644	547	122	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.9	36.6	28.2	51.1	29.5	24.6	56.0	31.3	26.3	57.3	0.0	38.1
Incr Delay (d2), s/veh	23.7	5.1	0.3	43.9	1.3	0.1	42.8	2.0	0.3	8.5	0.0	20.5
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	6.3	14.1	1.1	10.8	8.0	0.3	3.9	11.1	2.5	1.8	0.0	20.1
LnGrp Delay(d),s/veh	76.6	41.7	28.6	95.0	30.8	24.7	98.8	33.4	26.5	65.8	0.0	58.7
LnGrp LOS	E	D	C	F	C	C	F	C	C	E		E
Approach Vol, veh/h		1091			862			587			579	
Approach Delay, s/veh		46.2			48.4			41.4			59.3	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	42.9	11.0	45.1	16.4	47.5	8.6	47.5
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	17.0	34.0	7.0	43.1	14.0	37.0	9.0	41.1
Max Q Clear Time (g_c+I1), s	18.1	29.2	7.8	39.0	12.4	18.1	5.7	23.9
Green Ext Time (p_c), s	0.0	4.4	0.0	1.3	0.0	15.5	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.3
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	740	140	188	631	99	140	446	143	100	611	65
Future Volume (veh/h)	124	740	140	188	631	99	140	446	143	100	611	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1881	1881	1881	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	135	804	56	204	686	44	152	485	131	109	664	18
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	2	2	2
Cap, veh/h	159	2028	619	233	2269	696	177	774	208	132	900	395
Arrive On Green	0.09	0.40	0.40	0.04	0.15	0.15	0.10	0.28	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1757	5036	1538	1792	5136	1575	1792	2777	745	1774	3539	1552
Grp Volume(v), veh/h	135	804	56	204	686	44	152	311	305	109	664	18
Grp Sat Flow(s),veh/h/ln	1757	1679	1538	1792	1712	1575	1792	1787	1735	1774	1770	1552
Q Serve(g_s), s	10.6	15.9	3.2	15.9	16.7	3.4	11.7	21.3	21.6	8.5	24.1	1.2
Cycle Q Clear(g_c), s	10.6	15.9	3.2	15.9	16.7	3.4	11.7	21.3	21.6	8.5	24.1	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	159	2028	619	233	2269	696	177	498	483	132	900	395
V/C Ratio(X)	0.85	0.40	0.09	0.88	0.30	0.06	0.86	0.62	0.63	0.82	0.74	0.05
Avail Cap(c_a), veh/h	238	2028	619	333	2269	696	269	587	570	203	1036	455
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	29.7	25.9	65.9	40.5	34.8	62.1	44.1	44.5	63.9	47.9	39.4
Incr Delay (d2), s/veh	16.3	0.6	0.3	13.9	0.3	0.1	15.6	2.0	2.2	14.8	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	7.5	1.4	8.8	8.0	1.5	6.6	10.8	10.7	4.7	12.1	0.5
LnGrp Delay(d),s/veh	79.0	30.3	26.2	79.8	40.8	34.9	77.7	46.1	46.6	78.7	50.7	39.5
LnGrp LOS	E	C	C	E	D	C	E	D	D	E	D	D
Approach Vol, veh/h		995			934			768			791	
Approach Delay, s/veh		36.7			49.0			52.6			54.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.2	60.4	17.9	39.6	16.7	65.9	14.4	43.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	26.0	34.7	21.0	39.7	19.0	41.7	16.0	44.7
Max Q Clear Time (g_c+I1), s	17.7	17.9	13.7	26.1	12.6	18.7	10.5	23.6
Green Ext Time (p_c), s	0.3	11.1	0.2	8.2	0.2	13.8	0.1	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	801	135	258	797	97	148	489	162	232	655	69
Future Volume (veh/h)	139	801	135	258	797	97	148	489	162	232	655	69
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	151	871	46	280	866	95	161	532	152	252	712	68
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	175	1639	496	306	1839	201	185	651	185	277	959	91
Arrive On Green	0.13	0.42	0.42	0.17	0.39	0.38	0.10	0.24	0.23	0.15	0.29	0.28
Sat Flow, veh/h	1792	5136	1554	1792	4689	512	1774	2701	768	1792	3292	314
Grp Volume(v), veh/h	151	871	46	280	631	330	161	348	336	252	386	394
Grp Sat Flow(s),veh/h/ln	1792	1712	1554	1792	1712	1777	1774	1770	1700	1792	1787	1819
Q Serve(g_s), s	11.6	17.6	2.5	21.5	19.2	19.4	12.5	26.0	26.3	19.4	27.4	27.4
Cycle Q Clear(g_c), s	11.6	17.6	2.5	21.5	19.2	19.4	12.5	26.0	26.3	19.4	27.4	27.4
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.45	1.00		0.17
Lane Grp Cap(c), veh/h	175	1639	496	306	1343	697	185	426	409	277	521	530
V/C Ratio(X)	0.86	0.53	0.09	0.91	0.47	0.47	0.87	0.82	0.82	0.91	0.74	0.74
Avail Cap(c_a), veh/h	256	1639	496	384	1343	697	228	442	425	333	549	559
HCM Platoon Ratio	1.33	1.33	1.33	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	32.5	28.1	57.0	31.7	31.9	61.8	50.2	50.6	58.2	44.9	45.0
Incr Delay (d2), s/veh	16.0	1.1	0.3	22.7	1.2	2.3	24.6	11.5	12.4	24.9	5.5	5.5
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	6.5	8.5	1.1	12.6	9.3	10.0	7.4	14.1	13.8	11.5	14.3	14.6
LnGrp Delay(d),s/veh	76.0	33.6	28.5	79.7	32.9	34.2	86.4	61.7	63.0	83.1	50.4	50.5
LnGrp LOS	E	C	C	E	C	C	F	E	E	F	D	D
Approach Vol, veh/h		1068			1241			845			1032	
Approach Delay, s/veh		39.4			43.8			66.9			58.4	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.9	48.7	18.6	44.8	17.7	58.9	25.7	37.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	30.0	31.7	18.0	41.7	20.0	41.7	26.0	33.7
Max Q Clear Time (g_c+I1), s	23.5	19.6	14.5	29.4	13.6	21.4	21.4	28.3
Green Ext Time (p_c), s	0.4	9.6	0.1	8.2	0.2	14.5	0.3	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	50.9
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	373	215	190	647	59	264	901	125	77	777	388
Future Volume (veh/h)	326	373	215	190	647	59	264	901	125	77	777	388
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	354	405	162	207	703	61	287	979	89	84	845	346
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	381	1174	784	232	813	70	312	1361	593	104	946	415
Arrive On Green	0.21	0.33	0.32	0.13	0.25	0.24	0.18	0.38	0.38	0.06	0.27	0.27
Sat Flow, veh/h	1792	3574	1568	1792	3316	287	1774	3539	1543	1774	3539	1553
Grp Volume(v), veh/h	354	405	162	207	379	385	287	979	89	84	845	346
Grp Sat Flow(s),veh/h/ln	1792	1787	1568	1792	1787	1816	1774	1770	1543	1774	1770	1553
Q Serve(g_s), s	31.4	13.9	9.4	18.4	32.8	32.9	25.7	38.1	6.1	7.6	37.2	34.0
Cycle Q Clear(g_c), s	31.4	13.9	9.4	18.4	32.8	32.9	25.7	38.1	6.1	7.6	37.2	34.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1174	784	232	438	445	312	1361	593	104	946	415
V/C Ratio(X)	0.93	0.35	0.21	0.89	0.86	0.87	0.92	0.72	0.15	0.81	0.89	0.83
Avail Cap(c_a), veh/h	709	1174	784	487	500	509	483	1361	593	263	1000	439
HCM Platoon Ratio	1.00	1.00	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	62.5	41.1	22.9	69.3	58.5	58.6	65.5	42.3	32.5	75.2	57.0	55.9
Incr Delay (d2), s/veh	10.2	0.2	0.2	11.3	14.0	13.9	16.5	2.1	0.2	13.6	10.4	13.3
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	16.6	6.9	4.1	9.9	17.9	18.2	14.0	19.0	2.6	4.1	19.6	16.1
LnGrp Delay(d),s/veh	72.7	41.4	23.1	80.6	72.5	72.5	82.1	44.4	32.7	88.8	67.4	69.2
LnGrp LOS	E	D	C	F	E	E	F	D	C	F	E	E
Approach Vol, veh/h		921			971			1355			1275	
Approach Delay, s/veh		50.2			74.2			51.6			69.3	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.9	57.1	32.5	47.3	38.4	43.7	13.5	66.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	14.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	20.4	15.9	27.7	39.2	33.4	34.9	9.6	40.1
Green Ext Time (p_c), s	0.5	12.1	0.7	2.4	1.0	3.5	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	61.2
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	108
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	294	355	361	391
Future Vol, veh/h	343	0	294	355	361	391
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	350	0	300	362	368	399
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	28.9	36.5	205.9
HCM LOS	D	E	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	48%
Vol Thru, %	0%	100%	22%	0%
Vol Right, %	0%	0%	78%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	196	453	752
LT Vol	343	0	0	361
Through Vol	0	196	98	0
RT Vol	0	0	355	391
Lane Flow Rate	350	200	462	767
Geometry Grp	5	7	7	2
Degree of Util (X)	0.704	0.409	0.875	1.39
Departure Headway (Hd)	8.364	8.491	7.921	6.523
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	434	426	462	560
Service Time	6.364	6.191	5.621	4.55
HCM Lane V/C Ratio	0.806	0.469	1	1.37
HCM Control Delay	28.9	16.9	45	205.9
HCM Lane LOS	D	C	E	F
HCM 95th-tile Q	5.3	2	9.2	35

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	48	1	107	230	500	0	0	338	228
Future Vol, veh/h	25	0	0	48	1	107	230	500	0	0	338	228
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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, %	0	0	0	5	5	5	12	12	12	5	5	5
Mvmt Flow	26	0	0	51	1	113	242	526	0	0	356	240

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1189	1610	263	599	0	-	-	-	0
Stage 1	1011	1011	-	-	-	-	-	-	-
Stage 2	178	599	-	-	-	-	-	-	-
Critical Hdwy	6.9	6.6	7	4.34	-	-	-	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.9	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	2.32	-	-	-	-	-
Pot Cap-1 Maneuver	176	101	726	909	-	0	0	-	-
Stage 1	306	309	-	-	-	0	0	-	-
Stage 2	826	481	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	129	0	726	909	-	-	-	-	-
Mov Cap-2 Maneuver	129	0	-	-	-	-	-	-	-
Stage 1	225	0	-	-	-	-	-	-	-
Stage 2	826	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31	3.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	909	-	298	-	-
HCM Lane V/C Ratio	0.266	-	0.551	-	-
HCM Control Delay (s)	10.4	-	31	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	1.1	-	3.1	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	6	5	37	7	79	6	505	0	0	418	21
Future Vol, veh/h	27	6	5	37	7	79	6	505	0	0	418	21
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	7	7	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	9	9	9	2	2	2	2	2	2
Mvmt Flow	29	7	5	40	8	86	7	549	0	0	454	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	761	1032	243	792	1043	274	481	0	-	-	-	0
Stage 1	470	470	-	562	562	-	-	-	-	-	-	-
Stage 2	291	562	-	230	481	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.7	7.1	7.68	6.68	7.08	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	3.59	4.09	3.39	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	280	219	734	268	217	703	1078	-	0	0	-	-
Stage 1	523	539	-	462	491	-	-	-	0	0	-	-
Stage 2	671	488	-	732	535	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	237	217	731	259	215	703	1078	-	-	-	-	-
Mov Cap-2 Maneuver	237	217	-	259	215	-	-	-	-	-	-	-
Stage 1	518	537	-	459	488	-	-	-	-	-	-	-
Stage 2	576	485	-	718	533	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	17.2	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1078	-	256	427	-	-
HCM Lane V/C Ratio	0.006	-	0.161	0.313	-	-
HCM Control Delay (s)	8.4	-	21.7	17.2	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	1.3	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	5	874	128	14	342
Future Vol, veh/h	22	5	874	128	14	342
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	950	139	15	372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1422	1020	0	0	1089	0
Stage 1	1020	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	150	287	-	-	641	-
Stage 1	348	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	287	-	-	641	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	146	287	641	-
HCM Lane V/C Ratio	-	-	0.164	0.019	0.024	-
HCM Control Delay (s)	-	-	34.4	17.8	10.8	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	89	9	102	212	87	6	76	94	92	171	26
Future Vol, veh/h	16	89	9	102	212	87	6	76	94	92	171	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	91	9	104	216	89	6	78	96	94	174	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	16.9	11.1	13.9
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	14%	25%	32%
Vol Thru, %	43%	78%	53%	59%
Vol Right, %	53%	8%	22%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	114	401	289
LT Vol	6	16	102	92
Through Vol	76	89	212	171
RT Vol	94	9	87	26
Lane Flow Rate	180	116	409	295
Geometry Grp	1	1	1	1
Degree of Util (X)	0.285	0.194	0.616	0.471
Departure Headway (Hd)	5.708	6.015	5.417	5.753
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	625	592	663	622
Service Time	3.785	4.1	3.476	3.82
HCM Lane V/C Ratio	0.288	0.196	0.617	0.474
HCM Control Delay	11.1	10.6	16.9	13.9
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.2	0.7	4.2	2.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	94	119	317	251	8	123	232	161	9	158	26
Future Volume (veh/h)	43	94	119	317	251	8	123	232	161	9	158	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	44	97	99	327	259	3	127	239	97	9	163	6
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	107	188	192	405	725	616	184	693	273	31	671	292
Arrive On Green	0.06	0.22	0.19	0.23	0.39	0.39	0.10	0.27	0.24	0.02	0.19	0.19
Sat Flow, veh/h	1792	855	872	1774	1863	1583	1810	2531	998	1774	3539	1538
Grp Volume(v), veh/h	44	0	196	327	259	3	127	168	168	9	163	6
Grp Sat Flow(s),veh/h/ln	1792	0	1727	1774	1863	1583	1810	1805	1724	1774	1770	1538
Q Serve(g_s), s	1.5	0.0	6.2	10.7	6.1	0.1	4.2	4.6	4.9	0.3	2.4	0.2
Cycle Q Clear(g_c), s	1.5	0.0	6.2	10.7	6.1	0.1	4.2	4.6	4.9	0.3	2.4	0.2
Prop In Lane	1.00		0.51	1.00		1.00	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	107	0	381	405	725	616	184	494	472	31	671	292
V/C Ratio(X)	0.41	0.00	0.51	0.81	0.36	0.00	0.69	0.34	0.36	0.29	0.24	0.02
Avail Cap(c_a), veh/h	1063	0	1067	1052	1150	978	1073	1819	1737	995	3566	1550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	21.6	22.5	13.3	11.5	26.7	17.9	18.5	29.9	21.2	20.3
Incr Delay (d2), s/veh	2.5	0.0	1.6	3.8	0.5	0.0	4.6	0.6	0.7	5.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.1	5.7	3.2	0.0	2.3	2.4	2.4	0.2	1.2	0.1
LnGrp Delay(d),s/veh	30.4	0.0	23.2	26.3	13.8	11.5	31.3	18.5	19.2	35.0	21.5	20.3
LnGrp LOS	C		C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		240			589			463			178	
Approach Delay, s/veh		24.5			20.7			22.3			22.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	20.8	18.1	17.6	10.2	15.7	7.7	27.9
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.6	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.3	6.9	12.7	8.2	6.2	4.4	3.5	8.1
Green Ext Time (p_c), s	0.0	4.6	0.9	3.8	0.3	4.6	0.1	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	0	58	0	0	0	65	127	0	0	325	508
Future Volume (veh/h)	203	0	58	0	0	0	65	127	0	0	325	508
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1900	1900	1881	1900
Adj Flow Rate, veh/h	209	0	17	0	0	0	67	131	0	0	335	491
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	276	0	246	4	4	0	224	391	0	0	443	650
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.00	0.65	0.65	0.00	0.00	0.65	0.65
Sat Flow, veh/h	1774	0	1583	1774	1863	0	186	599	0	0	679	995
Grp Volume(v), veh/h	209	0	17	0	0	0	198	0	0	0	0	826
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	0	785	0	0	0	0	1675
Q Serve(g_s), s	5.3	0.0	0.4	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	15.9
Cycle Q Clear(g_c), s	5.3	0.0	0.4	0.0	0.0	0.0	18.4	0.0	0.0	0.0	0.0	15.9
Prop In Lane	1.00		1.00	1.00		0.00	0.34		0.00	0.00		0.59
Lane Grp Cap(c), veh/h	276	0	246	4	4	0	615	0	0	0	0	1093
V/C Ratio(X)	0.76	0.00	0.07	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.76
Avail Cap(c_a), veh/h	1154	0	1199	586	814	0	1221	0	0	0	0	1982
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	16.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	5.6
Incr Delay (d2), s/veh	4.2	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.2	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	7.4
LnGrp Delay(d),s/veh	23.2	0.0	17.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	6.7
LnGrp LOS	C		B				A					A
Approach Vol, veh/h		226			0			198			826	
Approach Delay, s/veh		22.7			0.0			5.3			6.7	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	11.8		35.1	11.8	0.0		35.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	10.0	2.4		20.4	7.3	0.0		17.9
Green Ext Time (p_c), s	0.0	0.0		10.2	0.5	0.0		10.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	38	3	1	5	52	709	19	10	598	97
Future Volume (veh/h)	58	0	38	3	1	5	52	709	19	10	598	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	62	0	5	3	1	1	55	754	20	11	636	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	255	0	106	130	12	7	94	1230	33	38	1172	955
Arrive On Green	0.05	0.00	0.07	0.05	0.06	0.05	0.05	0.67	0.63	0.02	0.63	0.00
Sat Flow, veh/h	1682	0	1599	277	202	120	1792	1824	48	1774	1863	1583
Grp Volume(v), veh/h	62	0	5	5	0	0	55	0	774	11	636	0
Grp Sat Flow(s),veh/h/ln	1682	0	1599	599	0	0	1792	0	1873	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.0	1.5	0.0	11.6	0.3	9.7	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.1	1.7	0.0	0.0	1.5	0.0	11.6	0.3	9.7	0.0
Prop In Lane	1.00		1.00	0.60		0.20	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	225	0	106	143	0	0	94	0	1263	38	1172	955
V/C Ratio(X)	0.28	0.00	0.05	0.03	0.00	0.00	0.58	0.00	0.61	0.29	0.54	0.00
Avail Cap(c_a), veh/h	1115	0	1106	803	0	0	1225	0	2079	862	2042	1695
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.2	0.0	22.0	22.6	0.0	0.0	23.4	0.0	4.6	24.3	5.3	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.1	0.0	0.0	5.6	0.0	0.7	4.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.1	0.1	0.0	0.0	0.9	0.0	6.1	0.2	5.1	0.0
LnGrp Delay(d),s/veh	23.9	0.0	22.2	22.7	0.0	0.0	29.0	0.0	5.3	28.5	5.9	0.0
LnGrp LOS	C		C	C			C		A	C	A	
Approach Vol, veh/h		67			5			829			647	
Approach Delay, s/veh		23.8			22.7			6.9			6.3	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	38.0		7.4	6.6	36.4		7.4
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.3	13.6		3.7	3.5	11.7		3.7
Green Ext Time (p_c), s	0.0	18.4		0.3	0.1	18.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Notes

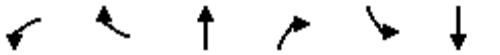
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	159	429	12
Future Vol, veh/h	5	2	2	159	429	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	5	2	2	167	452	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	630	458	464	0	-	0
Stage 1	458	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	449	607	1097	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	448	607	1097	-	-	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1097	-	484	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	8.3	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	217	297	320	236	340	318
Future Volume (veh/h)	217	297	320	236	340	318
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1863	1863	1863	1863
Adj Flow Rate, veh/h	221	117	327	73	347	324
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	2	2	2	2
Cap, veh/h	340	303	607	514	414	1198
Arrive On Green	0.19	0.19	0.33	0.33	0.23	0.64
Sat Flow, veh/h	1792	1599	1863	1576	1774	1863
Grp Volume(v), veh/h	221	117	327	73	347	324
Grp Sat Flow(s),veh/h/ln	1792	1599	1863	1576	1774	1863
Q Serve(g_s), s	5.5	3.1	6.9	1.6	8.9	3.6
Cycle Q Clear(g_c), s	5.5	3.1	6.9	1.6	8.9	3.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	340	303	607	514	414	1198
V/C Ratio(X)	0.65	0.39	0.54	0.14	0.84	0.27
Avail Cap(c_a), veh/h	798	713	2027	1715	742	2027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	16.9	13.2	11.4	17.5	3.7
Incr Delay (d2), s/veh	0.8	0.3	0.8	0.1	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.3	3.6	0.7	4.5	1.8
LnGrp Delay(d),s/veh	18.7	17.2	14.0	11.5	19.2	3.8
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	338		400			671
Approach Delay, s/veh	18.2		13.5			11.8
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.2	19.6				34.7		13.1
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	10.9	8.9				5.6		7.5
Green Ext Time (p_c), s	0.4	4.5				4.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	674	199	239	509	66	355	720	293	144	577	247
Future Volume (veh/h)	163	674	199	239	509	66	355	720	293	144	577	247
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	166	688	179	244	519	22	362	735	121	147	589	50
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	197	857	223	275	1256	552	369	1078	481	176	690	299
Arrive On Green	0.11	0.31	0.29	0.15	0.35	0.35	0.20	0.30	0.30	0.10	0.19	0.19
Sat Flow, veh/h	1792	2781	723	1792	3574	1572	1810	3610	1610	1792	3574	1550
Grp Volume(v), veh/h	166	442	425	244	519	22	362	735	121	147	589	50
Grp Sat Flow(s),veh/h/ln	1792	1787	1717	1792	1787	1572	1810	1805	1610	1792	1787	1550
Q Serve(g_s), s	10.3	25.7	25.8	15.1	12.4	1.0	22.5	20.2	6.4	9.1	18.0	3.0
Cycle Q Clear(g_c), s	10.3	25.7	25.8	15.1	12.4	1.0	22.5	20.2	6.4	9.1	18.0	3.0
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	551	529	275	1256	552	369	1078	481	176	690	299
V/C Ratio(X)	0.84	0.80	0.80	0.89	0.41	0.04	0.98	0.68	0.25	0.84	0.85	0.17
Avail Cap(c_a), veh/h	333	601	578	333	1256	552	369	1078	481	222	696	302
HCM Platoon Ratio	1.00	1.00	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	49.3	35.9	36.3	46.9	27.8	24.1	44.8	34.9	30.0	50.0	44.0	38.0
Incr Delay (d2), s/veh	9.2	7.9	8.3	21.3	0.3	0.0	42.0	2.1	0.4	19.4	10.5	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	5.6	13.9	13.4	9.1	6.2	0.5	15.6	10.4	2.9	5.4	9.8	1.3
LnGrp Delay(d),s/veh	58.5	43.8	44.5	68.1	28.1	24.1	86.7	36.9	30.5	69.5	54.5	38.4
LnGrp LOS	E	D	D	E	C	C	F	D	C	E	D	D
Approach Vol, veh/h		1033			785			1218			786	
Approach Delay, s/veh		46.5			40.5			51.1			56.3	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	37.7	21.3	38.8	27.0	25.8	16.4	43.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	11.1	22.2	17.1	27.8	24.5	20.0	12.3	14.4
Green Ext Time (p_c), s	0.1	5.5	0.2	5.3	0.0	0.1	0.3	13.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	75.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	563	129	33	503	34	108	118	15	51	84	75
Future Vol, veh/h	97	563	129	33	503	34	108	118	15	51	84	75
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	99	574	132	34	513	35	110	120	15	52	86	77
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	40.7	166.7	25.7	15.9
HCM LOS	E	F	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	45%	26%	0%	6%	38%	0%
Vol Thru, %	49%	74%	69%	88%	62%	0%
Vol Right, %	6%	0%	31%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	379	411	570	135	75
LT Vol	108	97	0	33	51	0
Through Vol	118	282	282	503	84	0
RT Vol	15	0	129	34	0	75
Lane Flow Rate	246	386	419	582	138	77
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.596	0.824	0.853	1.281	0.344	0.172
Departure Headway (Hd)	9.562	8.284	7.923	7.927	9.705	8.774
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	381	440	461	465	373	412
Service Time	7.562	5.984	5.623	5.927	7.405	6.474
HCM Lane V/C Ratio	0.646	0.877	0.909	1.252	0.37	0.187
HCM Control Delay	25.7	39.5	41.9	166.7	17.4	13.3
HCM Lane LOS	D	E	E	F	C	B
HCM 95th-tile Q	3.7	7.8	8.6	24.8	1.5	0.6



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	347	241	203	419	148	141
Future Volume (veh/h)	347	241	203	419	148	141
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1863	1900	1881	1881	1881	1881
Adj Flow Rate, veh/h	386	131	226	466	164	33
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	1051	352	320	1270	258	230
Arrive On Green	0.41	0.38	0.18	0.67	0.14	0.14
Sat Flow, veh/h	2684	867	1792	1881	1792	1599
Grp Volume(v), veh/h	262	255	226	466	164	33
Grp Sat Flow(s),veh/h/ln	1770	1688	1792	1881	1792	1599
Q Serve(g_s), s	4.6	4.8	5.2	4.7	3.8	0.8
Cycle Q Clear(g_c), s	4.6	4.8	5.2	4.7	3.8	0.8
Prop In Lane		0.51	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	718	685	320	1270	258	230
V/C Ratio(X)	0.36	0.37	0.71	0.37	0.64	0.14
Avail Cap(c_a), veh/h	1977	1886	999	2102	999	891
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	9.1	9.4	17.0	3.1	17.8	16.5
Incr Delay (d2), s/veh	0.4	0.5	2.9	0.3	2.6	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	2.3	2.3	2.8	2.4	2.1	0.4
LnGrp Delay(d),s/veh	9.6	9.9	19.9	3.4	20.4	16.8
LnGrp LOS	A	A	B	A	C	B
Approach Vol, veh/h	517			692	197	
Approach Delay, s/veh	9.7			8.8	19.8	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.9	21.9		10.3		33.8		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	7.2	6.8		5.8		6.7		
Green Ext Time (p_c), s	0.5	9.9		0.5		9.9		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	119	145	132	28	113	317
Future Vol, veh/h	119	145	132	28	113	317
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	132	161	147	31	126	352

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	178	0	-	0	588	162
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1392	-	-	-	473	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1392	-	-	-	428	885
Mov Cap-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1392	-	-	-	738
HCM Lane V/C Ratio	0.095	-	-	-	0.647
HCM Control Delay (s)	7.9	-	-	-	18.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	856	133	279	920	110	101	439	367	121	365	129
Future Volume (veh/h)	125	856	133	279	920	110	101	439	367	121	365	129
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	128	873	80	285	939	45	103	448	184	123	372	122
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	179	1177	526	310	1375	615	123	550	461	147	415	136
Arrive On Green	0.10	0.33	0.33	0.17	0.38	0.38	0.07	0.30	0.30	0.08	0.31	0.30
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1344	441
Grp Volume(v), veh/h	128	873	80	285	939	45	103	448	184	123	0	494
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	0	1785
Q Serve(g_s), s	8.9	28.0	4.6	20.3	28.5	1.7	7.5	29.0	12.2	8.9	0.0	34.4
Cycle Q Clear(g_c), s	8.9	28.0	4.6	20.3	28.5	1.7	7.5	29.0	12.2	8.9	0.0	34.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	179	1177	526	310	1375	615	123	550	461	147	0	551
V/C Ratio(X)	0.72	0.74	0.15	0.92	0.68	0.07	0.84	0.81	0.40	0.84	0.00	0.90
Avail Cap(c_a), veh/h	181	1177	526	331	1375	615	123	573	480	150	0	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.8	39.0	31.1	52.9	33.4	13.0	59.8	42.5	36.6	58.8	0.0	43.0
Incr Delay (d2), s/veh	10.8	4.2	0.6	28.9	2.8	0.2	35.9	9.0	0.8	30.0	0.0	16.2
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	5.0	14.6	2.1	12.5	14.6	0.8	4.9	16.3	5.4	5.6	0.0	19.4
LnGrp Delay(d),s/veh	67.6	43.2	31.7	81.8	36.2	13.2	95.6	51.5	37.4	88.8	0.0	59.3
LnGrp LOS	E	D	C	F	D	B	F	D	D	F		E
Approach Vol, veh/h		1081			1269			735			617	
Approach Delay, s/veh		45.2			45.6			54.2			65.2	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	46.4	13.0	44.1	18.9	54.0	14.8	42.4
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	24.0	37.0	9.0	41.1	13.0	* 48	11.0	39.1
Max Q Clear Time (g_c+I1), s	22.3	30.0	9.5	36.4	10.9	30.5	10.9	31.0
Green Ext Time (p_c), s	0.1	5.1	0.0	2.8	0.2	11.0	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	1081	196	227	988	163	267	725	111	162	660	140
Future Volume (veh/h)	227	1081	196	227	988	163	267	725	111	162	660	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	229	1092	68	229	998	63	270	732	104	164	667	33
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	1844	563	254	1861	568	293	946	134	186	863	374
Arrive On Green	0.14	0.36	0.36	0.05	0.12	0.12	0.16	0.30	0.29	0.10	0.24	0.24
Sat Flow, veh/h	1792	5136	1568	1810	5187	1583	1810	3173	451	1810	3610	1564
Grp Volume(v), veh/h	229	1092	68	229	998	63	270	416	420	164	667	33
Grp Sat Flow(s),veh/h/ln	1792	1712	1568	1810	1729	1583	1810	1805	1819	1810	1805	1564
Q Serve(g_s), s	20.2	27.7	4.6	20.2	29.0	5.7	23.5	33.7	33.7	14.3	27.6	2.6
Cycle Q Clear(g_c), s	20.2	27.7	4.6	20.2	29.0	5.7	23.5	33.7	33.7	14.3	27.6	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	251	1844	563	254	1861	568	293	538	542	186	863	374
V/C Ratio(X)	0.91	0.59	0.12	0.90	0.54	0.11	0.92	0.77	0.77	0.88	0.77	0.09
Avail Cap(c_a), veh/h	314	1844	563	305	1861	568	351	587	591	226	925	401
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.8	41.7	34.4	75.2	58.0	47.7	66.1	51.2	51.4	70.8	56.8	47.3
Incr Delay (d2), s/veh	25.7	1.4	0.4	17.3	0.7	0.2	26.5	6.4	6.3	27.3	4.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	13.4	2.1	11.3	14.0	2.5	13.9	17.7	17.9	8.6	14.3	1.1
LnGrp Delay(d),s/veh	93.5	43.2	34.8	92.6	58.7	48.0	92.6	57.6	57.7	98.1	61.0	47.5
LnGrp LOS	F	D	C	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		1389			1290			1106			864	
Approach Delay, s/veh		51.0			64.2			66.2			67.5	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	61.4	29.9	42.3	26.5	61.4	20.4	51.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	27.0	43.7	31.0	39.7	28.0	42.7	20.0	50.7
Max Q Clear Time (g_c+I1), s	22.2	29.7	25.5	29.6	22.2	31.0	16.3	35.7
Green Ext Time (p_c), s	0.3	11.9	0.4	7.4	0.3	10.2	0.1	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.3
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	1180	174	249	1070	81	272	724	193	327	661	119
Future Volume (veh/h)	146	1180	174	249	1070	81	272	724	193	327	661	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	149	1204	96	254	1092	78	278	739	182	334	674	112
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	168	1502	457	260	1688	120	300	794	195	325	907	151
Arrive On Green	0.19	0.58	0.58	0.14	0.34	0.33	0.17	0.28	0.27	0.18	0.30	0.29
Sat Flow, veh/h	1792	5136	1562	1810	4932	352	1792	2809	692	1792	3061	508
Grp Volume(v), veh/h	149	1204	96	254	765	405	278	470	451	334	393	393
Grp Sat Flow(s),veh/h/ln	1792	1712	1562	1810	1729	1825	1792	1787	1714	1792	1787	1781
Q Serve(g_s), s	13.0	29.3	4.7	22.4	29.9	30.0	24.5	41.0	41.0	29.0	31.8	31.9
Cycle Q Clear(g_c), s	13.0	29.3	4.7	22.4	29.9	30.0	24.5	41.0	41.0	29.0	31.8	31.9
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.40	1.00		0.29
Lane Grp Cap(c), veh/h	168	1502	457	260	1183	625	300	505	484	325	530	528
V/C Ratio(X)	0.88	0.80	0.21	0.98	0.65	0.65	0.93	0.93	0.93	1.03	0.74	0.74
Avail Cap(c_a), veh/h	202	1502	457	260	1183	625	347	516	495	325	530	528
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)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	29.6	24.5	68.2	44.5	44.6	65.6	55.9	56.1	65.5	50.8	51.0
Incr Delay (d2), s/veh	23.9	3.4	0.8	49.1	2.7	5.1	28.1	23.8	24.5	57.5	6.0	6.0
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	7.5	14.1	2.1	14.8	14.7	16.1	14.5	23.6	22.7	19.5	16.6	16.6
LnGrp Delay(d),s/veh	88.0	32.9	25.2	117.3	47.2	49.7	93.7	79.7	80.7	123.0	56.7	57.0
LnGrp LOS	F	C	C	F	D	D	F	E	F	F	E	E
Approach Vol, veh/h		1449			1424			1199			1120	
Approach Delay, s/veh		38.1			60.4			83.3			76.6	
Approach LOS		D			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	50.8	30.8	51.4	19.0	58.8	33.0	49.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	44.5	31.0	42.9	18.0	49.5	29.0	44.9
Max Q Clear Time (g_c+I1), s	24.4	31.3	26.5	33.9	15.0	32.0	31.0	43.0
Green Ext Time (p_c), s	0.0	11.8	0.3	7.1	0.1	15.2	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	63.0
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	789	289	186	491	71	309	999	206	115	847	379
Future Volume (veh/h)	464	789	289	186	491	71	309	999	206	115	847	379
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	473	805	255	190	501	67	315	1019	139	117	864	316
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	498	1264	840	212	610	81	338	1317	578	137	910	395
Arrive On Green	0.28	0.35	0.34	0.12	0.19	0.18	0.19	0.36	0.36	0.08	0.25	0.25
Sat Flow, veh/h	1810	3610	1580	1792	3153	420	1810	3610	1584	1792	3574	1551
Grp Volume(v), veh/h	473	805	255	190	283	285	315	1019	139	117	864	316
Grp Sat Flow(s),veh/h/ln	1810	1805	1580	1792	1787	1786	1810	1805	1584	1792	1787	1551
Q Serve(g_s), s	45.6	33.2	16.2	18.6	27.0	27.3	30.5	44.4	10.9	11.5	42.3	33.9
Cycle Q Clear(g_c), s	45.6	33.2	16.2	18.6	27.0	27.3	30.5	44.4	10.9	11.5	42.3	33.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	498	1264	840	212	346	346	338	1317	578	137	910	395
V/C Ratio(X)	0.95	0.64	0.30	0.89	0.82	0.83	0.93	0.77	0.24	0.85	0.95	0.80
Avail Cap(c_a), veh/h	651	1264	840	443	459	459	448	1317	578	242	910	395
HCM Platoon Ratio	1.00	1.00	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	63.3	48.3	23.7	77.3	68.7	69.0	71.2	50.0	39.3	81.2	65.2	62.1
Incr Delay (d2), s/veh	20.5	1.2	0.3	12.3	9.6	10.2	22.6	3.2	0.3	13.7	18.9	11.9
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	25.7	16.8	7.1	10.0	14.3	14.4	17.3	22.8	4.8	6.2	23.3	15.8
LnGrp Delay(d),s/veh	83.8	49.5	24.0	89.6	78.3	79.2	93.9	53.2	39.7	94.8	84.1	73.9
LnGrp LOS	F	D	C	F	E	E	F	D	D	F	F	E
Approach Vol, veh/h		1533			758			1473			1297	
Approach Delay, s/veh		55.9			81.5			60.6			82.6	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	65.9	37.2	49.7	53.0	38.0	17.6	69.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	20.6	35.2	32.5	44.3	47.6	29.3	13.5	46.4
Green Ext Time (p_c), s	0.5	6.6	0.7	0.0	1.3	3.5	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.9
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	144.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	633	568	389	329
Future Vol, veh/h	290	0	633	568	389	329
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	646	580	397	336
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	23	164.2	160.7
HCM LOS	C	F	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	54%
Vol Thru, %	0%	100%	27%	0%
Vol Right, %	0%	0%	73%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	422	779	718
LT Vol	290	0	0	389
Through Vol	0	422	211	0
RT Vol	0	0	568	329
Lane Flow Rate	296	431	795	733
Geometry Grp	5	7	7	2
Degree of Util (X)	0.601	0.843	1.443	1.28
Departure Headway (Hd)	8.264	7.941	7.413	6.579
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	441	461	501	557
Service Time	6.264	5.641	5.113	4.579
HCM Lane V/C Ratio	0.671	0.935	1.587	1.316
HCM Control Delay	23	40.6	231.2	160.7
HCM Lane LOS	C	E	F	F
HCM 95th-tile Q	3.8	8.3	34.5	28.4

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	0	0	32	1	97	272	645	0	0	614	373
Future Vol, veh/h	80	0	0	32	1	97	272	645	0	0	614	373
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	2	2	2
Mvmt Flow	82	0	0	33	1	99	278	658	0	0	627	381

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1526	2227	329	1014	0	-	-	-	0
Stage 1	1213	1213	-	-	-	-	-	-	-
Stage 2	313	1014	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	4.24	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.27	-	-	-	-	-
Pot Cap-1 Maneuver	111	44	673	650	-	0	0	-	-
Stage 1	248	257	-	-	-	0	0	-	-
Stage 2	721	319	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	64	0	673	650	-	-	-	-	-
Mov Cap-2 Maneuver	64	0	-	-	-	-	-	-	-
Stage 1	142	0	-	-	-	-	-	-	-
Stage 2	721	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	52.7	4.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	650	-	200	-	-
HCM Lane V/C Ratio	0.427	-	0.663	-	-
HCM Control Delay (s)	14.6	-	52.7	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	2.1	-	4	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	17	7	25	9	88	16	528	0	0	528	48
Future Vol, veh/h	25	17	7	25	9	88	16	528	0	0	528	48
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	9	9	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	1	1	1	1	1	1	1	1
Mvmt Flow	28	19	8	28	10	98	18	587	0	0	587	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	953	1241	326	925	1268	293	646	0	-	-	-	0
Stage 1	619	619	-	622	622	-	-	-	-	-	-	-
Stage 2	334	622	-	303	646	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	217	176	676	225	169	706	942	-	0	0	-	-
Stage 1	448	483	-	443	479	-	-	-	0	0	-	-
Stage 2	659	482	-	684	468	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	175	172	672	201	165	706	942	-	-	-	-	-
Mov Cap-2 Maneuver	175	172	-	201	165	-	-	-	-	-	-	-
Stage 1	437	480	-	435	470	-	-	-	-	-	-	-
Stage 2	545	473	-	649	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.6	18.4	0.3	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	942	-	194	402	-	-
HCM Lane V/C Ratio	0.019	-	0.281	0.337	-	-
HCM Control Delay (s)	8.9	-	30.6	18.4	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	1.5	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	10.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	142	13	425	45	5	769
Future Vol, veh/h	142	13	425	45	5	769
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	14	462	49	5	836

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1333	486	0	0	511	0
Stage 1	486	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	170	581	-	-	1054	-
Stage 1	618	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	581	-	-	1054	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	94.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	169	581	1054	-
HCM Lane V/C Ratio	-	-	0.913	0.024	0.005	-
HCM Control Delay (s)	-	-	102.4	11.4	8.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	6.7	0.1	0	-

Intersection	
Intersection Delay, s/veh	83.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	18	249	7	104	125	75	5	81	247	121	118	24
Future Vol, veh/h	18	249	7	104	125	75	5	81	247	121	118	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	328	9	137	164	99	7	107	325	159	155	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	68.8	86.2	104.7	68.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	7%	34%	46%
Vol Thru, %	24%	91%	41%	45%
Vol Right, %	74%	3%	25%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	333	274	304	263
LT Vol	5	18	104	121
Through Vol	81	249	125	118
RT Vol	247	7	75	24
Lane Flow Rate	438	361	400	346
Geometry Grp	1	1	1	1
Degree of Util (X)	1.095	0.952	1.027	0.943
Departure Headway (Hd)	9.318	10.069	9.749	10.38
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	394	364	376	353
Service Time	7.318	8.069	7.749	8.38
HCM Lane V/C Ratio	1.112	0.992	1.064	0.98
HCM Control Delay	104.7	68.8	86.2	68.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	15.1	10.3	12.6	9.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	280	133	100	52	10	151	289	385	15	381	49
Future Volume (veh/h)	30	280	133	100	52	10	151	289	385	15	381	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1900	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	44	412	189	147	76	6	222	425	448	22	560	18
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	71	355	163	181	653	555	260	758	678	38	1094	489
Arrive On Green	0.04	0.31	0.29	0.11	0.37	0.37	0.15	0.43	0.42	0.02	0.31	0.31
Sat Flow, veh/h	1691	1153	529	1660	1743	1482	1757	1752	1568	1792	3574	1599
Grp Volume(v), veh/h	44	0	601	147	76	6	222	425	448	22	560	18
Grp Sat Flow(s),veh/h/ln	1691	0	1682	1660	1743	1482	1757	1752	1568	1792	1787	1599
Q Serve(g_s), s	3.2	0.0	38.0	10.7	3.5	0.3	15.2	22.4	28.4	1.5	15.9	1.0
Cycle Q Clear(g_c), s	3.2	0.0	38.0	10.7	3.5	0.3	15.2	22.4	28.4	1.5	15.9	1.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	0	518	181	653	555	260	758	678	38	1094	489
V/C Ratio(X)	0.62	0.00	1.16	0.81	0.12	0.01	0.86	0.56	0.66	0.58	0.51	0.04
Avail Cap(c_a), veh/h	500	0	518	491	653	555	519	880	787	501	1795	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	0.0	43.1	53.8	25.2	24.2	51.3	26.2	28.7	59.9	35.3	30.1
Incr Delay (d2), s/veh	8.6	0.0	92.1	8.5	0.1	0.0	7.9	1.0	2.2	13.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	30.8	5.3	1.7	0.1	8.0	11.1	12.7	0.9	7.9	0.4
LnGrp Delay(d),s/veh	66.8	0.0	135.2	62.3	25.4	24.2	59.2	27.2	30.9	73.0	35.8	30.1
LnGrp LOS	E		F	E	C	C	E	C	C	E	D	C
Approach Vol, veh/h		645			229			1095			600	
Approach Delay, s/veh		130.5			49.0			35.2			37.0	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	57.4	17.5	42.0	22.2	41.8	9.2	50.3
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.5	30.4	12.7	40.0	17.2	17.9	5.2	5.5
Green Ext Time (p_c), s	0.0	15.2	0.3	0.0	0.5	17.9	0.1	6.8

Intersection Summary		
HCM 2010 Ctrl Delay		60.8
HCM 2010 LOS		E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	559	88	81	60	47	0	36	546	87	0	154	82
Future Volume (veh/h)	559	88	81	60	47	0	36	546	87	0	154	82
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1827	1827	1900	1138	1138	1900	1900	1845	1900	1900	1696	1900
Adj Flow Rate, veh/h	614	97	63	66	52	0	40	600	92	0	169	74
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	67	67	67	3	3	3	12	12	12
Cap, veh/h	610	363	235	79	84	0	65	677	101	0	513	225
Arrive On Green	0.35	0.35	0.35	0.07	0.07	0.00	0.46	0.46	0.45	0.00	0.46	0.45
Sat Flow, veh/h	1740	1033	671	1084	1138	0	62	1475	221	0	1118	490
Grp Volume(v), veh/h	614	0	160	66	52	0	732	0	0	0	0	243
Grp Sat Flow(s),veh/h/ln	1740	0	1704	1084	1138	0	1758	0	0	0	0	1607
Q Serve(g_s), s	36.0	0.0	6.9	6.2	4.6	0.0	23.2	0.0	0.0	0.0	0.0	9.9
Cycle Q Clear(g_c), s	36.0	0.0	6.9	6.2	4.6	0.0	39.5	0.0	0.0	0.0	0.0	9.9
Prop In Lane	1.00		0.39	1.00		0.00	0.05		0.13	0.00		0.30
Lane Grp Cap(c), veh/h	610	0	598	79	84	0	844	0	0	0	0	738
V/C Ratio(X)	1.01	0.00	0.27	0.84	0.62	0.00	0.87	0.00	0.00	0.00	0.00	0.33
Avail Cap(c_a), veh/h	610	0	598	169	177	0	993	0	0	0	0	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	23.9	47.0	46.2	0.0	25.6	0.0	0.0	0.0	0.0	17.7
Incr Delay (d2), s/veh	38.1	0.0	0.2	19.7	7.4	0.0	7.3	0.0	0.0	0.0	0.0	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	23.6	0.0	3.3	2.3	1.6	0.0	20.8	0.0	0.0	0.0	0.0	4.4
LnGrp Delay(d),s/veh	71.5	0.0	24.2	66.7	53.6	0.0	32.9	0.0	0.0	0.0	0.0	18.0
LnGrp LOS	F		C	E	D		C					B
Approach Vol, veh/h		774			118			732			243	
Approach Delay, s/veh		61.7			60.9			32.9			18.0	
Approach LOS		E			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	40.1		51.2	40.0	11.5		51.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	8.9	8.9		41.5	38.0	6.6		11.9
Green Ext Time (p_c), s	0.1	1.1		5.2	0.0	0.5		7.3

Intersection Summary	
HCM 2010 Ctrl Delay	44.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	0	42	0	0	9	34	742	5	3	832	45
Future Volume (veh/h)	122	0	42	0	0	9	34	742	5	3	832	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	174	0	11	0	0	2	49	1060	7	4	1189	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	4	4	4	4
Cap, veh/h	312	0	257	0	0	252	73	1248	8	18	1185	983
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.15	0.04	0.69	0.66	0.01	0.65	0.00
Sat Flow, veh/h	1414	0	1599	0	0	1615	1740	1813	12	1740	1827	1553
Grp Volume(v), veh/h	174	0	11	0	0	2	49	0	1067	4	1189	0
Grp Sat Flow(s),veh/h/ln	1414	0	1599	0	0	1615	1740	0	1825	1740	1827	1553
Q Serve(g_s), s	10.0	0.0	0.5	0.0	0.0	0.1	2.4	0.0	37.4	0.2	55.3	0.0
Cycle Q Clear(g_c), s	10.1	0.0	0.5	0.0	0.0	0.1	2.4	0.0	37.4	0.2	55.3	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	312	0	257	0	0	252	73	0	1256	18	1185	983
V/C Ratio(X)	0.56	0.00	0.04	0.00	0.00	0.01	0.67	0.00	0.85	0.23	1.00	0.00
Avail Cap(c_a), veh/h	665	0	654	0	0	464	704	0	1256	500	1185	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.3	0.0	30.2	0.0	0.0	30.6	40.3	0.0	10.0	41.9	15.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	0.0	10.3	0.0	5.9	6.4	27.0	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	4.1	0.0	0.2	0.0	0.0	0.0	1.4	0.0	20.5	0.1	36.2	0.0
LnGrp Delay(d),s/veh	35.9	0.0	30.3	0.0	0.0	30.6	50.6	0.0	15.9	48.3	42.0	0.0
LnGrp LOS	D		C			C	D		B	D	F	
Approach Vol, veh/h		185			2			1116			1193	
Approach Delay, s/veh		35.5			30.6			17.4			42.0	
Approach LOS		D			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	62.7		17.7	7.6	60.0		17.7
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.2	39.4		12.1	4.4	57.3		2.1
Green Ext Time (p_c), s	0.0	13.6		0.9	0.1	0.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

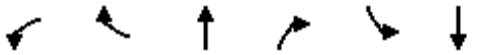
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	2	1	864	278	9
Future Vol, veh/h	15	2	1	864	278	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	3	18	18
Mvmt Flow	17	2	1	971	312	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1290	317	322	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	182	728	1232	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	182	728	1232	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	369	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1232	-	200	-	-
HCM Lane V/C Ratio	0.001	-	0.096	-	-
HCM Control Delay (s)	7.9	0	24.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	198	357	253	194	367	320
Future Volume (veh/h)	198	357	253	194	367	320
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1743	1743	1792	1792
Adj Flow Rate, veh/h	228	167	291	66	422	368
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	9	9	6	6
Cap, veh/h	338	301	528	448	479	1180
Arrive On Green	0.19	0.19	0.30	0.30	0.28	0.66
Sat Flow, veh/h	1774	1583	1743	1482	1707	1792
Grp Volume(v), veh/h	228	167	291	66	422	368
Grp Sat Flow(s),veh/h/ln	1774	1583	1743	1482	1707	1792
Q Serve(g_s), s	6.3	5.1	7.4	1.7	12.5	4.7
Cycle Q Clear(g_c), s	6.3	5.1	7.4	1.7	12.5	4.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	338	301	528	448	479	1180
V/C Ratio(X)	0.68	0.55	0.55	0.15	0.88	0.31
Avail Cap(c_a), veh/h	714	637	1712	1455	645	1761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	19.4	15.4	13.5	18.2	3.9
Incr Delay (d2), s/veh	0.9	0.6	1.0	0.2	8.8	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	3.2	2.2	3.7	0.7	7.0	2.3
LnGrp Delay(d),s/veh	20.8	20.0	16.4	13.6	27.0	4.0
LnGrp LOS	C	B	B	B	C	A
Approach Vol, veh/h	395		357			790
Approach Delay, s/veh	20.5		15.9			16.3
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	18.8	20.0				38.9		14.1
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	14.5	9.4				6.7		8.3
Green Ext Time (p_c), s	0.4	4.6				4.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	676	140	176	564	128	249	680	161	105	573	193
Future Volume (veh/h)	236	676	140	176	564	128	249	680	161	105	573	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1881	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	257	735	138	191	613	40	271	739	73	114	623	46
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	290	1008	189	225	1088	478	305	1058	466	142	729	320
Arrive On Green	0.16	0.34	0.33	0.13	0.30	0.30	0.17	0.30	0.30	0.08	0.21	0.21
Sat Flow, veh/h	1774	2945	553	1792	3574	1569	1774	3539	1558	1757	3505	1541
Grp Volume(v), veh/h	257	441	432	191	613	40	271	739	73	114	623	46
Grp Sat Flow(s),veh/h/ln	1774	1770	1728	1792	1787	1569	1774	1770	1558	1757	1752	1541
Q Serve(g_s), s	14.9	22.9	23.0	10.9	15.1	1.9	15.7	19.4	3.6	6.7	18.0	2.6
Cycle Q Clear(g_c), s	14.9	22.9	23.0	10.9	15.1	1.9	15.7	19.4	3.6	6.7	18.0	2.6
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	605	591	225	1088	478	305	1058	466	142	729	320
V/C Ratio(X)	0.89	0.73	0.73	0.85	0.56	0.08	0.89	0.70	0.16	0.80	0.86	0.14
Avail Cap(c_a), veh/h	355	641	626	359	1295	568	389	1058	466	235	735	323
HCM Platoon Ratio	1.00	1.00	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	42.9	30.2	30.5	44.9	30.6	26.0	42.5	32.6	27.0	47.4	40.0	33.9
Incr Delay (d2), s/veh	19.8	4.6	4.7	10.3	0.7	0.1	18.2	2.3	0.2	10.0	10.1	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	8.9	11.9	11.7	6.1	7.5	0.8	9.2	9.8	1.6	3.7	9.7	1.1
LnGrp Delay(d),s/veh	62.8	34.8	35.2	55.2	31.3	26.1	60.7	34.9	27.3	57.4	50.1	34.2
LnGrp LOS	E	C	D	E	C	C	E	C	C	E	D	C
Approach Vol, veh/h		1130			844			1083			783	
Approach Delay, s/veh		41.3			36.5			40.9			50.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	35.3	17.2	39.9	22.0	25.8	21.1	35.9
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	8.7	21.4	12.9	25.0	17.7	20.0	16.9	17.1
Green Ext Time (p_c), s	0.1	6.0	0.3	8.4	0.4	0.1	0.3	12.7

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	146.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	706	119	14	625	32	181	45	35	29	113	48
Future Vol, veh/h	30	706	119	14	625	32	181	45	35	29	113	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	33	767	129	15	679	35	197	49	38	32	123	52
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	80	310.9	34	18.2
HCM LOS	F	F	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	69%	8%	0%	2%	20%	0%
Vol Thru, %	17%	92%	75%	93%	80%	0%
Vol Right, %	13%	0%	25%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	383	472	671	142	48
LT Vol	181	30	0	14	29	0
Through Vol	45	353	353	625	113	0
RT Vol	35	0	119	32	0	48
Lane Flow Rate	284	416	513	729	154	52
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.697	0.909	1.089	1.621	0.394	0.122
Departure Headway (Hd)	10.332	9.006	8.78	8.269	10.465	9.618
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	352	408	416	445	346	375
Service Time	8.332	6.706	6.48	6.269	8.165	7.318
HCM Lane V/C Ratio	0.807	1.02	1.233	1.638	0.445	0.139
HCM Control Delay	34	55.3	100.1	310.9	19.8	13.6
HCM Lane LOS	D	F	F	F	C	B
HCM 95th-tile Q	5	9.6	15.4	40.4	1.8	0.4



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	572	135	149	475	206	224
Future Volume (veh/h)	572	135	149	475	206	224
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1845	1900	1863	1863	1881	1881
Adj Flow Rate, veh/h	596	120	155	495	215	54
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	2	2	1	1
Cap, veh/h	1337	269	225	1244	312	278
Arrive On Green	0.46	0.44	0.13	0.67	0.17	0.17
Sat Flow, veh/h	2989	582	1774	1863	1792	1599
Grp Volume(v), veh/h	360	356	155	495	215	54
Grp Sat Flow(s),veh/h/ln	1752	1726	1774	1863	1792	1599
Q Serve(g_s), s	7.0	7.2	4.2	6.1	5.7	1.5
Cycle Q Clear(g_c), s	7.0	7.2	4.2	6.1	5.7	1.5
Prop In Lane		0.34	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	809	797	225	1244	312	278
V/C Ratio(X)	0.44	0.45	0.69	0.40	0.69	0.19
Avail Cap(c_a), veh/h	1708	1683	863	1816	872	778
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	9.2	9.4	21.1	3.8	19.6	17.8
Incr Delay (d2), s/veh	0.5	0.6	3.7	0.3	2.7	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	3.5	3.5	2.3	3.1	3.0	0.7
LnGrp Delay(d),s/veh	9.8	10.0	24.8	4.1	22.3	18.2
LnGrp LOS	A	A	C	A	C	B
Approach Vol, veh/h	716			650	269	
Approach Delay, s/veh	9.9			9.0	21.5	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.4	27.3		12.8		37.8		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	6.2	9.2		7.7		8.1		
Green Ext Time (p_c), s	0.3	12.9		0.7		13.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	34

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	655	84	157	171	49	222
Future Vol, veh/h	655	84	157	171	49	222
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	17	17
Mvmt Flow	712	91	171	186	53	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	359	0	-	0	1781	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	1515	-
Critical Hdwy	4.12	-	-	-	6.57	6.37
Critical Hdwy Stg 1	-	-	-	-	5.57	-
Critical Hdwy Stg 2	-	-	-	-	5.57	-
Follow-up Hdwy	2.218	-	-	-	3.653	3.453
Pot Cap-1 Maneuver	1200	-	-	-	83	738
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	185	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1200	-	-	-	~ 34	737
Mov Cap-2 Maneuver	-	-	-	-	66	-
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	75	-

Approach	EB	WB	SB
HCM Control Delay, s	10.9	0	137.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1200	-	-	-	260
HCM Lane V/C Ratio	0.593	-	-	-	1.133
HCM Control Delay (s)	12.3	-	-	-	137.9
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	4.1	-	-	-	12.9

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)	156	842	99	218	564	43	76	392	251	46	412	91
Future Volume (veh/h)	156	842	99	218	564	43	76	392	251	46	412	91
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1900
Adj Flow Rate, veh/h	170	915	46	237	613	15	83	426	122	50	448	92
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	196	1128	505	249	1226	548	99	653	555	62	478	98
Arrive On Green	0.11	0.32	0.32	0.14	0.35	0.35	0.06	0.37	0.37	0.04	0.35	0.34
Sat Flow, veh/h	1774	3539	1583	1757	3505	1566	1691	1776	1508	1630	1375	282
Grp Volume(v), veh/h	170	915	46	237	613	15	83	426	122	50	0	540
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1566	1691	1776	1508	1630	0	1658
Q Serve(g_s), s	11.3	28.5	2.4	16.1	16.5	0.8	5.8	23.9	6.7	3.7	0.0	37.8
Cycle Q Clear(g_c), s	11.3	28.5	2.4	16.1	16.5	0.8	5.8	23.9	6.7	3.7	0.0	37.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	196	1128	505	249	1226	548	99	653	555	62	0	577
V/C Ratio(X)	0.87	0.81	0.09	0.95	0.50	0.03	0.84	0.65	0.22	0.80	0.00	0.94
Avail Cap(c_a), veh/h	207	1128	505	249	1226	548	99	653	555	122	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.5	37.6	28.7	51.1	30.7	25.6	56.0	31.5	26.1	57.3	0.0	37.9
Incr Delay (d2), s/veh	27.4	6.4	0.4	43.9	1.5	0.1	42.8	2.6	0.3	8.5	0.0	21.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	14.9	1.1	10.8	8.3	0.3	3.9	12.2	2.8	1.8	0.0	20.7
LnGrp Delay(d),s/veh	79.8	43.9	29.0	95.0	32.2	25.7	98.8	34.2	26.4	65.8	0.0	59.5
LnGrp LOS	E	D	C	F	C	C	F	C	C	E		E
Approach Vol, veh/h		1131			865			631			590	
Approach Delay, s/veh		48.7			49.3			41.2			60.0	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	42.2	11.0	45.8	17.3	46.0	8.6	48.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	17.0	34.0	7.0	43.1	14.0	37.0	9.0	41.1
Max Q Clear Time (g_c+I1), s	18.1	30.5	7.8	39.8	13.3	18.5	5.7	25.9
Green Ext Time (p_c), s	0.0	3.2	0.0	1.0	0.0	15.4	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	766	140	189	642	99	140	462	156	100	615	73
Future Volume (veh/h)	125	766	140	189	642	99	140	462	156	100	615	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1881	1881	1881	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	136	833	56	205	698	44	152	502	145	109	668	20
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	2	2	2
Cap, veh/h	160	2016	616	234	2257	692	177	766	220	132	906	397
Arrive On Green	0.09	0.40	0.40	0.04	0.15	0.15	0.10	0.28	0.27	0.07	0.26	0.26
Sat Flow, veh/h	1757	5036	1538	1792	5136	1575	1792	2730	784	1774	3539	1552
Grp Volume(v), veh/h	136	833	56	205	698	44	152	328	319	109	668	20
Grp Sat Flow(s),veh/h/ln	1757	1679	1538	1792	1712	1575	1792	1787	1727	1774	1770	1552
Q Serve(g_s), s	10.7	16.6	3.2	15.9	17.0	3.4	11.7	22.6	22.9	8.5	24.2	1.4
Cycle Q Clear(g_c), s	10.7	16.6	3.2	15.9	17.0	3.4	11.7	22.6	22.9	8.5	24.2	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	160	2016	616	234	2257	692	177	501	485	132	906	397
V/C Ratio(X)	0.85	0.41	0.09	0.88	0.31	0.06	0.86	0.65	0.66	0.82	0.74	0.05
Avail Cap(c_a), veh/h	238	2016	616	333	2257	692	269	587	567	203	1036	455
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	30.2	26.1	65.9	40.8	35.0	62.1	44.4	44.7	63.9	47.8	39.2
Incr Delay (d2), s/veh	16.6	0.6	0.3	13.7	0.3	0.1	15.6	2.5	2.7	14.8	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	7.8	1.4	8.8	8.1	1.5	6.6	11.5	11.3	4.7	12.2	0.6
LnGrp Delay(d),s/veh	79.3	30.8	26.4	79.6	41.1	35.1	77.7	46.9	47.5	78.7	50.5	39.3
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1025			947			799			797	
Approach Delay, s/veh		37.0			49.2			53.0			54.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.3	60.0	17.9	39.9	16.8	65.5	14.4	43.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	26.0	34.7	21.0	39.7	19.0	41.7	16.0	44.7
Max Q Clear Time (g_c+I1), s	17.9	18.6	13.7	26.2	12.7	19.0	10.5	24.9
Green Ext Time (p_c), s	0.3	11.0	0.2	8.3	0.2	14.0	0.1	10.8

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	827	135	258	808	97	148	524	162	232	724	119
Future Volume (veh/h)	159	827	135	258	808	97	148	524	162	232	724	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	173	899	45	280	878	95	161	570	155	252	787	119
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	197	1604	485	306	1752	189	185	678	184	277	926	140
Arrive On Green	0.15	0.42	0.42	0.17	0.37	0.36	0.10	0.25	0.24	0.15	0.30	0.29
Sat Flow, veh/h	1792	5136	1553	1792	4696	506	1774	2734	741	1792	3105	469
Grp Volume(v), veh/h	173	899	45	280	639	334	161	368	357	252	453	453
Grp Sat Flow(s),veh/h/ln	1792	1712	1553	1792	1712	1778	1774	1770	1706	1792	1787	1788
Q Serve(g_s), s	13.2	18.7	2.5	21.5	20.1	20.3	12.5	27.7	27.9	19.4	33.3	33.4
Cycle Q Clear(g_c), s	13.2	18.7	2.5	21.5	20.1	20.3	12.5	27.7	27.9	19.4	33.3	33.4
Prop In Lane	1.00		1.00	1.00		0.28	1.00		0.43	1.00		0.26
Lane Grp Cap(c), veh/h	197	1604	485	306	1278	664	185	438	423	277	533	533
V/C Ratio(X)	0.88	0.56	0.09	0.91	0.50	0.50	0.87	0.84	0.84	0.91	0.85	0.85
Avail Cap(c_a), veh/h	256	1604	485	384	1278	664	228	442	426	333	549	549
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	33.6	28.9	57.0	33.8	34.0	61.8	50.0	50.4	58.2	46.2	46.4
Incr Delay (d2), s/veh	20.6	1.2	0.3	22.7	1.4	2.7	24.6	13.8	14.7	24.9	12.2	12.2
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	7.7	9.0	1.1	12.6	9.7	10.4	7.4	15.2	14.9	11.5	18.3	18.3
LnGrp Delay(d),s/veh	79.4	34.9	29.2	79.7	35.2	36.7	86.4	63.8	65.1	83.1	58.4	58.6
LnGrp LOS	E	C	C	E	D	D	F	E	E	F	E	E
Approach Vol, veh/h		1117			1253			886			1158	
Approach Delay, s/veh		41.5			45.6			68.4			63.9	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.9	47.7	18.6	45.7	19.4	56.2	25.7	38.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	30.0	31.7	18.0	41.7	20.0	41.7	26.0	33.7
Max Q Clear Time (g_c+I1), s	23.5	20.7	14.5	35.4	15.2	22.3	21.4	29.9
Green Ext Time (p_c), s	0.4	9.0	0.1	5.1	0.2	14.3	0.3	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	374	215	190	655	59	264	940	125	77	782	391
Future Volume (veh/h)	351	374	215	190	655	59	264	940	125	77	782	391
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	382	407	163	207	712	61	287	1022	89	84	850	349
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	408	1219	803	231	804	69	311	1339	583	103	925	406
Arrive On Green	0.23	0.34	0.33	0.13	0.24	0.23	0.18	0.38	0.38	0.06	0.26	0.26
Sat Flow, veh/h	1792	3574	1569	1792	3320	284	1774	3539	1542	1774	3539	1552
Grp Volume(v), veh/h	382	407	163	207	383	390	287	1022	89	84	850	349
Grp Sat Flow(s),veh/h/ln	1792	1787	1569	1792	1787	1817	1774	1770	1542	1774	1770	1552
Q Serve(g_s), s	35.7	14.5	9.7	19.4	35.3	35.4	27.2	43.1	6.5	8.0	39.9	36.6
Cycle Q Clear(g_c), s	35.7	14.5	9.7	19.4	35.3	35.4	27.2	43.1	6.5	8.0	39.9	36.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	408	1219	803	231	433	440	311	1339	583	103	925	406
V/C Ratio(X)	0.94	0.33	0.20	0.90	0.88	0.89	0.92	0.76	0.15	0.81	0.92	0.86
Avail Cap(c_a), veh/h	672	1219	803	462	474	482	457	1339	583	249	947	416
HCM Platoon Ratio	1.00	1.00	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	41.8	23.0	73.3	62.4	62.5	69.3	46.4	35.0	79.5	61.3	60.1
Incr Delay (d2), s/veh	14.2	0.2	0.2	11.8	17.4	17.3	18.9	2.9	0.2	14.1	13.8	17.0
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	19.3	7.2	4.2	10.4	19.5	19.9	14.9	21.5	2.8	4.3	21.3	17.6
LnGrp Delay(d),s/veh	78.9	42.0	23.2	85.1	79.8	79.8	88.2	49.3	35.2	93.5	75.1	77.1
LnGrp LOS	E	D	C	F	E	E	F	D	D	F	E	E
Approach Vol, veh/h		952			980			1398			1283	
Approach Delay, s/veh		53.6			80.9			56.4			76.8	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	62.2	33.9	48.6	42.8	45.4	13.9	68.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	21.4	16.5	29.2	41.9	37.7	37.4	10.0	45.1
Green Ext Time (p_c), s	0.5	12.1	0.7	1.1	1.1	2.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.7
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	109.9
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	294	357	361	395
Future Vol, veh/h	343	0	294	357	361	395
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	350	0	300	364	368	403
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	29.1	37.1	209.3
HCM LOS	D	E	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	48%
Vol Thru, %	0%	100%	22%	0%
Vol Right, %	0%	0%	78%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	196	455	756
LT Vol	343	0	0	361
Through Vol	0	196	98	0
RT Vol	0	0	357	395
Lane Flow Rate	350	200	464	771
Geometry Grp	5	7	7	2
Degree of Util (X)	0.705	0.409	0.879	1.398
Departure Headway (Hd)	8.387	8.512	7.942	6.526
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	434	426	460	563
Service Time	6.387	6.212	5.642	4.552
HCM Lane V/C Ratio	0.806	0.469	1.009	1.369
HCM Control Delay	29.1	17	45.7	209.3
HCM Lane LOS	D	C	E	F
HCM 95th-tile Q	5.4	2	9.3	35.5

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	48	1	107	230	519	0	0	339	230
Future Vol, veh/h	25	0	0	48	1	107	230	519	0	0	339	230
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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, %	0	0	0	5	5	5	12	12	12	5	5	5
Mvmt Flow	26	0	0	51	1	113	242	546	0	0	357	242

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1209	1633	273	602	0	-	-	-	0
Stage 1	1031	1031	-	-	-	-	-	-	-
Stage 2	178	602	-	-	-	-	-	-	-
Critical Hdwy	6.9	6.6	7	4.34	-	-	-	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.9	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	2.32	-	-	-	-	-
Pot Cap-1 Maneuver	171	97	716	906	-	0	0	-	-
Stage 1	298	302	-	-	-	0	0	-	-
Stage 2	826	480	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	125	0	716	906	-	-	-	-	-
Mov Cap-2 Maneuver	125	0	-	-	-	-	-	-	-
Stage 1	218	0	-	-	-	-	-	-	-
Stage 2	826	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.3	3.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	906	-	291	-	-
HCM Lane V/C Ratio	0.267	-	0.564	-	-
HCM Control Delay (s)	10.4	-	32.3	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	1.1	-	3.2	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	6	5	37	7	79	6	510	0	0	419	23
Future Vol, veh/h	39	6	5	37	7	79	6	510	0	0	419	23
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	7	7	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	9	9	9	2	2	2	2	2	2
Mvmt Flow	42	7	5	40	8	86	7	554	0	0	455	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	766	1039	244	798	1051	277	484	0	-	-	-	0
Stage 1	472	472	-	567	567	-	-	-	-	-	-	-
Stage 2	294	567	-	231	484	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.7	7.1	7.68	6.68	7.08	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	3.59	4.09	3.39	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	278	217	733	265	214	700	1075	-	0	0	-	-
Stage 1	521	538	-	458	488	-	-	-	0	0	-	-
Stage 2	668	486	-	731	533	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	235	215	730	256	212	700	1075	-	-	-	-	-
Mov Cap-2 Maneuver	235	215	-	256	212	-	-	-	-	-	-	-
Stage 1	516	536	-	455	485	-	-	-	-	-	-	-
Stage 2	573	483	-	717	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.4	17.4	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1075	-	249	424	-	-
HCM Lane V/C Ratio	0.006	-	0.218	0.315	-	-
HCM Control Delay (s)	8.4	-	23.4	17.4	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	1.3	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	3	666	89	9	286
Future Vol, veh/h	14	3	666	89	9	286
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	3	724	97	10	311

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1102	772	0	0	821	0
Stage 1	772	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	234	400	-	-	808	-
Stage 1	456	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	231	400	-	-	808	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	231	400	808	-
HCM Lane V/C Ratio	-	-	0.066	0.008	0.012	-
HCM Control Delay (s)	-	-	21.7	14.1	9.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	3	752	88	9	291
Future Vol, veh/h	15	3	752	88	9	291
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	3	817	96	10	316

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1201	865	0	0	913	0
Stage 1	865	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	204	353	-	-	746	-
Stage 1	412	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	201	353	-	-	746	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	714	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	201	353	746	-
HCM Lane V/C Ratio	-	-	0.081	0.009	0.013	-
HCM Control Delay (s)	-	-	24.5	15.3	9.9	-
HCM Lane LOS	-	-	C	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	0	-

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	89	9	150	212	87	6	76	105	92	171	26
Future Vol, veh/h	16	89	9	150	212	87	6	76	105	92	171	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	91	9	153	216	89	6	78	107	94	174	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.9	20.8	11.8	14.7
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	14%	33%	32%
Vol Thru, %	41%	78%	47%	59%
Vol Right, %	56%	8%	19%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	114	449	289
LT Vol	6	16	150	92
Through Vol	76	89	212	171
RT Vol	105	9	87	26
Lane Flow Rate	191	116	458	295
Geometry Grp	1	1	1	1
Degree of Util (X)	0.318	0.204	0.703	0.488
Departure Headway (Hd)	5.994	6.311	5.524	5.958
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	603	571	651	599
Service Time	3.994	4.325	3.612	4.058
HCM Lane V/C Ratio	0.317	0.203	0.704	0.492
HCM Control Delay	11.8	10.9	20.8	14.7
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.4	0.8	5.7	2.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	105	119	466	299	8	123	232	278	9	158	26
Future Volume (veh/h)	43	105	119	466	299	8	123	232	278	9	158	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	44	108	101	480	308	4	127	239	164	9	163	5
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	98	194	181	545	873	742	178	516	340	28	583	253
Arrive On Green	0.05	0.22	0.19	0.31	0.47	0.47	0.10	0.25	0.22	0.02	0.16	0.16
Sat Flow, veh/h	1792	896	838	1774	1863	1583	1810	2085	1377	1774	3539	1536
Grp Volume(v), veh/h	44	0	209	480	308	4	127	206	197	9	163	5
Grp Sat Flow(s),veh/h/ln	1792	0	1733	1774	1863	1583	1810	1805	1657	1774	1770	1536
Q Serve(g_s), s	1.8	0.0	8.1	19.3	7.9	0.1	5.1	7.3	7.8	0.4	3.0	0.2
Cycle Q Clear(g_c), s	1.8	0.0	8.1	19.3	7.9	0.1	5.1	7.3	7.8	0.4	3.0	0.2
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	98	0	375	545	873	742	178	446	410	28	583	253
V/C Ratio(X)	0.45	0.00	0.56	0.88	0.35	0.01	0.71	0.46	0.48	0.32	0.28	0.02
Avail Cap(c_a), veh/h	872	0	878	863	944	802	881	1492	1370	816	2926	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	26.6	24.7	12.7	10.6	32.8	24.0	24.9	36.5	27.4	26.3
Incr Delay (d2), s/veh	3.2	0.0	2.0	6.6	0.4	0.0	5.2	1.1	1.3	6.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.1	10.3	4.1	0.0	2.8	3.7	3.7	0.2	1.5	0.1
LnGrp Delay(d),s/veh	37.6	0.0	28.6	31.3	13.0	10.6	38.0	25.1	26.2	43.0	27.8	26.3
LnGrp LOS	D		C	C	B	B	D	C	C	D	C	C
Approach Vol, veh/h		253			792			530			177	
Approach Delay, s/veh		30.2			24.1			28.6			28.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	22.5	27.0	20.2	11.4	16.3	8.1	39.2
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.4	9.8	21.3	10.1	7.1	5.0	3.8	9.9
Green Ext Time (p_c), s	0.0	5.3	1.3	4.3	0.3	5.4	0.1	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	86	65	66	110	0	92	229	36	0	442	568
Future Volume (veh/h)	238	86	65	66	110	0	92	229	36	0	442	568
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1900	1900	1881	1900
Adj Flow Rate, veh/h	245	89	42	68	113	0	95	236	34	0	456	554
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	287	243	115	88	169	0	51	107	11	0	458	557
Arrive On Green	0.16	0.20	0.20	0.05	0.09	0.00	0.60	0.60	0.60	0.00	0.60	0.60
Sat Flow, veh/h	1774	1198	565	1774	1863	0	4	177	19	0	762	926
Grp Volume(v), veh/h	245	0	131	68	113	0	365	0	0	0	0	1010
Grp Sat Flow(s),veh/h/ln	1774	0	1763	1774	1863	0	200	0	0	0	0	1688
Q Serve(g_s), s	12.4	0.0	5.9	3.5	5.4	0.0	0.7	0.0	0.0	0.0	0.0	54.8
Cycle Q Clear(g_c), s	12.4	0.0	5.9	3.5	5.4	0.0	55.5	0.0	0.0	0.0	0.0	54.8
Prop In Lane	1.00		0.32	1.00		0.00	0.26		0.09	0.00		0.55
Lane Grp Cap(c), veh/h	287	0	357	88	169	0	169	0	0	0	0	1015
V/C Ratio(X)	0.85	0.00	0.37	0.77	0.67	0.00	2.16	0.00	0.00	0.00	0.00	0.99
Avail Cap(c_a), veh/h	586	0	678	298	414	0	169	0	0	0	0	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	31.7	43.3	40.6	0.0	29.7	0.0	0.0	0.0	0.0	18.3
Incr Delay (d2), s/veh	7.1	0.0	0.6	13.0	4.5	0.0	540.5	0.0	0.0	0.0	0.0	27.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	2.9	2.0	3.0	0.0	25.4	0.0	0.0	0.0	0.0	32.9
LnGrp Delay(d),s/veh	44.8	0.0	32.3	56.3	45.1	0.0	570.2	0.0	0.0	0.0	0.0	45.2
LnGrp LOS	D		C	E	D		F					D
Approach Vol, veh/h		376			181			365			1010	
Approach Delay, s/veh		40.4			49.3			570.2			45.2	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	23.2		60.0	19.4	12.9		60.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	6.5	7.9		57.5	14.4	7.4		56.8
Green Ext Time (p_c), s	0.1	1.3		0.0	0.6	1.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	143.9	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	38	3	1	5	52	823	19	10	741	102
Future Volume (veh/h)	60	0	38	3	1	5	52	823	19	10	741	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	64	0	4	3	1	0	55	876	20	11	788	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	229	0	104	124	28	0	86	1313	30	35	1260	1037
Arrive On Green	0.05	0.00	0.06	0.05	0.06	0.00	0.05	0.72	0.68	0.02	0.68	0.00
Sat Flow, veh/h	1683	0	1599	339	481	0	1792	1832	42	1774	1863	1583
Grp Volume(v), veh/h	64	0	4	4	0	0	55	0	896	11	788	0
Grp Sat Flow(s),veh/h/ln	1683	0	1599	821	0	0	1792	0	1874	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.0	1.8	0.0	15.7	0.4	14.3	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.1	2.1	0.0	0.0	1.8	0.0	15.7	0.4	14.3	0.0
Prop In Lane	1.00		1.00	0.75		0.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	104	146	0	0	86	0	1343	35	1260	1037
V/C Ratio(X)	0.31	0.00	0.04	0.03	0.00	0.00	0.64	0.00	0.67	0.32	0.63	0.00
Avail Cap(c_a), veh/h	936	0	926	677	0	0	1025	0	1740	721	1708	1418
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	0.0	26.4	27.0	0.0	0.0	28.2	0.0	4.7	29.2	5.5	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.1	0.0	0.0	7.5	0.0	0.9	5.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.1	0.1	0.0	0.0	1.1	0.0	8.1	0.2	7.5	0.0
LnGrp Delay(d),s/veh	28.7	0.0	26.6	27.1	0.0	0.0	35.7	0.0	5.6	34.3	6.3	0.0
LnGrp LOS	C		C	C			D		A	C	A	
Approach Vol, veh/h		68			4			951			799	
Approach Delay, s/veh		28.5			27.1			7.3			6.6	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	47.2		7.9	6.9	45.5		7.9
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.4	17.7		4.1	3.8	16.3		4.1
Green Ext Time (p_c), s	0.0	22.6		0.3	0.1	23.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

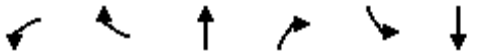
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	359	794	12
Future Vol, veh/h	5	2	2	359	794	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	5	2	2	378	836	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1224	842	848	0	-	0
Stage 1	842	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	200	367	790	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	199	367	790	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.2	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	790	-	229	-	-
HCM Lane V/C Ratio	0.003	-	0.032	-	-
HCM Control Delay (s)	9.6	0	21.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	234	297	331	240	340	366
Future Volume (veh/h)	234	297	331	240	340	366
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1863	1863	1863	1863
Adj Flow Rate, veh/h	239	133	338	75	347	373
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	2	2	2	2
Cap, veh/h	353	315	618	523	411	1198
Arrive On Green	0.20	0.20	0.33	0.33	0.23	0.64
Sat Flow, veh/h	1792	1599	1863	1576	1774	1863
Grp Volume(v), veh/h	239	133	338	75	347	373
Grp Sat Flow(s),veh/h/ln	1792	1599	1863	1576	1774	1863
Q Serve(g_s), s	6.2	3.7	7.4	1.7	9.4	4.5
Cycle Q Clear(g_c), s	6.2	3.7	7.4	1.7	9.4	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	353	315	618	523	411	1198
V/C Ratio(X)	0.68	0.42	0.55	0.14	0.84	0.31
Avail Cap(c_a), veh/h	761	679	1931	1634	707	1931
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	18.7	17.6	13.7	11.8	18.4	4.0
Incr Delay (d2), s/veh	0.8	0.3	0.8	0.1	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.6	3.9	0.7	4.7	2.3
LnGrp Delay(d),s/veh	19.5	18.0	14.5	11.9	20.3	4.1
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	372		413			720
Approach Delay, s/veh	19.0		14.0			11.9
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.6	20.6				36.3		13.9
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	11.4	9.4				6.5		8.2
Green Ext Time (p_c), s	0.3	5.1				5.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	797	199	243	699	66	355	765	301	144	648	310
Future Volume (veh/h)	227	797	199	243	699	66	355	765	301	144	648	310
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	232	813	185	248	713	21	362	781	133	147	661	62
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	262	921	210	277	1179	518	358	1043	465	175	675	293
Arrive On Green	0.15	0.32	0.31	0.15	0.33	0.33	0.20	0.29	0.29	0.10	0.19	0.19
Sat Flow, veh/h	1792	2868	653	1792	3574	1571	1810	3610	1610	1792	3574	1549
Grp Volume(v), veh/h	232	507	491	248	713	21	362	781	133	147	661	62
Grp Sat Flow(s),veh/h/ln	1792	1787	1734	1792	1787	1571	1810	1805	1610	1792	1787	1549
Q Serve(g_s), s	14.8	31.3	31.3	15.8	19.4	1.1	23.0	22.9	7.5	9.4	21.4	3.9
Cycle Q Clear(g_c), s	14.8	31.3	31.3	15.8	19.4	1.1	23.0	22.9	7.5	9.4	21.4	3.9
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	262	574	557	277	1179	518	358	1043	465	175	675	293
V/C Ratio(X)	0.89	0.88	0.88	0.89	0.60	0.04	1.01	0.75	0.29	0.84	0.98	0.21
Avail Cap(c_a), veh/h	323	583	566	323	1179	518	358	1043	465	215	675	293
HCM Platoon Ratio	1.00	1.00	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	48.7	37.4	37.7	48.3	32.7	26.5	46.7	37.6	32.1	51.6	47.0	39.9
Incr Delay (d2), s/veh	21.1	15.1	15.5	23.4	1.1	0.1	50.8	3.4	0.5	21.0	29.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	17.7	17.4	9.7	9.8	0.5	16.5	11.9	3.4	5.7	13.3	1.7
LnGrp Delay(d),s/veh	69.8	52.5	53.2	71.7	33.8	26.5	97.6	40.9	32.6	72.6	76.3	40.4
LnGrp LOS	E	D	D	E	C	C	F	D	C	E	E	D
Approach Vol, veh/h		1230			982			1276			870	
Approach Delay, s/veh		56.1			43.2			56.1			73.1	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	37.6	22.0	41.4	27.0	26.0	21.0	42.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	11.4	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	11.4	24.9	17.8	33.3	25.0	23.4	16.8	21.4
Green Ext Time (p_c), s	0.1	3.8	0.2	2.4	0.0	0.0	0.2	11.5

Intersection Summary	
HCM 2010 Ctrl Delay	56.6
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	184.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	714	129	38	739	36	108	118	15	51	84	75
Future Vol, veh/h	97	714	129	38	739	36	108	118	15	51	84	75
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	99	729	132	39	754	37	110	120	15	52	86	77
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	76.2	400.1	28.7	17.2
HCM LOS	F	F	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	45%	21%	0%	5%	38%	0%
Vol Thru, %	49%	79%	73%	91%	62%	0%
Vol Right, %	6%	0%	27%	4%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	454	486	813	135	75
LT Vol	108	97	0	38	51	0
Through Vol	118	357	357	739	84	0
RT Vol	15	0	129	36	0	75
Lane Flow Rate	246	463	496	830	138	77
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.603	0.99	1.019	1.827	0.348	0.174
Departure Headway (Hd)	10.69	9.039	8.733	7.929	10.566	9.626
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	403	422	465	343	375
Service Time	8.69	6.739	6.433	6.005	8.266	7.326
HCM Lane V/C Ratio	0.726	1.149	1.175	1.785	0.402	0.205
HCM Control Delay	28.7	73	79.1	400.1	18.8	14.3
HCM Lane LOS	D	F	F	F	C	B
HCM 95th-tile Q	3.7	11.9	13	52.4	1.5	0.6



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	498	241	249	662	148	161
Future Volume (veh/h)	498	241	249	662	148	161
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1863	1900	1881	1881	1881	1881
Adj Flow Rate, veh/h	553	209	277	736	164	33
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	1202	453	352	1393	237	212
Arrive On Green	0.48	0.46	0.20	0.74	0.13	0.13
Sat Flow, veh/h	2594	942	1792	1881	1792	1599
Grp Volume(v), veh/h	391	371	277	736	164	33
Grp Sat Flow(s),veh/h/ln	1770	1673	1792	1881	1792	1599
Q Serve(g_s), s	9.3	9.5	9.3	10.5	5.5	1.2
Cycle Q Clear(g_c), s	9.3	9.5	9.3	10.5	5.5	1.2
Prop In Lane		0.56	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	851	804	352	1393	237	212
V/C Ratio(X)	0.46	0.46	0.79	0.53	0.69	0.16
Avail Cap(c_a), veh/h	1385	1310	700	1473	700	625
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	10.9	11.2	24.1	3.5	26.1	24.2
Incr Delay (d2), s/veh	0.6	0.6	3.9	0.4	3.6	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	4.6	4.5	4.9	5.5	3.0	0.5
LnGrp Delay(d),s/veh	11.5	11.8	28.0	3.9	29.7	24.5
LnGrp LOS	B	B	C	A	C	C
Approach Vol, veh/h	762			1013	197	
Approach Delay, s/veh	11.6			10.5	28.8	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.4	34.3		12.3		50.6		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	11.3	11.5		7.5		12.5		
Green Ext Time (p_c), s	0.6	17.5		0.5		17.3		

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	144.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	145	132	57	189	606
Future Vol, veh/h	290	145	132	57	189	606
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	322	161	147	63	210	673

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	210	0	-	0	984	178
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	806	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1355	-	-	-	277	868
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	441	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1355	-	-	-	211	868
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	336	-

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	255.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1355	-	-	-	587
HCM Lane V/C Ratio	0.238	-	-	-	1.505
HCM Control Delay (s)	8.5	-	-	-	255.3
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.9	-	-	-	44.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	865	133	279	937	110	101	450	367	121	413	146
Future Volume (veh/h)	129	865	133	279	937	110	101	450	367	121	413	146
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	132	883	79	285	956	44	103	459	194	123	421	140
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	226	1271	568	310	1375	615	123	577	483	147	433	144
Arrive On Green	0.12	0.35	0.35	0.17	0.38	0.38	0.07	0.31	0.31	0.08	0.32	0.32
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1339	445
Grp Volume(v), veh/h	132	883	79	285	956	44	103	459	194	123	0	561
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	0	1784
Q Serve(g_s), s	9.0	27.3	4.3	20.3	29.2	1.8	7.5	29.3	12.7	8.9	0.0	40.4
Cycle Q Clear(g_c), s	9.0	27.3	4.3	20.3	29.2	1.8	7.5	29.3	12.7	8.9	0.0	40.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	226	1271	568	310	1375	615	123	577	483	147	0	576
V/C Ratio(X)	0.58	0.69	0.14	0.92	0.70	0.07	0.84	0.80	0.40	0.84	0.00	0.97
Avail Cap(c_a), veh/h	226	1271	568	331	1375	615	123	577	483	150	0	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.7	36.1	28.7	52.9	33.6	15.4	59.8	41.1	35.4	58.8	0.0	43.6
Incr Delay (d2), s/veh	2.6	3.2	0.5	28.9	2.9	0.2	35.9	8.0	0.8	30.0	0.0	30.7
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	4.6	14.2	2.0	12.5	14.9	0.8	4.9	16.3	5.6	5.6	0.0	24.7
LnGrp Delay(d),s/veh	56.3	39.3	29.2	81.8	36.5	15.7	95.6	49.2	36.2	88.8	0.0	74.2
LnGrp LOS	E	D	C	F	D	B	F	D	D	F		E
Approach Vol, veh/h		1094			1285			756			684	
Approach Delay, s/veh		40.6			45.9			52.2			76.8	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	49.8	13.0	46.0	22.3	54.0	14.8	44.2
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	24.0	37.0	9.0	41.1	13.0	* 48	11.0	39.1
Max Q Clear Time (g_c+I1), s	22.3	29.3	9.5	42.4	11.0	31.2	10.9	31.3
Green Ext Time (p_c), s	0.1	5.5	0.0	0.0	0.2	10.9	0.0	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1098	196	239	1008	163	267	731	116	162	686	143
Future Volume (veh/h)	235	1098	196	239	1008	163	267	731	116	162	686	143
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	237	1109	66	241	1018	64	270	738	109	164	693	35
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	1792	547	265	1820	555	293	952	141	186	876	380
Arrive On Green	0.14	0.35	0.35	0.05	0.12	0.12	0.16	0.30	0.29	0.10	0.24	0.24
Sat Flow, veh/h	1792	5136	1568	1810	5187	1583	1810	3155	466	1810	3610	1565
Grp Volume(v), veh/h	237	1109	66	241	1018	64	270	422	425	164	693	35
Grp Sat Flow(s),veh/h/ln	1792	1712	1568	1810	1729	1583	1810	1805	1816	1810	1805	1565
Q Serve(g_s), s	20.9	28.7	4.6	21.2	29.7	5.8	23.5	34.1	34.2	14.3	28.8	2.8
Cycle Q Clear(g_c), s	20.9	28.7	4.6	21.2	29.7	5.8	23.5	34.1	34.2	14.3	28.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	259	1792	547	265	1820	555	293	545	548	186	876	380
V/C Ratio(X)	0.91	0.62	0.12	0.91	0.56	0.12	0.92	0.77	0.78	0.88	0.79	0.09
Avail Cap(c_a), veh/h	314	1792	547	305	1820	555	351	587	590	226	925	401
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.4	43.2	35.4	75.1	59.0	48.5	66.1	50.9	51.1	70.8	56.8	46.9
Incr Delay (d2), s/veh	26.9	1.6	0.5	17.8	0.7	0.2	26.5	6.5	6.5	27.3	4.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	13.8	2.1	12.0	14.4	2.6	13.9	18.0	18.1	8.6	14.9	1.2
LnGrp Delay(d),s/veh	94.4	44.9	35.8	92.9	59.8	48.7	92.6	57.4	57.5	98.1	61.6	47.1
LnGrp LOS	F	D	D	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		1412			1323			1117			892	
Approach Delay, s/veh		52.7			65.2			65.9			67.7	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	59.8	29.9	42.8	27.2	60.1	20.4	52.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	43.7	31.0	39.7	28.0	42.7	20.0	50.7
Max Q Clear Time (g_c+I1), s	23.2	30.7	25.5	30.8	22.9	31.7	16.3	36.2
Green Ext Time (p_c), s	0.2	11.3	0.4	6.7	0.3	9.7	0.1	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1197	174	249	1090	81	272	791	193	327	707	148
Future Volume (veh/h)	195	1197	174	249	1090	81	272	791	193	327	707	148
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	199	1221	97	254	1112	78	278	807	183	334	721	140
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	202	1470	447	260	1568	110	300	827	187	325	901	175
Arrive On Green	0.22	0.57	0.57	0.14	0.32	0.31	0.17	0.29	0.28	0.18	0.30	0.29
Sat Flow, veh/h	1792	5136	1561	1810	4938	346	1792	2863	649	1792	2977	578
Grp Volume(v), veh/h	199	1221	97	254	778	412	278	504	486	334	433	428
Grp Sat Flow(s),veh/h/ln	1792	1712	1561	1810	1729	1826	1792	1787	1725	1792	1787	1768
Q Serve(g_s), s	17.7	31.0	4.9	22.4	31.7	31.8	24.5	44.7	44.7	29.0	35.6	35.7
Cycle Q Clear(g_c), s	17.7	31.0	4.9	22.4	31.7	31.8	24.5	44.7	44.7	29.0	35.6	35.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.38	1.00		0.33
Lane Grp Cap(c), veh/h	202	1470	447	260	1098	580	300	516	498	325	541	535
V/C Ratio(X)	0.99	0.83	0.22	0.98	0.71	0.71	0.93	0.98	0.98	1.03	0.80	0.80
Avail Cap(c_a), veh/h	202	1470	447	260	1098	580	347	516	498	325	541	535
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)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	31.0	25.4	68.2	48.1	48.2	65.6	56.4	56.6	65.5	51.4	51.6
Incr Delay (d2), s/veh	49.0	3.9	0.8	49.1	3.9	7.2	28.1	33.5	34.2	57.5	8.8	8.9
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	11.5	15.0	2.2	14.8	15.7	17.2	14.5	26.9	26.1	19.5	19.0	18.8
LnGrp Delay(d),s/veh	110.9	35.0	26.2	117.3	52.0	55.4	93.7	89.9	90.8	123.0	60.1	60.5
LnGrp LOS	F	C	C	F	D	E	F	F	F	F	E	E
Approach Vol, veh/h		1517			1444			1268			1195	
Approach Delay, s/veh		44.4			64.4			91.1			77.8	
Approach LOS		D			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	49.8	30.8	52.4	22.0	54.8	33.0	50.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	44.5	31.0	42.9	18.0	49.5	29.0	44.9
Max Q Clear Time (g_c+I1), s	24.4	33.0	26.5	37.7	19.7	33.8	31.0	46.7
Green Ext Time (p_c), s	0.0	10.5	0.3	4.5	0.0	13.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.0
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	473	797	289	186	494	71	309	1012	206	115	881	396
Future Volume (veh/h)	473	797	289	186	494	71	309	1012	206	115	881	396
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	483	813	256	190	504	67	315	1033	140	117	899	333
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	507	1283	848	212	610	81	337	1304	572	137	897	389
Arrive On Green	0.28	0.36	0.35	0.12	0.19	0.18	0.19	0.36	0.36	0.08	0.25	0.25
Sat Flow, veh/h	1810	3610	1580	1792	3156	417	1810	3610	1584	1792	3574	1551
Grp Volume(v), veh/h	483	813	256	190	284	287	315	1033	140	117	899	333
Grp Sat Flow(s),veh/h/ln	1810	1805	1580	1792	1787	1786	1810	1805	1584	1792	1787	1551
Q Serve(g_s), s	47.3	33.8	16.3	18.9	27.5	27.8	30.9	46.2	11.2	11.6	45.3	36.9
Cycle Q Clear(g_c), s	47.3	33.8	16.3	18.9	27.5	27.8	30.9	46.2	11.2	11.6	45.3	36.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	507	1283	848	212	346	346	337	1304	572	137	897	389
V/C Ratio(X)	0.95	0.63	0.30	0.90	0.82	0.83	0.93	0.79	0.24	0.86	1.00	0.86
Avail Cap(c_a), veh/h	642	1283	848	437	453	452	441	1304	572	238	897	389
HCM Platoon Ratio	1.00	1.00	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	63.7	48.4	23.5	78.4	69.8	70.1	72.3	51.6	40.4	82.3	67.6	64.4
Incr Delay (d2), s/veh	21.5	1.2	0.3	12.5	10.2	10.8	23.3	3.7	0.3	13.8	30.5	17.4
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	26.6	17.0	7.2	10.1	14.6	14.8	17.7	23.8	5.0	6.3	26.1	17.7
LnGrp Delay(d),s/veh	85.3	49.5	23.8	90.9	80.0	80.9	95.6	55.3	40.7	96.2	98.1	81.9
LnGrp LOS	F	D	C	F	F	F	F	E	D	F	F	F
Approach Vol, veh/h		1552			761			1488			1349	
Approach Delay, s/veh		56.4			83.1			62.4			93.9	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.4	67.7	37.6	49.7	54.6	38.5	17.8	69.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	20.9	35.8	32.9	47.3	49.3	29.8	13.6	48.2
Green Ext Time (p_c), s	0.5	6.2	0.7	0.0	1.3	3.4	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.9
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	51.1
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	633	569	391	351
Future Vol, veh/h	290	0	633	569	391	351
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	646	581	399	358
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	23.2	165.5	177.7
HCM LOS	C	F	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	53%
Vol Thru, %	0%	100%	27%	0%
Vol Right, %	0%	0%	73%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	422	780	742
LT Vol	290	0	0	391
Through Vol	0	422	211	0
RT Vol	0	0	569	351
Lane Flow Rate	296	431	796	757
Geometry Grp	5	7	7	2
Degree of Util (X)	0.601	0.843	1.446	1.322
Departure Headway (Hd)	8.368	8.043	7.514	6.568
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	435	452	493	560
Service Time	6.368	5.743	5.214	4.568
HCM Lane V/C Ratio	0.68	0.954	1.615	1.352
HCM Control Delay	23.2	41	232.9	177.7
HCM Lane LOS	C	E	F	F
HCM 95th-tile Q	3.8	8.3	34.3	30.9

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	0	0	32	1	97	272	651	0	0	620	384
Future Vol, veh/h	80	0	0	32	1	97	272	651	0	0	620	384
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	2	2	2
Mvmt Flow	82	0	0	33	1	99	278	664	0	0	633	392

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1535	2250	332	1031	0	-	-	-	0
Stage 1	1219	1219	-	-	-	-	-	-	-
Stage 2	316	1031	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	4.24	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.27	-	-	-	-	-
Pot Cap-1 Maneuver	109	42	670	640	-	0	0	-	-
Stage 1	246	255	-	-	-	0	0	-	-
Stage 2	718	313	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	62	0	670	640	-	-	-	-	-
Mov Cap-2 Maneuver	62	0	-	-	-	-	-	-	-
Stage 1	139	0	-	-	-	-	-	-	-
Stage 2	718	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	55.6	4.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	640	-	195	-	-
HCM Lane V/C Ratio	0.434	-	0.68	-	-
HCM Control Delay (s)	14.9	-	55.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	2.2	-	4.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	17	7	25	9	88	16	530	0	0	532	59
Future Vol, veh/h	29	17	7	25	9	88	16	530	0	0	532	59
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	9	9	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	1	1	1	1	1	1	1	1
Mvmt Flow	32	19	8	28	10	98	18	589	0	0	591	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	965	1254	334	929	1287	294	663	0	-	-	-	0
Stage 1	630	630	-	624	624	-	-	-	-	-	-	-
Stage 2	335	624	-	305	663	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	212	173	668	224	164	705	928	-	0	0	-	-
Stage 1	441	478	-	442	478	-	-	-	0	0	-	-
Stage 2	658	481	-	682	459	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	170	169	664	199	160	705	928	-	-	-	-	-
Mov Cap-2 Maneuver	170	169	-	199	160	-	-	-	-	-	-	-
Stage 1	430	475	-	433	469	-	-	-	-	-	-	-
Stage 2	544	472	-	647	456	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.6	18.6	0.3	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	928	-	188	398	-	-
HCM Lane V/C Ratio	0.019	-	0.313	0.341	-	-
HCM Control Delay (s)	9	-	32.6	18.6	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	1.5	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	19	146	31	3	186
Future Vol, veh/h	86	19	146	31	3	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	21	159	34	3	202

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	385	176	0	0	192	0
Stage 1	176	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	618	867	-	-	1381	-
Stage 1	855	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	617	867	-	-	1381	-
Mov Cap-2 Maneuver	617	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	617	867	1381	-
HCM Lane V/C Ratio	-	-	0.152	0.024	0.002	-
HCM Control Delay (s)	-	-	11.9	9.3	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	9	169	31	3	269
Future Vol, veh/h	97	9	169	31	3	269
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	10	184	34	3	292

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	500	201	0	0	217	0
Stage 1	201	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	530	840	-	-	1353	-
Stage 1	833	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	529	840	-	-	1353	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	529	840	1353	-
HCM Lane V/C Ratio	-	-	0.199	0.012	0.002	-
HCM Control Delay (s)	-	-	13.5	9.3	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	0	-

Intersection	
Intersection Delay, s/veh	24.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	249	7	104	125	75	5	81	247	121	118	24
Future Vol, veh/h	18	249	7	104	125	75	5	81	247	121	118	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	328	9	137	164	99	7	107	325	159	155	32
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	35	20.5	24.1	18.7
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	94%	0%	0%	97%	0%	62%	0%	83%
Vol Right, %	0%	100%	0%	3%	0%	38%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	247	18	256	104	200	121	142
LT Vol	5	0	18	0	104	0	121	0
Through Vol	81	0	0	249	0	125	0	118
RT Vol	0	247	0	7	0	75	0	24
Lane Flow Rate	113	325	24	337	137	263	159	187
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.27	0.707	0.059	0.791	0.342	0.6	0.416	0.455
Departure Headway (Hd)	8.589	7.833	8.996	8.458	9.004	8.213	9.413	8.77
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	462	399	428	400	439	382	411
Service Time	6.334	5.578	6.742	6.204	6.754	5.962	7.164	6.521
HCM Lane V/C Ratio	0.27	0.703	0.06	0.787	0.343	0.599	0.416	0.455
HCM Control Delay	14.5	27.4	12.3	36.6	16.4	22.6	18.7	18.7
HCM Lane LOS	B	D	B	E	C	C	C	C
HCM 95th-tile Q	1.1	5.5	0.2	7	1.5	3.8	2	2.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	280	133	100	52	10	151	289	385	15	381	49
Future Volume (veh/h)	30	280	133	100	52	10	151	289	385	15	381	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1776	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	44	412	111	147	76	6	222	425	434	22	560	15
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	75	494	394	184	601	511	263	784	701	40	1142	511
Arrive On Green	0.04	0.28	0.26	0.11	0.34	0.34	0.15	0.45	0.43	0.02	0.32	0.32
Sat Flow, veh/h	1691	1776	1509	1660	1743	1482	1757	1752	1568	1792	3574	1599
Grp Volume(v), veh/h	44	412	111	147	76	6	222	425	434	22	560	15
Grp Sat Flow(s),veh/h/ln	1691	1776	1509	1660	1743	1482	1757	1752	1568	1792	1787	1599
Q Serve(g_s), s	2.9	24.6	6.6	9.8	3.4	0.3	13.9	20.0	24.3	1.4	14.3	0.7
Cycle Q Clear(g_c), s	2.9	24.6	6.6	9.8	3.4	0.3	13.9	20.0	24.3	1.4	14.3	0.7
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	75	494	394	184	601	511	263	784	701	40	1142	511
V/C Ratio(X)	0.59	0.83	0.28	0.80	0.13	0.01	0.84	0.54	0.62	0.56	0.49	0.03
Avail Cap(c_a), veh/h	546	597	481	536	601	511	568	962	860	547	1961	877
HCM Platoon Ratio	1.00	1.00	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	53.0	38.3	33.3	49.0	25.4	24.3	46.8	22.8	24.7	54.7	31.0	26.4
Incr Delay (d2), s/veh	7.2	9.4	0.6	7.8	0.1	0.0	7.2	0.9	1.4	11.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	13.3	2.8	4.9	1.6	0.1	7.3	9.9	10.8	0.8	7.2	0.3
LnGrp Delay(d),s/veh	60.2	47.7	33.9	56.9	25.5	24.4	54.0	23.7	26.1	66.3	31.5	26.4
LnGrp LOS	E	D	C	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		567			229			1081			597	
Approach Delay, s/veh		46.0			45.6			30.9			32.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	54.5	16.5	35.5	20.9	40.1	9.0	43.0
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	3.4	26.3	11.8	26.6	15.9	16.3	4.9	5.4
Green Ext Time (p_c), s	0.0	16.0	0.4	2.8	0.5	17.8	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	559	88	81	60	47	0	36	546	87	0	154	82
Future Volume (veh/h)	559	88	81	60	47	0	36	546	87	0	154	82
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	614	97	69	66	52	0	40	600	26	0	169	35
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	666	393	279	96	125	0	76	721	623	0	767	639
Arrive On Green	0.38	0.39	0.38	0.05	0.07	0.00	0.41	0.41	0.41	0.00	0.41	0.41
Sat Flow, veh/h	1774	1012	720	1774	1863	0	70	1750	1535	0	1863	1576
Grp Volume(v), veh/h	614	0	166	66	52	0	640	0	26	0	169	35
Grp Sat Flow(s),veh/h/ln	1774	0	1731	1774	1863	0	1821	0	1535	0	1863	1576
Q Serve(g_s), s	27.2	0.0	5.4	3.0	2.2	0.0	13.5	0.0	0.8	0.0	4.8	1.1
Cycle Q Clear(g_c), s	27.2	0.0	5.4	3.0	2.2	0.0	26.0	0.0	0.8	0.0	4.8	1.1
Prop In Lane	1.00		0.42	1.00		0.00	0.06		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	666	0	672	96	125	0	796	0	623	0	767	639
V/C Ratio(X)	0.92	0.00	0.25	0.69	0.42	0.00	0.80	0.00	0.04	0.00	0.22	0.05
Avail Cap(c_a), veh/h	777	0	758	345	363	0	1281	0	1037	0	1269	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	17.1	38.2	36.8	0.0	21.8	0.0	14.8	0.0	15.6	14.8
Incr Delay (d2), s/veh	15.0	0.0	0.2	8.3	2.2	0.0	2.0	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	0.0	2.6	1.7	1.2	0.0	13.4	0.0	0.4	0.0	2.5	0.5
LnGrp Delay(d),s/veh	39.5	0.0	17.3	46.5	39.0	0.0	23.7	0.0	14.8	0.0	15.8	14.9
LnGrp LOS	D		B	D	D		C		B		B	B
Approach Vol, veh/h		780			118			666			204	
Approach Delay, s/veh		34.8			43.2			23.4			15.6	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	35.9		37.8	34.8	9.5		37.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	5.0	7.4		28.0	29.2	4.2		6.8
Green Ext Time (p_c), s	0.1	1.1		5.3	1.2	0.8		5.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	676	140	176	564	128	249	680	161	105	573	193
Future Volume (veh/h)	236	676	140	176	564	128	249	680	161	105	573	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1900	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	257	735	140	191	613	124	271	739	79	114	623	26
Adj No. of Lanes	1	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	290	1140	217	268	890	180	305	1062	468	142	733	322
Arrive On Green	0.16	0.39	0.37	0.08	0.30	0.30	0.17	0.30	0.30	0.08	0.21	0.21
Sat Flow, veh/h	1774	2940	560	3476	2953	596	1774	3539	1559	1757	3505	1541
Grp Volume(v), veh/h	257	442	433	191	370	367	271	739	79	114	623	26
Grp Sat Flow(s),veh/h/ln	1774	1770	1730	1738	1787	1762	1774	1770	1559	1757	1752	1541
Q Serve(g_s), s	14.7	21.2	21.3	5.6	19.0	19.1	15.5	19.2	3.9	6.6	17.8	1.4
Cycle Q Clear(g_c), s	14.7	21.2	21.3	5.6	19.0	19.1	15.5	19.2	3.9	6.6	17.8	1.4
Prop In Lane	1.00		0.32	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	686	671	268	539	531	305	1062	468	142	733	322
V/C Ratio(X)	0.89	0.64	0.64	0.71	0.69	0.69	0.89	0.70	0.17	0.80	0.85	0.08
Avail Cap(c_a), veh/h	359	686	671	703	654	645	393	1062	468	237	742	326
HCM Platoon Ratio	1.00	1.00	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	42.5	25.9	26.2	46.8	32.0	32.0	42.0	32.2	26.8	46.9	39.5	33.0
Incr Delay (d2), s/veh	19.4	2.5	2.6	3.5	3.1	3.2	17.8	2.3	0.3	10.0	9.6	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	8.8	10.8	10.6	2.8	9.8	9.7	9.1	9.7	1.7	3.6	9.5	0.6
LnGrp Delay(d),s/veh	61.9	28.4	28.8	50.3	35.1	35.2	59.8	34.4	27.1	56.9	49.1	33.2
LnGrp LOS	E	C	C	D	D	D	E	C	C	E	D	C
Approach Vol, veh/h		1132			928			1089			763	
Approach Delay, s/veh		36.2			38.3			40.2			49.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	35.2	12.0	44.3	21.9	25.7	21.0	35.3
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	4.6	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	7.6	21.2	7.6	23.3	17.5	19.8	16.7	21.1
Green Ext Time (p_c), s	0.1	6.2	0.5	9.7	0.4	0.2	0.3	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

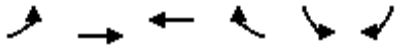
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	706	119	14	625	32	181	45	35	29	113	48
Future Volume (veh/h)	30	706	119	14	625	32	181	45	35	29	113	48
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.98	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1881	1900	1900	1881	1881
Adj Flow Rate, veh/h	33	767	112	15	679	28	197	49	28	32	123	10
Adj No. of Lanes	0	2	0	0	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	119	1337	191	102	1525	62	408	95	40	171	521	504
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	53	2917	418	22	3327	135	797	298	125	199	1629	1574
Grp Volume(v), veh/h	481	0	431	378	0	344	274	0	0	155	0	10
Grp Sat Flow(s),veh/h/ln	1781	0	1607	1819	0	1666	1219	0	0	1828	0	1574
Q Serve(g_s), s	0.0	0.0	8.1	0.0	0.0	5.7	6.2	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	7.7	0.0	8.1	5.6	0.0	5.7	8.7	0.0	0.0	2.5	0.0	0.2
Prop In Lane	0.07		0.26	0.04		0.08	0.72		0.10	0.21		1.00
Lane Grp Cap(c), veh/h	911	0	736	926	0	764	543	0	0	692	0	504
V/C Ratio(X)	0.53	0.00	0.59	0.41	0.00	0.45	0.50	0.00	0.00	0.22	0.00	0.02
Avail Cap(c_a), veh/h	1197	0	1009	1219	0	1046	964	0	0	1225	0	989
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	0.0	8.1	7.5	0.0	7.5	12.8	0.0	0.0	10.2	0.0	9.4
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.3	0.0	0.4	0.7	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	4.0	0.0	3.6	2.9	0.0	2.7	2.8	0.0	0.0	1.3	0.0	0.1
LnGrp Delay(d),s/veh	8.5	0.0	8.9	7.8	0.0	7.9	13.5	0.0	0.0	10.4	0.0	9.5
LnGrp LOS	A		A	A		A	B			B		A
Approach Vol, veh/h		912			722			274			165	
Approach Delay, s/veh		8.7			7.8			13.5			10.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.1		17.5		23.1		17.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		10.1		10.7		7.7		4.5
Green Ext Time (p_c), s		8.6		2.1		9.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	655	84	157	171	49	222
Future Volume (veh/h)	655	84	157	171	49	222
Number	1	6	2	12	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1881	1900	1863	1863
Adj Flow Rate, veh/h	712	91	171	146	53	-19
Adj No. of Lanes	2	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	1	1	2	2
Cap, veh/h	1012	1244	250	213	211	188
Arrive On Green	0.29	0.67	0.27	0.27	0.12	0.00
Sat Flow, veh/h	3442	1863	937	800	1774	1583
Grp Volume(v), veh/h	712	91	0	317	53	-19
Grp Sat Flow(s),veh/h/ln	1721	1863	0	1737	1774	1583
Q Serve(g_s), s	7.8	0.7	0.0	6.9	1.1	0.0
Cycle Q Clear(g_c), s	7.8	0.7	0.0	6.9	1.1	0.0
Prop In Lane	1.00			0.46	1.00	1.00
Lane Grp Cap(c), veh/h	1012	1244	0	463	211	188
V/C Ratio(X)	0.70	0.07	0.00	0.68	0.25	-0.10
Avail Cap(c_a), veh/h	3309	3781	0	1670	1074	958
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	13.2	2.4	0.0	13.8	16.9	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	1.8	0.6	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	3.8	0.4	0.0	3.5	0.6	0.0
LnGrp Delay(d),s/veh	14.1	2.5	0.0	15.6	17.5	0.0
LnGrp LOS	B	A		B	B	
Approach Vol, veh/h		803	317		34	
Approach Delay, s/veh		12.8	15.6		27.3	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.9	15.7		9.5		32.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	40.5	40.5		25.5		85.5		
Max Q Clear Time (g_c+I1), s	9.8	8.9		3.1		2.7		
Green Ext Time (p_c), s	2.6	2.3		0.1		2.4		

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	827	135	258	808	97	148	524	162	232	724	119
Future Volume (veh/h)	159	827	135	258	808	97	148	524	162	232	724	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	173	899	51	280	878	96	161	570	156	252	787	120
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	196	1540	465	305	1691	184	185	896	244	305	966	147
Arrive On Green	0.15	0.40	0.40	0.17	0.36	0.35	0.10	0.33	0.32	0.09	0.31	0.30
Sat Flow, veh/h	1792	5136	1552	1792	4690	511	1774	2733	745	3476	3101	473
Grp Volume(v), veh/h	173	899	51	280	640	334	161	368	358	252	453	454
Grp Sat Flow(s),veh/h/ln	1792	1712	1552	1792	1712	1777	1774	1770	1709	1738	1787	1787
Q Serve(g_s), s	13.2	19.2	2.9	21.5	20.6	20.8	12.5	24.7	25.0	10.0	32.8	32.8
Cycle Q Clear(g_c), s	13.2	19.2	2.9	21.5	20.6	20.8	12.5	24.7	25.0	10.0	32.8	32.8
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.44	1.00		0.26
Lane Grp Cap(c), veh/h	196	1540	465	305	1235	641	185	580	560	305	556	556
V/C Ratio(X)	0.88	0.58	0.11	0.92	0.52	0.52	0.87	0.64	0.64	0.83	0.81	0.82
Avail Cap(c_a), veh/h	230	1540	465	358	1235	641	215	594	574	397	587	587
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	35.2	30.3	57.1	35.2	35.4	61.8	40.0	40.3	62.8	44.5	44.7
Incr Delay (d2), s/veh	24.8	1.4	0.4	25.5	1.6	3.0	27.1	2.5	2.6	10.5	8.8	8.8
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	7.9	9.3	1.3	12.8	10.0	10.8	7.5	12.5	12.2	5.2	17.5	17.6
LnGrp Delay(d),s/veh	83.7	36.7	30.7	82.7	36.8	38.4	88.9	42.4	42.9	73.3	53.2	53.4
LnGrp LOS	F	D	C	F	D	D	F	D	D	E	D	D
Approach Vol, veh/h		1123			1254			887			1159	
Approach Delay, s/veh		43.6			47.4			51.1			57.7	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	46.0	18.6	47.6	19.3	54.5	16.3	49.9
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	13.8	31.7	17.0	44.7	18.0	41.7	16.0	45.7
Max Q Clear Time (g_c+I1), s	23.5	21.2	14.5	34.8	15.2	22.8	12.0	27.0
Green Ext Time (p_c), s	0.3	8.6	0.1	7.5	0.1	14.0	0.3	12.3

Intersection Summary	
HCM 2010 Ctrl Delay	49.9
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	374	215	190	655	59	264	940	125	77	782	391
Future Volume (veh/h)	351	374	215	190	655	59	264	940	125	77	782	391
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	382	407	166	207	712	61	287	1022	88	84	850	350
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	408	1219	803	231	804	69	311	1339	583	103	925	782
Arrive On Green	0.23	0.34	0.33	0.13	0.24	0.23	0.18	0.38	0.38	0.06	0.26	0.26
Sat Flow, veh/h	1792	3574	1569	1792	3320	284	1774	3539	1542	1774	3539	1552
Grp Volume(v), veh/h	382	407	166	207	383	390	287	1022	88	84	850	350
Grp Sat Flow(s),veh/h/ln	1792	1787	1569	1792	1787	1817	1774	1770	1542	1774	1770	1552
Q Serve(g_s), s	35.7	14.5	9.9	19.4	35.3	35.4	27.2	43.1	6.4	8.0	39.9	24.9
Cycle Q Clear(g_c), s	35.7	14.5	9.9	19.4	35.3	35.4	27.2	43.1	6.4	8.0	39.9	24.9
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	408	1219	803	231	433	440	311	1339	583	103	925	782
V/C Ratio(X)	0.94	0.33	0.21	0.90	0.88	0.89	0.92	0.76	0.15	0.81	0.92	0.45
Avail Cap(c_a), veh/h	672	1219	803	462	474	482	457	1339	583	249	947	792
HCM Platoon Ratio	1.00	1.00	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	41.8	23.0	73.3	62.4	62.5	69.3	46.4	35.0	79.5	61.3	27.7
Incr Delay (d2), s/veh	14.2	0.2	0.2	11.8	17.4	17.3	18.9	2.9	0.2	14.1	13.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	7.2	4.3	10.4	19.5	19.9	14.9	21.5	2.8	4.3	21.3	10.8
LnGrp Delay(d),s/veh	78.9	42.0	23.2	85.1	79.8	79.8	88.2	49.3	35.2	93.5	75.1	28.3
LnGrp LOS	E	D	C	F	E	E	F	D	D	F	E	C
Approach Vol, veh/h		955			980			1397			1284	
Approach Delay, s/veh		53.5			80.9			56.4			63.6	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	62.2	33.9	48.6	42.8	45.4	13.9	68.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	21.4	16.5	29.2	41.9	37.7	37.4	10.0	45.1
Green Ext Time (p_c), s	0.5	12.2	0.7	1.1	1.1	2.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.0
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	89	9	150	212	87	6	76	105	92	171	26
Future Vol, veh/h	16	89	9	150	212	87	6	76	105	92	171	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	91	9	153	216	89	6	78	107	94	174	27
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.9	13.8	10.5	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	7%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	93%	0%	0%	91%	0%	71%	0%	87%
Vol Right, %	0%	100%	0%	9%	0%	29%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	105	16	98	150	299	92	197
LT Vol	6	0	16	0	150	0	92	0
Through Vol	76	0	0	89	0	212	0	171
RT Vol	0	105	0	9	0	87	0	26
Lane Flow Rate	84	107	16	100	153	305	94	201
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.158	0.18	0.033	0.185	0.284	0.506	0.183	0.358
Departure Headway (Hd)	6.8	6.049	7.253	6.677	6.687	5.974	7.015	6.413
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	525	590	492	535	537	601	510	559
Service Time	4.567	3.816	5.024	4.449	4.439	3.726	4.777	4.175
HCM Lane V/C Ratio	0.16	0.181	0.033	0.187	0.285	0.507	0.184	0.36
HCM Control Delay	10.9	10.2	10.3	11	12.1	14.7	11.4	12.7
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.6	0.7	0.1	0.7	1.2	2.9	0.7	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	105	119	466	299	8	123	232	278	9	158	26
Future Volume (veh/h)	43	105	119	466	299	8	123	232	278	9	158	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	44	108	13	480	308	3	127	239	159	9	163	2
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	105	288	195	557	761	647	182	563	360	30	646	281
Arrive On Green	0.06	0.15	0.12	0.31	0.41	0.41	0.10	0.27	0.24	0.02	0.18	0.18
Sat Flow, veh/h	1792	1881	1599	1774	1863	1583	1810	2113	1353	1774	3539	1538
Grp Volume(v), veh/h	44	108	13	480	308	3	127	203	195	9	163	2
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1774	1863	1583	1810	1805	1661	1774	1770	1538
Q Serve(g_s), s	1.5	3.3	0.5	16.3	7.5	0.1	4.4	6.0	6.4	0.3	2.5	0.1
Cycle Q Clear(g_c), s	1.5	3.3	0.5	16.3	7.5	0.1	4.4	6.0	6.4	0.3	2.5	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	105	288	195	557	761	647	182	481	443	30	646	281
V/C Ratio(X)	0.42	0.38	0.07	0.86	0.40	0.00	0.70	0.42	0.44	0.30	0.25	0.01
Avail Cap(c_a), veh/h	1020	1115	898	1010	1104	938	1030	1745	1606	954	3422	1487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	24.4	24.9	20.7	13.4	11.2	27.9	19.4	20.3	31.1	22.5	21.4
Incr Delay (d2), s/veh	2.6	1.2	0.2	4.1	0.5	0.0	4.7	0.9	1.1	5.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.8	0.2	8.5	4.0	0.0	2.4	3.0	3.1	0.2	1.3	0.0
LnGrp Delay(d),s/veh	31.8	25.6	25.2	24.8	14.0	11.2	32.6	20.3	21.3	36.5	22.8	21.5
LnGrp LOS	C	C	C	C	B	B	C	C	C	D	C	C
Approach Vol, veh/h		165			791			525			174	
Approach Delay, s/veh		27.2			20.5			23.7			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	21.1	24.1	13.8	10.5	15.7	7.8	30.2
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	31.6	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.3	8.4	18.3	5.3	6.4	4.5	3.5	9.5
Green Ext Time (p_c), s	0.0	5.3	1.3	3.5	0.3	5.3	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	86	65	66	110	0	92	229	36	0	442	568
Future Volume (veh/h)	238	86	65	66	110	0	92	229	36	0	442	568
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1845	1900	1881	1881
Adj Flow Rate, veh/h	245	89	48	68	113	0	95	236	9	0	456	256
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	315	268	144	108	220	0	186	411	669	0	821	678
Arrive On Green	0.18	0.23	0.23	0.06	0.12	0.00	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	1774	1140	615	1774	1863	0	216	942	1533	0	1881	1553
Grp Volume(v), veh/h	245	0	137	68	113	0	331	0	9	0	456	256
Grp Sat Flow(s),veh/h/ln	1774	0	1754	1774	1863	0	1158	0	1533	0	1881	1553
Q Serve(g_s), s	6.6	0.0	3.3	1.9	2.9	0.0	3.7	0.0	0.2	0.0	9.1	5.6
Cycle Q Clear(g_c), s	6.6	0.0	3.3	1.9	2.9	0.0	12.7	0.0	0.2	0.0	9.1	5.6
Prop In Lane	1.00		0.35	1.00		0.00	0.29		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	315	0	412	108	220	0	597	0	669	0	821	678
V/C Ratio(X)	0.78	0.00	0.33	0.63	0.51	0.00	0.55	0.00	0.01	0.00	0.56	0.38
Avail Cap(c_a), veh/h	1074	0	1236	546	758	0	1449	0	1688	0	2072	1711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	16.0	23.1	20.9	0.0	10.8	0.0	8.1	0.0	10.6	9.6
Incr Delay (d2), s/veh	4.1	0.0	0.5	5.9	1.9	0.0	0.8	0.0	0.0	0.0	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	3.6	0.0	1.6	1.1	1.6	0.0	3.8	0.0	0.1	0.0	4.8	2.4
LnGrp Delay(d),s/veh	23.9	0.0	16.5	29.0	22.7	0.0	11.6	0.0	8.1	0.0	11.2	9.9
LnGrp LOS	C		B	C	C		B		A		B	A
Approach Vol, veh/h		382			181			340			712	
Approach Delay, s/veh		21.2			25.1			11.5			10.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	16.3		26.5	13.5	10.4		26.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	3.9	5.3		14.7	8.6	4.9		11.1
Green Ext Time (p_c), s	0.1	1.3		7.2	0.6	1.1		7.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	797	199	243	699	66	355	765	301	144	648	310
Future Volume (veh/h)	227	797	199	243	699	66	355	765	301	144	648	310
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	232	813	188	248	713	62	362	781	145	147	661	49
Adj No. of Lanes	1	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	264	1019	236	323	1003	87	376	1111	496	176	710	308
Arrive On Green	0.15	0.36	0.34	0.09	0.30	0.30	0.21	0.31	0.31	0.10	0.20	0.20
Sat Flow, veh/h	1792	2860	661	3476	3322	289	1810	3610	1610	1792	3574	1550
Grp Volume(v), veh/h	232	508	493	248	383	392	362	781	145	147	661	49
Grp Sat Flow(s),veh/h/ln	1792	1787	1734	1738	1787	1824	1810	1805	1610	1792	1787	1550
Q Serve(g_s), s	14.1	28.3	28.4	7.7	21.1	21.1	21.9	21.2	7.6	8.9	20.1	2.9
Cycle Q Clear(g_c), s	14.1	28.3	28.4	7.7	21.1	21.1	21.9	21.2	7.6	8.9	20.1	2.9
Prop In Lane	1.00		0.38	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	637	618	323	540	551	376	1111	496	176	710	308
V/C Ratio(X)	0.88	0.80	0.80	0.77	0.71	0.71	0.96	0.70	0.29	0.83	0.93	0.16
Avail Cap(c_a), veh/h	340	637	618	659	613	626	376	1111	496	226	710	308
HCM Platoon Ratio	1.00	1.00	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	46.3	32.1	32.4	49.1	34.3	34.4	43.5	33.9	29.2	49.0	43.6	36.7
Incr Delay (d2), s/veh	18.6	7.6	7.8	3.8	4.0	4.0	36.8	2.3	0.5	18.5	19.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	15.3	14.9	3.9	11.0	11.3	14.8	10.9	3.4	5.3	11.8	1.3
LnGrp Delay(d),s/veh	64.9	39.6	40.2	52.9	38.4	38.3	80.2	36.1	29.7	67.5	62.9	37.1
LnGrp LOS	E	D	D	D	D	D	F	D	C	E	E	D
Approach Vol, veh/h		1233			1023			1288			857	
Approach Delay, s/veh		44.6			41.9			47.8			62.2	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	38.1	14.3	43.5	27.0	26.0	20.3	37.5
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	11.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	10.9	23.2	9.7	30.4	23.9	22.1	16.1	23.1
Green Ext Time (p_c), s	0.1	5.1	0.6	5.1	0.0	0.0	0.3	8.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.3
HCM 2010 LOS	D

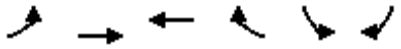
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	714	129	38	739	36	108	118	15	51	84	75
Future Volume (veh/h)	97	714	129	38	739	36	108	118	15	51	84	75
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	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
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1863	1900	1900	1881	1900	1900	1900	1900
Adj Flow Rate, veh/h	99	729	118	39	754	32	110	120	11	52	86	31
Adj No. of Lanes	0	2	0	0	2	0	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	218	1297	204	138	1630	68	275	234	18	243	335	411
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	204	2544	400	70	3197	133	541	915	70	444	1313	1607
Grp Volume(v), veh/h	465	0	481	423	0	402	241	0	0	138	0	31
Grp Sat Flow(s),veh/h/ln	1517	0	1631	1732	0	1668	1526	0	0	1758	0	1607
Q Serve(g_s), s	0.6	0.0	7.9	0.0	0.0	6.0	3.2	0.0	0.0	0.0	0.0	0.6
Cycle Q Clear(g_c), s	6.6	0.0	7.9	5.5	0.0	6.0	5.4	0.0	0.0	2.2	0.0	0.6
Prop In Lane	0.21		0.25	0.09		0.08	0.46		0.05	0.38		1.00
Lane Grp Cap(c), veh/h	887	0	832	985	0	850	526	0	0	578	0	411
V/C Ratio(X)	0.52	0.00	0.58	0.43	0.00	0.47	0.46	0.00	0.00	0.24	0.00	0.08
Avail Cap(c_a), veh/h	1101	0	1085	1232	0	1110	1156	0	0	1236	0	1069
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.1	0.0	6.5	6.0	0.0	6.1	12.6	0.0	0.0	11.5	0.0	10.8
Incr Delay (d2), s/veh	0.5	0.0	0.6	0.3	0.0	0.4	0.6	0.0	0.0	0.2	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	3.2	0.0	3.6	2.9	0.0	2.8	2.3	0.0	0.0	1.2	0.0	0.3
LnGrp Delay(d),s/veh	6.6	0.0	7.2	6.3	0.0	6.5	13.2	0.0	0.0	11.7	0.0	10.9
LnGrp LOS	A		A	A		A	B			B		B
Approach Vol, veh/h		946			825			241			169	
Approach Delay, s/veh		6.9			6.4			13.2			11.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.0		14.3		24.0		14.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		9.9		7.4		8.0		4.2
Green Ext Time (p_c), s		9.7		2.0		10.4		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	290	145	132	57	189	606
Future Volume (veh/h)	290	145	132	57	189	606
Number	1	6	2	12	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1881	1900	1881	1881
Adj Flow Rate, veh/h	322	161	147	46	210	83
Adj No. of Lanes	2	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	1	1	1	1
Cap, veh/h	589	963	285	89	348	310
Arrive On Green	0.17	0.52	0.21	0.21	0.19	0.19
Sat Flow, veh/h	3408	1845	1375	430	1792	1599
Grp Volume(v), veh/h	322	161	0	193	210	83
Grp Sat Flow(s),veh/h/ln	1704	1845	0	1805	1792	1599
Q Serve(g_s), s	2.7	1.4	0.0	3.0	3.4	1.4
Cycle Q Clear(g_c), s	2.7	1.4	0.0	3.0	3.4	1.4
Prop In Lane	1.00			0.24	1.00	1.00
Lane Grp Cap(c), veh/h	589	963	0	374	348	310
V/C Ratio(X)	0.55	0.17	0.00	0.52	0.60	0.27
Avail Cap(c_a), veh/h	4357	4978	0	2308	1442	1287
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	1.00
Uniform Delay (d), s/veh	12.0	4.0	0.0	11.2	11.7	10.9
Incr Delay (d2), s/veh	0.8	0.1	0.0	1.1	1.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.7	0.0	1.6	1.8	0.6
LnGrp Delay(d),s/veh	12.8	4.0	0.0	12.3	13.4	11.3
LnGrp LOS	B	A		B	B	B
Approach Vol, veh/h		483	193		293	
Approach Delay, s/veh		9.9	12.3		12.8	
Approach LOS		A	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.0	11.1		10.6		21.0		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	40.5	40.5		25.5		85.5		
Max Q Clear Time (g_c+I1), s	4.7	5.0		5.4		3.4		
Green Ext Time (p_c), s	1.1	1.9		0.8		1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1197	174	249	1090	81	272	791	193	327	707	148
Future Volume (veh/h)	195	1197	174	249	1090	81	272	791	193	327	707	148
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	199	1221	100	254	1112	78	278	807	184	334	721	140
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	218	1567	477	274	1655	116	297	984	224	348	826	160
Arrive On Green	0.24	0.61	0.61	0.15	0.34	0.33	0.17	0.34	0.34	0.10	0.28	0.27
Sat Flow, veh/h	1792	5136	1563	1810	4938	346	1792	2864	653	3476	2977	578
Grp Volume(v), veh/h	199	1221	100	254	778	412	278	504	487	334	433	428
Grp Sat Flow(s),veh/h/ln	1792	1712	1563	1810	1729	1826	1792	1787	1730	1738	1787	1768
Q Serve(g_s), s	17.3	28.3	4.6	22.2	30.9	31.0	24.5	41.2	41.3	15.3	36.9	37.0
Cycle Q Clear(g_c), s	17.3	28.3	4.6	22.2	30.9	31.0	24.5	41.2	41.3	15.3	36.9	37.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.38	1.00		0.33
Lane Grp Cap(c), veh/h	218	1567	477	274	1159	612	297	614	594	348	496	490
V/C Ratio(X)	0.91	0.78	0.21	0.93	0.67	0.67	0.93	0.82	0.82	0.96	0.87	0.87
Avail Cap(c_a), veh/h	246	1567	477	283	1159	612	302	625	605	348	503	497
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)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	27.2	22.6	67.0	45.6	45.8	65.9	48.0	48.3	71.7	55.1	55.3
Incr Delay (d2), s/veh	25.6	2.7	0.7	34.3	3.1	5.8	34.8	8.8	9.0	37.9	15.7	15.9
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	10.1	13.5	2.0	13.7	15.3	16.7	15.0	21.8	21.1	9.2	20.4	20.3
LnGrp Delay(d),s/veh	85.4	29.9	23.3	101.3	48.7	51.6	100.6	56.8	57.3	109.6	70.8	71.3
LnGrp LOS	F	C	C	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		1520			1444			1269			1195	
Approach Delay, s/veh		36.7			58.8			66.6			81.8	
Approach LOS		D			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.2	52.8	30.6	48.4	23.4	57.6	20.0	59.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	25.0	45.7	27.0	43.7	22.0	48.7	16.0	54.7
Max Q Clear Time (g_c+I1), s	24.3	30.3	26.5	39.0	19.3	33.0	17.3	43.3
Green Ext Time (p_c), s	0.1	13.7	0.0	4.1	0.1	13.9	0.0	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	59.5
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	473	797	289	186	494	71	309	1012	206	115	881	396
Future Volume (veh/h)	473	797	289	186	494	71	309	1012	206	115	881	396
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	483	813	225	190	504	67	315	1033	147	117	899	367
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	507	1284	848	212	611	81	337	1303	572	137	897	849
Arrive On Green	0.28	0.36	0.35	0.12	0.19	0.18	0.19	0.36	0.36	0.08	0.25	0.25
Sat Flow, veh/h	1810	3610	1580	1792	3156	417	1810	3610	1584	1792	3574	1551
Grp Volume(v), veh/h	483	813	225	190	284	287	315	1033	147	117	899	367
Grp Sat Flow(s),veh/h/ln	1810	1805	1580	1792	1787	1786	1810	1805	1584	1792	1787	1551
Q Serve(g_s), s	47.3	33.8	14.0	18.9	27.5	27.8	31.0	46.2	11.8	11.6	45.3	25.8
Cycle Q Clear(g_c), s	47.3	33.8	14.0	18.9	27.5	27.8	31.0	46.2	11.8	11.6	45.3	25.8
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	507	1284	848	212	346	346	337	1303	572	137	897	849
V/C Ratio(X)	0.95	0.63	0.27	0.90	0.82	0.83	0.93	0.79	0.26	0.86	1.00	0.43
Avail Cap(c_a), veh/h	642	1284	848	437	452	452	441	1303	572	238	897	849
HCM Platoon Ratio	1.00	1.00	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	63.8	48.4	23.0	78.5	69.8	70.1	72.3	51.6	40.6	82.4	67.6	25.2
Incr Delay (d2), s/veh	21.6	1.2	0.2	12.5	10.2	10.8	23.3	3.7	0.4	13.8	30.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.7	17.0	6.1	10.1	14.6	14.8	17.7	23.8	5.2	6.3	26.1	11.2
LnGrp Delay(d),s/veh	85.3	49.5	23.2	90.9	80.0	80.9	95.6	55.3	41.0	96.2	98.2	25.7
LnGrp LOS	F	D	C	F	E	F	F	E	D	F	F	C
Approach Vol, veh/h		1521			761			1495			1383	
Approach Delay, s/veh		57.0			83.1			62.4			78.8	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.4	67.8	37.6	49.7	54.6	38.5	17.8	69.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.6	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	20.9	35.8	33.0	47.3	49.3	29.8	13.6	48.2
Green Ext Time (p_c), s	0.5	6.2	0.7	0.0	1.3	3.4	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.2
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	121.6
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	633	569	391	351
Future Vol, veh/h	290	0	633	569	391	351
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	646	581	399	358
Number of Lanes	1	1	2	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	34.1	194.1	38.5
HCM LOS	D	F	E

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	27%	0%	0%
Vol Right, %	0%	0%	0%	73%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	0	422	780	391	351
LT Vol	290	0	0	0	391	0
Through Vol	0	0	422	211	0	0
RT Vol	0	0	0	569	0	351
Lane Flow Rate	296	0	431	796	399	358
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.729	0	0.898	1.545	0.897	0.686
Departure Headway (Hd)	9.563	9.045	7.511	6.986	8.523	7.29
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	0	482	525	427	498
Service Time	7.263	6.745	5.261	4.736	6.223	4.99
HCM Lane V/C Ratio	0.775	0	0.894	1.516	0.934	0.719
HCM Control Delay	34.1	11.7	47.2	273.5	51.1	24.4
HCM Lane LOS	D	N	E	F	F	C
HCM 95th-tile Q	5.6	0	10	41.9	9.5	5.2

Intersection	
Intersection Delay, s/veh	83.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	250	7	98	128	85	5	88	218	125	121	24
Future Vol, veh/h	18	250	7	98	128	85	5	88	218	125	121	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	329	9	129	168	112	7	116	287	164	159	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	71.7	96.1	89	74.7
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	7%	32%	46%
Vol Thru, %	28%	91%	41%	45%
Vol Right, %	70%	3%	27%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	275	311	270
LT Vol	5	18	98	125
Through Vol	88	250	128	121
RT Vol	218	7	85	24
Lane Flow Rate	409	362	409	355
Geometry Grp	1	1	1	1
Degree of Util (X)	1.04	0.964	1.062	0.972
Departure Headway (Hd)	9.543	10.094	9.692	10.365
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	385	362	376	352
Service Time	7.543	8.094	7.692	8.365
HCM Lane V/C Ratio	1.062	1	1.088	1.009
HCM Control Delay	89	71.7	96.1	74.7
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	13.1	10.6	13.7	10.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	252	134	47	47	10	155	295	226	16	400	54
Future Volume (veh/h)	31	252	134	47	47	10	155	295	226	16	400	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1900	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	46	371	188	69	69	5	228	434	267	24	588	22
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	76	376	191	95	611	520	269	918	560	42	1102	493
Arrive On Green	0.05	0.34	0.32	0.06	0.35	0.35	0.15	0.44	0.42	0.02	0.31	0.31
Sat Flow, veh/h	1691	1112	564	1660	1743	1482	1757	2094	1278	1792	3574	1599
Grp Volume(v), veh/h	46	0	559	69	69	5	228	363	338	24	588	22
Grp Sat Flow(s),veh/h/ln	1691	0	1676	1660	1743	1482	1757	1752	1619	1792	1787	1599
Q Serve(g_s), s	3.0	0.0	37.2	4.6	3.0	0.2	14.2	16.5	16.9	1.5	15.3	1.1
Cycle Q Clear(g_c), s	3.0	0.0	37.2	4.6	3.0	0.2	14.2	16.5	16.9	1.5	15.3	1.1
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	567	95	611	520	269	768	710	42	1102	493
V/C Ratio(X)	0.60	0.00	0.99	0.72	0.11	0.01	0.85	0.47	0.48	0.58	0.53	0.04
Avail Cap(c_a), veh/h	550	0	567	540	611	520	571	968	894	550	1974	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	0.0	37.2	52.0	24.6	23.7	46.2	22.3	23.0	54.3	32.2	27.2
Incr Delay (d2), s/veh	7.4	0.0	34.0	9.9	0.1	0.0	7.2	0.7	0.8	12.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	22.4	2.4	1.5	0.1	7.4	8.1	7.7	0.9	7.6	0.5
LnGrp Delay(d),s/veh	60.0	0.0	71.2	61.9	24.8	23.8	53.4	23.0	23.8	66.3	32.8	27.3
LnGrp LOS	E		E	E	C	C	D	C	C	E	C	C
Approach Vol, veh/h		605			143			929			634	
Approach Delay, s/veh		70.4			42.7			30.8			33.8	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	53.2	10.5	42.0	21.2	38.6	9.1	43.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	3.5	18.9	6.6	39.2	16.2	17.3	5.0	5.0
Green Ext Time (p_c), s	0.0	15.1	0.1	0.0	0.6	15.3	0.1	6.2

Intersection Summary		
HCM 2010 Ctrl Delay		42.7
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	478	0	64	3	0	0	34	453	4	0	59	73
Future Volume (veh/h)	478	0	64	3	0	0	34	453	4	0	59	73
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	525	0	35	3	0	0	37	498	4	0	65	35
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	659	0	388	31	5	0	130	727	6	0	473	254
Arrive On Green	0.37	0.00	0.23	0.02	0.00	0.00	0.42	0.42	0.40	0.00	0.42	0.40
Sat Flow, veh/h	1774	0	1570	1774	1863	0	65	1752	14	0	1138	613
Grp Volume(v), veh/h	525	0	35	3	0	0	539	0	0	0	0	100
Grp Sat Flow(s),veh/h/ln	1774	0	1570	1774	1863	0	1831	0	0	0	0	1751
Q Serve(g_s), s	9.9	0.0	0.7	0.1	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.3
Cycle Q Clear(g_c), s	9.9	0.0	0.7	0.1	0.0	0.0	9.0	0.0	0.0	0.0	0.0	1.3
Prop In Lane	1.00		1.00	1.00		0.00	0.07		0.01	0.00		0.35
Lane Grp Cap(c), veh/h	659	0	388	31	5	0	863	0	0	0	0	727
V/C Ratio(X)	0.80	0.00	0.09	0.10	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.14
Avail Cap(c_a), veh/h	1705	0	1508	758	795	0	2810	0	0	0	0	2617
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	11.1	18.1	0.0	0.0	9.0	0.0	0.0	0.0	0.0	6.9
Incr Delay (d2), s/veh	2.3	0.0	0.1	1.3	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.3	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.7
LnGrp Delay(d),s/veh	12.8	0.0	11.2	19.5	0.0	0.0	9.8	0.0	0.0	0.0	0.0	6.9
LnGrp LOS	B		B	B			A					A
Approach Vol, veh/h		560			3			539			100	
Approach Delay, s/veh		12.7			19.5			9.8			6.9	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.7	13.3		19.6	17.9	0.0		19.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	2.1	2.7		11.0	11.9	0.0		3.3
Green Ext Time (p_c), s	0.0	0.1		3.9	1.6	0.0		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	0	46	0	0	12	36	622	7	4	856	44
Future Volume (veh/h)	117	0	46	0	0	12	36	622	7	4	856	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	167	0	12	0	0	3	51	889	10	6	1223	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	4	4	4	4
Cap, veh/h	305	0	250	0	0	245	75	1244	14	21	1189	987
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.15	0.04	0.69	0.67	0.01	0.65	0.00
Sat Flow, veh/h	1407	0	1599	0	0	1615	1740	1803	20	1740	1827	1553
Grp Volume(v), veh/h	167	0	12	0	0	3	51	0	899	6	1223	0
Grp Sat Flow(s),veh/h/ln	1407	0	1599	0	0	1615	1740	0	1823	1740	1827	1553
Q Serve(g_s), s	9.6	0.0	0.5	0.0	0.0	0.1	2.5	0.0	25.6	0.3	55.3	0.0
Cycle Q Clear(g_c), s	9.7	0.0	0.5	0.0	0.0	0.1	2.5	0.0	25.6	0.3	55.3	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	250	0	0	245	75	0	1258	21	1189	987
V/C Ratio(X)	0.55	0.00	0.05	0.00	0.00	0.01	0.68	0.00	0.71	0.28	1.03	0.00
Avail Cap(c_a), veh/h	666	0	657	0	0	466	706	0	1258	502	1189	987
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.4	0.0	30.5	0.0	0.0	30.8	40.1	0.0	8.0	41.6	14.8	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.1	0.0	0.0	0.0	10.0	0.0	2.2	7.2	33.7	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.2	0.0	0.0	0.1	1.4	0.0	13.5	0.2	38.5	0.0
LnGrp Delay(d),s/veh	35.9	0.0	30.5	0.0	0.0	30.9	50.1	0.0	10.2	48.8	48.5	0.0
LnGrp LOS	D		C			C	D		B	D	F	
Approach Vol, veh/h		179			3			950			1229	
Approach Delay, s/veh		35.6			30.9			12.4			48.5	
Approach LOS		D			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	62.7		17.3	7.7	60.0		17.3
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.3	27.6		11.7	4.5	57.3		2.1
Green Ext Time (p_c), s	0.0	23.0		0.9	0.1	0.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Notes

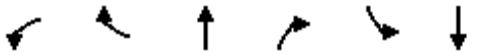
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	2	1	515	99	9
Future Vol, veh/h	15	2	1	515	99	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	3	18	18
Mvmt Flow	17	2	1	579	111	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	697	116	121	0	-	0
Stage 1	116	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	410	942	1460	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	410	942	1460	-	-	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1460	-	439	-	-
HCM Lane V/C Ratio	0.001	-	0.044	-	-
HCM Control Delay (s)	7.5	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	209	363	238	188	375	344
Future Volume (veh/h)	209	363	238	188	375	344
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1743	1743	1792	1792
Adj Flow Rate, veh/h	240	185	274	61	431	395
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	9	9	6	6
Cap, veh/h	349	311	513	436	486	1172
Arrive On Green	0.20	0.20	0.29	0.29	0.28	0.65
Sat Flow, veh/h	1774	1583	1743	1482	1707	1792
Grp Volume(v), veh/h	240	185	274	61	431	395
Grp Sat Flow(s),veh/h/ln	1774	1583	1743	1482	1707	1792
Q Serve(g_s), s	6.7	5.7	7.0	1.6	12.9	5.2
Cycle Q Clear(g_c), s	6.7	5.7	7.0	1.6	12.9	5.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	349	311	513	436	486	1172
V/C Ratio(X)	0.69	0.59	0.53	0.14	0.89	0.34
Avail Cap(c_a), veh/h	706	630	1693	1439	638	1741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	19.6	15.8	13.9	18.3	4.1
Incr Delay (d2), s/veh	0.9	0.7	0.9	0.2	9.8	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	3.4	2.5	3.5	0.7	7.3	2.6
LnGrp Delay(d),s/veh	20.9	20.2	16.8	14.1	28.1	4.3
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	425		335			826
Approach Delay, s/veh	20.6		16.3			16.7
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	19.3	19.8				39.0		14.5
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	14.9	9.0				7.2		8.7
Green Ext Time (p_c), s	0.4	4.7				4.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	505	142	190	465	137	250	654	170	108	638	171
Future Volume (veh/h)	213	505	142	190	465	137	250	654	170	108	638	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1881	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	232	549	132	207	505	41	272	711	74	117	693	43
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	267	884	211	243	1075	472	307	1089	479	146	762	335
Arrive On Green	0.15	0.32	0.30	0.14	0.30	0.30	0.17	0.31	0.31	0.08	0.22	0.22
Sat Flow, veh/h	1774	2797	669	1792	3574	1568	1774	3539	1559	1757	3505	1542
Grp Volume(v), veh/h	232	346	335	207	505	41	272	711	74	117	693	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1697	1792	1787	1568	1774	1770	1559	1757	1752	1542
Q Serve(g_s), s	12.9	16.8	17.1	11.4	11.6	1.9	15.2	17.6	3.5	6.6	19.5	2.3
Cycle Q Clear(g_c), s	12.9	16.8	17.1	11.4	11.6	1.9	15.2	17.6	3.5	6.6	19.5	2.3
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	559	536	243	1075	472	307	1089	479	146	762	335
V/C Ratio(X)	0.87	0.62	0.62	0.85	0.47	0.09	0.89	0.65	0.15	0.80	0.91	0.13
Avail Cap(c_a), veh/h	368	665	637	372	1342	589	403	1089	479	243	762	335
HCM Platoon Ratio	1.00	1.00	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	42.0	29.4	29.8	42.8	28.8	25.4	40.9	30.4	25.5	45.6	38.6	31.9
Incr Delay (d2), s/veh	15.0	1.9	2.1	11.2	0.5	0.1	16.7	1.7	0.2	9.7	15.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	8.5	8.3	6.4	5.8	0.8	8.8	8.8	1.5	3.6	11.0	1.0
LnGrp Delay(d),s/veh	57.0	31.4	31.9	54.0	29.3	25.5	57.6	32.0	25.7	55.3	53.8	32.1
LnGrp LOS	E	C	C	D	C	C	E	C	C	E	D	C
Approach Vol, veh/h		913			753			1057			853	
Approach Delay, s/veh		38.1			35.9			38.2			53.0	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	35.1	17.7	36.0	21.5	26.0	19.2	34.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	13.6	19.6	13.4	19.1	17.2	21.5	14.9	13.6
Green Ext Time (p_c), s	0.1	7.3	0.3	9.6	0.4	0.0	0.3	11.4

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	101.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	502	119	13	514	36	181	54	35	34	142	58
Future Vol, veh/h	39	502	119	13	514	36	181	54	35	34	142	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	42	546	129	14	559	39	197	59	38	37	154	63
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	42.8	236.1	37.1	20.2
HCM LOS	E	F	E	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	67%	13%	0%	2%	19%	0%
Vol Thru, %	20%	87%	68%	91%	81%	0%
Vol Right, %	13%	0%	32%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	290	370	563	176	58
LT Vol	181	39	0	13	34	0
Through Vol	54	251	251	514	142	0
RT Vol	35	0	119	36	0	58
Lane Flow Rate	293	315	402	612	191	63
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.737	0.722	0.889	1.444	0.489	0.147
Departure Headway (Hd)	10.228	9.149	8.843	8.493	10.241	9.402
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	355	397	414	428	354	384
Service Time	8.228	6.849	6.543	6.546	7.941	7.102
HCM Lane V/C Ratio	0.825	0.793	0.971	1.43	0.54	0.164
HCM Control Delay	37.1	32.3	51.1	236.1	22.4	13.7
HCM Lane LOS	E	D	F	F	C	B
HCM 95th-tile Q	5.6	5.5	9.2	30.8	2.6	0.5



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	360	148	160	355	218	196
Future Volume (veh/h)	360	148	160	355	218	196
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1845	1900	1863	1863	1881	1881
Adj Flow Rate, veh/h	375	104	167	370	227	51
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	2	2	1	1
Cap, veh/h	1026	281	248	1147	342	305
Arrive On Green	0.38	0.35	0.14	0.62	0.19	0.19
Sat Flow, veh/h	2798	740	1774	1863	1792	1599
Grp Volume(v), veh/h	241	238	167	370	227	51
Grp Sat Flow(s),veh/h/ln	1752	1693	1774	1863	1792	1599
Q Serve(g_s), s	4.1	4.3	3.7	3.9	4.9	1.1
Cycle Q Clear(g_c), s	4.1	4.3	3.7	3.9	4.9	1.1
Prop In Lane		0.44	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	665	642	248	1147	342	305
V/C Ratio(X)	0.36	0.37	0.67	0.32	0.66	0.17
Avail Cap(c_a), veh/h	2090	2019	1056	2222	1066	952
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	9.2	9.5	16.9	3.8	15.5	14.0
Incr Delay (d2), s/veh	0.5	0.5	3.2	0.2	2.2	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	2.0	2.0	2.0	2.0	2.6	0.5
LnGrp Delay(d),s/veh	9.7	10.0	20.1	4.0	17.7	14.2
LnGrp LOS	A	B	C	A	B	B
Approach Vol, veh/h	479			537	278	
Approach Delay, s/veh	9.9			9.0	17.1	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.8	19.7		11.9		29.5		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	5.7	6.3		6.9		5.9		
Green Ext Time (p_c), s	0.4	8.1		0.7		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	388	89	164	89	37	56
Future Vol, veh/h	388	89	164	89	37	56
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	422	97	178	97	40	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	277	0	-	0	1169	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	940	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1286	-	-	-	213	810
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1286	-	-	-	143	808
Mov Cap-2 Maneuver	-	-	-	-	218	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	255	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1286	-	-	-	389
HCM Lane V/C Ratio	0.328	-	-	-	0.26
HCM Control Delay (s)	9.2	-	-	-	17.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.4	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	852	106	223	635	46	80	379	251	50	436	100
Future Volume (veh/h)	148	852	106	223	635	46	80	379	251	50	436	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1900
Adj Flow Rate, veh/h	161	926	15	242	690	0	87	412	252	54	474	52
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	187	1153	516	249	1268	567	99	636	540	67	516	57
Arrive On Green	0.11	0.33	0.33	0.14	0.36	0.00	0.06	0.36	0.36	0.04	0.34	0.33
Sat Flow, veh/h	1774	3539	1583	1757	3505	1568	1691	1776	1508	1630	1514	166
Grp Volume(v), veh/h	161	926	15	242	690	0	87	412	252	54	0	526
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1568	1691	1776	1508	1630	0	1680
Q Serve(g_s), s	10.7	28.7	0.8	16.5	18.8	0.0	6.1	23.3	15.5	3.9	0.0	36.1
Cycle Q Clear(g_c), s	10.7	28.7	0.8	16.5	18.8	0.0	6.1	23.3	15.5	3.9	0.0	36.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	187	1153	516	249	1268	567	99	636	540	67	0	573
V/C Ratio(X)	0.86	0.80	0.03	0.97	0.54	0.00	0.88	0.65	0.47	0.80	0.00	0.92
Avail Cap(c_a), veh/h	207	1153	516	249	1268	567	99	636	540	122	0	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	37.0	27.5	51.3	30.4	0.0	56.1	32.2	29.7	57.0	0.0	38.0
Incr Delay (d2), s/veh	24.9	6.0	0.1	49.1	1.7	0.0	53.3	2.6	0.9	7.9	0.0	18.2
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	6.6	15.0	0.4	11.4	9.4	0.0	4.3	11.9	6.6	1.9	0.0	19.6
LnGrp Delay(d),s/veh	77.6	42.9	27.6	100.4	32.1	0.0	109.4	34.8	30.6	64.9	0.0	56.2
LnGrp LOS	E	D	C	F	C		F	C	C	E		E
Approach Vol, veh/h		1102			932			751			580	
Approach Delay, s/veh		47.8			49.9			42.0			57.0	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	43.1	11.0	44.9	16.7	47.4	9.0	47.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	17.0	34.0	7.0	43.1	14.0	37.0	9.0	41.1
Max Q Clear Time (g_c+I1), s	18.5	30.7	8.1	38.1	12.7	20.8	5.9	25.3
Green Ext Time (p_c), s	0.0	3.1	0.0	2.0	0.0	14.0	0.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	775	141	189	705	101	143	493	144	102	685	71
Future Volume (veh/h)	126	775	141	189	705	101	143	493	144	102	685	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1881	1881	1881	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	137	842	64	205	766	53	155	536	118	111	745	27
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	2	2	2
Cap, veh/h	161	1938	592	234	2175	667	180	857	188	134	955	419
Arrive On Green	0.09	0.38	0.38	0.04	0.14	0.14	0.10	0.29	0.29	0.08	0.27	0.27
Sat Flow, veh/h	1757	5036	1537	1792	5136	1575	1792	2906	637	1774	3539	1553
Grp Volume(v), veh/h	137	842	64	205	766	53	155	329	325	111	745	27
Grp Sat Flow(s),veh/h/ln	1757	1679	1537	1792	1712	1575	1792	1787	1756	1774	1770	1553
Q Serve(g_s), s	10.8	17.3	3.7	15.9	18.9	4.1	11.9	22.3	22.5	8.6	27.3	1.8
Cycle Q Clear(g_c), s	10.8	17.3	3.7	15.9	18.9	4.1	11.9	22.3	22.5	8.6	27.3	1.8
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	161	1938	592	234	2175	667	180	527	518	134	955	419
V/C Ratio(X)	0.85	0.43	0.11	0.88	0.35	0.08	0.86	0.62	0.63	0.83	0.78	0.06
Avail Cap(c_a), veh/h	238	1938	592	333	2175	667	269	587	577	203	1036	455
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	31.8	27.6	65.9	42.8	36.5	62.0	42.7	43.0	63.8	47.3	38.0
Incr Delay (d2), s/veh	16.9	0.7	0.4	13.3	0.3	0.2	16.3	2.1	2.2	15.5	3.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	8.2	1.6	8.8	9.0	1.8	6.7	11.3	11.3	4.8	13.9	0.8
LnGrp Delay(d),s/veh	79.5	32.5	28.0	79.2	43.2	36.7	78.3	44.8	45.2	79.3	51.2	38.1
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1043			1024			809			883	
Approach Delay, s/veh		38.4			50.1			51.4			54.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.3	57.9	18.1	41.8	16.8	63.3	14.6	45.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	26.0	34.7	21.0	39.7	19.0	41.7	16.0	44.7
Max Q Clear Time (g_c+I1), s	17.9	19.3	13.9	29.3	12.8	20.9	10.6	24.5
Green Ext Time (p_c), s	0.3	11.1	0.2	7.2	0.2	13.8	0.1	11.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.1
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	843	137	277	871	98	152	513	172	234	741	73
Future Volume (veh/h)	141	843	137	277	871	98	152	513	172	234	741	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	153	916	46	301	947	98	165	558	164	254	805	72
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	177	1553	469	326	1819	188	189	658	193	279	976	87
Arrive On Green	0.13	0.40	0.40	0.18	0.39	0.38	0.11	0.25	0.24	0.16	0.29	0.29
Sat Flow, veh/h	1792	5136	1552	1792	4719	487	1774	2681	785	1792	3313	296
Grp Volume(v), veh/h	153	916	46	301	686	359	165	368	354	254	434	443
Grp Sat Flow(s),veh/h/ln	1792	1712	1552	1792	1712	1782	1774	1770	1696	1792	1787	1822
Q Serve(g_s), s	11.7	19.6	2.6	23.1	21.6	21.7	12.8	27.7	27.9	19.5	31.7	31.7
Cycle Q Clear(g_c), s	11.7	19.6	2.6	23.1	21.6	21.7	12.8	27.7	27.9	19.5	31.7	31.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.46	1.00		0.16
Lane Grp Cap(c), veh/h	177	1553	469	326	1320	687	189	434	416	279	527	537
V/C Ratio(X)	0.86	0.59	0.10	0.92	0.52	0.52	0.87	0.85	0.85	0.91	0.82	0.82
Avail Cap(c_a), veh/h	256	1553	469	384	1320	687	228	442	424	333	549	560
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	35.1	30.0	56.3	33.1	33.2	61.6	50.3	50.7	58.1	46.0	46.1
Incr Delay (d2), s/veh	16.1	1.4	0.4	25.1	1.5	2.8	25.6	14.4	15.5	25.2	10.1	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	9.4	1.2	13.7	10.5	11.2	7.6	15.3	14.9	11.6	17.2	17.5
LnGrp Delay(d),s/veh	75.9	36.5	30.3	81.4	34.5	36.1	87.2	64.7	66.2	83.4	56.1	56.0
LnGrp LOS	E	D	C	F	C	D	F	E	E	F	E	E
Approach Vol, veh/h		1115			1346			887			1131	
Approach Delay, s/veh		41.6			45.4			69.5			62.2	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	46.3	18.9	45.2	17.9	58.0	25.8	38.4
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	30.0	31.7	18.0	41.7	20.0	41.7	26.0	33.7
Max Q Clear Time (g_c+I1), s	15.1	21.6	14.8	33.7	13.7	23.7	21.5	29.9
Green Ext Time (p_c), s	0.4	8.5	0.1	6.1	0.2	13.9	0.3	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	406	217	192	707	63	266	955	126	80	861	421
Future Volume (veh/h)	345	406	217	192	707	63	266	955	126	80	861	421
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	375	441	166	209	768	65	289	1038	90	87	936	383
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	400	1230	809	232	832	70	312	1330	579	106	919	403
Arrive On Green	0.22	0.34	0.34	0.13	0.25	0.24	0.18	0.38	0.38	0.06	0.26	0.26
Sat Flow, veh/h	1792	3574	1569	1792	3324	281	1774	3539	1542	1774	3539	1552
Grp Volume(v), veh/h	375	441	166	209	413	420	289	1038	90	87	936	383
Grp Sat Flow(s),veh/h/ln	1792	1787	1569	1792	1787	1818	1774	1770	1542	1774	1770	1552
Q Serve(g_s), s	36.2	16.2	10.1	20.2	39.6	39.7	28.2	45.6	6.8	8.5	45.7	42.7
Cycle Q Clear(g_c), s	36.2	16.2	10.1	20.2	39.6	39.7	28.2	45.6	6.8	8.5	45.7	42.7
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1230	809	232	448	455	312	1330	579	106	919	403
V/C Ratio(X)	0.94	0.36	0.21	0.90	0.92	0.92	0.93	0.78	0.16	0.82	1.02	0.95
Avail Cap(c_a), veh/h	652	1230	809	448	460	468	444	1330	579	242	919	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)	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	67.1	43.2	23.4	75.5	64.3	64.4	71.4	48.5	36.4	81.8	65.1	64.0
Incr Delay (d2), s/veh	14.8	0.2	0.2	12.1	24.2	24.0	20.5	3.3	0.2	14.3	34.3	32.4
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	19.6	8.1	4.5	10.8	22.6	23.0	15.7	23.0	2.9	4.6	26.7	22.0
LnGrp Delay(d),s/veh	82.0	43.4	23.5	87.6	88.4	88.4	91.9	51.8	36.6	96.0	99.4	96.4
LnGrp LOS	F	D	C	F	F	F	F	D	D	F	F	F
Approach Vol, veh/h		982			1042			1417			1406	
Approach Delay, s/veh		54.8			88.2			59.0			98.4	
Approach LOS		D			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	64.6	34.9	49.7	43.3	48.1	14.5	70.1
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	22.2	18.2	30.2	47.7	38.2	41.7	10.5	47.6
Green Ext Time (p_c), s	0.5	12.8	0.7	0.0	1.1	1.1	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	126.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	308	376	382	407
Future Vol, veh/h	343	0	308	376	382	407
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	350	0	314	384	390	415
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	30	43.6	240.9
HCM LOS	D	E	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	48%
Vol Thru, %	0%	100%	21%	0%
Vol Right, %	0%	0%	79%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	205	479	789
LT Vol	343	0	0	382
Through Vol	0	205	103	0
RT Vol	0	0	376	407
Lane Flow Rate	350	210	488	805
Geometry Grp	5	7	7	2
Degree of Util (X)	0.709	0.429	0.926	1.472
Departure Headway (Hd)	8.609	8.704	8.132	6.58
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	424	417	449	556
Service Time	6.609	6.404	5.832	4.607
HCM Lane V/C Ratio	0.825	0.504	1.087	1.448
HCM Control Delay	30	17.8	54.7	240.9
HCM Lane LOS	D	C	F	F
HCM 95th-tile Q	5.4	2.1	10.5	39.7

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	0	0	50	1	114	254	559	0	0	383	240
Future Vol, veh/h	35	0	0	50	1	114	254	559	0	0	383	240
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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, %	0	0	0	5	5	5	12	12	12	5	5	5
Mvmt Flow	37	0	0	53	1	120	267	588	0	0	403	253

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1325	1782	294	659	0	-	-	-	0
Stage 1	1123	1123	-	-	-	-	-	-	-
Stage 2	202	659	-	-	-	-	-	-	-
Critical Hdwy	6.9	6.6	7	4.34	-	-	-	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.9	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	2.32	-	-	-	-	-
Pot Cap-1 Maneuver	143	79	693	860	-	0	0	-	-
Stage 1	266	273	-	-	-	0	0	-	-
Stage 2	803	452	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	99	0	693	860	-	-	-	-	-
Mov Cap-2 Maneuver	99	0	-	-	-	-	-	-	-
Stage 1	183	0	-	-	-	-	-	-	-
Stage 2	803	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.9	3.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	860	-	245	-	-
HCM Lane V/C Ratio	0.311	-	0.709	-	-
HCM Control Delay (s)	11.1	-	48.9	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	1.3	-	4.8	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	8	5	37	8	83	6	509	0	0	429	21
Future Vol, veh/h	27	8	5	37	8	83	6	509	0	0	429	21
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	7	7	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	9	9	9	2	2	2	2	2	2
Mvmt Flow	29	9	5	40	9	90	7	553	0	0	466	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	776	1048	249	804	1059	277	493	0	-	-	-	0
Stage 1	482	482	-	566	566	-	-	-	-	-	-	-
Stage 2	294	566	-	238	493	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.7	7.1	7.68	6.68	7.08	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	3.59	4.09	3.39	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	273	214	727	262	212	700	1067	-	0	0	-	-
Stage 1	514	532	-	459	489	-	-	-	0	0	-	-
Stage 2	668	486	-	724	528	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	228	212	724	251	210	700	1067	-	-	-	-	-
Mov Cap-2 Maneuver	228	212	-	251	210	-	-	-	-	-	-	-
Stage 1	509	530	-	456	486	-	-	-	-	-	-	-
Stage 2	568	483	-	707	526	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.8	17.7	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1067	-	245	421	-	-
HCM Lane V/C Ratio	0.006	-	0.177	0.33	-	-
HCM Control Delay (s)	8.4	-	22.8	17.7	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	1.4	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	5	874	128	14	342
Future Vol, veh/h	22	5	874	128	14	342
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	950	139	15	372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1422	1020	0	0	1089	0
Stage 1	1020	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	150	287	-	-	641	-
Stage 1	348	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	287	-	-	641	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	146	287	641	-
HCM Lane V/C Ratio	-	-	0.164	0.019	0.024	-
HCM Control Delay (s)	-	-	34.4	17.8	10.8	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	92	9	103	214	94	6	81	95	104	179	26
Future Vol, veh/h	16	92	9	103	214	94	6	81	95	104	179	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	94	9	105	218	96	6	83	97	106	183	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.9	18.1	11.5	15
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	14%	25%	34%
Vol Thru, %	45%	79%	52%	58%
Vol Right, %	52%	8%	23%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	117	411	309
LT Vol	6	16	103	104
Through Vol	81	92	214	179
RT Vol	95	9	94	26
Lane Flow Rate	186	119	419	315
Geometry Grp	1	1	1	1
Degree of Util (X)	0.306	0.208	0.643	0.512
Departure Headway (Hd)	5.932	6.261	5.517	5.841
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	609	575	650	612
Service Time	3.932	4.272	3.603	3.935
HCM Lane V/C Ratio	0.305	0.207	0.645	0.515
HCM Control Delay	11.5	10.9	18.1	15
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.3	0.8	4.6	2.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	96	123	317	252	9	126	252	162	10	171	30
Future Volume (veh/h)	49	96	123	317	252	9	126	252	162	10	171	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	99	103	327	260	4	130	260	111	10	176	6
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	115	189	197	404	721	613	187	682	284	32	669	291
Arrive On Green	0.06	0.22	0.19	0.23	0.39	0.39	0.10	0.27	0.24	0.02	0.19	0.19
Sat Flow, veh/h	1792	846	880	1774	1863	1583	1810	2488	1034	1774	3539	1538
Grp Volume(v), veh/h	51	0	202	327	260	4	130	187	184	10	176	6
Grp Sat Flow(s),veh/h/ln	1792	0	1726	1774	1863	1583	1810	1805	1718	1774	1770	1538
Q Serve(g_s), s	1.7	0.0	6.5	10.9	6.2	0.1	4.3	5.2	5.5	0.3	2.7	0.2
Cycle Q Clear(g_c), s	1.7	0.0	6.5	10.9	6.2	0.1	4.3	5.2	5.5	0.3	2.7	0.2
Prop In Lane	1.00		0.51	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	115	0	386	404	721	613	187	495	471	32	669	291
V/C Ratio(X)	0.44	0.00	0.52	0.81	0.36	0.01	0.70	0.38	0.39	0.31	0.26	0.02
Avail Cap(c_a), veh/h	1047	0	1050	1037	1133	963	1058	1792	1705	980	3514	1527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	21.8	22.8	13.6	11.8	27.0	18.3	19.0	30.3	21.6	20.6
Incr Delay (d2), s/veh	2.6	0.0	1.7	3.9	0.5	0.0	4.6	0.7	0.8	5.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.2	5.7	3.3	0.0	2.4	2.7	2.7	0.2	1.3	0.1
LnGrp Delay(d),s/veh	30.8	0.0	23.5	26.7	14.1	11.8	31.6	19.1	19.8	35.6	21.9	20.7
LnGrp LOS	C		C	C	B	B	C	B	B	D	C	C
Approach Vol, veh/h		253			591			501			192	
Approach Delay, s/veh		24.9			21.1			22.6			22.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	21.1	18.2	18.0	10.5	15.8	8.0	28.2
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.6	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.3	7.5	12.9	8.5	6.3	4.7	3.7	8.2
Green Ext Time (p_c), s	0.0	5.1	0.9	3.8	0.3	5.1	0.1	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	0	61	0	0	0	67	127	0	0	325	508
Future Volume (veh/h)	203	0	61	0	0	0	67	127	0	0	325	508
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1900	1900	1881	1900
Adj Flow Rate, veh/h	209	0	18	0	0	0	69	131	0	0	335	491
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	276	0	246	4	4	0	226	383	0	0	444	650
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.00	0.65	0.65	0.00	0.00	0.65	0.65
Sat Flow, veh/h	1774	0	1583	1774	1863	0	189	586	0	0	679	995
Grp Volume(v), veh/h	209	0	18	0	0	0	200	0	0	0	0	826
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	0	775	0	0	0	0	1675
Q Serve(g_s), s	5.3	0.0	0.5	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	15.9
Cycle Q Clear(g_c), s	5.3	0.0	0.5	0.0	0.0	0.0	18.5	0.0	0.0	0.0	0.0	15.9
Prop In Lane	1.00		1.00	1.00		0.00	0.34		0.00	0.00		0.59
Lane Grp Cap(c), veh/h	276	0	246	4	4	0	609	0	0	0	0	1094
V/C Ratio(X)	0.76	0.00	0.07	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.76
Avail Cap(c_a), veh/h	1150	0	1195	585	812	0	1206	0	0	0	0	1976
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	17.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	5.6
Incr Delay (d2), s/veh	4.2	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.2	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	7.4
LnGrp Delay(d),s/veh	23.3	0.0	17.1	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	6.7
LnGrp LOS	C		B				A					A
Approach Vol, veh/h		227			0			200			826	
Approach Delay, s/veh		22.8			0.0			5.4			6.7	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	11.8		35.2	11.8	0.0		35.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	0.0	2.5		20.5	7.3	0.0		17.9
Green Ext Time (p_c), s	0.0	0.0		10.3	0.5	0.0		10.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	0	41	3	1	7	57	816	26	14	649	98
Future Volume (veh/h)	59	0	41	3	1	7	57	816	26	14	649	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	63	0	5	3	1	1	61	868	27	15	690	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	234	0	104	116	21	9	94	1277	40	42	1234	1013
Arrive On Green	0.05	0.00	0.07	0.05	0.06	0.05	0.05	0.70	0.67	0.02	0.66	0.00
Sat Flow, veh/h	1681	0	1599	280	361	160	1792	1815	56	1774	1863	1583
Grp Volume(v), veh/h	63	0	5	5	0	0	61	0	895	15	690	0
Grp Sat Flow(s),veh/h/ln	1681	0	1599	802	0	0	1792	0	1871	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.2	0.0	0.0	0.0	1.9	0.0	15.7	0.5	11.5	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.2	2.0	0.0	0.0	1.9	0.0	15.7	0.5	11.5	0.0
Prop In Lane	1.00		1.00	0.60		0.20	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	104	140	0	0	94	0	1316	42	1234	1013
V/C Ratio(X)	0.30	0.00	0.05	0.04	0.00	0.00	0.65	0.00	0.68	0.36	0.56	0.00
Avail Cap(c_a), veh/h	975	0	966	705	0	0	1070	0	1814	753	1784	1480
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.6	0.0	25.3	25.9	0.0	0.0	26.8	0.0	4.9	27.8	5.2	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.1	0.0	0.0	7.3	0.0	1.0	5.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.1	0.1	0.0	0.0	1.1	0.0	8.3	0.3	6.0	0.0
LnGrp Delay(d),s/veh	27.4	0.0	25.5	26.0	0.0	0.0	34.2	0.0	5.8	32.9	5.8	0.0
LnGrp LOS	C		C	C			C		A	C	A	
Approach Vol, veh/h		68			5			956			705	
Approach Delay, s/veh		27.3			26.0			7.6			6.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	44.6		7.8	7.0	43.0		7.8
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.5	17.7		4.0	3.9	13.5		4.0
Green Ext Time (p_c), s	0.0	20.9		0.3	0.1	22.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	161	432	12
Future Vol, veh/h	5	2	2	161	432	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	5	2	2	169	455	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	635	461	467	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	446	605	1094	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	445	605	1094	-	-	-
Mov Cap-2 Maneuver	445	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	859	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1094	-	481	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	8.3	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	234	308	366	256	348	341
Future Volume (veh/h)	234	308	366	256	348	341
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1863	1863	1863	1863
Adj Flow Rate, veh/h	239	137	373	84	355	348
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	2	2	2	2
Cap, veh/h	349	311	637	539	416	1216
Arrive On Green	0.19	0.19	0.34	0.34	0.23	0.65
Sat Flow, veh/h	1792	1599	1863	1576	1774	1863
Grp Volume(v), veh/h	239	137	373	84	355	348
Grp Sat Flow(s),veh/h/ln	1792	1599	1863	1576	1774	1863
Q Serve(g_s), s	6.5	4.0	8.6	1.9	10.1	4.2
Cycle Q Clear(g_c), s	6.5	4.0	8.6	1.9	10.1	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	349	311	637	539	416	1216
V/C Ratio(X)	0.69	0.44	0.59	0.16	0.85	0.29
Avail Cap(c_a), veh/h	727	649	1845	1561	676	1845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	18.6	14.2	12.0	19.2	3.9
Incr Delay (d2), s/veh	0.9	0.4	0.9	0.1	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.8	4.6	0.9	5.3	2.2
LnGrp Delay(d),s/veh	20.5	19.0	15.1	12.1	22.2	4.0
LnGrp LOS	C	B	B	B	C	A
Approach Vol, veh/h	376		457			703
Approach Delay, s/veh	20.0		14.6			13.2
Approach LOS	B		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.3	22.0				38.3		14.2
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	12.1	10.6				6.2		8.5
Green Ext Time (p_c), s	0.3	5.2				5.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	732	200	261	545	70	357	846	329	155	663	274
Future Volume (veh/h)	181	732	200	261	545	70	357	846	329	155	663	274
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	185	747	183	266	556	24	364	863	163	158	677	54
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	216	867	212	295	1255	552	360	1032	460	186	681	295
Arrive On Green	0.12	0.31	0.29	0.16	0.35	0.35	0.20	0.29	0.29	0.10	0.19	0.19
Sat Flow, veh/h	1792	2820	691	1792	3574	1572	1810	3610	1610	1792	3574	1549
Grp Volume(v), veh/h	185	473	457	266	556	24	364	863	163	158	677	54
Grp Sat Flow(s),veh/h/ln	1792	1787	1724	1792	1787	1572	1810	1805	1610	1792	1787	1549
Q Serve(g_s), s	11.7	28.8	28.9	16.8	13.8	1.2	23.0	25.9	9.3	10.0	21.8	3.4
Cycle Q Clear(g_c), s	11.7	28.8	28.9	16.8	13.8	1.2	23.0	25.9	9.3	10.0	21.8	3.4
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	549	530	295	1255	552	360	1032	460	186	681	295
V/C Ratio(X)	0.86	0.86	0.86	0.90	0.44	0.04	1.01	0.84	0.35	0.85	0.99	0.18
Avail Cap(c_a), veh/h	326	588	567	326	1255	552	360	1032	460	217	681	295
HCM Platoon Ratio	1.00	1.00	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	49.8	37.7	38.0	47.3	28.8	24.7	46.2	38.7	32.8	50.8	46.7	39.2
Incr Delay (d2), s/veh	13.3	12.6	13.0	25.5	0.4	0.1	49.9	6.4	0.7	23.1	33.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	16.1	15.6	10.4	6.9	0.5	16.4	13.9	4.2	6.2	13.8	1.5
LnGrp Delay(d),s/veh	63.1	50.3	51.1	72.9	29.2	24.7	96.2	45.2	33.5	74.0	79.7	39.7
LnGrp LOS	E	D	D	E	C	C	F	D	C	E	E	D
Approach Vol, veh/h		1115			846			1390			889	
Approach Delay, s/veh		52.7			42.8			57.2			76.2	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	37.0	23.0	39.5	27.0	26.0	17.9	44.6
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	12.0	27.9	18.8	30.9	25.0	23.8	13.7	15.8
Green Ext Time (p_c), s	0.1	1.3	0.2	2.9	0.0	0.0	0.3	13.3

Intersection Summary	
HCM 2010 Ctrl Delay	57.1
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	118.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	124	639	129	33	548	40	108	147	15	67	108	94
Future Vol, veh/h	124	639	129	33	548	40	108	147	15	67	108	94
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	127	652	132	34	559	41	110	150	15	68	110	96
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	82.3	251.7	34.1	19.1
HCM LOS	F	F	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	40%	28%	0%	5%	38%	0%
Vol Thru, %	54%	72%	71%	88%	62%	0%
Vol Right, %	6%	0%	29%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	444	449	621	175	94
LT Vol	108	124	0	33	67	0
Through Vol	147	320	320	548	108	0
RT Vol	15	0	129	40	0	94
Lane Flow Rate	276	453	458	634	179	96
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.696	1.041	1.01	1.481	0.459	0.223
Departure Headway (Hd)	10.41	9.189	8.833	8.542	10.295	9.356
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	350	398	416	431	352	387
Service Time	8.41	6.889	6.533	6.542	7.995	7.056
HCM Lane V/C Ratio	0.789	1.138	1.101	1.471	0.509	0.248
HCM Control Delay	34.1	87.4	77.2	251.7	21.4	14.7
HCM Lane LOS	D	F	F	F	C	B
HCM 95th-tile Q	5	13.4	12.7	32.5	2.3	0.8



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	404	276	230	458	160	175
Future Volume (veh/h)	404	276	230	458	160	175
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1863	1900	1881	1881	1881	1881
Adj Flow Rate, veh/h	449	179	256	509	178	40
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	1052	415	344	1310	266	238
Arrive On Green	0.43	0.40	0.19	0.70	0.15	0.15
Sat Flow, veh/h	2557	973	1792	1881	1792	1599
Grp Volume(v), veh/h	321	307	256	509	178	40
Grp Sat Flow(s),veh/h/ln	1770	1667	1792	1881	1792	1599
Q Serve(g_s), s	6.6	6.8	7.0	5.8	4.8	1.1
Cycle Q Clear(g_c), s	6.6	6.8	7.0	5.8	4.8	1.1
Prop In Lane		0.58	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	756	712	344	1310	266	238
V/C Ratio(X)	0.43	0.43	0.74	0.39	0.67	0.17
Avail Cap(c_a), veh/h	1690	1592	854	1797	854	762
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	10.4	10.7	19.7	3.3	20.8	19.2
Incr Delay (d2), s/veh	0.5	0.6	3.2	0.3	2.9	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	3.2	3.2	3.7	3.1	2.6	0.5
LnGrp Delay(d),s/veh	10.9	11.3	22.9	3.5	23.6	19.5
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	628			765	218	
Approach Delay, s/veh	11.1			10.0	22.9	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.9	26.0		11.7		39.9		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	9.0	8.8		6.8		7.8		
Green Ext Time (p_c), s	0.6	11.9		0.6		12.0		

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	120	161	138	29	114	319
Future Vol, veh/h	120	161	138	29	114	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	133	179	153	32	127	354

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	186	0	-	0	615	169
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1382	-	-	-	456	878
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1382	-	-	-	412	878
Mov Cap-2 Maneuver	-	-	-	-	490	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1382	-	-	-	727
HCM Lane V/C Ratio	0.096	-	-	-	0.662
HCM Control Delay (s)	7.9	-	-	-	19.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	953	144	283	986	119	107	491	367	130	397	138
Future Volume (veh/h)	139	953	144	283	986	119	107	491	367	130	397	138
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	142	972	90	289	1006	52	109	501	207	133	405	131
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	291	1392	622	314	1375	615	123	568	476	150	433	140
Arrive On Green	0.16	0.39	0.39	0.18	0.38	0.38	0.07	0.31	0.31	0.08	0.32	0.31
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1349	436
Grp Volume(v), veh/h	142	972	90	289	1006	52	109	501	207	133	0	536
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	0	1786
Q Serve(g_s), s	9.3	29.4	4.7	20.6	31.3	2.2	7.9	33.2	13.8	9.6	0.0	37.9
Cycle Q Clear(g_c), s	9.3	29.4	4.7	20.6	31.3	2.2	7.9	33.2	13.8	9.6	0.0	37.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	291	1392	622	314	1375	615	123	568	476	150	0	572
V/C Ratio(X)	0.49	0.70	0.14	0.92	0.73	0.08	0.89	0.88	0.43	0.89	0.00	0.94
Avail Cap(c_a), veh/h	291	1392	622	331	1375	615	123	573	480	150	0	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.7	33.6	26.0	52.7	34.3	17.6	60.0	42.9	36.2	58.9	0.0	43.0
Incr Delay (d2), s/veh	0.5	2.9	0.5	29.5	3.5	0.3	47.4	15.1	0.9	41.0	0.0	22.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	15.1	2.2	12.8	16.0	1.0	5.5	19.5	6.1	6.4	0.0	22.3
LnGrp Delay(d),s/veh	50.2	36.5	26.5	82.2	37.7	17.9	107.4	58.1	37.1	99.8	0.0	65.8
LnGrp LOS	D	D	C	F	D	B	F	E	D	F		E
Approach Vol, veh/h		1204			1347			817			669	
Approach Delay, s/veh		37.4			46.5			59.3			72.6	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	54.2	13.0	45.7	26.9	54.0	15.0	43.7
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	24.0	37.0	9.0	41.1	13.0	* 48	11.0	39.1
Max Q Clear Time (g_c+I1), s	22.6	31.4	9.9	39.9	11.3	33.3	11.6	35.2
Green Ext Time (p_c), s	0.1	4.4	0.0	0.9	0.2	10.2	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	1175	200	229	1058	165	270	803	113	164	768	146
Future Volume (veh/h)	236	1175	200	229	1058	165	270	803	113	164	768	146
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	238	1187	66	231	1069	68	273	811	107	166	776	49
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	260	1766	539	255	1762	538	296	998	132	188	908	394
Arrive On Green	0.15	0.34	0.34	0.05	0.11	0.11	0.16	0.31	0.30	0.10	0.25	0.25
Sat Flow, veh/h	1792	5136	1568	1810	5187	1582	1810	3206	423	1810	3610	1566
Grp Volume(v), veh/h	238	1187	66	231	1069	68	273	457	461	166	776	49
Grp Sat Flow(s),veh/h/ln	1792	1712	1568	1810	1729	1582	1810	1805	1824	1810	1805	1566
Q Serve(g_s), s	21.0	31.6	4.6	20.3	31.4	6.2	23.8	37.3	37.3	14.5	32.8	3.9
Cycle Q Clear(g_c), s	21.0	31.6	4.6	20.3	31.4	6.2	23.8	37.3	37.3	14.5	32.8	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	260	1766	539	255	1762	538	296	562	568	188	908	394
V/C Ratio(X)	0.91	0.67	0.12	0.90	0.61	0.13	0.92	0.81	0.81	0.88	0.85	0.12
Avail Cap(c_a), veh/h	314	1766	539	305	1762	538	351	587	593	226	925	401
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.53	0.53	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.4	44.8	36.0	75.2	60.8	49.6	65.9	50.8	50.9	70.7	57.1	46.3
Incr Delay (d2), s/veh	27.1	2.1	0.5	16.0	0.8	0.3	26.9	8.7	8.6	27.8	8.0	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	12.3	15.3	2.1	11.3	15.2	2.8	14.1	20.0	20.2	8.7	17.4	1.7
LnGrp Delay(d),s/veh	94.5	46.9	36.4	91.2	61.7	49.9	92.8	59.5	59.6	98.5	65.1	46.4
LnGrp LOS	F	D	D	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		1491			1368			1191			991	
Approach Delay, s/veh		54.0			66.1			67.2			69.8	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.6	59.0	30.1	44.3	27.2	58.4	20.6	53.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	22.6	43.7	31.0	39.7	28.0	42.7	20.0	50.7
Max Q Clear Time (g_c+I1), s	22.3	33.6	25.8	34.8	23.0	33.4	16.5	39.3
Green Ext Time (p_c), s	0.3	9.2	0.4	4.2	0.3	8.4	0.1	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	63.5
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1296	185	265	1146	84	281	804	214	328	727	124
Future Volume (veh/h)	153	1296	185	265	1146	84	281	804	214	328	727	124
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	156	1322	110	270	1169	81	287	820	203	335	742	118
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	175	1470	447	260	1642	114	309	810	201	325	918	146
Arrive On Green	0.20	0.57	0.57	0.14	0.33	0.32	0.17	0.29	0.28	0.18	0.30	0.29
Sat Flow, veh/h	1792	5136	1561	1810	4943	342	1792	2807	695	1792	3082	490
Grp Volume(v), veh/h	156	1322	110	270	818	432	287	522	501	335	430	430
Grp Sat Flow(s),veh/h/ln	1792	1712	1561	1810	1729	1827	1792	1787	1714	1792	1787	1785
Q Serve(g_s), s	13.6	36.3	5.6	23.0	33.1	33.1	25.3	46.2	46.2	29.0	35.6	35.7
Cycle Q Clear(g_c), s	13.6	36.3	5.6	23.0	33.1	33.1	25.3	46.2	46.2	29.0	35.6	35.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.41	1.00		0.27
Lane Grp Cap(c), veh/h	175	1470	447	260	1149	607	309	516	495	325	532	531
V/C Ratio(X)	0.89	0.90	0.25	1.04	0.71	0.71	0.93	1.01	1.01	1.03	0.81	0.81
Avail Cap(c_a), veh/h	202	1470	447	260	1149	607	347	516	495	325	532	531
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)	0.62	0.62	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.5	32.2	25.6	68.5	46.7	46.8	65.3	56.9	57.2	65.5	52.0	52.1
Incr Delay (d2), s/veh	22.8	6.0	0.8	66.0	3.8	7.0	29.2	42.6	43.5	58.3	9.4	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	17.7	2.5	16.3	16.4	17.9	15.0	28.9	27.8	19.6	19.0	19.0
LnGrp Delay(d),s/veh	86.3	38.1	26.4	134.5	50.5	53.8	94.5	99.5	100.7	123.8	61.4	61.6
LnGrp LOS	F	D	C	F	D	D	F	F	F	F	E	E
Approach Vol, veh/h		1588			1520			1310			1195	
Approach Delay, s/veh		42.1			66.4			98.9			79.0	
Approach LOS		D			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	49.8	31.6	51.6	19.6	57.2	33.0	50.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	44.5	31.0	42.9	18.0	49.5	29.0	44.9
Max Q Clear Time (g_c+I1), s	25.0	38.3	27.3	37.7	15.6	35.1	31.0	48.2
Green Ext Time (p_c), s	0.0	5.9	0.3	4.6	0.1	13.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.8
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	504	884	292	190	550	74	313	1130	211	124	928	409
Future Volume (veh/h)	504	884	292	190	550	74	313	1130	211	124	928	409
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	514	902	261	194	561	71	319	1153	150	127	947	347
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	534	1366	887	214	644	81	339	1223	536	145	831	360
Arrive On Green	0.30	0.38	0.37	0.12	0.20	0.19	0.19	0.34	0.34	0.08	0.23	0.23
Sat Flow, veh/h	1810	3610	1581	1792	3177	401	1810	3610	1583	1792	3574	1549
Grp Volume(v), veh/h	514	902	261	194	315	317	319	1153	150	127	947	347
Grp Sat Flow(s),veh/h/ln	1810	1805	1581	1792	1787	1791	1810	1805	1583	1792	1787	1549
Q Serve(g_s), s	54.5	40.3	17.1	20.8	33.2	33.4	33.9	60.4	13.5	13.7	45.3	43.2
Cycle Q Clear(g_c), s	54.5	40.3	17.1	20.8	33.2	33.4	33.9	60.4	13.5	13.7	45.3	43.2
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	1366	887	214	362	363	339	1223	536	145	831	360
V/C Ratio(X)	0.96	0.66	0.29	0.90	0.87	0.87	0.94	0.94	0.28	0.87	1.14	0.96
Avail Cap(c_a), veh/h	595	1366	887	405	417	417	409	1223	536	221	831	360
HCM Platoon Ratio	1.00	1.00	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	67.5	50.2	22.9	84.6	75.1	75.4	78.1	62.6	47.0	88.5	74.7	73.9
Incr Delay (d2), s/veh	26.4	1.3	0.3	13.2	16.8	17.5	27.4	14.4	0.4	20.9	77.0	37.9
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	31.2	20.4	7.5	11.1	18.1	18.3	19.5	32.6	6.0	7.6	31.2	22.2
LnGrp Delay(d),s/veh	93.9	51.5	23.2	97.8	92.0	92.9	105.5	77.0	47.5	109.4	151.8	111.8
LnGrp LOS	F	D	C	F	F	F	F	E	D	F	F	F
Approach Vol, veh/h		1677			826			1622			1421	
Approach Delay, s/veh		60.1			93.7			79.9			138.2	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.3	77.3	40.5	49.7	61.5	43.1	19.8	70.4
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	43.7	24.0	44.0
Max Q Clear Time (g_c+I2), s	22.8	42.3	35.9	47.3	56.5	35.4	15.7	62.4
Green Ext Time (p_c), s	0.5	1.5	0.6	0.0	1.1	2.3	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.9
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	173.5
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	644	618	419	341
Future Vol, veh/h	290	0	644	618	419	341
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	657	631	428	348
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	23.4	196	193.5
HCM LOS	C	F	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	55%
Vol Thru, %	0%	100%	26%	0%
Vol Right, %	0%	0%	74%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	429	833	760
LT Vol	290	0	0	419
Through Vol	0	429	215	0
RT Vol	0	0	618	341
Lane Flow Rate	296	438	850	776
Geometry Grp	5	7	7	2
Degree of Util (X)	0.601	0.859	1.543	1.36
Departure Headway (Hd)	8.472	8.135	7.596	6.598
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	429	451	484	558
Service Time	6.472	5.835	5.296	4.598
HCM Lane V/C Ratio	0.69	0.971	1.756	1.391
HCM Control Delay	23.4	43.5	274.6	193.5
HCM Lane LOS	C	E	F	F
HCM 95th-tile Q	3.8	8.7	39.2	33

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	0	0	38	1	104	288	705	0	0	698	392
Future Vol, veh/h	114	0	0	38	1	104	288	705	0	0	698	392
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	2	2	2
Mvmt Flow	116	0	0	39	1	106	294	719	0	0	712	400

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1663	2426	360	1119	0	-	-	-	0
Stage 1	1307	1307	-	-	-	-	-	-	-
Stage 2	356	1119	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	4.24	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.27	-	-	-	-	-
Pot Cap-1 Maneuver	90	33	642	592	-	0	0	-	-
Stage 1	221	232	-	-	-	0	0	-	-
Stage 2	686	285	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	45	0	642	592	-	-	-	-	-
Mov Cap-2 Maneuver	45	0	-	-	-	-	-	-	-
Stage 1	111	0	-	-	-	-	-	-	-
Stage 2	686	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	147.7	4.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	592	-	141	-	-
HCM Lane V/C Ratio	0.496	-	1.035	-	-
HCM Control Delay (s)	16.9	-	147.7	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	2.8	-	7.7	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	24	7	25	10	99	16	532	0	0	542	48
Future Vol, veh/h	25	24	7	25	10	99	16	532	0	0	542	48
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	9	9	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	1	1	1	1	1	1	1	1
Mvmt Flow	28	27	8	28	11	110	18	591	0	0	602	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	972	1262	334	941	1289	296	662	0	-	-	-	0
Stage 1	635	635	-	627	627	-	-	-	-	-	-	-
Stage 2	337	627	-	314	662	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	210	171	668	219	164	703	929	-	0	0	-	-
Stage 1	438	476	-	440	477	-	-	-	0	0	-	-
Stage 2	656	479	-	674	460	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	164	167	664	187	160	703	929	-	-	-	-	-
Mov Cap-2 Maneuver	164	167	-	187	160	-	-	-	-	-	-	-
Stage 1	427	473	-	431	468	-	-	-	-	-	-	-
Stage 2	530	470	-	629	457	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.5	19.4	0.3	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	929	-	183	398	-	-
HCM Lane V/C Ratio	0.019	-	0.34	0.374	-	-
HCM Control Delay (s)	9	-	34.5	19.4	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	1.7	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	10.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	142	13	425	45	5	769
Future Vol, veh/h	142	13	425	45	5	769
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	14	462	49	5	836

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1333	486	0	0	511	0
Stage 1	486	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	170	581	-	-	1054	-
Stage 1	618	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	581	-	-	1054	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	94.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	169	581	1054	-
HCM Lane V/C Ratio	-	-	0.913	0.024	0.005	-
HCM Control Delay (s)	-	-	102.4	11.4	8.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	6.7	0.1	0	-

Intersection	
Int Delay, s/veh	52.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	242	774	234	232	831	233	657	1050	229	664	1083	239
Future Vol, veh/h	242	774	234	232	831	233	657	1050	229	664	1083	239
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	263	841	254	252	903	253	714	1141	249	722	1177	260

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	5202	5569	718	5147	5574	695	1437	0	0	1390	0	0
Stage 1	2751	2751	-	2694	2694	-	-	-	-	-	-	-
Stage 2	2451	2818	-	2453	2880	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	371	0	0	385	~ 468	-	-	~ 488	-	-
Stage 1	~ 20	~ 42	-	~ 22	~ 45	-	-	-	-	-	-	-
Stage 2	~ 31	~ 39	-	~ 31	~ 36	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	371	-	0	385	~ 468	-	-	~ 488	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 20	0	-	~ 22	0	-	-	-	-	-	-	-
Stage 2	-	0	-	-	0	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			91.6	83.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	~ 468	-	-	-	-	~ 488	-	-
HCM Lane V/C Ratio	1.526	-	-	-	-	1.479	-	-
HCM Control Delay (s)	269.9	-	-	-	-	248.7	-	-
HCM Lane LOS	F	-	-	-	-	F	-	-
HCM 95th %tile Q(veh)	37.8	-	-	-	-	36.6	-	-

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

Intersection	
Intersection Delay, s/veh	103
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	250	7	109	128	85	5	88	262	125	121	24
Future Vol, veh/h	18	250	7	109	128	85	5	88	262	125	121	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	329	9	143	168	112	7	116	345	164	159	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	73.2	111.6	138.9	75.9
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	7%	34%	46%
Vol Thru, %	25%	91%	40%	45%
Vol Right, %	74%	3%	26%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	355	275	322	270
LT Vol	5	18	109	125
Through Vol	88	250	128	121
RT Vol	262	7	85	24
Lane Flow Rate	467	362	424	355
Geometry Grp	1	1	1	1
Degree of Util (X)	1.19	0.961	1.106	0.968
Departure Headway (Hd)	9.616	10.62	10.074	10.89
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	383	344	364	338
Service Time	7.616	8.62	8.074	8.89
HCM Lane V/C Ratio	1.219	1.052	1.165	1.05
HCM Control Delay	138.9	73.2	111.6	75.9
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	18.1	10.3	14.8	10.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	296	134	121	58	10	155	295	455	16	400	54
Future Volume (veh/h)	31	296	134	121	58	10	155	295	455	16	400	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1900	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	46	435	190	178	85	6	228	434	537	24	588	22
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	69	337	147	210	651	553	263	777	695	39	1127	504
Arrive On Green	0.04	0.29	0.27	0.13	0.37	0.37	0.15	0.44	0.43	0.02	0.32	0.32
Sat Flow, veh/h	1691	1173	512	1660	1743	1482	1757	1752	1568	1792	3574	1599
Grp Volume(v), veh/h	46	0	625	178	85	6	228	434	537	24	588	22
Grp Sat Flow(s),veh/h/ln	1691	0	1685	1660	1743	1482	1757	1752	1568	1792	1787	1599
Q Serve(g_s), s	3.5	0.0	38.0	13.9	4.2	0.3	16.8	24.2	38.7	1.8	17.8	1.3
Cycle Q Clear(g_c), s	3.5	0.0	38.0	13.9	4.2	0.3	16.8	24.2	38.7	1.8	17.8	1.3
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	0	484	210	651	553	263	777	695	39	1127	504
V/C Ratio(X)	0.67	0.00	1.29	0.85	0.13	0.01	0.87	0.56	0.77	0.62	0.52	0.04
Avail Cap(c_a), veh/h	467	0	484	458	651	553	485	822	735	467	1676	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	0.0	47.4	56.5	27.3	26.1	54.9	27.2	32.1	64.2	37.1	31.4
Incr Delay (d2), s/veh	10.6	0.0	145.6	9.0	0.1	0.0	8.4	1.1	5.3	15.3	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	37.2	6.9	2.1	0.1	8.8	11.9	17.7	1.0	8.9	0.6
LnGrp Delay(d),s/veh	73.1	0.0	193.0	65.5	27.4	26.1	63.4	28.3	37.4	79.5	37.7	31.5
LnGrp LOS	E		F	E	C	C	E	C	D	E	D	C
Approach Vol, veh/h		671			269			1199			634	
Approach Delay, s/veh		184.8			52.6			39.1			39.1	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	62.6	20.8	42.0	23.8	45.7	9.4	53.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.0	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	3.8	40.7	15.9	40.0	18.8	19.8	5.5	6.2
Green Ext Time (p_c), s	0.0	12.7	0.4	0.0	0.5	19.8	0.1	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	75.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	596	128	91	76	64	0	41	587	125	0	183	87
Future Volume (veh/h)	596	128	91	76	64	0	41	587	125	0	183	87
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	655	141	80	84	70	0	45	645	132	0	201	82
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	586	369	209	116	123	0	67	696	139	0	621	253
Arrive On Green	0.33	0.33	0.33	0.07	0.07	0.00	0.49	0.49	0.49	0.00	0.49	0.49
Sat Flow, veh/h	1774	1114	632	1774	1863	0	65	1409	282	0	1257	513
Grp Volume(v), veh/h	655	0	221	84	70	0	822	0	0	0	0	283
Grp Sat Flow(s),veh/h/ln	1774	0	1747	1774	1863	0	1757	0	0	0	0	1770
Q Serve(g_s), s	36.0	0.0	10.6	5.1	4.0	0.0	31.7	0.0	0.0	0.0	0.0	10.5
Cycle Q Clear(g_c), s	36.0	0.0	10.6	5.1	4.0	0.0	48.4	0.0	0.0	0.0	0.0	10.5
Prop In Lane	1.00		0.36	1.00		0.00	0.05		0.16	0.00		0.29
Lane Grp Cap(c), veh/h	586	0	578	116	123	0	902	0	0	0	0	874
V/C Ratio(X)	1.12	0.00	0.38	0.73	0.57	0.00	0.91	0.00	0.00	0.00	0.00	0.32
Avail Cap(c_a), veh/h	586	0	578	260	273	0	937	0	0	0	0	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	28.0	50.0	49.4	0.0	26.1	0.0	0.0	0.0	0.0	16.7
Incr Delay (d2), s/veh	74.1	0.0	0.4	8.4	4.1	0.0	12.5	0.0	0.0	0.0	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	29.6	0.0	5.2	2.8	2.2	0.0	26.4	0.0	0.0	0.0	0.0	5.2
LnGrp Delay(d),s/veh	110.6	0.0	28.4	58.4	53.5	0.0	38.6	0.0	0.0	0.0	0.0	16.9
LnGrp LOS	F		C	E	D		D					B
Approach Vol, veh/h		876			154			822			283	
Approach Delay, s/veh		89.9			56.2			38.6			16.9	
Approach LOS		F			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	40.1		57.9	40.0	11.2		57.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	7.1	12.6		50.4	38.0	6.0		12.5
Green Ext Time (p_c), s	0.1	1.5		2.9	0.0	0.7		9.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.0
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	0	46	0	0	12	36	843	7	4	928	45
Future Volume (veh/h)	126	0	46	0	0	12	36	843	7	4	928	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	180	0	12	0	0	3	51	1204	10	6	1326	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	4	4	4	4
Cap, veh/h	317	0	265	0	0	260	75	1235	10	21	1175	975
Arrive On Green	0.17	0.00	0.17	0.00	0.00	0.16	0.04	0.68	0.66	0.01	0.64	0.00
Sat Flow, veh/h	1408	0	1599	0	0	1615	1740	1809	15	1740	1827	1553
Grp Volume(v), veh/h	180	0	12	0	0	3	51	0	1214	6	1326	0
Grp Sat Flow(s),veh/h/ln	1408	0	1599	0	0	1615	1740	0	1824	1740	1827	1553
Q Serve(g_s), s	10.4	0.0	0.5	0.0	0.0	0.1	2.5	0.0	54.3	0.3	55.3	0.0
Cycle Q Clear(g_c), s	10.6	0.0	0.5	0.0	0.0	0.1	2.5	0.0	54.3	0.3	55.3	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	317	0	265	0	0	260	75	0	1245	21	1175	975
V/C Ratio(X)	0.57	0.00	0.05	0.00	0.00	0.01	0.68	0.00	0.98	0.29	1.13	0.00
Avail Cap(c_a), veh/h	659	0	649	0	0	460	698	0	1245	496	1175	975
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.4	0.0	30.1	0.0	0.0	30.5	40.5	0.0	13.0	42.1	15.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	0.0	10.1	0.0	19.8	7.3	69.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.2	0.0	0.0	0.1	1.4	0.0	33.5	0.2	50.0	0.0
LnGrp Delay(d),s/veh	36.0	0.0	30.2	0.0	0.0	30.5	50.6	0.0	32.7	49.4	84.4	0.0
LnGrp LOS	D		C			C	D		C	D	F	
Approach Vol, veh/h		192			3			1265			1332	
Approach Delay, s/veh		35.6			30.5			33.5			84.3	
Approach LOS		D			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	62.7		18.3	7.7	60.0		18.3
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	12.3	56.3		12.6	4.5	57.3		2.1
Green Ext Time (p_c), s	0.0	0.0		0.9	0.1	0.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	57.8
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	2	1	1027	338	9
Future Vol, veh/h	15	2	1	1027	338	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	3	18	18
Mvmt Flow	17	2	1	1154	380	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1541	385	390	0	-	0
Stage 1	385	-	-	-	-	-
Stage 2	1156	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	128	667	1163	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	667	1163	-	-	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	301	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	141	-	-
HCM Lane V/C Ratio	0.001	-	0.135	-	-
HCM Control Delay (s)	8.1	0	34.5	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	213	363	282	205	375	355
Future Volume (veh/h)	213	363	282	205	375	355
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1743	1743	1792	1792
Adj Flow Rate, veh/h	245	189	324	73	431	408
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	9	9	6	6
Cap, veh/h	346	308	551	468	481	1196
Arrive On Green	0.19	0.19	0.32	0.32	0.28	0.67
Sat Flow, veh/h	1774	1583	1743	1482	1707	1792
Grp Volume(v), veh/h	245	189	324	73	431	408
Grp Sat Flow(s),veh/h/ln	1774	1583	1743	1482	1707	1792
Q Serve(g_s), s	7.5	6.3	9.0	2.1	14.0	5.7
Cycle Q Clear(g_c), s	7.5	6.3	9.0	2.1	14.0	5.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	346	308	551	468	481	1196
V/C Ratio(X)	0.71	0.61	0.59	0.16	0.90	0.34
Avail Cap(c_a), veh/h	652	582	1565	1330	589	1609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	21.3	16.6	14.2	20.0	4.2
Incr Delay (d2), s/veh	1.0	0.7	1.1	0.2	12.8	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	3.8	2.8	4.5	0.9	8.3	2.8
LnGrp Delay(d),s/veh	22.8	22.1	17.7	14.4	32.7	4.3
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	434		397			839
Approach Delay, s/veh	22.5		17.1			18.9
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.3	22.3				42.6		15.3
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	16.0	11.0				7.7		9.5
Green Ext Time (p_c), s	0.3	5.3				5.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	783	142	201	626	137	250	784	173	108	664	215
Future Volume (veh/h)	278	783	142	201	626	137	250	784	173	108	664	215
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1881	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	302	851	142	218	680	42	272	852	92	117	722	108
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	329	1045	174	250	1078	473	303	1015	447	144	694	305
Arrive On Green	0.19	0.35	0.33	0.14	0.30	0.30	0.17	0.29	0.29	0.08	0.20	0.20
Sat Flow, veh/h	1774	3009	502	1792	3574	1569	1774	3539	1558	1757	3505	1539
Grp Volume(v), veh/h	302	501	492	218	680	42	272	852	92	117	722	108
Grp Sat Flow(s),veh/h/ln	1774	1770	1741	1792	1787	1569	1774	1770	1558	1757	1752	1539
Q Serve(g_s), s	18.6	28.6	28.6	13.2	18.2	2.1	16.7	25.1	5.0	7.3	22.0	6.7
Cycle Q Clear(g_c), s	18.6	28.6	28.6	13.2	18.2	2.1	16.7	25.1	5.0	7.3	22.0	6.7
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	615	605	250	1078	473	303	1015	447	144	694	305
V/C Ratio(X)	0.92	0.81	0.81	0.87	0.63	0.09	0.90	0.84	0.21	0.81	1.04	0.35
Avail Cap(c_a), veh/h	335	615	605	339	1223	537	367	1015	447	221	694	305
HCM Platoon Ratio	1.00	1.00	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	44.4	33.0	33.2	46.8	33.5	27.8	45.1	37.2	30.0	50.1	44.5	38.4
Incr Delay (d2), s/veh	28.9	8.8	8.9	16.7	1.2	0.1	21.1	6.7	0.4	12.2	45.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	15.4	15.2	7.7	9.1	0.9	9.9	13.2	2.2	4.0	14.9	2.9
LnGrp Delay(d),s/veh	73.3	41.7	42.1	63.6	34.6	28.0	66.2	43.9	30.4	62.4	89.5	39.5
LnGrp LOS	E	D	D	E	C	C	E	D	C	E	F	D
Approach Vol, veh/h		1295			940			1216			947	
Approach Delay, s/veh		49.2			41.0			47.9			80.5	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	35.9	19.5	42.6	23.0	26.0	24.6	37.5
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	9.3	27.1	15.2	30.6	18.7	24.0	20.6	20.2
Green Ext Time (p_c), s	0.1	2.0	0.3	4.9	0.3	0.0	0.0	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.8
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	226.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	838	119	14	714	37	181	54	35	34	142	58
Future Vol, veh/h	39	838	119	14	714	37	181	54	35	34	142	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	42	911	129	15	776	40	197	59	38	37	154	63
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	153.8	449.8	40.8	21.5
HCM LOS	F	F	E	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	67%	9%	0%	2%	19%	0%
Vol Thru, %	20%	91%	78%	93%	81%	0%
Vol Right, %	13%	0%	22%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	458	538	765	176	58
LT Vol	181	39	0	14	34	0
Through Vol	54	419	419	714	142	0
RT Vol	35	0	119	37	0	58
Lane Flow Rate	293	498	585	832	191	63
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.743	1.136	1.302	1.936	0.494	0.149
Departure Headway (Hd)	11.262	9.928	9.72	8.565	10.926	10.08
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	323	368	380	432	333	358
Service Time	9.262	7.628	7.42	6.565	8.626	7.78
HCM Lane V/C Ratio	0.907	1.353	1.539	1.926	0.574	0.176
HCM Control Delay	40.8	120.8	181.9	449.8	23.8	14.5
HCM Lane LOS	E	F	F	F	C	B
HCM 95th-tile Q	5.6	15.9	22.1	54.8	2.6	0.5



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	696	148	180	557	218	251
Future Volume (veh/h)	696	148	180	557	218	251
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1845	1900	1863	1863	1881	1881
Adj Flow Rate, veh/h	725	137	188	580	227	58
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	2	2	1	1
Cap, veh/h	1424	269	257	1297	310	277
Arrive On Green	0.49	0.46	0.14	0.70	0.17	0.17
Sat Flow, veh/h	3023	554	1774	1863	1792	1599
Grp Volume(v), veh/h	433	429	188	580	227	58
Grp Sat Flow(s),veh/h/ln	1752	1732	1774	1863	1792	1599
Q Serve(g_s), s	10.3	10.4	6.2	8.4	7.3	1.9
Cycle Q Clear(g_c), s	10.3	10.4	6.2	8.4	7.3	1.9
Prop In Lane		0.32	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	851	841	257	1297	310	277
V/C Ratio(X)	0.51	0.51	0.73	0.45	0.73	0.21
Avail Cap(c_a), veh/h	1413	1397	714	1502	721	644
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	10.7	10.9	25.0	4.1	23.9	21.7
Incr Delay (d2), s/veh	0.7	0.7	4.0	0.3	3.3	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	5.1	5.1	3.3	4.3	3.9	0.9
LnGrp Delay(d),s/veh	11.4	11.6	29.0	4.4	27.3	22.1
LnGrp LOS	B	B	C	A	C	C
Approach Vol, veh/h	862			768	285	
Approach Delay, s/veh	11.5			10.5	26.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.9	33.7		14.6		46.5		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	8.2	12.4		9.3		10.4		
Green Ext Time (p_c), s	0.4	16.0		0.7		16.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	131.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	779	89	164	210	55	277
Future Vol, veh/h	779	89	164	210	55	277
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	847	97	178	228	60	301

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	409	0	-	0	2084	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	1790	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1150	-	-	-	~ 58	745
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	146	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1150	-	-	-	~ 15	744
Mov Cap-2 Maneuver	-	-	-	-	~ 34	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	~ 38	-

Approach	EB	WB	SB
HCM Control Delay, s	14.6	0	$ 586.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1150	-	-	-	167
HCM Lane V/C Ratio	0.736	-	-	-	2.161
HCM Control Delay (s)	16.3	-	-	-	$ 586.4
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	7.1	-	-	-	28.9

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)	165	888	106	223	639	46	80	423	251	50	447	104
Future Volume (veh/h)	165	888	106	223	639	46	80	423	251	50	447	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1900
Adj Flow Rate, veh/h	179	965	51	242	695	16	87	460	136	54	486	105
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	205	1062	475	249	1143	510	99	681	579	67	499	108
Arrive On Green	0.12	0.30	0.30	0.14	0.33	0.33	0.06	0.38	0.38	0.04	0.37	0.36
Sat Flow, veh/h	1774	3539	1583	1757	3505	1566	1691	1776	1508	1630	1361	294
Grp Volume(v), veh/h	179	965	51	242	695	16	87	460	136	54	0	591
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1566	1691	1776	1508	1630	0	1655
Q Serve(g_s), s	11.9	31.5	2.8	16.5	20.0	0.8	6.1	25.9	7.3	3.9	0.0	42.2
Cycle Q Clear(g_c), s	11.9	31.5	2.8	16.5	20.0	0.8	6.1	25.9	7.3	3.9	0.0	42.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	205	1062	475	249	1143	510	99	681	579	67	0	607
V/C Ratio(X)	0.87	0.91	0.11	0.97	0.61	0.03	0.88	0.68	0.24	0.80	0.00	0.97
Avail Cap(c_a), veh/h	207	1062	475	249	1143	510	99	681	579	122	0	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.2	40.4	30.4	51.3	34.0	27.5	56.1	30.8	25.1	57.0	0.0	37.5
Incr Delay (d2), s/veh	29.7	12.9	0.5	49.1	2.4	0.1	53.3	3.0	0.3	7.9	0.0	29.9
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	7.6	17.3	1.3	11.4	10.0	0.4	4.3	13.2	3.1	1.9	0.0	24.2
LnGrp Delay(d),s/veh	81.9	53.3	30.8	100.4	36.4	27.6	109.4	33.7	25.4	64.9	0.0	67.4
LnGrp LOS	F	D	C	F	D	C	F	C	C	E		E
Approach Vol, veh/h		1195			953			683			645	
Approach Delay, s/veh		56.6			52.5			41.7			67.2	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	40.0	11.0	48.0	17.9	43.1	9.0	50.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	17.0	34.0	7.0	43.1	14.0	37.0	9.0	41.1
Max Q Clear Time (g_c+I1), s	18.5	33.5	8.1	44.2	13.9	22.0	5.9	27.9
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.0	13.3	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	813	141	192	720	101	143	516	163	102	691	82
Future Volume (veh/h)	128	813	141	192	720	101	143	516	163	102	691	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1881	1881	1881	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	139	884	53	209	783	42	155	561	154	111	751	24
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	2	2	2
Cap, veh/h	163	1916	585	238	2157	661	180	821	225	134	963	422
Arrive On Green	0.09	0.38	0.38	0.04	0.14	0.14	0.10	0.30	0.29	0.08	0.27	0.27
Sat Flow, veh/h	1757	5036	1537	1792	5136	1575	1792	2764	756	1774	3539	1553
Grp Volume(v), veh/h	139	884	53	209	783	42	155	362	353	111	751	24
Grp Sat Flow(s),veh/h/ln	1757	1679	1537	1792	1712	1575	1792	1787	1733	1774	1770	1553
Q Serve(g_s), s	10.9	18.5	3.1	16.2	19.4	3.2	11.9	25.0	25.2	8.6	27.5	1.6
Cycle Q Clear(g_c), s	10.9	18.5	3.1	16.2	19.4	3.2	11.9	25.0	25.2	8.6	27.5	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	163	1916	585	238	2157	661	180	531	515	134	963	422
V/C Ratio(X)	0.85	0.46	0.09	0.88	0.36	0.06	0.86	0.68	0.69	0.83	0.78	0.06
Avail Cap(c_a), veh/h	238	1916	585	333	2157	661	269	587	569	203	1036	455
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	32.6	27.8	65.8	43.3	36.4	62.0	43.4	43.7	63.8	47.1	37.7
Incr Delay (d2), s/veh	17.4	0.8	0.3	13.1	0.3	0.1	16.3	3.3	3.5	15.5	3.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	8.7	1.4	8.9	9.3	1.4	6.7	12.9	12.6	4.8	14.0	0.7
LnGrp Delay(d),s/veh	79.9	33.4	28.1	78.9	43.6	36.5	78.3	46.7	47.2	79.3	51.0	37.8
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1076			1034			870			886	
Approach Delay, s/veh		39.2			50.5			52.5			54.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	57.3	18.1	42.1	17.0	62.8	14.6	45.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	26.6	34.7	21.0	39.7	19.0	41.7	16.0	44.7
Max Q Clear Time (g_c+I1), s	18.2	20.5	13.9	29.5	12.9	21.4	10.6	27.2
Green Ext Time (p_c), s	0.3	10.6	0.2	7.3	0.2	13.9	0.1	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	881	137	277	886	98	152	563	172	234	829	138
Future Volume (veh/h)	169	881	137	277	886	98	152	563	172	234	829	138
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	184	958	44	301	963	98	165	612	167	254	901	140
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	208	1488	449	326	1683	171	189	704	192	279	950	148
Arrive On Green	0.15	0.39	0.39	0.18	0.36	0.35	0.11	0.26	0.25	0.16	0.31	0.30
Sat Flow, veh/h	1792	5136	1551	1792	4727	480	1774	2732	744	1792	3092	480
Grp Volume(v), veh/h	184	958	44	301	697	364	165	396	383	254	521	520
Grp Sat Flow(s),veh/h/ln	1792	1712	1551	1792	1712	1783	1774	1770	1706	1792	1787	1786
Q Serve(g_s), s	14.1	21.3	2.5	23.1	23.0	23.2	12.8	30.0	30.1	19.5	39.9	39.9
Cycle Q Clear(g_c), s	14.1	21.3	2.5	23.1	23.0	23.2	12.8	30.0	30.1	19.5	39.9	39.9
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.44	1.00		0.27
Lane Grp Cap(c), veh/h	208	1488	449	326	1219	635	189	456	440	279	549	548
V/C Ratio(X)	0.89	0.64	0.10	0.92	0.57	0.57	0.87	0.87	0.87	0.91	0.95	0.95
Avail Cap(c_a), veh/h	256	1488	449	384	1219	635	228	456	440	333	549	548
HCM Platoon Ratio	1.33	1.33	1.33	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	37.1	31.3	56.3	36.4	36.6	61.6	49.7	50.0	58.1	47.4	47.6
Incr Delay (d2), s/veh	22.0	1.8	0.4	25.1	2.0	3.7	25.6	16.5	17.4	25.2	26.3	26.3
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	8.2	10.3	1.1	13.7	11.2	12.1	7.6	16.7	16.3	11.6	23.7	23.7
LnGrp Delay(d),s/veh	80.3	38.9	31.7	81.4	38.4	40.4	87.2	66.2	67.4	83.4	73.7	73.9
LnGrp LOS	F	D	C	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		1186			1362			944			1295	
Approach Delay, s/veh		45.1			48.4			70.3			75.7	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	44.6	18.9	47.0	20.2	53.8	25.8	40.1
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	30.0	31.7	18.0	41.7	20.0	41.7	26.0	33.7
Max Q Clear Time (g_c+I1), s	25.1	23.3	14.8	41.9	16.1	25.2	21.5	32.1
Green Ext Time (p_c), s	0.4	7.2	0.1	0.0	0.2	13.2	0.3	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	59.3
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	408	217	192	718	63	266	1012	126	80	869	425
Future Volume (veh/h)	381	408	217	192	718	63	266	1012	126	80	869	425
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	443	168	209	780	65	289	1100	89	87	945	387
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	438	1292	836	231	818	68	310	1287	560	105	878	385
Arrive On Green	0.24	0.36	0.35	0.13	0.25	0.24	0.17	0.36	0.36	0.06	0.25	0.25
Sat Flow, veh/h	1792	3574	1570	1792	3329	277	1774	3539	1541	1774	3539	1552
Grp Volume(v), veh/h	414	443	168	209	419	426	289	1100	89	87	945	387
Grp Sat Flow(s),veh/h/ln	1792	1787	1570	1792	1787	1819	1774	1770	1541	1774	1770	1552
Q Serve(g_s), s	41.8	16.6	10.4	21.2	42.5	42.6	29.6	52.9	7.2	8.9	45.7	45.7
Cycle Q Clear(g_c), s	41.8	16.6	10.4	21.2	42.5	42.6	29.6	52.9	7.2	8.9	45.7	45.7
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	1292	836	231	439	447	310	1287	560	105	878	385
V/C Ratio(X)	0.95	0.34	0.20	0.91	0.95	0.95	0.93	0.85	0.16	0.83	1.08	1.01
Avail Cap(c_a), veh/h	622	1292	836	428	439	447	424	1287	560	231	878	385
HCM Platoon Ratio	1.00	1.00	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	68.4	42.9	22.9	79.2	68.4	68.5	74.9	54.1	39.6	85.7	69.3	69.3
Incr Delay (d2), s/veh	19.1	0.2	0.2	12.5	31.3	31.1	22.7	6.1	0.2	14.7	53.2	47.3
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	23.0	8.3	4.6	11.3	24.9	25.3	16.5	26.9	3.1	4.8	28.8	24.7
LnGrp Delay(d),s/veh	87.5	43.1	23.0	91.7	99.7	99.6	97.6	60.2	39.8	100.4	122.4	116.6
LnGrp LOS	F	D	C	F	F	F	F	E	D	F	F	F
Approach Vol, veh/h		1025			1054			1478			1419	
Approach Delay, s/veh		57.8			98.1			66.3			119.5	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.7	70.6	36.2	49.7	49.0	49.3	14.9	71.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	23.2	18.6	31.6	47.7	43.8	44.6	10.9	54.9
Green Ext Time (p_c), s	0.5	12.8	0.7	0.0	1.2	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	86.4
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	128.9
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	308	379	382	412
Future Vol, veh/h	343	0	308	379	382	412
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	350	0	314	387	390	420
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	30.1	44.4	244.8
HCM LOS	D	E	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	48%
Vol Thru, %	0%	100%	21%	0%
Vol Right, %	0%	0%	79%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	205	482	794
LT Vol	343	0	0	382
Through Vol	0	205	103	0
RT Vol	0	0	379	412
Lane Flow Rate	350	210	491	810
Geometry Grp	5	7	7	2
Degree of Util (X)	0.71	0.429	0.931	1.481
Departure Headway (Hd)	8.635	8.728	8.155	6.582
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	424	415	447	559
Service Time	6.635	6.428	5.855	4.61
HCM Lane V/C Ratio	0.825	0.506	1.098	1.449
HCM Control Delay	30.1	17.8	55.8	244.8
HCM Lane LOS	D	C	F	F
HCM 95th-tile Q	5.4	2.1	10.7	40.3

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	0	0	50	1	114	254	587	0	0	384	242
Future Vol, veh/h	35	0	0	50	1	114	254	587	0	0	384	242
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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, %	0	0	0	5	5	5	12	12	12	5	5	5
Mvmt Flow	37	0	0	53	1	120	267	618	0	0	404	255

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	1355	1815	309	662	0	-	-	-	0
Stage 1	1153	1153	-	-	-	-	-	-	-
Stage 2	202	662	-	-	-	-	-	-	-
Critical Hdwy	6.9	6.6	7	4.34	-	-	-	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.9	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	2.32	-	-	-	-	-
Pot Cap-1 Maneuver	137	75	678	858	-	0	0	-	-
Stage 1	257	264	-	-	-	0	0	-	-
Stage 2	803	450	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	94	0	678	858	-	-	-	-	-
Mov Cap-2 Maneuver	94	0	-	-	-	-	-	-	-
Stage 1	177	0	-	-	-	-	-	-	-
Stage 2	803	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	54.6	3.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	858	-	234	-	-
HCM Lane V/C Ratio	0.312	-	0.742	-	-
HCM Control Delay (s)	11.1	-	54.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	5.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	8	5	37	8	83	6	516	0	0	430	23
Future Vol, veh/h	45	8	5	37	8	83	6	516	0	0	430	23
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	7	7	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	9	9	9	2	2	2	2	2	2
Mvmt Flow	49	9	5	40	9	90	7	561	0	0	467	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	782	1058	250	812	1070	280	496	0	-	-	-	0
Stage 1	484	484	-	574	574	-	-	-	-	-	-	-
Stage 2	298	574	-	238	496	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.7	7.1	7.68	6.68	7.08	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.7	-	6.68	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	3.59	4.09	3.39	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	271	211	726	259	209	697	1064	-	0	0	-	-
Stage 1	512	531	-	454	484	-	-	-	0	0	-	-
Stage 2	664	482	-	724	526	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	226	209	723	248	207	697	1064	-	-	-	-	-
Mov Cap-2 Maneuver	226	209	-	248	207	-	-	-	-	-	-	-
Stage 1	507	529	-	451	481	-	-	-	-	-	-	-
Stage 2	564	479	-	707	524	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.6	17.9	0.1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1064	-	237	417	-	-
HCM Lane V/C Ratio	0.006	-	0.266	0.334	-	-
HCM Control Delay (s)	8.4	-	25.6	17.9	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0	-	1	1.4	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	5	748	131	14	336
Future Vol, veh/h	20	5	748	131	14	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	5	813	142	15	365

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1280	884	0	0	955	0
Stage 1	884	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	183	344	-	-	720	-
Stage 1	404	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	179	344	-	-	720	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	404	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.4	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	179	344	720	-
HCM Lane V/C Ratio	-	-	0.121	0.016	0.021	-
HCM Control Delay (s)	-	-	27.9	15.6	10.1	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	5	874	128	14	342
Future Vol, veh/h	22	5	874	128	14	342
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	950	139	15	372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1422	1020	0	0	1089	0
Stage 1	1020	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	150	287	-	-	641	-
Stage 1	348	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	287	-	-	641	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	146	287	641	-
HCM Lane V/C Ratio	-	-	0.164	0.019	0.024	-
HCM Control Delay (s)	-	-	34.4	17.8	10.8	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	92	9	175	214	94	6	81	110	104	179	26
Future Vol, veh/h	16	92	9	175	214	94	6	81	110	104	179	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	94	9	179	218	96	6	83	112	106	183	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	27.5	12.7	16.7
HCM LOS	B	D	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	14%	36%	34%
Vol Thru, %	41%	79%	44%	58%
Vol Right, %	56%	8%	19%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	117	483	309
LT Vol	6	16	175	104
Through Vol	81	92	214	179
RT Vol	110	9	94	26
Lane Flow Rate	201	119	493	315
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.219	0.795	0.549
Departure Headway (Hd)	6.246	6.598	5.808	6.267
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	542	626	574
Service Time	4.309	4.663	3.808	4.323
HCM Lane V/C Ratio	0.351	0.22	0.788	0.549
HCM Control Delay	12.7	11.5	27.5	16.7
HCM Lane LOS	B	B	D	C
HCM 95th-tile Q	1.6	0.8	7.8	3.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	111	123	534	324	9	126	252	323	10	171	30
Future Volume (veh/h)	49	111	123	534	324	9	126	252	323	10	171	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	114	106	551	334	4	130	260	205	10	176	6
Adj No. of Lanes	1	1	0	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	101	174	162	607	894	760	179	493	376	28	600	261
Arrive On Green	0.06	0.19	0.17	0.34	0.48	0.48	0.10	0.25	0.23	0.02	0.17	0.17
Sat Flow, veh/h	1792	898	835	1774	1863	1583	1810	1955	1488	1774	3539	1537
Grp Volume(v), veh/h	51	0	220	551	334	4	130	239	226	10	176	6
Grp Sat Flow(s),veh/h/ln	1792	0	1734	1774	1863	1583	1810	1805	1637	1774	1770	1537
Q Serve(g_s), s	2.3	0.0	9.7	24.3	9.3	0.1	5.7	9.4	10.0	0.5	3.6	0.3
Cycle Q Clear(g_c), s	2.3	0.0	9.7	24.3	9.3	0.1	5.7	9.4	10.0	0.5	3.6	0.3
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	101	0	337	607	894	760	179	456	413	28	600	261
V/C Ratio(X)	0.51	0.00	0.65	0.91	0.37	0.01	0.73	0.53	0.55	0.35	0.29	0.02
Avail Cap(c_a), veh/h	797	0	803	789	894	760	805	1364	1237	746	2674	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	31.0	25.7	13.5	11.1	35.9	26.4	27.4	39.9	29.8	28.4
Incr Delay (d2), s/veh	3.9	0.0	3.3	11.9	0.4	0.0	5.5	1.4	1.7	7.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.9	13.8	4.8	0.0	3.1	4.8	4.7	0.3	1.8	0.1
LnGrp Delay(d),s/veh	41.5	0.0	34.3	37.6	13.9	11.1	41.4	27.9	29.2	47.2	30.2	28.5
LnGrp LOS	D		C	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		271			889			595			192	
Approach Delay, s/veh		35.6			28.6			31.3			31.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	24.7	32.1	19.9	12.1	17.9	8.6	43.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	24.8	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.5	12.0	26.3	11.7	7.7	5.6	4.3	11.3
Green Ext Time (p_c), s	0.0	6.2	1.3	2.4	0.3	6.2	0.1	4.6

Intersection Summary		
HCM 2010 Ctrl Delay		30.6
HCM 2010 LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	116	71	93	160	0	107	262	51	0	490	596
Future Volume (veh/h)	254	116	71	93	160	0	107	262	51	0	490	596
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1900	1900	1881	1900
Adj Flow Rate, veh/h	262	120	54	96	165	0	110	270	49	0	505	592
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	302	268	121	123	222	0	47	95	12	0	445	522
Arrive On Green	0.17	0.22	0.22	0.07	0.12	0.00	0.57	0.57	0.57	0.00	0.57	0.57
Sat Flow, veh/h	1774	1218	548	1774	1863	0	0	167	22	0	778	913
Grp Volume(v), veh/h	262	0	174	96	165	0	429	0	0	0	0	1097
Grp Sat Flow(s),veh/h/ln	1774	0	1766	1774	1863	0	188	0	0	0	0	1691
Q Serve(g_s), s	14.0	0.0	8.3	5.2	8.3	0.0	0.0	0.0	0.0	0.0	0.0	55.5
Cycle Q Clear(g_c), s	14.0	0.0	8.3	5.2	8.3	0.0	55.5	0.0	0.0	0.0	0.0	55.5
Prop In Lane	1.00		0.31	1.00		0.00	0.26		0.11	0.00		0.54
Lane Grp Cap(c), veh/h	302	0	389	123	222	0	154	0	0	0	0	966
V/C Ratio(X)	0.87	0.00	0.45	0.78	0.74	0.00	2.78	0.00	0.00	0.00	0.00	1.14
Avail Cap(c_a), veh/h	557	0	646	283	393	0	154	0	0	0	0	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	0.0	32.8	44.5	41.3	0.0	32.2	0.0	0.0	0.0	0.0	20.8
Incr Delay (d2), s/veh	7.5	0.0	0.8	10.1	4.9	0.0	819.5	0.0	0.0	0.0	0.0	73.7
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	7.5	0.0	4.1	2.9	4.6	0.0	38.0	0.0	0.0	0.0	0.0	45.3
LnGrp Delay(d),s/veh	46.7	0.0	33.6	54.6	46.2	0.0	851.7	0.0	0.0	0.0	0.0	94.5
LnGrp LOS	D		C	D	D		F					F
Approach Vol, veh/h		436			261			429			1097	
Approach Delay, s/veh		41.5			49.3			851.7			94.5	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	25.9		60.0	21.0	16.1		60.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	10.0	10.3		57.5	16.0	10.3		57.5
Green Ext Time (p_c), s	0.1	1.8		0.0	0.6	1.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	224.9	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	0	41	3	1	7	57	973	26	14	858	106
Future Volume (veh/h)	62	0	41	3	1	7	57	973	26	14	858	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	66	0	4	3	1	1	61	1035	28	15	913	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	213	0	103	100	31	12	92	1349	37	39	1304	1079
Arrive On Green	0.05	0.00	0.06	0.05	0.06	0.05	0.05	0.74	0.71	0.02	0.70	0.00
Sat Flow, veh/h	1682	0	1599	277	533	202	1792	1823	49	1774	1863	1583
Grp Volume(v), veh/h	66	0	4	5	0	0	61	0	1063	15	913	0
Grp Sat Flow(s),veh/h/ln	1682	0	1599	1012	0	0	1792	0	1872	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.2	0.0	0.0	0.0	2.3	0.0	23.6	0.6	19.9	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.2	2.5	0.0	0.0	2.3	0.0	23.6	0.6	19.9	0.0
Prop In Lane	1.00		1.00	0.60		0.20	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	103	136	0	0	92	0	1386	39	1304	1079
V/C Ratio(X)	0.35	0.00	0.04	0.04	0.00	0.00	0.66	0.00	0.77	0.39	0.70	0.00
Avail Cap(c_a), veh/h	817	0	807	592	0	0	893	0	1516	628	1489	1236
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.9	0.0	30.3	30.9	0.0	0.0	32.2	0.0	5.4	33.4	6.1	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.2	0.1	0.0	0.0	7.8	0.0	2.5	6.3	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.1	0.1	0.0	0.0	1.3	0.0	12.8	0.4	10.4	0.0
LnGrp Delay(d),s/veh	32.9	0.0	30.5	31.0	0.0	0.0	40.0	0.0	7.9	39.7	7.6	0.0
LnGrp LOS	C		C	C			D		A	D	A	
Approach Vol, veh/h		70			5			1124			928	
Approach Delay, s/veh		32.8			31.0			9.7			8.1	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	55.2		8.5	7.6	53.1		8.5
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	24.0	54.0		34.0	34.0	* 54		* 24
Max Q Clear Time (g_c+I1), s	2.6	25.6		4.5	4.3	21.9		4.5
Green Ext Time (p_c), s	0.0	22.8		0.3	0.1	25.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	437	957	12
Future Vol, veh/h	5	2	2	437	957	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	5	2	2	460	1007	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1478	1014	1020	0	-	0
Stage 1	1014	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	140	292	680	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	139	292	680	-	-	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	680	-	163	-	-
HCM Lane V/C Ratio	0.003	-	0.045	-	-
HCM Control Delay (s)	10.3	0	28.1	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	258	308	381	262	348	413
Future Volume (veh/h)	258	308	381	262	348	413
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1863	1863	1863	1863
Adj Flow Rate, veh/h	263	155	389	88	355	421
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	2	2	2	2
Cap, veh/h	365	326	653	553	412	1218
Arrive On Green	0.20	0.20	0.35	0.35	0.23	0.65
Sat Flow, veh/h	1792	1599	1863	1577	1774	1863
Grp Volume(v), veh/h	263	155	389	88	355	421
Grp Sat Flow(s),veh/h/ln	1792	1599	1863	1577	1774	1863
Q Serve(g_s), s	7.7	4.8	9.7	2.2	10.8	5.7
Cycle Q Clear(g_c), s	7.7	4.8	9.7	2.2	10.8	5.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	365	326	653	553	412	1218
V/C Ratio(X)	0.72	0.48	0.60	0.16	0.86	0.35
Avail Cap(c_a), veh/h	678	605	1720	1456	630	1720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	19.8	15.0	12.6	20.7	4.4
Incr Delay (d2), s/veh	1.0	0.4	0.9	0.1	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.1	5.0	1.0	5.8	2.9
LnGrp Delay(d),s/veh	21.9	20.2	16.0	12.7	25.7	4.5
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	418		477			776
Approach Delay, s/veh	21.3		15.4			14.2
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.1	23.7				40.8		15.5
Change Period (Y+Rc), s	4.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	20.0	50.0				50.0		20.0
Max Q Clear Time (g_c+I1), s	12.8	11.7				7.7		9.7
Green Ext Time (p_c), s	0.3	6.0				6.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	901	200	266	819	70	357	910	339	155	767	366
Future Volume (veh/h)	265	901	200	266	819	70	357	910	339	155	767	366
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	270	919	188	271	836	22	364	929	180	158	783	102
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	297	939	192	298	1146	504	350	994	443	185	662	287
Arrive On Green	0.17	0.32	0.31	0.17	0.32	0.32	0.19	0.28	0.28	0.10	0.19	0.19
Sat Flow, veh/h	1792	2933	600	1792	3574	1571	1810	3610	1610	1792	3574	1548
Grp Volume(v), veh/h	270	560	547	271	836	22	364	929	180	158	783	102
Grp Sat Flow(s),veh/h/ln	1792	1787	1746	1792	1787	1571	1810	1805	1610	1792	1787	1548
Q Serve(g_s), s	17.6	36.8	36.9	17.6	24.6	1.1	23.0	29.8	10.8	10.3	22.0	6.8
Cycle Q Clear(g_c), s	17.6	36.8	36.9	17.6	24.6	1.1	23.0	29.8	10.8	10.3	22.0	6.8
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	572	559	298	1146	504	350	994	443	185	662	287
V/C Ratio(X)	0.91	0.98	0.98	0.91	0.73	0.04	1.04	0.93	0.41	0.85	1.18	0.36
Avail Cap(c_a), veh/h	317	572	559	317	1146	504	350	994	443	211	662	287
HCM Platoon Ratio	1.00	1.00	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	48.6	40.0	40.3	48.6	35.8	27.8	47.9	42.0	35.1	52.3	48.4	42.2
Incr Delay (d2), s/veh	27.7	32.2	33.0	27.8	2.7	0.1	58.5	15.4	0.9	24.7	97.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	23.3	22.9	11.0	12.6	0.5	17.1	17.0	4.9	6.4	19.7	3.0
LnGrp Delay(d),s/veh	76.3	72.2	73.2	76.5	38.5	27.9	106.3	57.4	36.0	77.0	145.4	43.4
LnGrp LOS	E	E	E	E	D	C	F	E	D	E	F	D
Approach Vol, veh/h		1377			1129			1473			1043	
Approach Delay, s/veh		73.4			47.4			66.9			125.1	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	36.7	23.8	42.0	27.0	26.0	23.7	42.1
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.0	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	12.3	31.8	19.6	38.9	25.0	24.0	19.6	26.6
Green Ext Time (p_c), s	0.1	0.0	0.1	0.0	0.0	0.0	0.1	8.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.4
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	301.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	124	846	129	40	886	43	108	147	15	67	108	94
Future Vol, veh/h	124	846	129	40	886	43	108	147	15	67	108	94
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	0	0	0
Mvmt Flow	127	863	132	41	904	44	110	150	15	68	110	96
Number of Lanes	0	2	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	166.9	606.1	38.8	20.7
HCM LOS	F	F	E	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	40%	23%	0%	4%	38%	0%
Vol Thru, %	54%	77%	77%	91%	62%	0%
Vol Right, %	6%	0%	23%	4%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	547	552	969	175	94
LT Vol	108	124	0	40	67	0
Through Vol	147	423	423	886	108	0
RT Vol	15	0	129	43	0	94
Lane Flow Rate	276	558	563	989	179	96
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.7	1.274	1.242	2.289	0.461	0.224
Departure Headway (Hd)	12.001	10.421	10.128	8.448	11.323	10.373
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	303	352	366	445	321	348
Service Time	10.001	8.121	7.828	6.448	9.023	8.073
HCM Lane V/C Ratio	0.911	1.585	1.538	2.222	0.558	0.276
HCM Control Delay	38.8	173.6	160.2	606.1	23.3	16
HCM Lane LOS	E	F	F	F	C	C
HCM 95th-tile Q	4.9	20.1	19.3	73.6	2.3	0.8



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	611	276	298	806	160	202
Future Volume (veh/h)	611	276	298	806	160	202
Number	2	12	1	6	7	14
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
Adj Sat Flow, veh/h/ln	1863	1900	1881	1881	1881	1881
Adj Flow Rate, veh/h	679	258	331	896	178	40
Adj No. of Lanes	2	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	1180	448	397	1412	246	219
Arrive On Green	0.47	0.45	0.22	0.75	0.14	0.14
Sat Flow, veh/h	2587	948	1792	1881	1792	1599
Grp Volume(v), veh/h	482	455	331	896	178	40
Grp Sat Flow(s),veh/h/ln	1770	1672	1792	1881	1792	1599
Q Serve(g_s), s	14.1	14.2	12.6	16.2	6.8	1.6
Cycle Q Clear(g_c), s	14.1	14.2	12.6	16.2	6.8	1.6
Prop In Lane		0.57	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	837	791	397	1412	246	219
V/C Ratio(X)	0.58	0.58	0.83	0.63	0.72	0.18
Avail Cap(c_a), veh/h	1221	1153	617	1412	617	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	13.9	26.5	4.2	29.5	27.3
Incr Delay (d2), s/veh	0.9	0.9	5.8	1.1	4.0	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	7.0	6.7	6.9	8.6	3.6	0.7
LnGrp Delay(d),s/veh	14.5	14.9	32.3	5.3	33.6	27.7
LnGrp LOS	B	B	C	A	C	C
Approach Vol, veh/h	937			1227	218	
Approach Delay, s/veh	14.7			12.6	32.5	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	19.8	37.8		13.8		57.7		
Change Period (Y+Rc), s	4.6	5.3		4.6		5.3		
Max Green Setting (Gmax), s	24.0	48.0		24.0		48.0		
Max Q Clear Time (g_c+I1), s	14.6	16.2		8.8		18.2		
Green Ext Time (p_c), s	0.7	16.3		0.5		20.2		

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	288.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	354	161	138	71	223	735
Future Vol, veh/h	354	161	138	71	223	735
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	393	179	153	79	248	817

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	232	0	-	0	1159	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	966	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1330	-	-	-	~ 217	851
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	371	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1330	-	-	-	~ 153	851
Mov Cap-2 Maneuver	-	-	-	-	~ 225	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	261	-

Approach	EB	WB	SB
HCM Control Delay, s	6.1	0	$ 503.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1330	-	-	-	516
HCM Lane V/C Ratio	0.296	-	-	-	2.063
HCM Control Delay (s)	8.8	-	-	-	-$ 503.4
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	1.2	-	-	-	74

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)	145	966	144	283	1010	119	107	506	367	130	469	162
Future Volume (veh/h)	145	966	144	283	1010	119	107	506	367	130	469	162
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	148	986	89	289	1031	53	109	516	127	133	479	155
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	411	1631	729	314	1375	615	123	573	480	150	436	141
Arrive On Green	0.23	0.45	0.45	0.18	0.38	0.38	0.07	0.31	0.31	0.08	0.32	0.32
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1349	437
Grp Volume(v), veh/h	148	986	89	289	1031	53	109	516	127	133	0	634
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	0	1786
Q Serve(g_s), s	9.0	26.8	4.2	20.6	32.4	2.6	7.9	34.5	8.0	9.6	0.0	42.0
Cycle Q Clear(g_c), s	9.0	26.8	4.2	20.6	32.4	2.6	7.9	34.5	8.0	9.6	0.0	42.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	411	1631	729	314	1375	615	123	573	480	150	0	577
V/C Ratio(X)	0.36	0.60	0.12	0.92	0.75	0.09	0.89	0.90	0.26	0.89	0.00	1.10
Avail Cap(c_a), veh/h	411	1631	729	331	1375	615	123	573	480	150	0	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.3	26.9	20.7	52.7	34.6	22.7	60.0	43.1	33.9	58.9	0.0	44.1
Incr Delay (d2), s/veh	0.2	1.7	0.3	29.5	3.8	0.3	47.4	17.6	0.4	41.0	0.0	67.4
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	4.5	13.7	1.9	12.8	16.8	1.2	5.5	20.6	3.5	6.4	0.0	31.5
LnGrp Delay(d),s/veh	42.5	28.5	21.0	82.2	38.4	22.9	107.4	60.7	34.3	99.8	0.0	111.5
LnGrp LOS	D	C	C	F	D	C	F	E	C	F		F
Approach Vol, veh/h		1223			1373			752			767	
Approach Delay, s/veh		29.7			47.0			63.0			109.5	
Approach LOS		C			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	62.8	13.0	46.0	35.6	54.0	15.0	44.0
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	24.0	37.0	9.0	41.1	13.0	* 48	11.0	39.1
Max Q Clear Time (g_c+I1), s	22.6	28.8	9.9	44.0	11.0	34.4	11.6	36.5
Green Ext Time (p_c), s	0.1	6.2	0.0	0.0	0.2	9.8	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	56.4
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	1198	200	246	1085	165	270	811	120	164	804	150
Future Volume (veh/h)	246	1198	200	246	1085	165	270	811	120	164	804	150
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	248	1210	65	248	1096	68	273	819	113	166	812	56
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	1707	521	272	1722	525	296	999	138	188	917	398
Arrive On Green	0.15	0.33	0.33	0.05	0.11	0.11	0.16	0.31	0.31	0.10	0.25	0.25
Sat Flow, veh/h	1792	5136	1567	1810	5187	1582	1810	3186	440	1810	3610	1566
Grp Volume(v), veh/h	248	1210	65	248	1096	68	273	464	468	166	812	56
Grp Sat Flow(s),veh/h/ln	1792	1712	1567	1810	1729	1582	1810	1805	1821	1810	1805	1566
Q Serve(g_s), s	21.8	32.9	4.6	21.8	32.4	6.2	23.8	38.0	38.0	14.5	34.6	4.4
Cycle Q Clear(g_c), s	21.8	32.9	4.6	21.8	32.4	6.2	23.8	38.0	38.0	14.5	34.6	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	270	1707	521	272	1722	525	296	566	571	188	917	398
V/C Ratio(X)	0.92	0.71	0.12	0.91	0.64	0.13	0.92	0.82	0.82	0.88	0.89	0.14
Avail Cap(c_a), veh/h	314	1707	521	305	1722	525	351	587	592	226	925	401
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.49	0.49	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	46.7	37.2	75.0	62.0	50.4	65.9	50.7	50.9	70.7	57.4	46.2
Incr Delay (d2), s/veh	28.6	2.5	0.5	16.7	0.9	0.2	26.9	9.2	9.1	27.8	10.5	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	13.0	16.0	2.1	12.2	15.7	2.8	14.1	20.4	20.6	8.7	18.6	1.9
LnGrp Delay(d),s/veh	95.5	49.2	37.7	91.6	62.9	50.6	92.8	59.9	60.0	98.5	67.9	46.4
LnGrp LOS	F	D	D	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		1523			1412			1205			1034	
Approach Delay, s/veh		56.2			67.3			67.4			71.7	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	57.2	30.1	44.6	28.1	57.1	20.6	54.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	27.0	43.7	31.0	39.7	28.0	42.7	20.0	50.7
Max Q Clear Time (g_c+I1), s	23.8	34.9	25.8	36.6	23.8	34.4	16.5	40.0
Green Ext Time (p_c), s	0.2	8.1	0.4	2.7	0.3	7.7	0.1	8.5

Intersection Summary	
HCM 2010 Ctrl Delay	64.9
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	1319	185	265	1173	84	281	891	214	328	790	163
Future Volume (veh/h)	216	1319	185	265	1173	84	281	891	214	328	790	163
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	220	1346	111	270	1197	81	287	909	205	335	806	155
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	202	1470	447	260	1572	106	309	828	187	325	888	171
Arrive On Green	0.22	0.57	0.57	0.14	0.32	0.31	0.17	0.29	0.28	0.18	0.30	0.29
Sat Flow, veh/h	1792	5136	1561	1810	4951	335	1792	2867	646	1792	2982	574
Grp Volume(v), veh/h	220	1346	111	270	836	442	287	566	548	335	483	478
Grp Sat Flow(s),veh/h/ln	1792	1712	1561	1810	1729	1828	1792	1787	1726	1792	1787	1769
Q Serve(g_s), s	18.0	37.7	5.7	23.0	34.8	34.9	25.3	46.2	46.2	29.0	41.6	41.6
Cycle Q Clear(g_c), s	18.0	37.7	5.7	23.0	34.8	34.9	25.3	46.2	46.2	29.0	41.6	41.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.37	1.00		0.32
Lane Grp Cap(c), veh/h	202	1470	447	260	1098	581	309	516	498	325	532	527
V/C Ratio(X)	1.09	0.92	0.25	1.04	0.76	0.76	0.93	1.10	1.10	1.03	0.91	0.91
Avail Cap(c_a), veh/h	202	1470	447	260	1098	581	347	516	498	325	532	527
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)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	32.5	25.6	68.5	49.1	49.3	65.3	56.9	57.1	65.5	54.1	54.3
Incr Delay (d2), s/veh	74.8	6.5	0.8	66.0	5.0	9.1	29.2	68.8	70.1	58.3	19.7	19.8
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	13.0	18.3	2.5	16.3	17.4	19.0	15.0	32.7	31.7	19.6	23.4	23.2
LnGrp Delay(d),s/veh	136.8	39.0	26.4	134.5	54.1	58.4	94.5	125.7	127.3	123.8	73.7	74.1
LnGrp LOS	F	D	C	F	D	E	F	F	F	F	E	E
Approach Vol, veh/h		1677			1548			1401			1296	
Approach Delay, s/veh		51.0			69.4			119.9			86.8	
Approach LOS		D			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	49.8	31.6	51.6	22.0	54.8	33.0	50.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	44.5	31.0	42.9	18.0	49.5	29.0	44.9
Max Q Clear Time (g_c+I1), s	25.0	39.7	27.3	43.6	20.0	36.9	31.0	48.2
Green Ext Time (p_c), s	0.0	4.6	0.3	0.0	0.0	11.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.9
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	517	894	292	190	554	74	313	1151	211	124	979	433
Future Volume (veh/h)	517	894	292	190	554	74	313	1151	211	124	979	433
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	528	912	262	194	565	71	319	1174	151	127	999	372
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	546	1390	897	214	644	81	338	1206	529	145	815	353
Arrive On Green	0.30	0.39	0.38	0.12	0.20	0.19	0.19	0.33	0.33	0.08	0.23	0.23
Sat Flow, veh/h	1810	3610	1581	1792	3180	398	1810	3610	1583	1792	3574	1548
Grp Volume(v), veh/h	528	912	262	194	317	319	319	1174	151	127	999	372
Grp Sat Flow(s),veh/h/ln	1810	1805	1581	1792	1787	1791	1810	1805	1583	1792	1787	1548
Q Serve(g_s), s	57.1	41.3	17.2	21.2	34.1	34.4	34.6	63.8	14.0	13.9	45.3	45.3
Cycle Q Clear(g_c), s	57.1	41.3	17.2	21.2	34.1	34.4	34.6	63.8	14.0	13.9	45.3	45.3
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	546	1390	897	214	362	363	338	1206	529	145	815	353
V/C Ratio(X)	0.97	0.66	0.29	0.91	0.87	0.88	0.94	0.97	0.29	0.88	1.23	1.05
Avail Cap(c_a), veh/h	583	1390	897	397	411	412	401	1206	529	216	815	353
HCM Platoon Ratio	1.00	1.00	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	68.4	50.3	22.7	86.4	76.8	77.0	79.7	65.3	48.7	90.3	76.7	76.7
Incr Delay (d2), s/veh	28.2	1.3	0.2	13.4	17.9	18.5	28.4	19.9	0.5	22.1	112.4	62.7
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	32.9	20.9	7.6	11.4	18.7	18.9	19.9	35.1	6.2	7.8	35.0	25.6
LnGrp Delay(d),s/veh	96.6	51.5	22.9	99.7	94.6	95.5	108.1	85.2	49.2	112.4	189.1	139.4
LnGrp LOS	F	D	C	F	F	F	F	F	D	F	F	F
Approach Vol, veh/h		1702			830			1644			1498	
Approach Delay, s/veh		61.1			96.2			86.3			170.2	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.7	80.1	41.1	49.7	64.0	43.8	20.1	70.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	23.2	43.3	36.6	47.3	59.1	36.4	15.9	65.8
Green Ext Time (p_c), s	0.5	0.6	0.6	0.0	0.8	2.2	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	102.3
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	183.7
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	644	619	422	374
Future Vol, veh/h	290	0	644	619	422	374
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	657	632	431	382
Number of Lanes	1	0	2	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	23.8	197.8	219.5
HCM LOS	C	F	F

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	53%
Vol Thru, %	0%	100%	26%	0%
Vol Right, %	0%	0%	74%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	429	834	796
LT Vol	290	0	0	422
Through Vol	0	429	215	0
RT Vol	0	0	619	374
Lane Flow Rate	296	438	851	812
Geometry Grp	5	7	7	2
Degree of Util (X)	0.601	0.86	1.547	1.422
Departure Headway (Hd)	8.625	8.285	7.746	6.581
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	423	442	476	560
Service Time	6.625	5.985	5.446	4.581
HCM Lane V/C Ratio	0.7	0.991	1.788	1.45
HCM Control Delay	23.8	44.3	276.8	219.5
HCM Lane LOS	C	E	F	F
HCM 95th-tile Q	3.8	8.6	38.7	36.8

Intersection	
Int Delay, s/veh	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	0	0	38	1	104	288	714	0	0	707	408
Future Vol, veh/h	114	0	0	38	1	104	288	714	0	0	707	408
Conflicting Peds, #/hr	0	0	0	0	0	0	7	0	0	0	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	2	2	2
Mvmt Flow	116	0	0	39	1	106	294	729	0	0	721	416

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1677	2461	364	1145	0	-	-	-	0
Stage 1	1316	1316	-	-	-	-	-	-	-
Stage 2	361	1145	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	4.24	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.27	-	-	-	-	-
Pot Cap-1 Maneuver	88	31	639	578	-	0	0	-	-
Stage 1	219	229	-	-	-	0	0	-	-
Stage 2	682	277	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	43	0	639	578	-	-	-	-	-
Mov Cap-2 Maneuver	43	0	-	-	-	-	-	-	-
Stage 1	108	0	-	-	-	-	-	-	-
Stage 2	682	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	162.1	5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	578	-	136	-	-
HCM Lane V/C Ratio	0.508	-	1.073	-	-
HCM Control Delay (s)	17.5	-	162.1	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	2.9	-	8	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	24	7	25	10	99	16	534	0	0	548	64
Future Vol, veh/h	31	24	7	25	10	99	16	534	0	0	548	64
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	9	9	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	1	1	1	1	1	1	1	1
Mvmt Flow	34	27	8	28	11	110	18	593	0	0	609	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	988	1279	346	947	1315	297	686	0	-	-	-	0
Stage 1	650	650	-	629	629	-	-	-	-	-	-	-
Stage 2	338	629	-	318	686	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.52	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	204	167	656	217	158	702	910	-	0	0	-	-
Stage 1	429	468	-	439	476	-	-	-	0	0	-	-
Stage 2	656	478	-	671	448	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	159	163	652	185	154	702	910	-	-	-	-	-
Mov Cap-2 Maneuver	159	163	-	185	154	-	-	-	-	-	-	-
Stage 1	418	465	-	430	467	-	-	-	-	-	-	-
Stage 2	529	469	-	625	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38	19.6	0.3	0
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	910	-	176	393	-	-
HCM Lane V/C Ratio	0.02	-	0.391	0.379	-	-
HCM Control Delay (s)	9	-	38	19.6	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	1.7	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	125	28	392	46	5	649
Future Vol, veh/h	125	28	392	46	5	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	30	426	50	5	705

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1167	451	0	0	476	0
Stage 1	451	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	214	608	-	-	1086	-
Stage 1	642	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	213	608	-	-	1086	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.9	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	213	608	1086	-
HCM Lane V/C Ratio	-	-	0.638	0.05	0.005	-
HCM Control Delay (s)	-	-	47.6	11.2	8.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	3.8	0.2	0	-

Intersection	
Int Delay, s/veh	10.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	142	13	425	45	5	769
Future Vol, veh/h	142	13	425	45	5	769
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	14	462	49	5	836

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1333	486	0	0	511	0
Stage 1	486	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	170	581	-	-	1054	-
Stage 1	618	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	581	-	-	1054	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	94.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	169	581	1054	-
HCM Lane V/C Ratio	-	-	0.913	0.024	0.005	-
HCM Control Delay (s)	-	-	102.4	11.4	8.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	6.7	0.1	0	-

Intersection	
Intersection Delay, s/veh	27.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	250	7	109	128	85	5	88	262	125	121	24
Future Vol, veh/h	18	250	7	109	128	85	5	88	262	125	121	24
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	6	6	4	4	4	11	11	11	20	20	20
Mvmt Flow	24	329	9	143	168	112	7	116	345	164	159	32
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	38.7	22.9	28.2	19.8
HCM LOS	E	C	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	95%	0%	0%	97%	0%	60%	0%	83%
Vol Right, %	0%	100%	0%	3%	0%	40%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	262	18	257	109	213	125	145
LT Vol	5	0	18	0	109	0	125	0
Through Vol	88	0	0	250	0	128	0	121
RT Vol	0	262	0	7	0	85	0	24
Lane Flow Rate	122	345	24	338	143	280	164	191
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.298	0.768	0.061	0.818	0.367	0.654	0.441	0.478
Departure Headway (Hd)	8.774	8.018	9.248	8.708	9.216	8.406	9.655	9.013
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	410	452	387	416	390	429	373	399
Service Time	6.528	5.773	7.002	6.462	6.975	6.164	7.415	6.773
HCM Lane V/C Ratio	0.298	0.763	0.062	0.813	0.367	0.653	0.44	0.479
HCM Control Delay	15.2	32.8	12.6	40.5	17.3	25.8	19.9	19.8
HCM Lane LOS	C	D	B	E	C	D	C	C
HCM 95th-tile Q	1.2	6.6	0.2	7.5	1.7	4.5	2.2	2.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	296	134	121	58	10	155	295	455	16	400	54
Future Volume (veh/h)	31	296	134	121	58	10	155	295	455	16	400	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1776	1776	1743	1743	1743	1845	1845	1900	1881	1881	1881
Adj Flow Rate, veh/h	46	435	112	178	85	6	228	434	537	24	588	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	7	7	7	9	9	9	3	3	3	1	1	1
Cap, veh/h	70	491	394	211	632	537	264	787	705	39	1147	513
Arrive On Green	0.04	0.28	0.26	0.13	0.36	0.36	0.15	0.45	0.43	0.02	0.32	0.32
Sat Flow, veh/h	1691	1776	1509	1660	1743	1482	1757	1752	1568	1792	3574	1599
Grp Volume(v), veh/h	46	435	112	178	85	6	228	434	537	24	588	22
Grp Sat Flow(s),veh/h/ln	1691	1776	1509	1660	1743	1482	1757	1752	1568	1792	1787	1599
Q Serve(g_s), s	3.4	30.1	7.6	13.4	4.2	0.3	16.3	23.3	37.2	1.7	17.2	1.2
Cycle Q Clear(g_c), s	3.4	30.1	7.6	13.4	4.2	0.3	16.3	23.3	37.2	1.7	17.2	1.2
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	70	491	394	211	632	537	264	787	705	39	1147	513
V/C Ratio(X)	0.65	0.89	0.28	0.84	0.13	0.01	0.86	0.55	0.76	0.61	0.51	0.04
Avail Cap(c_a), veh/h	481	526	424	472	632	537	500	847	758	482	1727	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.6	44.4	37.8	54.7	27.4	26.2	53.2	25.9	30.5	62.2	35.4	30.0
Incr Delay (d2), s/veh	9.8	16.5	0.6	8.7	0.1	0.0	8.2	1.0	4.8	14.6	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	17.0	3.2	6.7	2.0	0.1	8.5	11.4	17.0	1.0	8.6	0.5
LnGrp Delay(d),s/veh	70.4	60.9	38.4	63.4	27.5	26.2	61.4	26.8	35.3	76.8	36.0	30.1
LnGrp LOS	E	E	D	E	C	C	E	C	D	E	D	C
Approach Vol, veh/h		593			269			1199			634	
Approach Delay, s/veh		57.4			51.3			37.2			37.3	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	61.6	20.3	39.5	23.3	45.2	9.3	50.5
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	34.6	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	3.7	39.2	15.4	32.1	18.3	19.2	5.4	6.2
Green Ext Time (p_c), s	0.0	13.4	0.4	1.4	0.5	20.0	0.1	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	596	128	91	76	64	0	41	587	125	0	183	87
Future Volume (veh/h)	596	128	91	76	64	0	41	587	125	0	183	87
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	655	141	80	84	70	0	45	645	67	0	201	41
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	665	419	238	118	126	0	75	749	657	0	806	674
Arrive On Green	0.37	0.38	0.37	0.07	0.07	0.00	0.43	0.43	0.43	0.00	0.43	0.43
Sat Flow, veh/h	1774	1115	632	1774	1863	0	80	1731	1536	0	1863	1576
Grp Volume(v), veh/h	655	0	221	84	70	0	690	0	67	0	201	41
Grp Sat Flow(s),veh/h/ln	1774	0	1747	1774	1863	0	1811	0	1536	0	1863	1576
Q Serve(g_s), s	35.2	0.0	8.7	4.5	3.5	0.0	20.4	0.0	2.5	0.0	6.6	1.5
Cycle Q Clear(g_c), s	35.2	0.0	8.7	4.5	3.5	0.0	33.4	0.0	2.5	0.0	6.6	1.5
Prop In Lane	1.00		0.36	1.00		0.00	0.07		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	665	0	657	118	126	0	823	0	657	0	806	674
V/C Ratio(X)	0.99	0.00	0.34	0.71	0.55	0.00	0.84	0.00	0.10	0.00	0.25	0.06
Avail Cap(c_a), veh/h	665	0	657	295	310	0	1092	0	887	0	1086	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	21.5	44.0	43.4	0.0	24.8	0.0	16.5	0.0	17.3	16.2
Incr Delay (d2), s/veh	31.1	0.0	0.3	7.8	3.8	0.0	4.5	0.0	0.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	0.0	4.2	2.4	1.9	0.0	17.7	0.0	1.1	0.0	3.4	0.6
LnGrp Delay(d),s/veh	60.9	0.0	21.8	51.8	47.1	0.0	29.3	0.0	16.5	0.0	17.5	16.2
LnGrp LOS	E		C	D	D		C		B		B	B
Approach Vol, veh/h		876			154			757			242	
Approach Delay, s/veh		51.0			49.7			28.2			17.3	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	40.2		45.6	40.0	10.5		45.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	35.5	15.5		55.5
Max Q Clear Time (g_c+I1), s	10.5	10.7		35.4	37.2	5.5		8.6
Green Ext Time (p_c), s	0.1	1.5		5.7	0.0	0.5		6.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	0	46	0	0	12	36	843	7	4	928	45
Future Volume (veh/h)	126	0	46	0	0	12	36	843	7	4	928	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	180	0	9	0	0	1	51	1204	10	6	1326	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	1	1	1	0	0	0	4	4	4	4	4	4
Cap, veh/h	250	0	214	0	0	211	72	1367	11	18	1313	1099
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.13	0.04	0.76	0.74	0.01	0.72	0.00
Sat Flow, veh/h	1419	0	1599	0	0	1615	1740	1809	15	1740	1827	1553
Grp Volume(v), veh/h	180	0	9	0	0	1	51	0	1214	6	1326	0
Grp Sat Flow(s),veh/h/ln	1419	0	1599	0	0	1615	1740	0	1824	1740	1827	1553
Q Serve(g_s), s	15.0	0.0	0.6	0.0	0.0	0.1	3.5	0.0	58.2	0.4	86.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	0.6	0.0	0.0	0.1	3.5	0.0	58.2	0.4	86.0	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	250	0	214	0	0	211	72	0	1378	18	1313	1099
V/C Ratio(X)	0.72	0.00	0.04	0.00	0.00	0.00	0.71	0.00	0.88	0.34	1.01	0.00
Avail Cap(c_a), veh/h	250	0	214	0	0	216	87	0	1378	87	1313	1099
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	0.0	45.2	0.0	0.0	45.5	56.6	0.0	10.7	58.8	16.8	0.0
Incr Delay (d2), s/veh	9.7	0.0	0.1	0.0	0.0	0.0	18.4	0.0	7.1	10.7	27.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.3	0.0	0.0	0.0	2.0	0.0	31.4	0.2	52.6	0.0
LnGrp Delay(d),s/veh	61.1	0.0	45.2	0.0	0.0	45.5	75.1	0.0	17.8	69.6	44.1	0.0
LnGrp LOS	E		D			D	E		B	E	F	
Approach Vol, veh/h		189			1			1265			1332	
Approach Delay, s/veh		60.4			45.5			20.1			44.2	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	94.4		20.0	9.0	90.7		20.0
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	5.5	84.0		15.1	5.5	* 85		* 16
Max Q Clear Time (g_c+I1), s	2.4	60.2		17.1	5.5	88.0		2.1
Green Ext Time (p_c), s	0.0	22.9		0.0	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	783	142	201	626	137	250	784	173	108	664	215
Future Volume (veh/h)	278	783	142	201	626	137	250	784	173	108	664	215
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1900	1863	1863	1863	1845	1845	1845
Adj Flow Rate, veh/h	302	851	142	218	680	134	272	852	92	117	722	50
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	385	1114	186	298	1021	201	307	1079	475	146	753	331
Arrive On Green	0.11	0.37	0.35	0.09	0.34	0.34	0.17	0.30	0.30	0.08	0.21	0.21
Sat Flow, veh/h	3442	3010	502	3476	2968	584	1774	3539	1559	1757	3505	1542
Grp Volume(v), veh/h	302	500	493	218	409	405	272	852	92	117	722	50
Grp Sat Flow(s),veh/h/ln	1721	1770	1743	1738	1787	1765	1774	1770	1559	1757	1752	1542
Q Serve(g_s), s	8.7	25.4	25.5	6.3	19.9	20.0	15.3	22.6	4.5	6.7	20.9	2.7
Cycle Q Clear(g_c), s	8.7	25.4	25.5	6.3	19.9	20.0	15.3	22.6	4.5	6.7	20.9	2.7
Prop In Lane	1.00		0.29	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	655	645	298	615	607	307	1079	475	146	753	331
V/C Ratio(X)	0.78	0.76	0.76	0.73	0.67	0.67	0.89	0.79	0.19	0.80	0.96	0.15
Avail Cap(c_a), veh/h	706	657	647	713	663	655	399	1079	475	240	753	331
HCM Platoon Ratio	1.00	1.00	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	44.2	28.3	28.5	45.6	28.6	28.6	41.4	32.6	26.3	46.1	39.7	32.6
Incr Delay (d2), s/veh	3.5	5.8	5.9	3.4	2.8	2.9	17.3	4.3	0.3	9.8	23.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	13.4	13.3	3.1	10.3	10.2	8.9	11.7	2.0	3.6	12.6	1.2
LnGrp Delay(d),s/veh	47.8	34.1	34.4	49.1	31.4	31.5	58.6	36.9	26.6	55.9	63.0	32.9
LnGrp LOS	D	C	C	D	C	C	E	D	C	E	E	C
Approach Vol, veh/h		1295			1032			1216			889	
Approach Delay, s/veh		37.4			35.2			41.0			60.4	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	35.2	12.8	41.9	21.7	26.0	15.5	39.2
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	14.6	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	10.7	24.6	8.3	27.5	17.3	22.9	10.7	22.0
Green Ext Time (p_c), s	0.1	4.1	0.5	7.4	0.4	0.0	0.7	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.5
HCM 2010 LOS	D

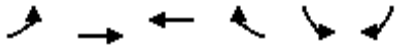
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	838	119	14	714	37	181	54	35	34	142	58
Future Volume (veh/h)	39	838	119	14	714	37	181	54	35	34	142	58
Number	5	2	12	1	6	16	7	4	14	3	8	18
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		0.98	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1881	1900	1900	1881	1881
Adj Flow Rate, veh/h	42	911	112	15	776	33	197	59	28	37	154	21
Adj No. of Lanes	0	2	0	0	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	115	1383	167	90	1559	66	375	104	38	159	548	528
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	65	2946	355	20	3322	140	723	312	113	195	1636	1575
Grp Volume(v), veh/h	555	0	510	430	0	394	284	0	0	191	0	21
Grp Sat Flow(s),veh/h/ln	1747	0	1620	1815	0	1666	1148	0	0	1831	0	1575
Q Serve(g_s), s	0.1	0.0	11.2	0.0	0.0	7.6	7.6	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	10.4	0.0	11.2	7.3	0.0	7.6	11.1	0.0	0.0	3.5	0.0	0.4
Prop In Lane	0.08		0.22	0.03		0.08	0.69		0.10	0.19		1.00
Lane Grp Cap(c), veh/h	904	0	760	933	0	782	517	0	0	707	0	528
V/C Ratio(X)	0.61	0.00	0.67	0.46	0.00	0.50	0.55	0.00	0.00	0.27	0.00	0.04
Avail Cap(c_a), veh/h	1043	0	897	1079	0	923	811	0	0	1087	0	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	0.0	9.5	8.4	0.0	8.5	14.6	0.0	0.0	11.3	0.0	10.3
Incr Delay (d2), s/veh	0.8	0.0	1.5	0.4	0.0	0.5	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	5.4	0.0	5.3	3.8	0.0	3.5	3.4	0.0	0.0	1.8	0.0	0.2
LnGrp Delay(d),s/veh	10.1	0.0	11.0	8.8	0.0	9.0	15.5	0.0	0.0	11.5	0.0	10.3
LnGrp LOS	B		B	A		A	B			B		B
Approach Vol, veh/h		1065			824			284			212	
Approach Delay, s/veh		10.5			8.9			15.5			11.4	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.1		19.9		26.1		19.9
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		13.2		13.1		9.6		5.5
Green Ext Time (p_c), s		8.4		2.3		10.1		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	779	89	164	210	55	277
Future Volume (veh/h)	779	89	164	210	55	277
Number	1	6	2	12	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1881	1900	1863	1863
Adj Flow Rate, veh/h	847	97	178	188	60	41
Adj No. of Lanes	2	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	1	1	2	2
Cap, veh/h	1128	1323	242	256	184	164
Arrive On Green	0.33	0.71	0.29	0.29	0.10	0.10
Sat Flow, veh/h	3442	1863	837	884	1774	1583
Grp Volume(v), veh/h	847	97	0	366	60	41
Grp Sat Flow(s),veh/h/ln	1721	1863	0	1722	1774	1583
Q Serve(g_s), s	10.6	0.8	0.0	9.3	1.5	1.2
Cycle Q Clear(g_c), s	10.6	0.8	0.0	9.3	1.5	1.2
Prop In Lane	1.00			0.51	1.00	1.00
Lane Grp Cap(c), veh/h	1128	1323	0	498	184	164
V/C Ratio(X)	0.75	0.07	0.00	0.73	0.33	0.25
Avail Cap(c_a), veh/h	2885	3296	0	1443	936	836
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	1.00
Uniform Delay (d), s/veh	14.5	2.1	0.0	15.5	20.1	19.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	2.1	1.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.4	0.0	4.7	0.8	0.5
LnGrp Delay(d),s/veh	15.5	2.2	0.0	17.6	21.1	20.7
LnGrp LOS	B	A		B	C	C
Approach Vol, veh/h		944	366		101	
Approach Delay, s/veh		14.1	17.6		21.0	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	20.3	18.5		9.5		38.8		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	40.5	40.5		25.5		85.5		
Max Q Clear Time (g_c+I1), s	12.6	11.3		3.5		2.8		
Green Ext Time (p_c), s	3.2	2.6		0.2		2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	888	106	223	639	46	80	423	251	50	447	104
Future Volume (veh/h)	165	888	106	223	639	46	80	423	251	50	447	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1845	1845	1776	1776	1776	1712	1712	1712
Adj Flow Rate, veh/h	179	965	55	242	695	18	87	460	128	54	486	37
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	7	7	7	11	11	11
Cap, veh/h	205	1194	534	249	1273	569	99	615	522	67	564	462
Arrive On Green	0.12	0.34	0.34	0.14	0.36	0.36	0.06	0.35	0.35	0.04	0.33	0.32
Sat Flow, veh/h	1774	3539	1583	1757	3505	1566	1691	1776	1508	1630	1712	1436
Grp Volume(v), veh/h	179	965	55	242	695	18	87	460	128	54	486	37
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1757	1752	1566	1691	1776	1508	1630	1712	1436
Q Serve(g_s), s	11.9	29.8	2.9	16.5	18.9	0.9	6.1	27.4	7.3	3.9	31.9	2.2
Cycle Q Clear(g_c), s	11.9	29.8	2.9	16.5	18.9	0.9	6.1	27.4	7.3	3.9	31.9	2.2
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	205	1194	534	249	1273	569	99	615	522	67	564	462
V/C Ratio(X)	0.87	0.81	0.10	0.97	0.55	0.03	0.88	0.75	0.25	0.80	0.86	0.08
Avail Cap(c_a), veh/h	207	1194	534	249	1273	569	99	621	528	122	628	516
HCM Platoon Ratio	1.00	1.00	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	52.2	36.2	27.3	51.3	30.3	24.6	56.1	34.6	28.0	57.0	37.7	28.3
Incr Delay (d2), s/veh	29.7	5.9	0.4	49.1	1.7	0.1	53.3	5.3	0.3	7.9	11.0	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	7.6	15.6	1.3	11.4	9.5	0.4	4.3	14.3	3.1	1.9	16.8	0.9
LnGrp Delay(d),s/veh	81.9	42.2	27.7	100.4	32.0	24.7	109.4	39.9	28.4	64.9	48.6	28.4
LnGrp LOS	F	D	C	F	C	C	F	D	C	E	D	C
Approach Vol, veh/h		1199			955			675			577	
Approach Delay, s/veh		47.4			49.2			46.7			48.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	44.5	11.0	43.5	17.9	47.6	9.0	45.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	4.0	6.0	4.0	4.9
Max Green Setting (Gmax), s	17.0	34.0	7.0	43.1	14.0	37.0	9.0	41.1
Max Q Clear Time (g_c+I1), s	13.5	31.8	8.1	33.9	13.9	20.9	5.9	29.4
Green Ext Time (p_c), s	0.0	2.1	0.0	4.7	0.0	14.2	0.0	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.0
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	881	137	277	886	98	152	563	172	234	829	138
Future Volume (veh/h)	169	881	137	277	886	98	152	563	172	234	829	138
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	184	958	53	301	963	98	165	612	167	254	901	141
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	207	1416	427	325	1615	164	189	930	253	307	995	156
Arrive On Green	0.15	0.37	0.37	0.18	0.34	0.33	0.11	0.34	0.33	0.09	0.32	0.31
Sat Flow, veh/h	1792	5136	1550	1792	4727	480	1774	2734	745	3476	3089	483
Grp Volume(v), veh/h	184	958	53	301	697	364	165	396	383	254	521	521
Grp Sat Flow(s),veh/h/ln	1792	1712	1550	1792	1712	1783	1774	1770	1709	1738	1787	1785
Q Serve(g_s), s	14.1	22.0	3.2	23.1	23.5	23.7	12.8	26.6	26.8	10.1	39.1	39.1
Cycle Q Clear(g_c), s	14.1	22.0	3.2	23.1	23.5	23.7	12.8	26.6	26.8	10.1	39.1	39.1
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.44	1.00		0.27
Lane Grp Cap(c), veh/h	207	1416	427	325	1170	609	189	602	582	307	576	575
V/C Ratio(X)	0.89	0.68	0.12	0.93	0.60	0.60	0.87	0.66	0.66	0.83	0.91	0.91
Avail Cap(c_a), veh/h	230	1416	427	358	1170	609	215	602	582	397	587	587
HCM Platoon Ratio	1.33	1.33	1.33	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	39.1	33.1	56.4	38.1	38.3	61.6	39.2	39.5	62.8	45.4	45.6
Incr Delay (d2), s/veh	26.2	2.2	0.5	28.2	2.2	4.3	28.1	2.9	3.1	10.7	17.7	17.8
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	8.5	10.7	1.4	14.0	11.5	12.4	7.8	13.5	13.1	5.3	22.1	22.1
LnGrp Delay(d),s/veh	84.6	41.3	33.6	84.5	40.3	42.6	89.7	42.2	42.6	73.5	63.1	63.4
LnGrp LOS	F	D	C	F	D	D	F	D	D	E	E	E
Approach Vol, veh/h		1195			1362			944			1296	
Approach Delay, s/veh		47.6			50.7			50.7			65.3	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.4	42.6	18.9	49.1	20.2	51.8	16.4	51.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	28.6	31.7	17.0	44.7	18.0	41.7	16.0	45.7
Max Q Clear Time (g_c+I1), s	25.1	24.0	14.8	41.1	16.1	25.7	12.1	28.8
Green Ext Time (p_c), s	0.3	6.7	0.1	2.7	0.1	12.9	0.3	12.5

Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	408	217	192	718	63	266	1012	126	80	869	425
Future Volume (veh/h)	381	408	217	192	718	63	266	1012	126	80	869	425
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	443	168	209	780	65	289	1100	89	87	945	387
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	438	1292	836	231	818	68	310	1287	560	105	878	786
Arrive On Green	0.24	0.36	0.35	0.13	0.25	0.24	0.17	0.36	0.36	0.06	0.25	0.25
Sat Flow, veh/h	1792	3574	1570	1792	3329	277	1774	3539	1541	1774	3539	1552
Grp Volume(v), veh/h	414	443	168	209	419	426	289	1100	89	87	945	387
Grp Sat Flow(s),veh/h/ln	1792	1787	1570	1792	1787	1819	1774	1770	1541	1774	1770	1552
Q Serve(g_s), s	41.8	16.6	10.4	21.2	42.5	42.6	29.6	52.9	7.2	8.9	45.7	30.5
Cycle Q Clear(g_c), s	41.8	16.6	10.4	21.2	42.5	42.6	29.6	52.9	7.2	8.9	45.7	30.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	1292	836	231	439	447	310	1287	560	105	878	786
V/C Ratio(X)	0.95	0.34	0.20	0.91	0.95	0.95	0.93	0.85	0.16	0.83	1.08	0.49
Avail Cap(c_a), veh/h	622	1292	836	428	439	447	424	1287	560	231	878	786
HCM Platoon Ratio	1.00	1.00	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	68.4	42.9	22.9	79.2	68.4	68.5	74.9	54.1	39.6	85.7	69.3	30.5
Incr Delay (d2), s/veh	19.1	0.2	0.2	12.5	31.3	31.1	22.7	6.1	0.2	14.7	53.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.0	8.3	4.6	11.3	24.9	25.3	16.5	26.9	3.1	4.8	28.8	13.3
LnGrp Delay(d),s/veh	87.5	43.1	23.0	91.7	99.7	99.6	97.6	60.2	39.8	100.4	122.4	31.3
LnGrp LOS	F	D	C	F	F	F	F	E	D	F	F	C
Approach Vol, veh/h		1025			1054			1478			1419	
Approach Delay, s/veh		57.8			98.1			66.3			96.2	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.7	70.6	36.2	49.7	49.0	49.3	14.9	71.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	23.2	18.6	31.6	47.7	43.8	44.6	10.9	54.9
Green Ext Time (p_c), s	0.5	12.8	0.7	0.0	1.2	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.8
HCM 2010 LOS	E

Notes

Intersection	
Intersection Delay, s/veh	47
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	0	308	379	382	412
Future Vol, veh/h	343	0	308	379	382	412
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	8	8	8	8
Mvmt Flow	350	0	314	387	390	420
Number of Lanes	1	1	2	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	46.5	51.7	43.1
HCM LOS	E	F	E

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	21%	0%	0%
Vol Right, %	0%	0%	0%	79%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	0	205	482	382	412
LT Vol	343	0	0	0	382	0
Through Vol	0	0	205	103	0	0
RT Vol	0	0	0	379	0	412
Lane Flow Rate	350	0	210	491	390	420
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.859	0	0.458	0.996	0.902	0.828
Departure Headway (Hd)	8.836	8.318	7.864	7.296	8.326	7.092
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	410	0	461	501	437	513
Service Time	6.579	6.061	5.58	5.012	6.041	4.806
HCM Lane V/C Ratio	0.854	0	0.456	0.98	0.892	0.819
HCM Control Delay	46.5	11.1	17.1	66.4	51.2	35.5
HCM Lane LOS	E	N	C	F	F	E
HCM 95th-tile Q	8.4	0	2.4	13.4	9.7	8.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	50	1	114	254	622	0	0	384	242
Future Volume (veh/h)	0	0	0	50	1	114	254	622	0	0	384	242
Number				3	8	18	5	2	12	1	6	16
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		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1810	1900	1696	1696	0	0	1810	1900
Adj Flow Rate, veh/h				53	1	120	267	655	0	0	404	255
Adj No. of Lanes				0	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	5	0	12	12	0	0	5	5
Cap, veh/h				71	1	161	331	2217	0	0	806	502
Arrive On Green				0.15	0.15	0.15	0.21	0.69	0.00	0.00	0.40	0.40
Sat Flow, veh/h				485	9	1098	1616	3308	0	0	2104	1255
Grp Volume(v), veh/h				174	0	0	267	655	0	0	344	315
Grp Sat Flow(s),veh/h/ln				1592	0	0	1616	1612	0	0	1719	1549
Q Serve(g_s), s				5.7	0.0	0.0	8.6	4.3	0.0	0.0	8.2	8.3
Cycle Q Clear(g_c), s				5.7	0.0	0.0	8.6	4.3	0.0	0.0	8.2	8.3
Prop In Lane				0.30		0.69	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				234	0	0	331	2217	0	0	688	620
V/C Ratio(X)				0.75	0.00	0.00	0.81	0.30	0.00	0.00	0.50	0.51
Avail Cap(c_a), veh/h				746	0	0	1054	5066	0	0	1438	1296
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	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.2	0.0	0.0	20.6	3.3	0.0	0.0	12.2	12.3
Incr Delay (d2), s/veh				4.7	0.0	0.0	4.6	0.1	0.0	0.0	0.6	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	0.0	4.2	1.9	0.0	0.0	3.9	3.6
LnGrp Delay(d),s/veh				26.9	0.0	0.0	25.2	3.4	0.0	0.0	12.8	12.9
LnGrp LOS				C			C	A			B	B
Approach Vol, veh/h					174			922			659	
Approach Delay, s/veh					26.9			9.7			12.9	
Approach LOS					C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		41.9			15.7	26.3		12.5
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		85.5			35.5	45.5		25.5
Max Q Clear Time (g_c+I1), s		6.3			10.6	10.3		7.7
Green Ext Time (p_c), s		12.9			0.8	11.4		0.9

Intersection Summary		
HCM 2010 Ctrl Delay		12.6
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	8	5	37	8	83	6	516	0	0	430	23
Future Volume (veh/h)	45	8	5	37	8	83	6	516	0	0	430	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1727	1900	1900	1743	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	49	9	2	40	9	30	7	561	0	0	467	25
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	9	9	9	2	2	0	0	2	2
Cap, veh/h	84	15	3	61	14	45	17	1767	0	0	1258	67
Arrive On Green	0.06	0.06	0.06	0.08	0.08	0.08	0.01	0.50	0.00	0.00	0.37	0.37
Sat Flow, veh/h	1348	248	55	808	182	606	1774	3632	0	0	3505	182
Grp Volume(v), veh/h	60	0	0	79	0	0	7	561	0	0	242	250
Grp Sat Flow(s),veh/h/ln	1650	0	0	1596	0	0	1774	1770	0	0	1770	1825
Q Serve(g_s), s	1.3	0.0	0.0	1.8	0.0	0.0	0.1	3.5	0.0	0.0	3.7	3.7
Cycle Q Clear(g_c), s	1.3	0.0	0.0	1.8	0.0	0.0	0.1	3.5	0.0	0.0	3.7	3.7
Prop In Lane	0.82		0.03	0.51		0.38	1.00		0.00	0.00		0.10
Lane Grp Cap(c), veh/h	103	0	0	120	0	0	17	1767	0	0	653	673
V/C Ratio(X)	0.59	0.00	0.00	0.66	0.00	0.00	0.42	0.32	0.00	0.00	0.37	0.37
Avail Cap(c_a), veh/h	1133	0	0	1096	0	0	502	5289	0	0	1930	1990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	16.7	0.0	0.0	18.3	5.5	0.0	0.0	8.6	8.6
Incr Delay (d2), s/veh	5.2	0.0	0.0	6.1	0.0	0.0	16.0	0.1	0.0	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.0	0.0	0.0	0.1	1.7	0.0	0.0	1.9	1.9
LnGrp Delay(d),s/veh	22.2	0.0	0.0	22.8	0.0	0.0	34.3	5.6	0.0	0.0	8.9	8.9
LnGrp LOS	C			C			C	A			A	A
Approach Vol, veh/h		60			79			568			492	
Approach Delay, s/veh		22.2			22.8			6.0			8.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		23.0		6.8	4.8	18.2		7.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		55.5		25.5	10.5	40.5		25.5
Max Q Clear Time (g_c+I1), s		5.5		3.3	2.1	5.7		3.8
Green Ext Time (p_c), s		8.1		0.2	0.0	7.8		0.3

Intersection Summary		
HCM 2010 Ctrl Delay		9.1
HCM 2010 LOS		A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	5	748	131	14	336
Future Volume (veh/h)	20	5	748	131	14	336
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	22	5	813	142	15	365
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	58	52	1109	194	436	1337
Arrive On Green	0.03	0.03	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1774	1583	1545	270	585	1863
Grp Volume(v), veh/h	22	5	0	955	15	365
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1815	585	1863
Q Serve(g_s), s	0.4	0.1	0.0	11.3	0.6	2.5
Cycle Q Clear(g_c), s	0.4	0.1	0.0	11.3	11.9	2.5
Prop In Lane	1.00	1.00		0.15	1.00	
Lane Grp Cap(c), veh/h	58	52	0	1303	436	1337
V/C Ratio(X)	0.38	0.10	0.00	0.73	0.03	0.27
Avail Cap(c_a), veh/h	1254	1119	0	4302	1403	4415
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	1.00
Uniform Delay (d), s/veh	17.1	16.9	0.0	3.0	6.6	1.8
Incr Delay (d2), s/veh	4.0	0.8	0.0	0.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.0	5.6	0.1	1.3
LnGrp Delay(d),s/veh	21.1	17.7	0.0	3.8	6.6	1.9
LnGrp LOS	C	B		A	A	A
Approach Vol, veh/h	27		955			380
Approach Delay, s/veh	20.4		3.8			2.1
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		30.4				30.4		5.7
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		85.5				85.5		25.5
Max Q Clear Time (g_c+I1), s		13.3				13.9		2.4
Green Ext Time (p_c), s		12.0				12.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	3.7
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	5	874	128	14	342
Future Volume (veh/h)	22	5	874	128	14	342
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	24	0	950	137	15	372
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	49	44	1134	164	33	1511
Arrive On Green	0.03	0.00	0.71	0.71	0.02	0.81
Sat Flow, veh/h	1774	1583	1593	230	1774	1863
Grp Volume(v), veh/h	24	0	0	1087	15	372
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1822	1774	1863
Q Serve(g_s), s	0.7	0.0	0.0	23.8	0.5	2.6
Cycle Q Clear(g_c), s	0.7	0.0	0.0	23.8	0.5	2.6
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	49	44	0	1298	33	1511
V/C Ratio(X)	0.49	0.00	0.00	0.84	0.46	0.25
Avail Cap(c_a), veh/h	808	722	0	2296	333	2846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	0.0	5.7	27.2	1.2
Incr Delay (d2), s/veh	7.2	0.0	0.0	1.5	9.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	12.0	0.3	1.3
LnGrp Delay(d),s/veh	34.0	0.0	0.0	7.2	36.7	1.3
LnGrp LOS	C			A	D	A
Approach Vol, veh/h	24		1087			387
Approach Delay, s/veh	34.0		7.2			2.7
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.5	44.4				49.9		6.1
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	10.5	70.5				85.5		25.5
Max Q Clear Time (g_c+I1), s	2.7	25.8				4.6		2.7
Green Ext Time (p_c), s	0.0	14.1				15.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	92	9	175	214	94	6	81	110	104	179	26
Future Vol, veh/h	16	92	9	175	214	94	6	81	110	104	179	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	1	1	1	5	5	5	2	2	2
Mvmt Flow	16	94	9	179	218	96	6	83	112	106	183	27
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.3	14.7	10.8	12.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	7%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	93%	0%	0%	91%	0%	69%	0%	87%
Vol Right, %	0%	100%	0%	9%	0%	31%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	110	16	101	175	308	104	205
LT Vol	6	0	16	0	175	0	104	0
Through Vol	81	0	0	92	0	214	0	179
RT Vol	0	110	0	9	0	94	0	26
Lane Flow Rate	89	112	16	103	179	314	106	209
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.172	0.194	0.034	0.197	0.338	0.531	0.211	0.381
Departure Headway (Hd)	6.967	6.218	7.441	6.867	6.809	6.085	7.161	6.562
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	574	478	519	527	591	499	546
Service Time	4.747	3.997	5.229	4.654	4.573	3.849	4.934	4.335
HCM Lane V/C Ratio	0.174	0.195	0.033	0.198	0.34	0.531	0.212	0.383
HCM Control Delay	11.2	10.5	10.5	11.4	13	15.6	11.9	13.4
HCM Lane LOS	B	B	B	B	B	C	B	B
HCM 95th-tile Q	0.6	0.7	0.1	0.7	1.5	3.1	0.8	1.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	111	123	534	324	9	126	252	323	10	171	30
Future Volume (veh/h)	49	111	123	534	324	9	126	252	323	10	171	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	114	17	551	334	4	130	260	205	10	176	6
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	107	286	200	616	820	697	182	520	396	30	644	280
Arrive On Green	0.06	0.15	0.13	0.35	0.44	0.44	0.10	0.27	0.24	0.02	0.18	0.18
Sat Flow, veh/h	1792	1881	1599	1774	1863	1583	1810	1955	1488	1774	3539	1538
Grp Volume(v), veh/h	51	114	17	551	334	4	130	239	226	10	176	6
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1774	1863	1583	1810	1805	1637	1774	1770	1538
Q Serve(g_s), s	2.0	4.0	0.7	21.6	9.0	0.1	5.1	8.3	8.8	0.4	3.1	0.2
Cycle Q Clear(g_c), s	2.0	4.0	0.7	21.6	9.0	0.1	5.1	8.3	8.8	0.4	3.1	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	107	286	200	616	820	697	182	480	435	30	644	280
V/C Ratio(X)	0.48	0.40	0.09	0.89	0.41	0.01	0.71	0.50	0.52	0.33	0.27	0.02
Avail Cap(c_a), veh/h	889	972	783	881	963	818	898	1522	1381	833	2985	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	28.1	28.4	22.7	14.0	11.6	32.0	22.8	23.8	35.7	25.9	24.7
Incr Delay (d2), s/veh	3.3	1.4	0.3	8.6	0.5	0.0	5.1	1.2	1.5	6.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.2	0.3	12.0	4.7	0.0	2.8	4.3	4.1	0.3	1.6	0.1
LnGrp Delay(d),s/veh	36.7	29.5	28.7	31.3	14.5	11.6	37.1	24.1	25.3	42.1	26.2	24.7
LnGrp LOS	D	C	C	C	B	B	D	C	C	D	C	C
Approach Vol, veh/h		182			889			595			192	
Approach Delay, s/veh		31.5			24.9			27.4			27.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	23.5	29.5	15.2	11.4	17.4	8.4	36.3
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0
Max Green Setting (Gmax), s	31.6	60.0	36.0	36.0	36.0	60.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	2.4	10.8	23.6	6.0	7.1	5.1	4.0	11.0
Green Ext Time (p_c), s	0.0	6.2	1.4	3.8	0.3	6.3	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	116	71	93	160	0	107	262	51	0	490	596
Future Volume (veh/h)	254	116	71	93	160	0	107	262	51	0	490	596
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1845	1845	1900	1881	1881
Adj Flow Rate, veh/h	262	120	54	96	165	0	110	270	25	0	505	284
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	318	295	133	126	249	0	176	397	754	0	925	764
Arrive On Green	0.18	0.24	0.24	0.07	0.13	0.00	0.49	0.49	0.49	0.00	0.49	0.49
Sat Flow, veh/h	1774	1218	548	1774	1863	0	221	809	1533	0	1881	1555
Grp Volume(v), veh/h	262	0	174	96	165	0	380	0	25	0	505	284
Grp Sat Flow(s),veh/h/ln	1774	0	1766	1774	1863	0	1029	0	1533	0	1881	1555
Q Serve(g_s), s	9.8	0.0	5.7	3.7	5.8	0.0	10.8	0.0	0.6	0.0	12.9	7.8
Cycle Q Clear(g_c), s	9.8	0.0	5.7	3.7	5.8	0.0	23.7	0.0	0.6	0.0	12.9	7.8
Prop In Lane	1.00		0.31	1.00		0.00	0.29		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	318	0	428	126	249	0	573	0	754	0	925	764
V/C Ratio(X)	0.82	0.00	0.41	0.76	0.66	0.00	0.66	0.00	0.03	0.00	0.55	0.37
Avail Cap(c_a), veh/h	784	0	908	398	553	0	958	0	1232	0	1512	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	22.0	31.5	28.4	0.0	15.0	0.0	9.1	0.0	12.2	10.9
Incr Delay (d2), s/veh	5.3	0.0	0.6	9.3	3.0	0.0	1.3	0.0	0.0	0.0	0.5	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	5.3	0.0	2.9	2.1	3.2	0.0	6.3	0.0	0.2	0.0	6.7	3.4
LnGrp Delay(d),s/veh	32.6	0.0	22.6	40.8	31.4	0.0	16.3	0.0	9.1	0.0	12.7	11.2
LnGrp LOS	C		C	D	C		B		A		B	B
Approach Vol, veh/h		436			261			405			789	
Approach Delay, s/veh		28.6			34.9			15.9			12.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	21.2		38.4	16.9	13.7		38.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	35.5		55.5	30.5	20.5		55.5
Max Q Clear Time (g_c+I1), s	5.7	7.7		25.7	11.8	7.8		14.9
Green Ext Time (p_c), s	0.1	1.8		8.2	0.6	1.4		8.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	0	41	3	1	7	57	973	26	14	858	106
Future Volume (veh/h)	62	0	41	3	1	7	57	973	26	14	858	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1900	1900	1881	1881	1900	1863	1863	1863
Adj Flow Rate, veh/h	66	0	4	3	1	1	61	1035	27	15	913	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	2	2	2
Cap, veh/h	184	0	96	80	26	10	88	1429	37	35	1388	1156
Arrive On Green	0.05	0.00	0.06	0.05	0.06	0.05	0.05	0.78	0.76	0.02	0.75	0.00
Sat Flow, veh/h	1692	0	1599	253	472	181	1792	1825	48	1774	1863	1583
Grp Volume(v), veh/h	66	0	4	5	0	0	61	0	1062	15	913	0
Grp Sat Flow(s),veh/h/ln	1692	0	1599	905	0	0	1792	0	1873	1774	1863	1583
Q Serve(g_s), s	0.0	0.0	0.2	0.0	0.0	0.0	2.9	0.0	24.9	0.7	21.4	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.2	3.2	0.0	0.0	2.9	0.0	24.9	0.7	21.4	0.0
Prop In Lane	1.00		1.00	0.60		0.20	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	167	0	96	111	0	0	88	0	1466	35	1388	1156
V/C Ratio(X)	0.40	0.00	0.04	0.05	0.00	0.00	0.69	0.00	0.72	0.43	0.66	0.00
Avail Cap(c_a), veh/h	341	0	292	308	0	0	123	0	1841	122	1831	1533
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.6	0.0	38.7	39.3	0.0	0.0	40.9	0.0	4.8	42.4	5.6	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.2	0.2	0.0	0.0	9.2	0.0	1.4	8.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.1	0.1	0.0	0.0	1.7	0.0	13.0	0.4	11.0	0.0
LnGrp Delay(d),s/veh	42.1	0.0	38.9	39.5	0.0	0.0	50.1	0.0	6.2	50.5	6.4	0.0
LnGrp LOS	D		D	D			D		A	D	A	
Approach Vol, veh/h		70			5			1123			928	
Approach Delay, s/veh		41.9			39.5			8.5			7.1	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	72.5		9.3	8.3	69.9		9.3
Change Period (Y+Rc), s	4.5	6.0		4.9	4.5	* 6		* 4.9
Max Green Setting (Gmax), s	5.5	84.0		15.1	5.5	* 85		* 16
Max Q Clear Time (g_c+I1), s	2.2	26.9		5.2	4.9	23.4		5.2
Green Ext Time (p_c), s	0.0	38.6		0.2	0.0	40.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	901	200	266	819	70	357	910	339	155	767	366
Future Volume (veh/h)	265	901	200	266	819	70	357	910	339	155	767	366
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	270	919	189	271	836	66	364	929	184	158	783	106
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	347	1011	208	348	1157	91	379	1100	491	188	715	310
Arrive On Green	0.10	0.34	0.33	0.10	0.35	0.35	0.21	0.30	0.30	0.10	0.20	0.20
Sat Flow, veh/h	3476	2931	602	3476	3352	265	1810	3610	1610	1792	3574	1551
Grp Volume(v), veh/h	270	560	548	271	446	456	364	929	184	158	783	106
Grp Sat Flow(s),veh/h/ln	1738	1787	1747	1738	1787	1829	1810	1805	1610	1792	1787	1551
Q Serve(g_s), s	8.3	32.9	33.0	8.4	23.9	23.9	21.9	26.5	9.9	9.5	22.0	6.5
Cycle Q Clear(g_c), s	8.3	32.9	33.0	8.4	23.9	23.9	21.9	26.5	9.9	9.5	22.0	6.5
Prop In Lane	1.00		0.34	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	617	603	348	617	632	379	1100	491	188	715	310
V/C Ratio(X)	0.78	0.91	0.91	0.78	0.72	0.72	0.96	0.84	0.38	0.84	1.09	0.34
Avail Cap(c_a), veh/h	664	618	604	664	618	632	379	1100	491	228	715	310
HCM Platoon Ratio	1.00	1.00	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	48.3	34.3	34.7	48.3	31.4	31.4	43.0	35.8	30.0	48.3	44.0	37.7
Incr Delay (d2), s/veh	3.8	17.7	18.2	3.8	4.6	4.5	36.1	6.5	0.8	20.6	62.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	19.2	18.9	4.2	12.6	12.8	14.7	14.2	4.5	5.8	17.0	2.9
LnGrp Delay(d),s/veh	52.1	52.1	52.9	52.1	36.0	35.9	79.2	42.3	30.8	68.9	106.4	38.8
LnGrp LOS	D	D	D	D	D	D	E	D	C	E	F	D
Approach Vol, veh/h		1378			1173			1477			1047	
Approach Delay, s/veh		52.4			39.7			49.9			93.9	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	37.5	15.0	41.9	27.0	26.0	15.0	42.0
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7
Max Green Setting (Gmax), s	11.5	29.3	21.0	36.3	23.0	20.3	21.0	36.3
Max Q Clear Time (g_c+I1), s	11.5	28.5	10.4	35.0	23.9	24.0	10.3	25.9
Green Ext Time (p_c), s	0.1	0.8	0.6	1.3	0.0	0.0	0.6	9.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.3
HCM 2010 LOS	E

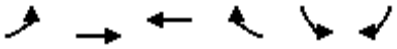
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	846	129	40	886	43	108	147	15	67	108	94
Future Volume (veh/h)	124	846	129	40	886	43	108	147	15	67	108	94
Number	5	2	12	1	6	16	7	4	14	3	8	18
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	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
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1863	1900	1900	1881	1900	1900	1900	1900
Adj Flow Rate, veh/h	127	863	118	41	904	39	110	150	11	68	110	50
Adj No. of Lanes	0	2	0	0	2	0	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	201	1219	173	118	1682	71	233	260	16	239	339	441
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	195	2295	325	64	3167	135	451	948	59	479	1238	1608
Grp Volume(v), veh/h	511	0	597	501	0	483	271	0	0	178	0	50
Grp Sat Flow(s),veh/h/ln	1169	0	1646	1698	0	1668	1458	0	0	1717	0	1608
Q Serve(g_s), s	8.6	0.0	12.3	0.1	0.0	8.8	4.5	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	17.4	0.0	12.3	12.5	0.0	8.8	8.0	0.0	0.0	3.5	0.0	1.1
Prop In Lane	0.25		0.20	0.08		0.08	0.41		0.04	0.38		1.00
Lane Grp Cap(c), veh/h	718	0	874	986	0	886	509	0	0	578	0	441
V/C Ratio(X)	0.71	0.00	0.68	0.51	0.00	0.55	0.53	0.00	0.00	0.31	0.00	0.11
Avail Cap(c_a), veh/h	744	0	909	1019	0	921	937	0	0	1018	0	888
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	8.0	6.9	0.0	7.1	15.0	0.0	0.0	13.4	0.0	12.6
Incr Delay (d2), s/veh	3.1	0.0	2.0	0.4	0.0	0.6	0.9	0.0	0.0	0.3	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	6.0	0.0	6.0	4.1	0.0	4.2	3.2	0.0	0.0	1.8	0.0	0.5
LnGrp Delay(d),s/veh	11.7	0.0	10.0	7.3	0.0	7.8	15.9	0.0	0.0	13.7	0.0	12.7
LnGrp LOS	B		A	A		A	B			B		B
Approach Vol, veh/h		1108			984			271			228	
Approach Delay, s/veh		10.8			7.6			15.9			13.5	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		17.1		29.0		17.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		19.4		10.0		14.5		5.5
Green Ext Time (p_c), s		5.1		2.4		8.6		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	354	161	138	71	223	735
Future Volume (veh/h)	354	161	138	71	223	735
Number	1	6	2	12	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1881	1900	1881	1881
Adj Flow Rate, veh/h	393	179	153	62	248	227
Adj No. of Lanes	2	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	1	1	1	1
Cap, veh/h	659	982	274	111	395	352
Arrive On Green	0.19	0.53	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3408	1845	1274	516	1792	1599
Grp Volume(v), veh/h	393	179	0	215	248	227
Grp Sat Flow(s),veh/h/ln	1704	1845	0	1790	1792	1599
Q Serve(g_s), s	3.8	1.8	0.0	3.9	4.6	4.7
Cycle Q Clear(g_c), s	3.8	1.8	0.0	3.9	4.6	4.7
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	659	982	0	386	395	352
V/C Ratio(X)	0.60	0.18	0.00	0.56	0.63	0.64
Avail Cap(c_a), veh/h	3792	4333	0	1992	1255	1120
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	1.00
Uniform Delay (d), s/veh	13.4	4.4	0.0	12.7	12.8	12.9
Incr Delay (d2), s/veh	0.9	0.1	0.0	1.3	1.7	2.0
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	0.9	0.0	2.0	2.4	2.2
LnGrp Delay(d),s/veh	14.2	4.5	0.0	14.0	14.5	14.9
LnGrp LOS	B	A		B	B	B
Approach Vol, veh/h		572	215		475	
Approach Delay, s/veh		11.2	14.0		14.7	
Approach LOS		B	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.5	12.3		12.5		23.9		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	40.5	40.5		25.5		85.5		
Max Q Clear Time (g_c+I1), s	5.8	5.9		6.7		3.8		
Green Ext Time (p_c), s	1.3	2.1		1.3		2.1		

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	966	144	283	1010	119	107	506	367	130	469	162
Future Volume (veh/h)	145	966	144	283	1010	119	107	506	367	130	469	162
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1881	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	148	986	90	289	1031	54	109	516	212	133	479	59
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	297	1404	627	314	1375	615	123	563	472	150	592	492
Arrive On Green	0.16	0.39	0.39	0.18	0.38	0.38	0.07	0.30	0.30	0.08	0.32	0.31
Sat Flow, veh/h	1810	3610	1613	1792	3574	1599	1774	1863	1561	1774	1863	1583
Grp Volume(v), veh/h	148	986	90	289	1031	54	109	516	212	133	479	59
Grp Sat Flow(s),veh/h/ln	1810	1805	1613	1792	1787	1599	1774	1863	1561	1774	1863	1583
Q Serve(g_s), s	9.7	29.8	4.7	20.6	32.4	2.3	7.9	34.8	14.3	9.6	30.7	2.6
Cycle Q Clear(g_c), s	9.7	29.8	4.7	20.6	32.4	2.3	7.9	34.8	14.3	9.6	30.7	2.6
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	297	1404	627	314	1375	615	123	563	472	150	592	492
V/C Ratio(X)	0.50	0.70	0.14	0.92	0.75	0.09	0.89	0.92	0.45	0.89	0.81	0.12
Avail Cap(c_a), veh/h	297	1404	627	331	1375	615	123	573	480	150	602	501
HCM Platoon Ratio	1.00	1.00	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	49.5	33.4	25.7	52.7	34.6	17.7	60.0	43.8	36.6	58.9	40.7	17.9
Incr Delay (d2), s/veh	0.5	3.0	0.5	29.5	3.8	0.3	47.4	19.8	1.0	41.0	8.0	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	4.9	15.4	2.2	12.8	16.8	1.1	5.5	21.0	6.3	6.4	17.2	1.1
LnGrp Delay(d),s/veh	50.0	36.3	26.2	82.2	38.4	17.9	107.4	63.5	37.6	99.8	48.8	18.0
LnGrp LOS	D	D	C	F	D	B	F	E	D	F	D	B
Approach Vol, veh/h		1224			1374			837			671	
Approach Delay, s/veh		37.2			46.8			62.7			56.2	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	54.6	13.0	45.3	27.4	54.0	15.0	43.3
Change Period (Y+Rc), s	4.0	6.0	4.0	4.9	6.0	* 6	4.0	4.9
Max Green Setting (Gmax), s	21.8	37.0	9.0	41.1	13.0	* 48	11.0	39.1
Max Q Clear Time (g_c+I1), s	22.6	31.8	9.9	32.7	11.7	34.4	11.6	36.8
Green Ext Time (p_c), s	0.1	4.1	0.0	4.9	0.1	9.8	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	1319	185	265	1173	84	281	891	214	328	790	163
Future Volume (veh/h)	216	1319	185	265	1173	84	281	891	214	328	790	163
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1881	1881	1881	1900	1900	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	220	1346	111	270	1197	81	287	909	205	335	806	155
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	237	1509	459	283	1572	106	302	1005	226	348	839	161
Arrive On Green	0.26	0.59	0.59	0.16	0.32	0.31	0.17	0.35	0.34	0.10	0.28	0.27
Sat Flow, veh/h	1792	5136	1562	1810	4951	335	1792	2872	647	3476	2982	573
Grp Volume(v), veh/h	220	1346	111	270	836	442	287	565	549	335	483	478
Grp Sat Flow(s),veh/h/ln	1792	1712	1562	1810	1729	1828	1792	1787	1732	1738	1787	1768
Q Serve(g_s), s	19.1	36.4	5.5	23.7	34.8	34.9	25.4	48.1	48.3	15.4	42.6	42.6
Cycle Q Clear(g_c), s	19.1	36.4	5.5	23.7	34.8	34.9	25.4	48.1	48.3	15.4	42.6	42.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.37	1.00		0.32
Lane Grp Cap(c), veh/h	237	1509	459	283	1098	581	302	625	606	348	503	497
V/C Ratio(X)	0.93	0.89	0.24	0.95	0.76	0.76	0.95	0.90	0.91	0.96	0.96	0.96
Avail Cap(c_a), veh/h	246	1509	459	283	1098	581	302	625	606	348	503	497
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)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	30.8	24.4	66.9	49.1	49.3	65.8	49.4	49.7	71.7	56.6	56.8
Incr Delay (d2), s/veh	25.8	5.1	0.7	41.3	5.0	9.1	38.3	16.8	17.5	38.6	30.5	30.7
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	11.1	17.7	2.4	15.1	17.4	19.0	15.8	26.6	26.0	9.3	25.3	25.1
LnGrp Delay(d),s/veh	83.8	35.9	25.2	108.2	54.1	58.4	104.1	66.3	67.2	110.3	87.1	87.5
LnGrp LOS	F	D	C	F	D	E	F	E	E	F	F	F
Approach Vol, veh/h		1677			1548			1401			1296	
Approach Delay, s/veh		41.5			64.8			74.4			93.3	
Approach LOS		D			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	51.0	31.0	49.0	25.2	54.8	20.0	60.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	25.0	45.7	27.0	43.7	22.0	48.7	16.0	54.7
Max Q Clear Time (g_c+I1), s	25.7	38.4	27.4	44.6	21.1	36.9	17.4	50.3
Green Ext Time (p_c), s	0.0	7.0	0.0	0.0	0.1	11.0	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.7
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	517	894	292	190	554	74	313	1151	211	124	979	433
Future Volume (veh/h)	517	894	292	190	554	74	313	1151	211	124	979	433
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1881
Adj Flow Rate, veh/h	528	912	228	194	565	71	319	1174	152	127	999	405
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	546	1390	897	214	645	81	338	1206	529	145	815	846
Arrive On Green	0.30	0.39	0.38	0.12	0.20	0.19	0.19	0.33	0.33	0.08	0.23	0.23
Sat Flow, veh/h	1810	3610	1581	1792	3180	398	1810	3610	1583	1792	3574	1548
Grp Volume(v), veh/h	528	912	228	194	317	319	319	1174	152	127	999	405
Grp Sat Flow(s),veh/h/ln	1810	1805	1581	1792	1787	1791	1810	1805	1583	1792	1787	1548
Q Serve(g_s), s	57.2	41.3	14.6	21.2	34.1	34.4	34.6	63.8	14.1	13.9	45.3	32.6
Cycle Q Clear(g_c), s	57.2	41.3	14.6	21.2	34.1	34.4	34.6	63.8	14.1	13.9	45.3	32.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	546	1390	897	214	362	363	338	1206	529	145	815	846
V/C Ratio(X)	0.97	0.66	0.25	0.91	0.87	0.88	0.94	0.97	0.29	0.88	1.23	0.48
Avail Cap(c_a), veh/h	583	1390	897	397	411	412	401	1206	529	216	815	846
HCM Platoon Ratio	1.00	1.00	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	68.4	50.3	22.1	86.4	76.8	77.0	79.7	65.3	48.8	90.3	76.7	28.9
Incr Delay (d2), s/veh	28.2	1.3	0.2	13.4	17.8	18.5	28.4	19.9	0.5	22.1	112.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.9	20.9	6.4	11.4	18.7	18.9	19.9	35.1	6.2	7.8	35.0	14.1
LnGrp Delay(d),s/veh	96.6	51.5	22.3	99.8	94.6	95.5	108.2	85.2	49.2	112.4	189.2	29.6
LnGrp LOS	F	D	C	F	F	F	F	F	D	F	F	C
Approach Vol, veh/h		1668			830			1645			1531	
Approach Delay, s/veh		61.8			96.1			86.3			140.6	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.7	80.1	41.1	49.7	64.0	43.9	20.1	70.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	4.0	5.3	4.0	5.7
Max Green Setting (Gmax), s	44.0	44.0	44.0	44.0	64.0	44.0	24.0	44.0
Max Q Clear Time (g_c+I1), s	23.2	43.3	36.6	47.3	59.2	36.4	15.9	65.8
Green Ext Time (p_c), s	0.5	0.6	0.6	0.0	0.8	2.2	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	95.2
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	147.8
Intersection LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	290	0	644	619	422	374
Future Vol, veh/h	290	0	644	619	422	374
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	296	0	657	632	431	382
Number of Lanes	1	1	2	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	36.3	236.1	48.2
HCM LOS	E	F	E

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	26%	0%	0%
Vol Right, %	0%	0%	0%	74%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	0	429	834	422	374
LT Vol	290	0	0	0	422	0
Through Vol	0	0	429	215	0	0
RT Vol	0	0	0	619	0	374
Lane Flow Rate	296	0	438	851	431	382
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.743	0	0.927	1.675	0.971	0.734
Departure Headway (Hd)	9.896	9.377	7.621	7.087	8.579	7.346
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	367	0	478	519	426	496
Service Time	7.596	7.077	5.371	4.836	6.279	5.046
HCM Lane V/C Ratio	0.807	0	0.916	1.64	1.012	0.77
HCM Control Delay	36.3	12.1	52.9	330.4	66.3	27.7
HCM Lane LOS	E	N	F	F	F	D
HCM 95th-tile Q	5.8	0	10.8	49	11.6	6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	38	1	104	288	828	0	0	707	408
Future Volume (veh/h)	0	0	0	38	1	104	288	828	0	0	707	408
Number				3	8	18	5	2	12	1	6	16
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		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1776	1776	0	0	1863	1900
Adj Flow Rate, veh/h				39	1	106	294	845	0	0	721	416
Adj No. of Lanes				0	1	0	1	2	0	0	2	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	7	7	0	0	2	2
Cap, veh/h				51	1	140	347	2576	0	0	1065	612
Arrive On Green				0.12	0.12	0.12	0.21	0.76	0.00	0.00	0.50	0.50
Sat Flow, veh/h				445	11	1208	1691	3463	0	0	2232	1230
Grp Volume(v), veh/h				146	0	0	294	845	0	0	596	541
Grp Sat Flow(s),veh/h/ln				1665	0	0	1691	1687	0	0	1770	1599
Q Serve(g_s), s				6.3	0.0	0.0	12.4	5.9	0.0	0.0	19.0	19.1
Cycle Q Clear(g_c), s				6.3	0.0	0.0	12.4	5.9	0.0	0.0	19.0	19.1
Prop In Lane				0.27		0.73	1.00		0.00	0.00		0.77
Lane Grp Cap(c), veh/h				192	0	0	347	2576	0	0	881	796
V/C Ratio(X)				0.76	0.00	0.00	0.85	0.33	0.00	0.00	0.68	0.68
Avail Cap(c_a), veh/h				571	0	0	808	3880	0	0	1083	979
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	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	0.0	0.0	28.4	2.8	0.0	0.0	14.1	14.2
Incr Delay (d2), s/veh				6.0	0.0	0.0	5.7	0.1	0.0	0.0	1.3	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	0.0	6.4	2.7	0.0	0.0	9.4	8.7
LnGrp Delay(d),s/veh				37.9	0.0	0.0	34.2	2.8	0.0	0.0	15.4	15.6
LnGrp LOS				D			C	A			B	B
Approach Vol, veh/h					146			1139			1137	
Approach Delay, s/veh					37.9			10.9			15.5	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.3			19.8	41.5		13.1
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		85.5			35.5	45.5		25.5
Max Q Clear Time (g_c+I1), s		7.9			14.4	21.1		8.3
Green Ext Time (p_c), s		27.6			0.9	15.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	24	7	25	10	99	16	534	0	0	548	64
Future Volume (veh/h)	31	24	7	25	10	99	16	534	0	0	548	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1881	1900	1881	1881	0	0	1881	1900
Adj Flow Rate, veh/h	34	27	2	28	11	19	18	593	0	0	609	71
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	0	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	0	0	1	1
Cap, veh/h	62	49	4	49	19	33	40	1977	0	0	1357	158
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.02	0.55	0.00	0.00	0.42	0.42
Sat Flow, veh/h	993	789	58	839	330	570	1792	3668	0	0	3309	374
Grp Volume(v), veh/h	63	0	0	58	0	0	18	593	0	0	338	342
Grp Sat Flow(s),veh/h/ln	1840	0	0	1739	0	0	1792	1787	0	0	1787	1802
Q Serve(g_s), s	1.4	0.0	0.0	1.3	0.0	0.0	0.4	3.7	0.0	0.0	5.6	5.6
Cycle Q Clear(g_c), s	1.4	0.0	0.0	1.3	0.0	0.0	0.4	3.7	0.0	0.0	5.6	5.6
Prop In Lane	0.54		0.03	0.48		0.33	1.00		0.00	0.00		0.21
Lane Grp Cap(c), veh/h	115	0	0	102	0	0	40	1977	0	0	754	760
V/C Ratio(X)	0.55	0.00	0.00	0.57	0.00	0.00	0.44	0.30	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h	1132	0	0	1070	0	0	454	4788	0	0	1747	1762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	0.0	19.0	0.0	0.0	20.0	5.0	0.0	0.0	8.5	8.5
Incr Delay (d2), s/veh	4.1	0.0	0.0	4.9	0.0	0.0	7.5	0.1	0.0	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.8	0.0	0.0	0.3	1.8	0.0	0.0	2.8	2.8
LnGrp Delay(d),s/veh	22.9	0.0	0.0	23.9	0.0	0.0	27.5	5.0	0.0	0.0	9.0	9.0
LnGrp LOS	C			C			C	A			A	A
Approach Vol, veh/h		63			58			611			680	
Approach Delay, s/veh		22.9			23.9			5.7			9.0	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		27.4		7.1	5.4	22.0		6.9
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		55.5		25.5	10.5	40.5		25.5
Max Q Clear Time (g_c+I1), s		5.7		3.4	2.4	7.6		3.3
Green Ext Time (p_c), s		10.6		0.2	0.0	9.8		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		8.8
HCM 2010 LOS		A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	125	28	392	46	5	649
Future Volume (veh/h)	125	28	392	46	5	649
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	136	30	426	50	5	705
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	217	194	965	113	638	1098
Arrive On Green	0.12	0.12	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1774	1583	1637	192	914	1863
Grp Volume(v), veh/h	136	30	0	476	5	705
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1829	914	1863
Q Serve(g_s), s	2.3	0.5	0.0	4.5	0.1	7.8
Cycle Q Clear(g_c), s	2.3	0.5	0.0	4.5	4.6	7.8
Prop In Lane	1.00	1.00		0.11	1.00	
Lane Grp Cap(c), veh/h	217	194	0	1078	638	1098
V/C Ratio(X)	0.63	0.16	0.00	0.44	0.01	0.64
Avail Cap(c_a), veh/h	1450	1294	0	5012	2605	5105
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	1.00
Uniform Delay (d), s/veh	13.0	12.3	0.0	3.6	4.8	4.2
Incr Delay (d2), s/veh	3.0	0.4	0.0	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.2	0.0	2.3	0.0	4.1
LnGrp Delay(d),s/veh	16.0	12.6	0.0	3.8	4.8	4.9
LnGrp LOS	B	B		A	A	A
Approach Vol, veh/h	166		476			710
Approach Delay, s/veh	15.4		3.8			4.9
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.9				22.9		8.3
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		85.5				85.5		25.5
Max Q Clear Time (g_c+I1), s		6.5				9.8		4.3
Green Ext Time (p_c), s		8.6				8.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	142	13	425	45	5	769
Future Volume (veh/h)	142	13	425	45	5	769
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	154	14	462	49	5	836
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	217	193	862	91	12	1200
Arrive On Green	0.12	0.12	0.52	0.52	0.01	0.64
Sat Flow, veh/h	1774	1583	1656	176	1774	1863
Grp Volume(v), veh/h	154	14	0	511	5	836
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1832	1774	1863
Q Serve(g_s), s	3.2	0.3	0.0	7.1	0.1	11.2
Cycle Q Clear(g_c), s	3.2	0.3	0.0	7.1	0.1	11.2
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	217	193	0	954	12	1200
V/C Ratio(X)	0.71	0.07	0.00	0.54	0.42	0.70
Avail Cap(c_a), veh/h	1174	1048	0	3353	484	4135
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	1.00
Uniform Delay (d), s/veh	16.3	15.0	0.0	6.1	19.1	4.4
Incr Delay (d2), s/veh	4.3	0.2	0.0	0.5	21.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.0	3.7	0.1	5.8
LnGrp Delay(d),s/veh	20.5	15.1	0.0	6.6	40.5	5.2
LnGrp LOS	C	B		A	D	A
Approach Vol, veh/h	168		511			841
Approach Delay, s/veh	20.1		6.6			5.4
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.8	24.6				29.3		9.2
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	10.5	70.5				85.5		25.5
Max Q Clear Time (g_c+I1), s	2.1	9.1				13.2		5.2
Green Ext Time (p_c), s	0.0	10.9				11.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Appendix F:
Signal Warrant Evaluations

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	113	18	94
Through	64	112	247	119
Right	217	24	7	50
Total	286	249	272	263

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	43.2
Approach with Worst Case Delay	EB
Total Vehicles on Approach	272

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**3.3**	**286**	**1,070**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

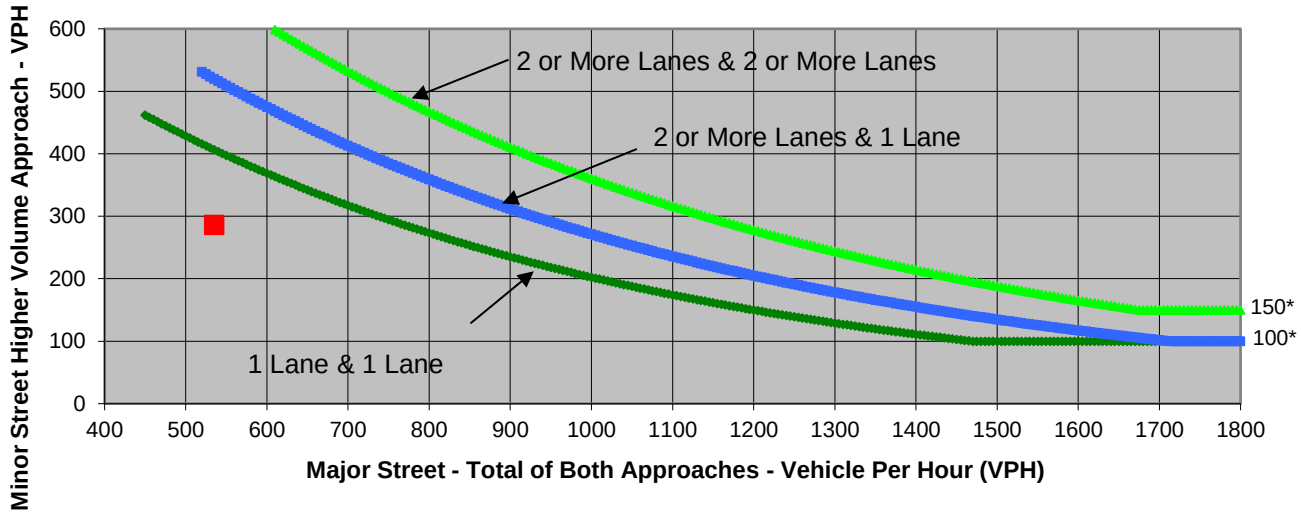
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	113	18	94
Through	64	112	247	119
Right	217	24	7	50
Total	286	249	272	263

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**535**	**286**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	507	94	0	0
Right	0	9	2	0
Total	508	103	17	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	13.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0.1**	**17**	**628**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

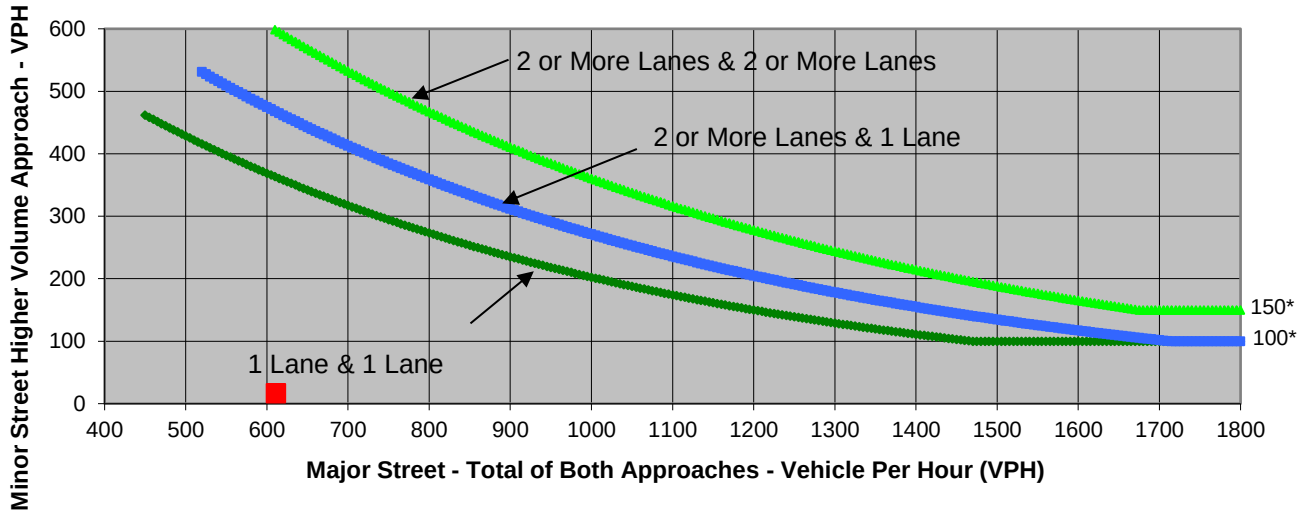
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	507	94	0	0
Right	0	9	2	0
Total	508	103	17	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**611**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	17	10	13
Through	22	42	415	379
Right	35	23	119	22
Total	238	82	544	414

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	21.8
Approach with Worst Case Delay	NB
Total Vehicles on Approach	238

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**1.4**	**238**	**1,278**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

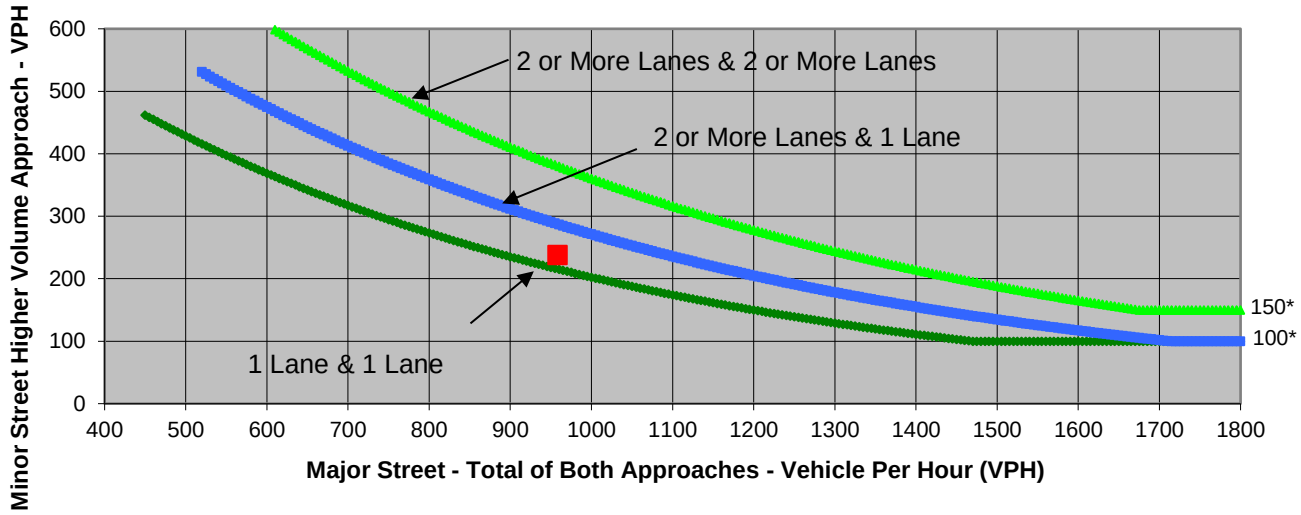
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	17	10	13
Through	22	42	415	379
Right	35	23	119	22
Total	238	82	544	414

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**958**	**238**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	35	381	0
Through	0	0	71	141
Right	0	53	0	88
Total	0	88	452	229

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	452

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**1**	**88**	**769**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

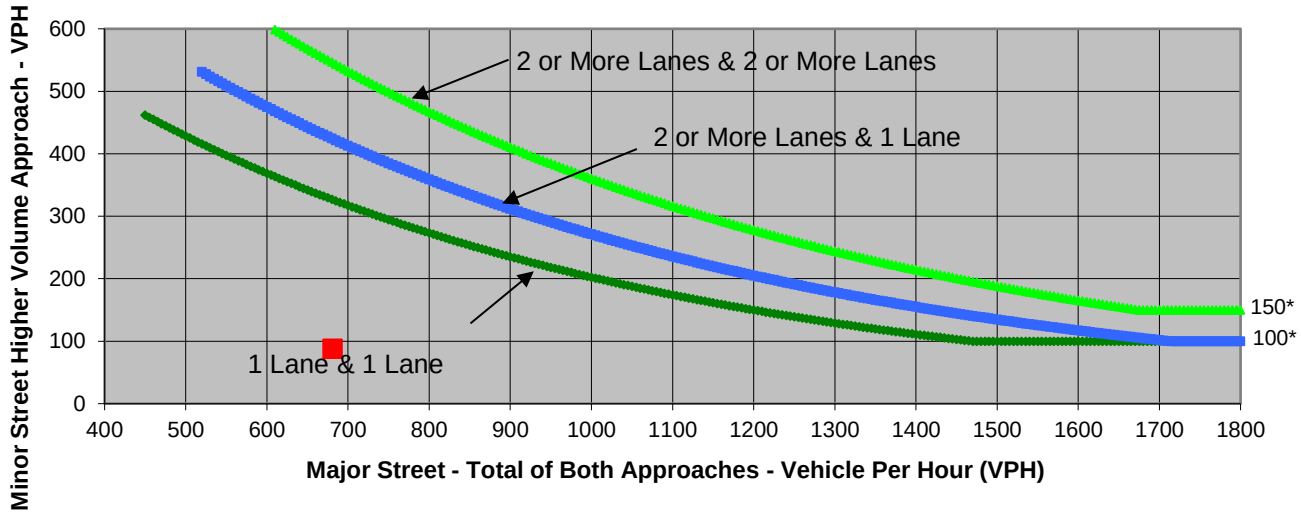
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	35	381	0
Through	0	0	71	141
Right	0	53	0	88
Total	0	88	452	229

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**681**	**88**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	311	343	0
Through	0	0	0	260
Right	0	353	0	305
Total	0	664	343	565

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	148.2
Approach with Worst Case Delay	SB
Total Vehicles on Approach	664

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**27.3**	**664**	**1,572**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	16th St
Minor Street	Snelling Hwy (CA 59)

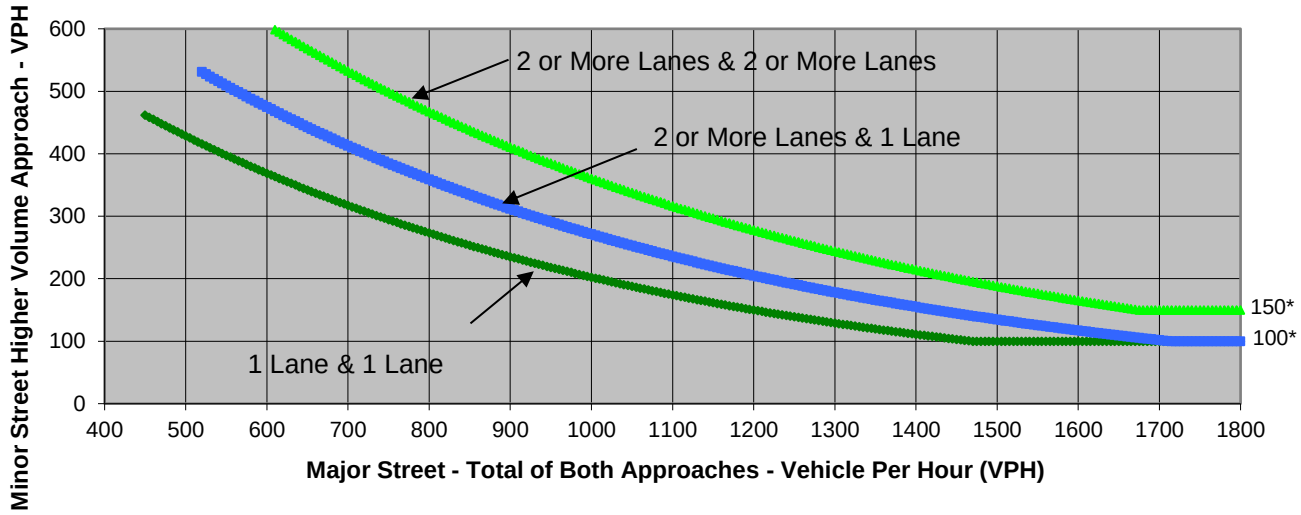
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	311	343	0
Through	0	0	0	260
Right	0	353	0	305
Total	0	664	343	565

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**908**	**664**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way
Minor Street	CA 99 NB Ramps

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	171	0	0	44
Through	360	230	0	1
Right	0	200	0	91
Total	531	430	0	136

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	136

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0.6**	**136**	**1,097**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

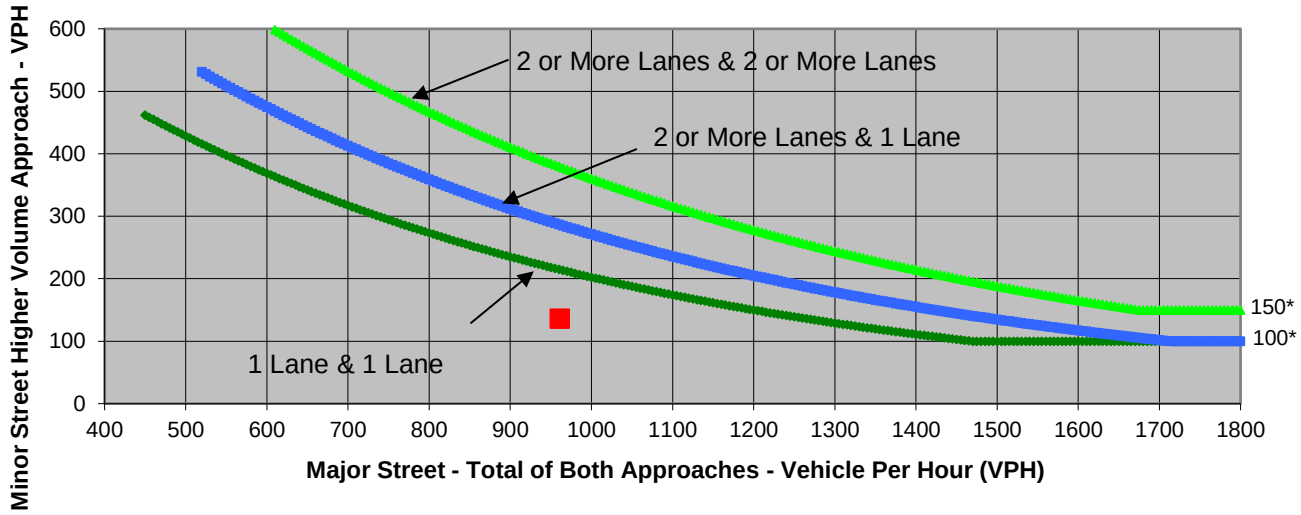
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	Existing No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	171	0	0	44
Through	360	230	0	1
Right	0	200	0	91
Total	531	430	0	136

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**961**	**136**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St
Minor Street	14th St/CA 99 NB Off Ramp

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	26	37
Through	496	393	0	3
Right	0	21	5	70
Total	502	414	31	110

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.2
Approach with Worst Case Delay	EB
Total Vehicles on Approach	31

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0.2**	**110**	**1,057**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	G St
Minor Street	14th St/CA 99 NB Off Ramp

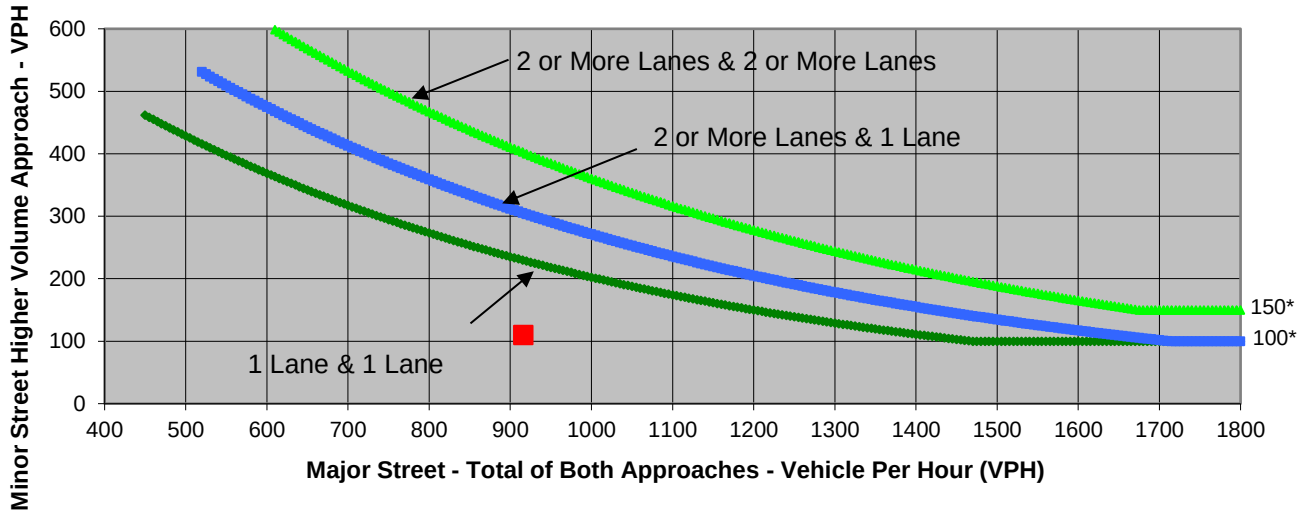
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	26	37
Through	496	393	0	3
Right	0	21	5	70
Total	502	414	31	110

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**916**	**110**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	64	16	100
Through	65	152	82	208
Right	90	26	9	70
Total	161	242	107	378

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	378

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**1.6**	**242**	**888**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

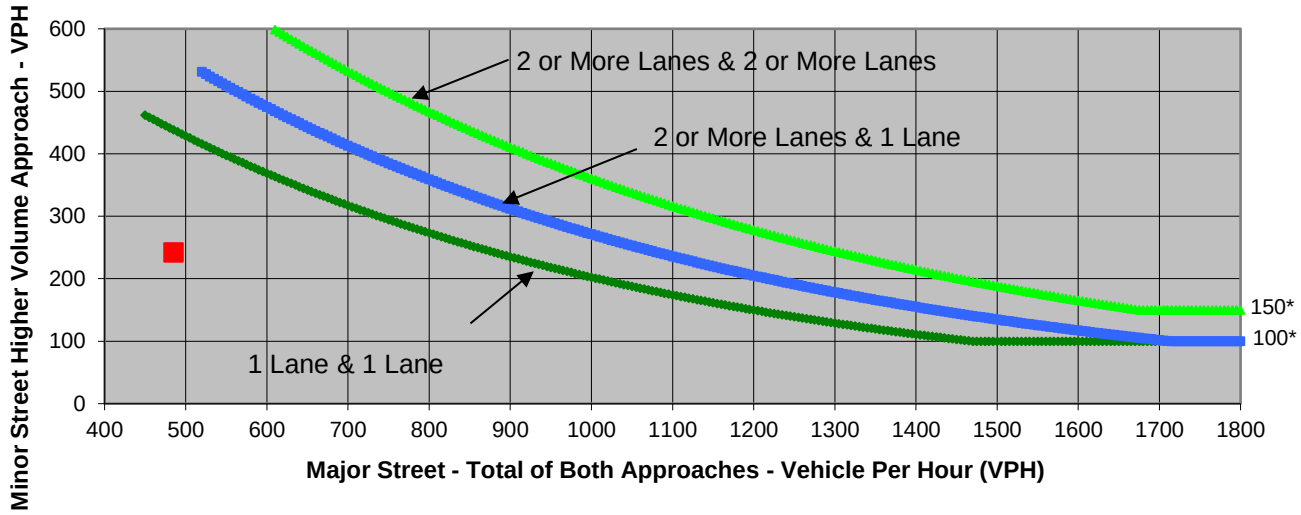
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	64	16	100
Through	65	152	82	208
Right	90	26	9	70
Total	161	242	107	378

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**485**	**242**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	PM

Major Street	Lake Rd
Minor Street	Cardella Rd

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	154	423	0	0
Right	0	12	2	0
Total	156	435	7	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	7

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0**	**7**	**598**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

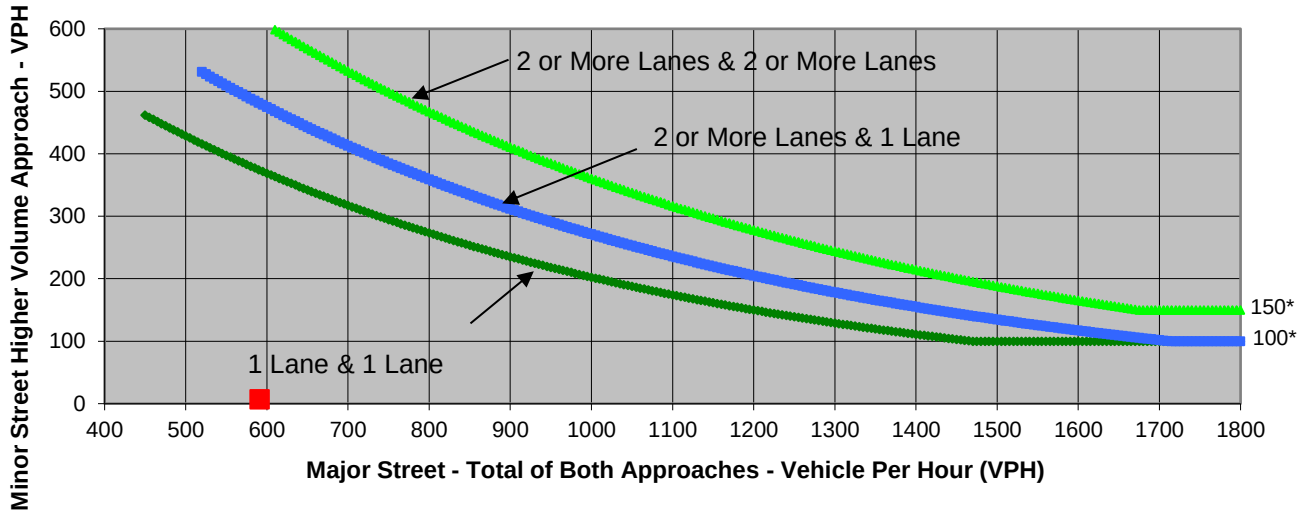
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	154	423	0	0
Right	0	12	2	0
Total	156	435	7	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**591**	**7**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	13	33	33
Through	47	27	380	394
Right	15	30	129	18
Total	170	70	542	445

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	32.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	445

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**4**	**170**	**1,227**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

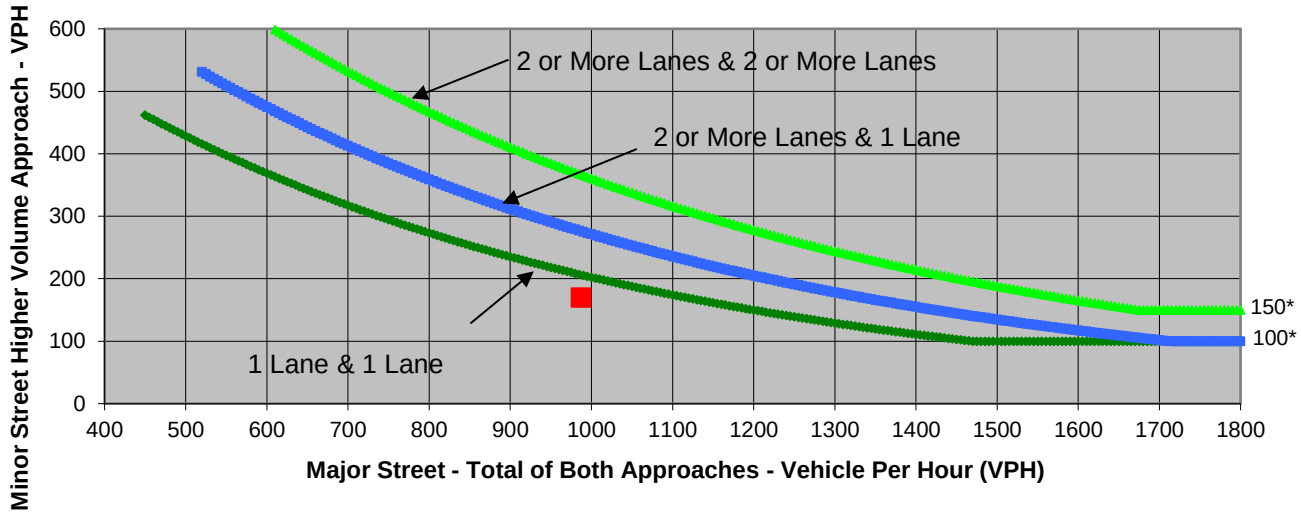
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	13	33	33
Through	47	27	380	394
Right	15	30	129	18
Total	170	70	542	445

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**987**	**170**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	112	115	0
Through	0	0	105	116
Right	0	311	0	26
Total	0	423	220	142

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	17.7
Approach with Worst Case Delay	SB
Total Vehicles on Approach	423

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**2.1**	**423**	**785**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

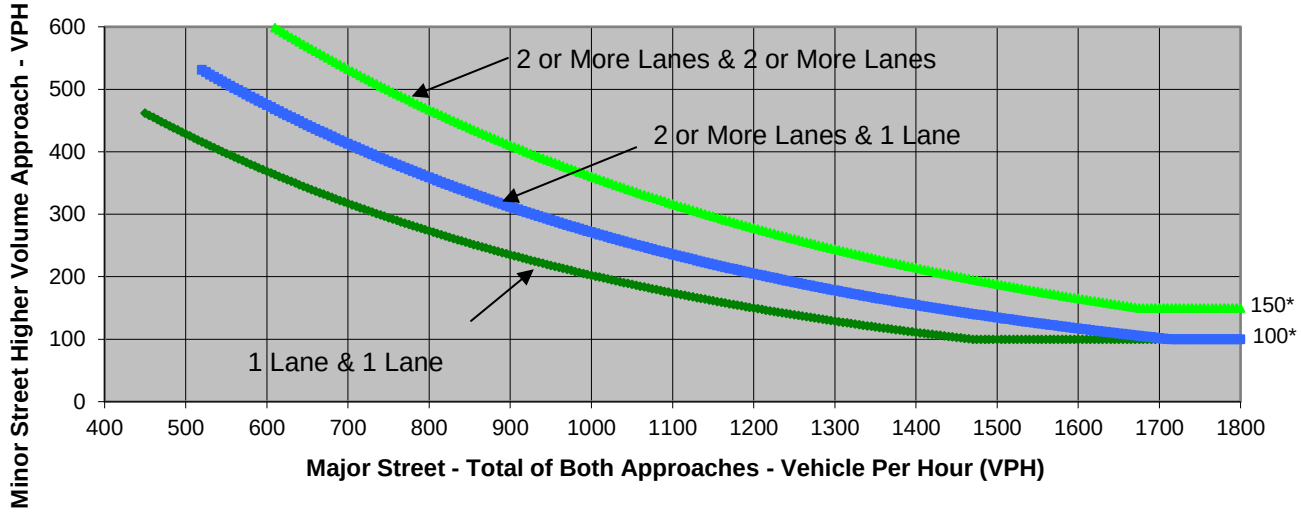
Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	112	115	0
Through	0	0	105	116
Right	0	311	0	26
Total	0	423	220	142

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**362**	**423**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	318	290	0
Through	0	0	0	605
Right	0	299	0	449
Total	0	617	290	1,054

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	108.4
Approach with Worst Case Delay	WB
Total Vehicles on Approach	1,054

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**31.7**	**617**	**1,961**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

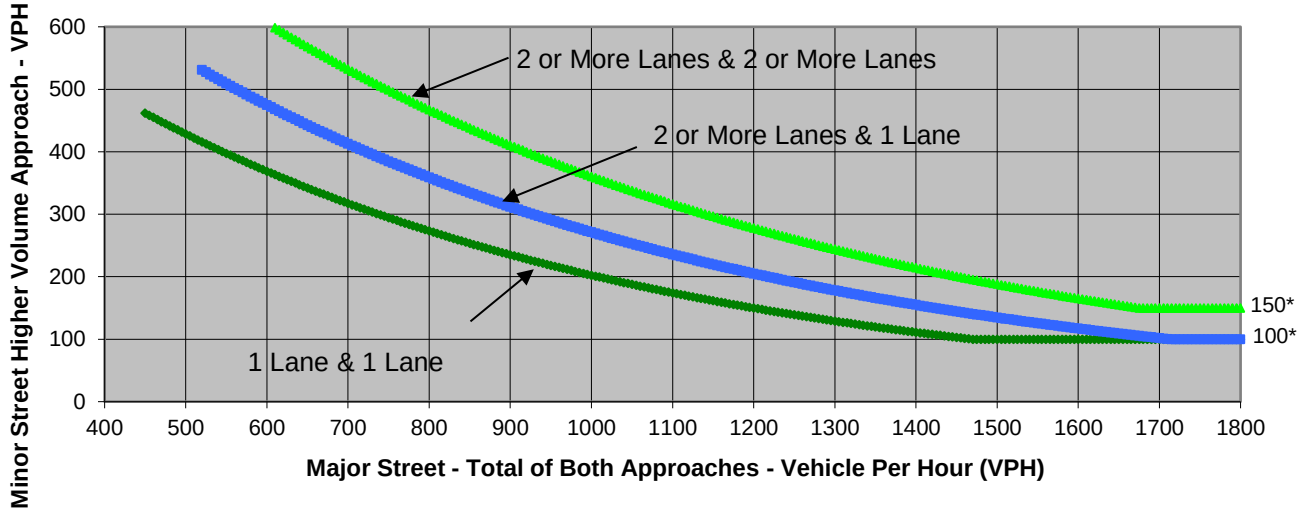
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	318	290	0
Through	0	0	0	605
Right	0	299	0	449
Total	0	617	290	1,054

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,344**	**617**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way
Minor Street	CA 99 NB Ramps

Project	UC Merced LRDP Update
Scenario	Existing No Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	233	0	0	19
Through	502	414	0	1
Right	0	326	0	80
Total	735	740	0	100

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	100

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0.5**	**100**	**1,575**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

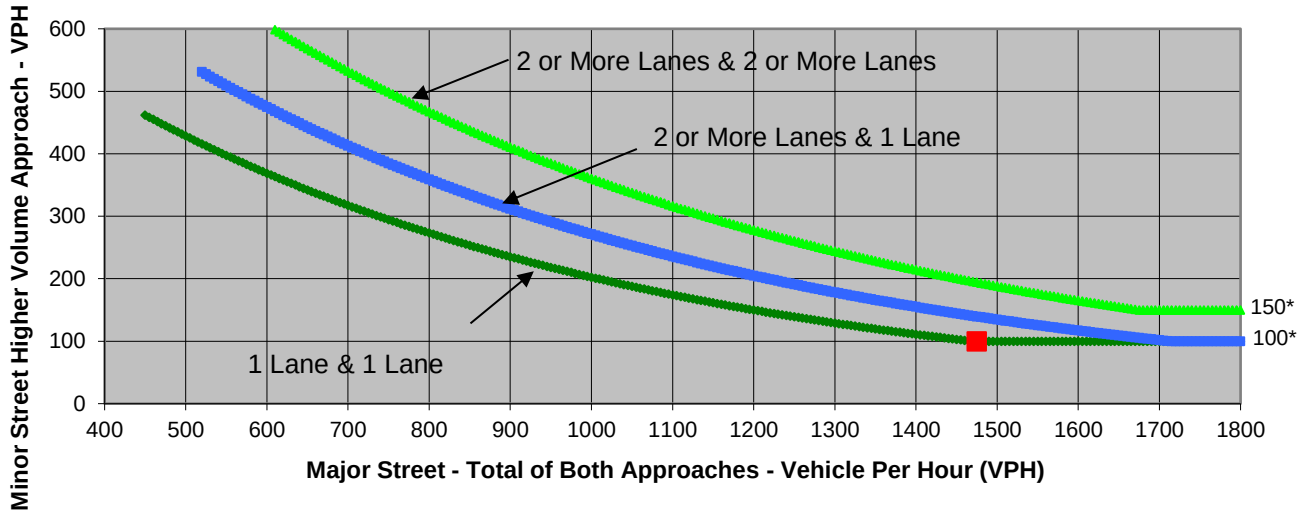
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	233	0	0	19
Through	502	414	0	1
Right	0	326	0	80
Total	735	740	0	100

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,475**	**100**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	24	25
Through	519	496	0	5
Right	0	47	7	60
Total	535	543	31	90

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22.3
Approach with Worst Case Delay	EB
Total Vehicles on Approach	31

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing No Project	**0.2**	**90**	**1,199**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

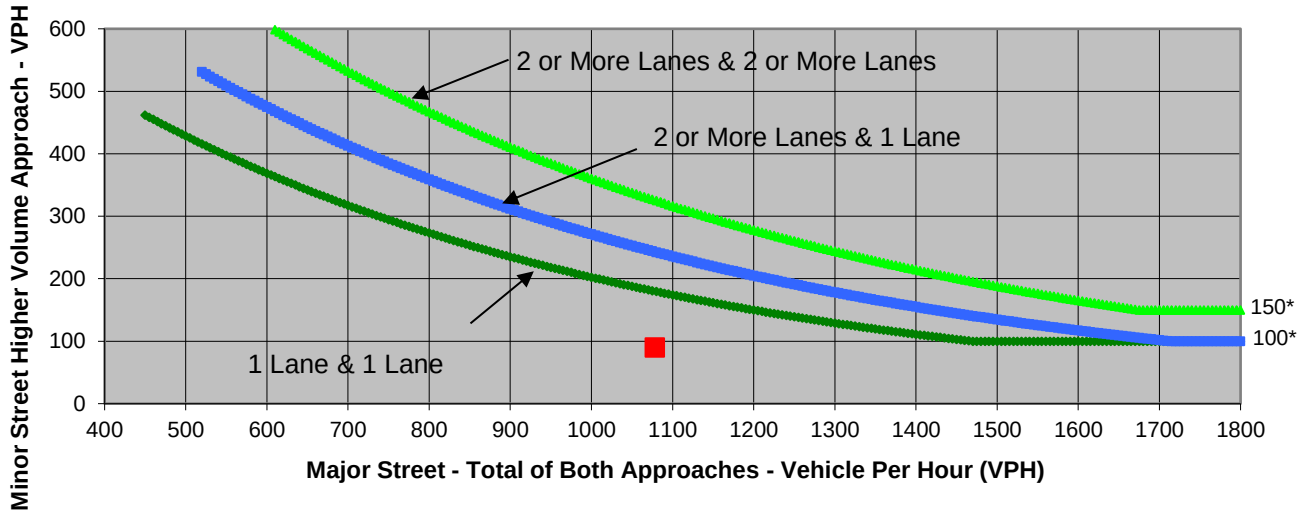
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	Existing No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	24	25
Through	519	496	0	5
Right	0	47	7	60
Total	535	543	31	90

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,078**	**90**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	121	18	97
Through	81	118	249	125
Right	218	24	7	75
Total	304	263	274	297

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	82.7
Approach with Worst Case Delay	NB
Total Vehicles on Approach	304

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**7**	**304**	**1,138**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

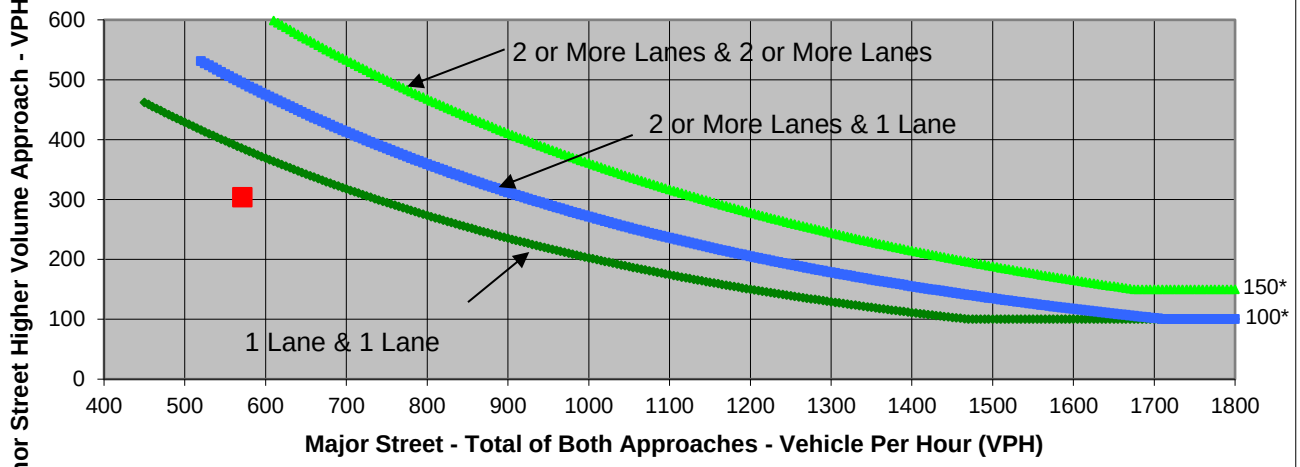
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	121	18	97
Through	81	118	249	125
Right	218	24	7	75
Total	304	263	274	297

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**571**	**304**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	513	98	0	0
Right	0	9	2	0
Total	514	107	17	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	13.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**0.1**	**17**	**638**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

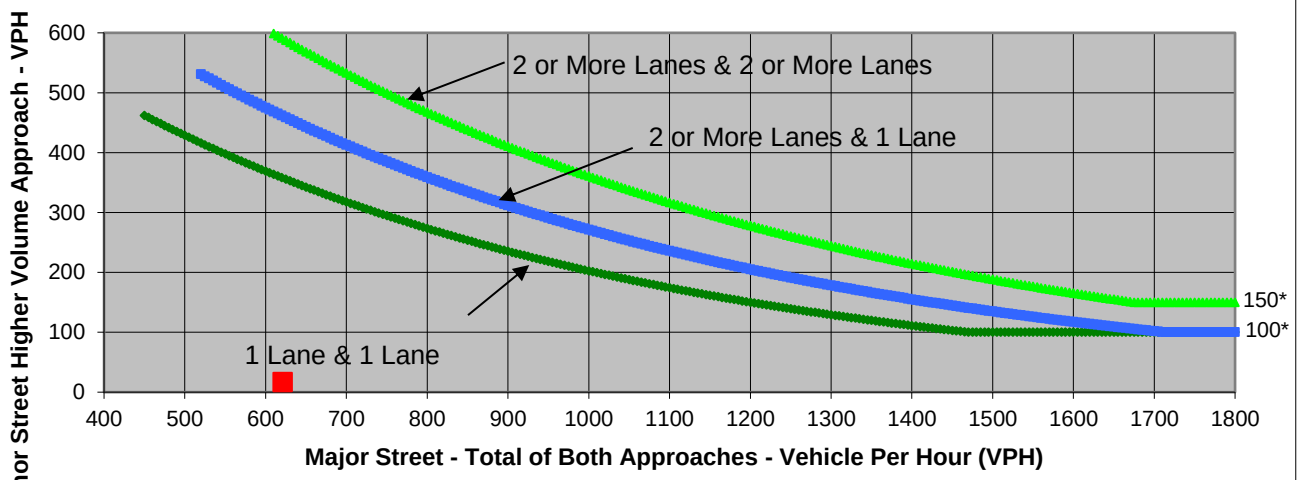
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	513	98	0	0
Right	0	9	2	0
Total	514	107	17	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**621**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	29	30	13
Through	45	113	476	474
Right	35	48	119	32
Total	261	190	625	519

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	159.9
Approach with Worst Case Delay	WB
Total Vehicles on Approach	519

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**23.1**	**261**	**1,595**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

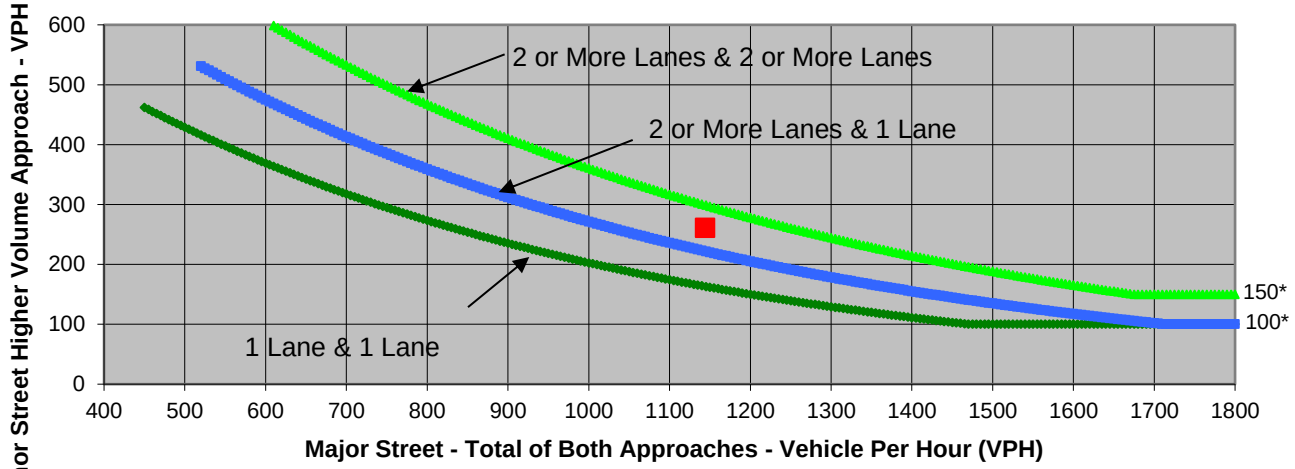
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	29	30	13
Through	45	113	476	474
Right	35	48	119	32
Total	261	190	625	519

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,144**	**261**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	36	386	0
Through	0	0	84	157
Right	0	55	0	89
Total	0	91	470	246

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.1
Approach with Worst Case Delay	SB
Total Vehicles on Approach	91

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**0.5**	**91**	**807**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

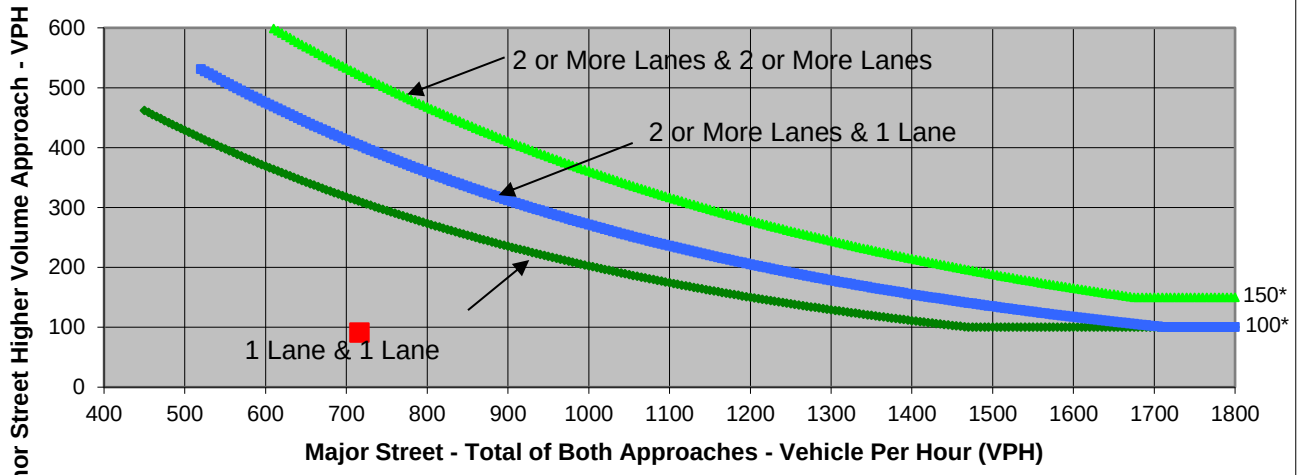
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	36	386	0
Through	0	0	84	157
Right	0	55	0	89
Total	0	91	470	246

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**716**	**91**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	361	343	0
Through	0	0	0	294
Right	0	391	0	355
Total	0	752	343	649

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	205.9
Approach with Worst Case Delay	SB
Total Vehicles on Approach	752

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**43**	**752**	**1,744**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

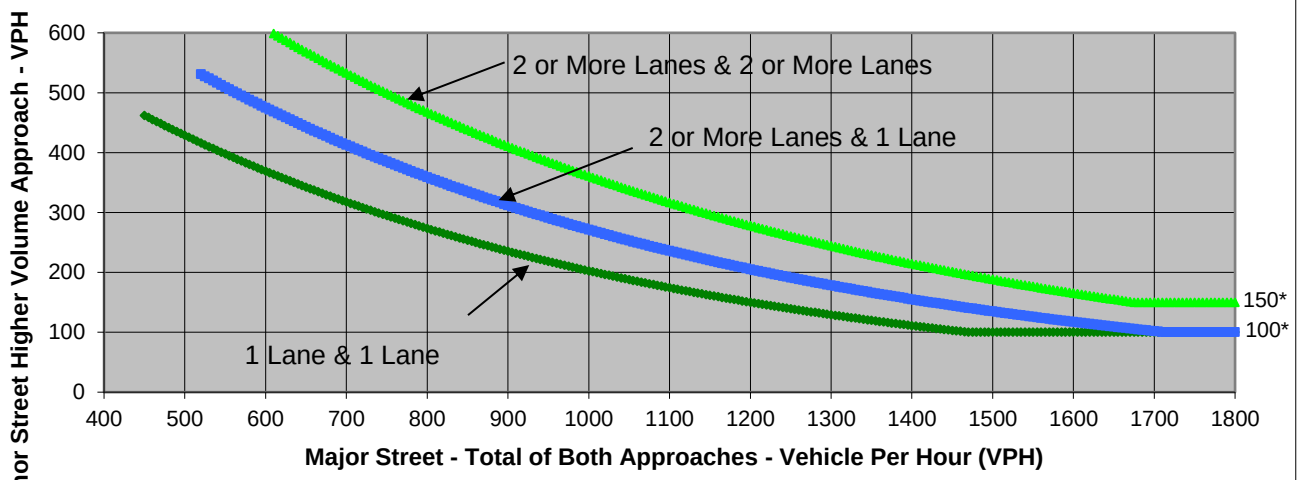
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	361	343	0
Through	0	0	0	294
Right	0	391	0	355
Total	0	752	343	649

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**992**	**752**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	0	0	48
Through	525	338	0	1
Right	0	228	0	107
Total	755	566	0	156

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	31
Approach with Worst Case Delay	WB
Total Vehicles on Approach	156

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**1.3**	**156**	**1,477**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

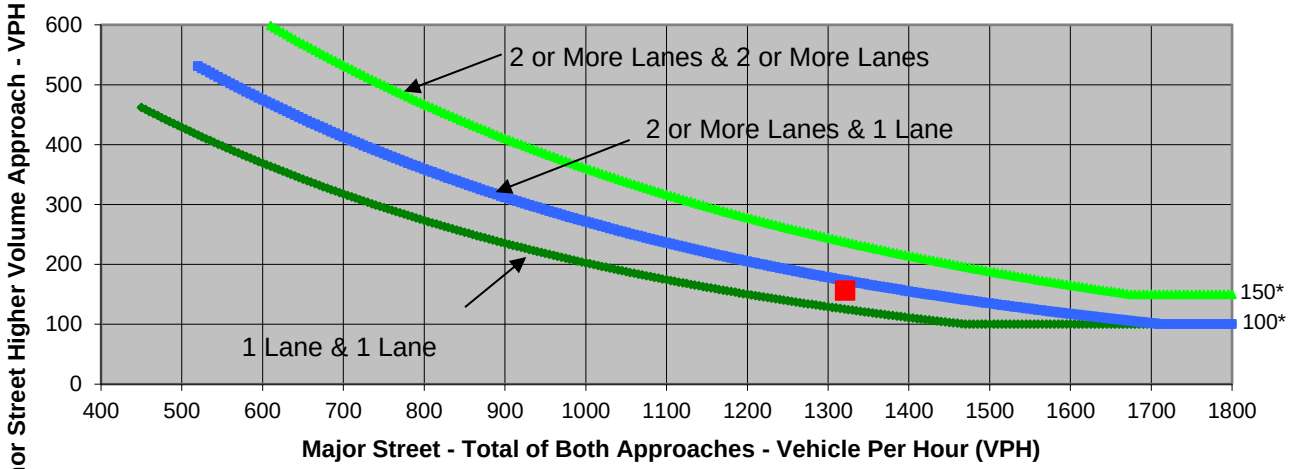
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	0	0	48
Through	525	338	0	1
Right	0	228	0	107
Total	755	566	0	156

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,321**	**156**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	UC Merced LRDP Update
Major Street	G St
Scenario	2030_NP
Minor Street	14th St/CA 99 NB Off Ramp
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	27	37
Through	505	418	6	7
Right	0	21	5	79
Total	511	439	38	123

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	21.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	38

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**0.2**	**123**	**1,111**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

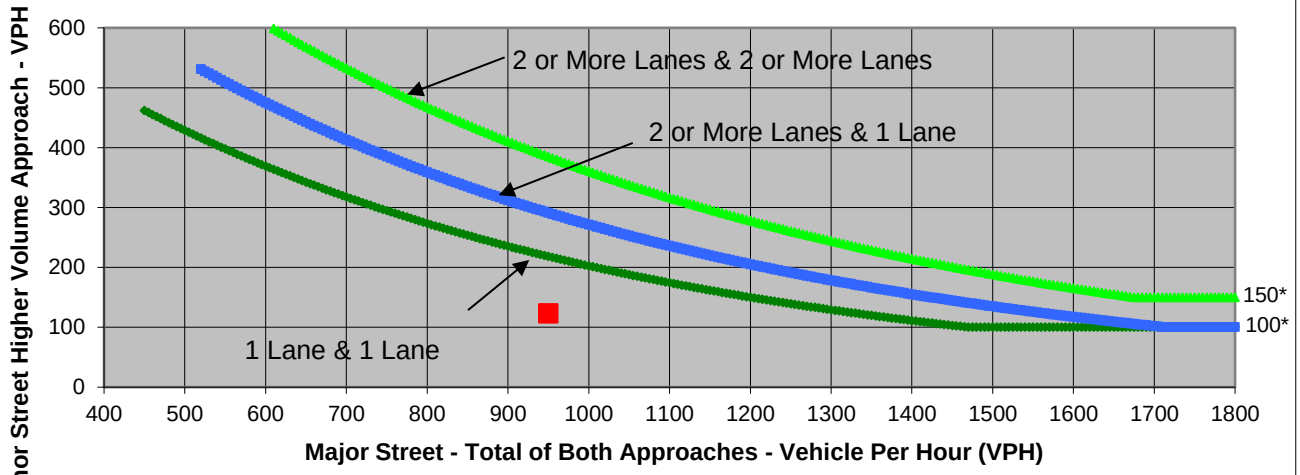
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	27	37
Through	505	418	6	7
Right	0	21	5	79
Total	511	439	38	123

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**950**	**123**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	92	16	102
Through	76	171	89	212
Right	94	26	9	87
Total	176	289	114	401

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16.9
Approach with Worst Case Delay	WB
Total Vehicles on Approach	401

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**1.9**	**289**	**980**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

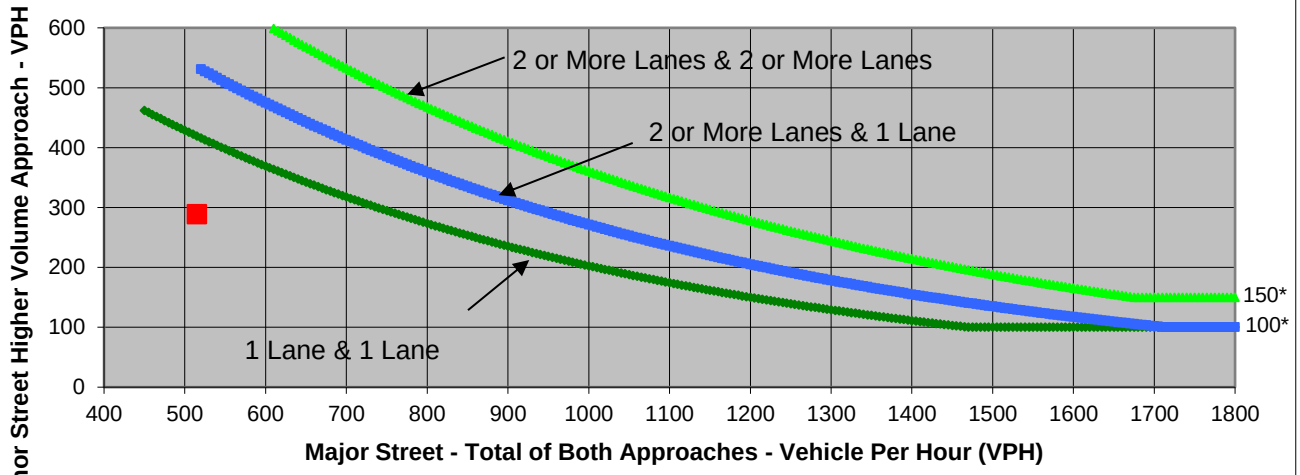
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	92	16	102
Through	76	171	89	212
Right	94	26	9	87
Total	176	289	114	401

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**515**	**289**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Cardella Rd	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	159	429	0	0
Right	0	12	2	0
Total	161	441	7	0

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	7

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**0**	**441**	**609**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

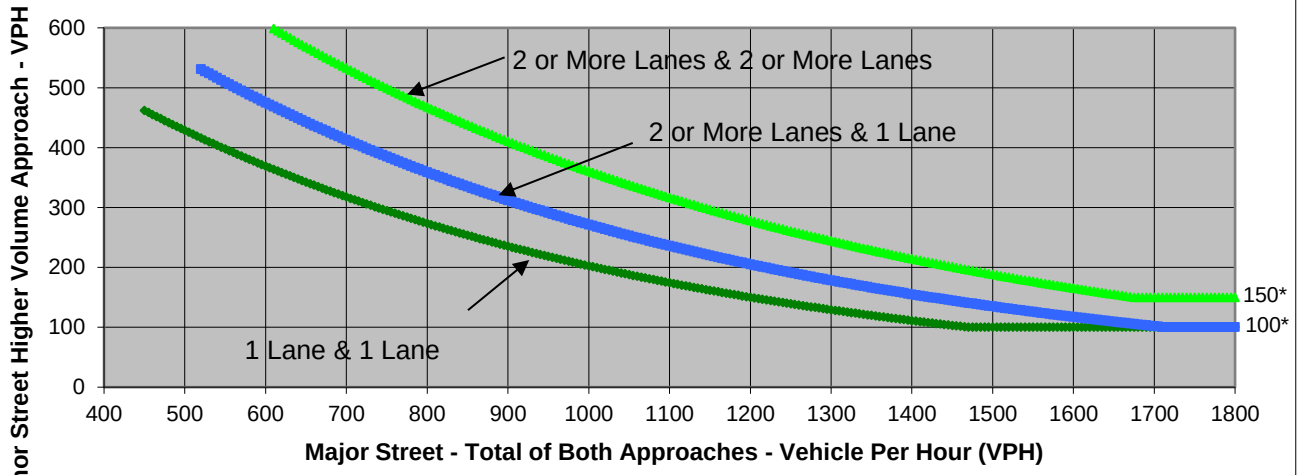
Major Street	Cardella Rd	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	159	429	0	0
Right	0	12	2	0
Total	161	441	7	0

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Cardella Rd	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**7**	**441**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	51	97	33
Through	118	84	563	503
Right	15	75	129	34
Total	241	210	789	570

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	166.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	570

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**26.4**	**241**	**1,810**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

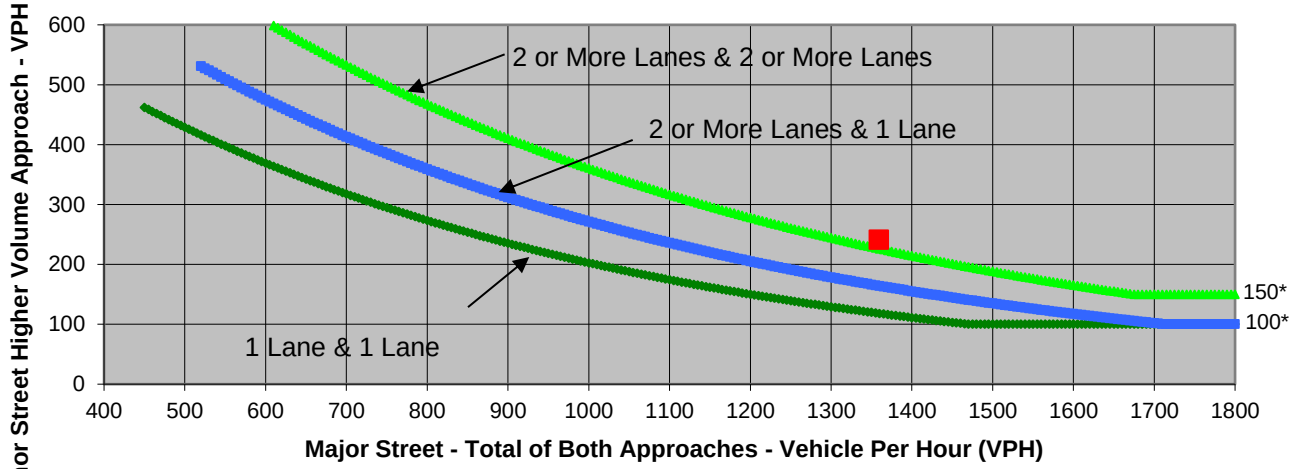
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	51	97	33
Through	118	84	563	503
Right	15	75	129	34
Total	241	210	789	570

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,359**	**241**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	113	119	0
Through	0	0	145	132
Right	0	317	0	28
Total	0	430	264	160

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.4
Approach with Worst Case Delay	SB
Total Vehicles on Approach	430

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**2.2**	**430**	**854**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

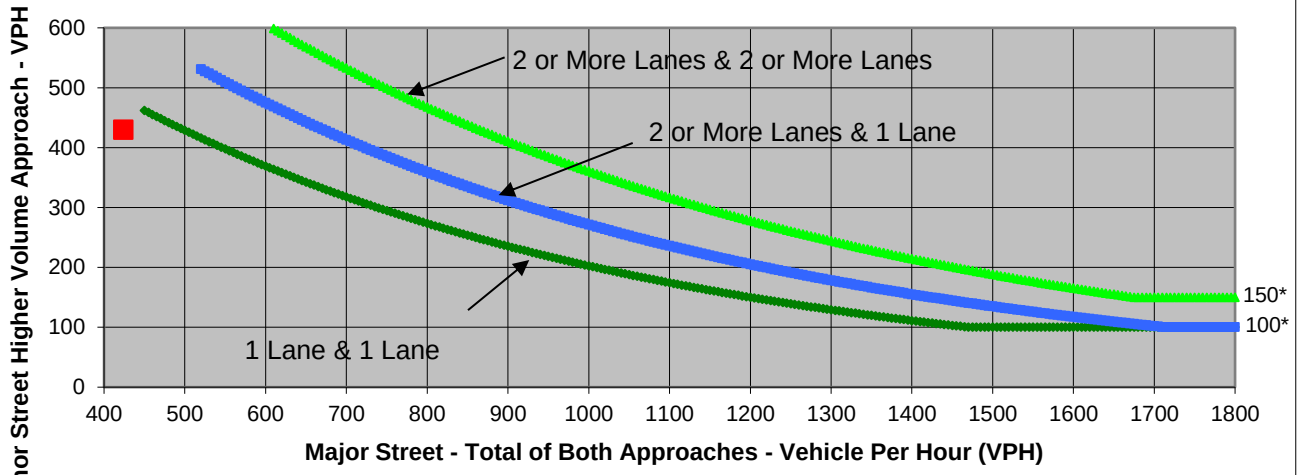
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	113	119	0
Through	0	0	145	132
Right	0	317	0	28
Total	0	430	264	160

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**424**	**430**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	389	290	0
Through	0	0	0	633
Right	0	329	0	568
Total	0	718	290	1,201

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	164.2
Approach with Worst Case Delay	WB
Total Vehicles on Approach	1,201

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**54.8**	**718**	**2,209**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

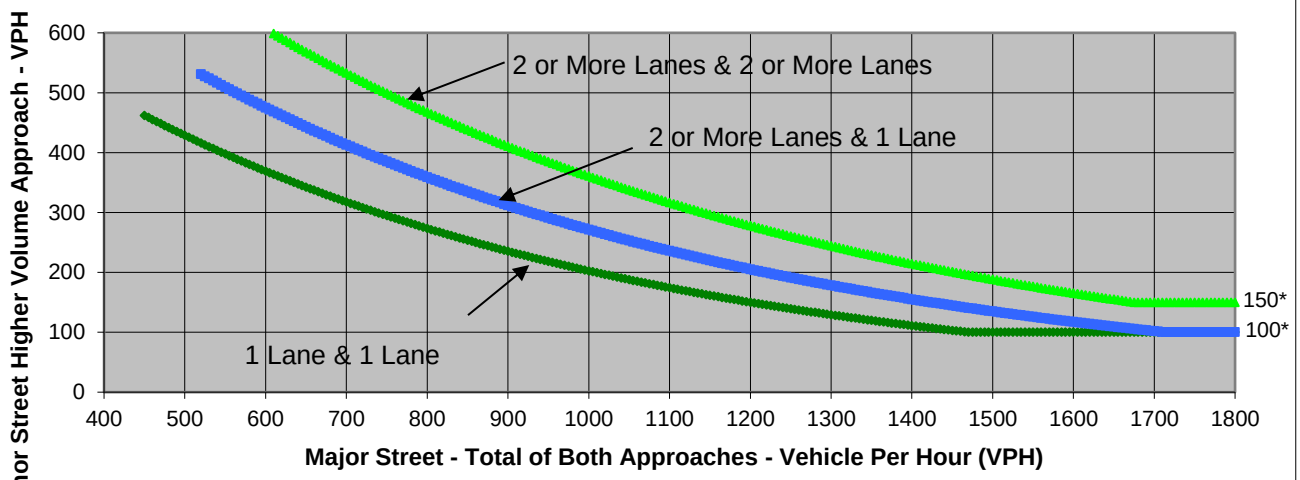
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	389	290	0
Through	0	0	0	633
Right	0	329	0	568
Total	0	718	290	1,201

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,491**	**718**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	272	0	0	32
Through	725	614	0	1
Right	0	373	0	97
Total	997	987	0	130

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	52.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	130

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**1.9**	**130**	**2,114**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

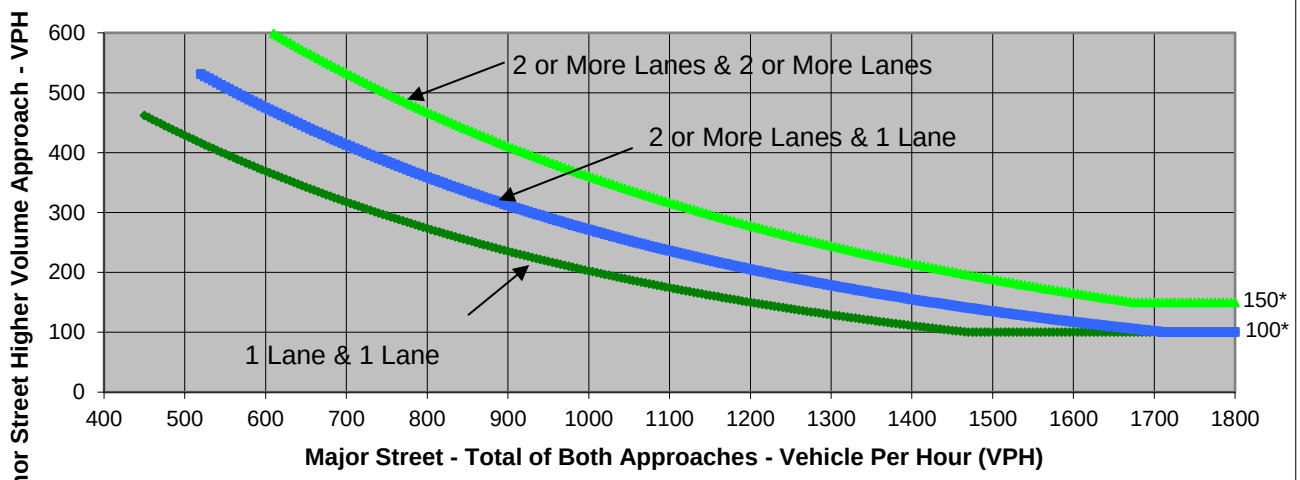
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	272	0	0	32
Through	725	614	0	1
Right	0	373	0	97
Total	997	987	0	130

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,984**	**130**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	25	25
Through	528	528	17	9
Right	0	48	7	88
Total	544	576	49	122

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	30.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	49

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030_NP	**0.4**	**122**	**1,291**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

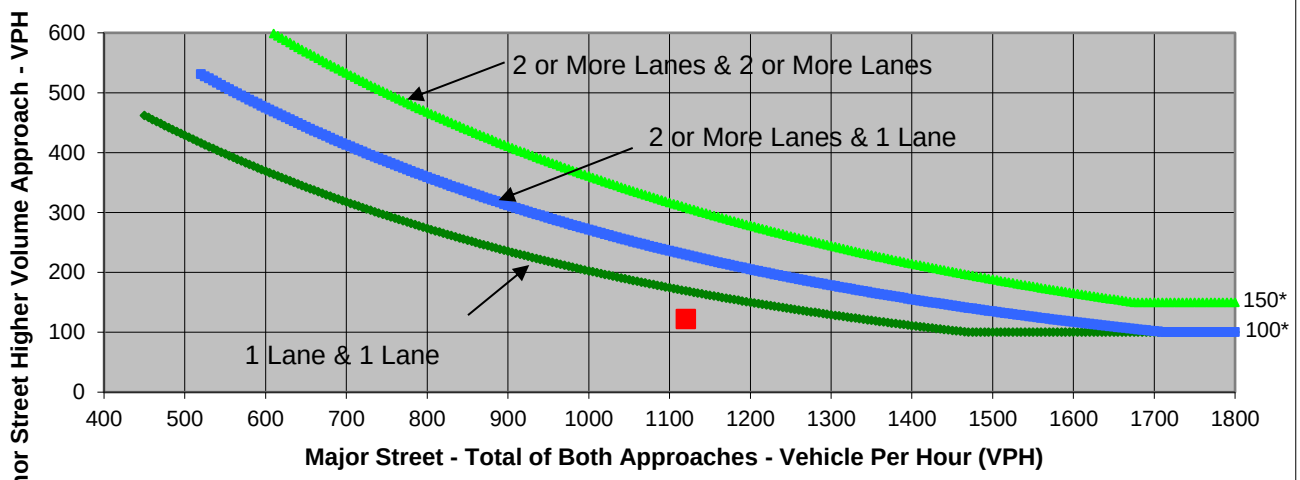
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	25	25
Through	528	528	17	9
Right	0	48	7	88
Total	544	576	49	122

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,120**	**122**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	121	18	104
Through	81	118	249	125
Right	247	24	7	75
Total	333	263	274	304

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	104.7
Approach with Worst Case Delay	NB
Total Vehicles on Approach	333

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**9.7**	**333**	**1,174**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

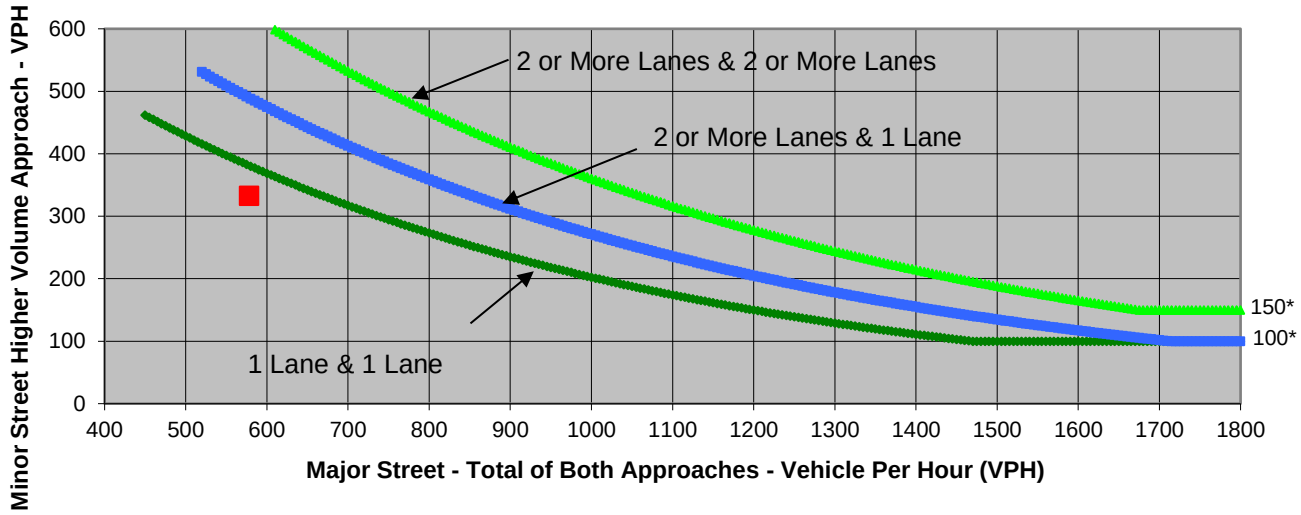
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	121	18	104
Through	81	118	249	125
Right	247	24	7	75
Total	333	263	274	304

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**578**	**333**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	864	278	0	0
Right	0	9	2	0
Total	865	287	17	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	24.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**0.1**	**17**	**1,169**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

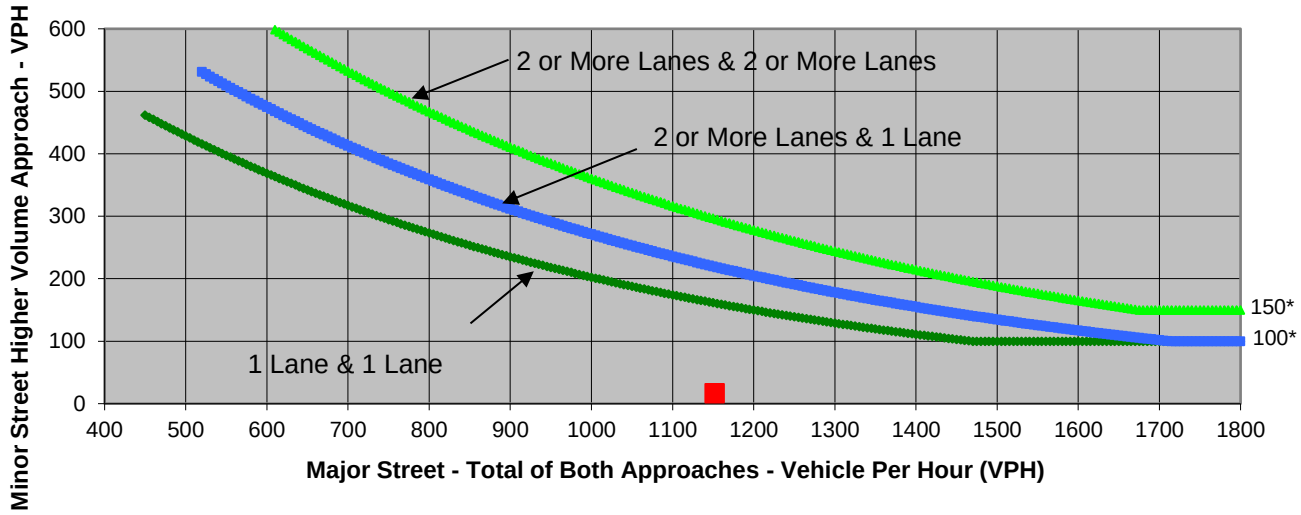
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	864	278	0	0
Right	0	9	2	0
Total	865	287	17	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,152**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	29	30	14
Through	45	113	706	625
Right	35	48	119	32
Total	261	190	855	671

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	310.9
Approach with Worst Case Delay	WB
Total Vehicles on Approach	671

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**57.9**	**261**	**1,977**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

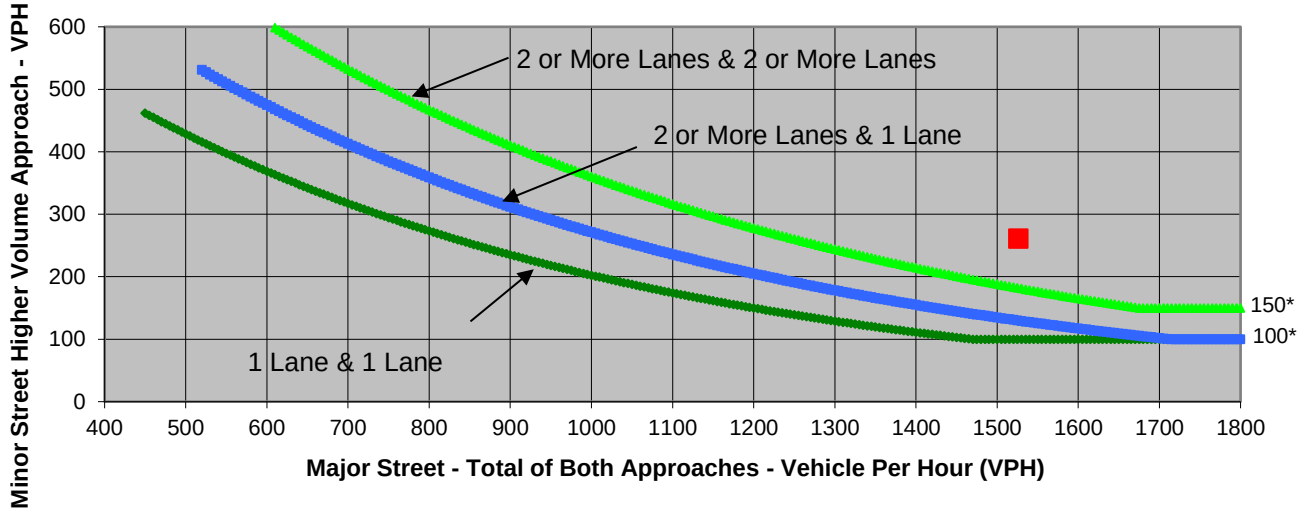
Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	29	30	14
Through	45	113	706	625
Right	35	48	119	32
Total	261	190	855	671

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,526**	**261**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	49	655	0
Through	0	0	84	157
Right	0	222	0	171
Total	0	271	739	328

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	14.3
Approach with Worst Case Delay	SB
Total Vehicles on Approach	271

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**1.1**	**271**	**1,338**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

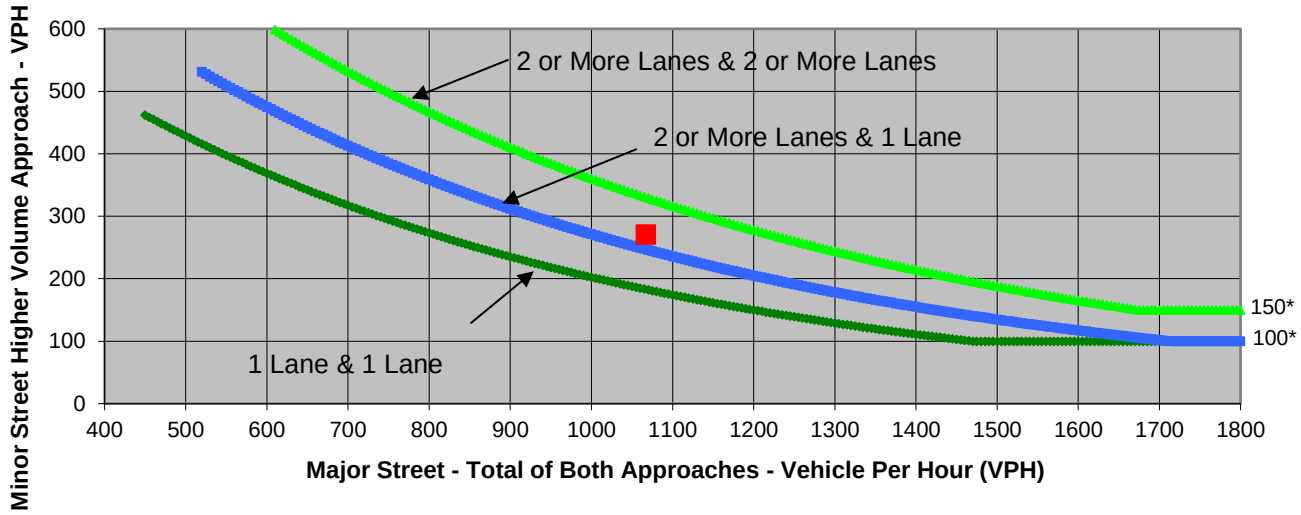
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	49	655	0
Through	0	0	84	157
Right	0	222	0	171
Total	0	271	739	328

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,067**	**271**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	361	343	0
Through	0	0	0	294
Right	0	395	0	357
Total	0	756	343	651

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	209.3
Approach with Worst Case Delay	SB
Total Vehicles on Approach	756

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**44**	**756**	**1,750**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

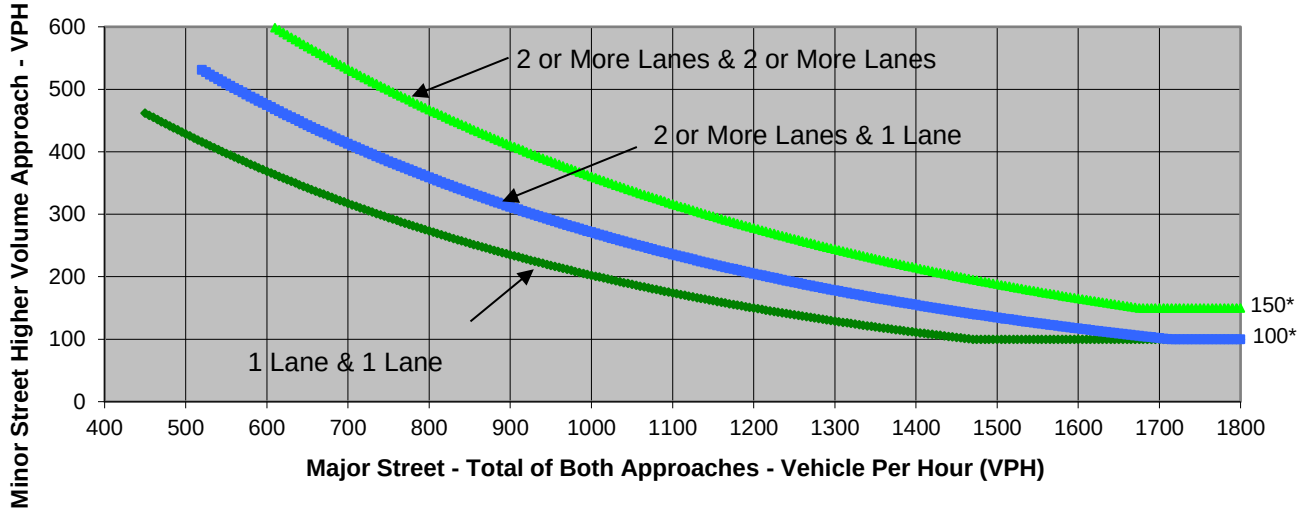
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	361	343	0
Through	0	0	0	294
Right	0	395	0	357
Total	0	756	343	651

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**994**	**756**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	0	0	48
Through	519	339	0	1
Right	0	230	0	107
Total	749	569	0	156

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	32.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	156

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**1.4**	**156**	**1,474**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

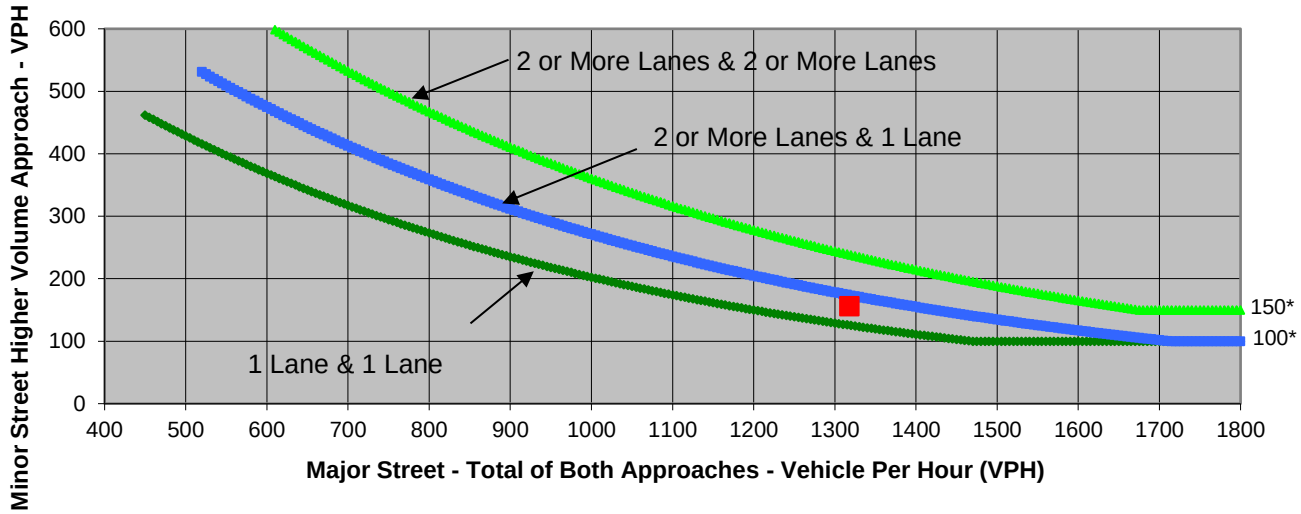
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	230	0	0	48
Through	519	339	0	1
Right	0	230	0	107
Total	749	569	0	156

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,318**	**156**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	39	37
Through	510	419	6	7
Right	0	23	5	79
Total	516	442	50	123

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	23.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	50

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**0.3**	**123**	**1,131**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

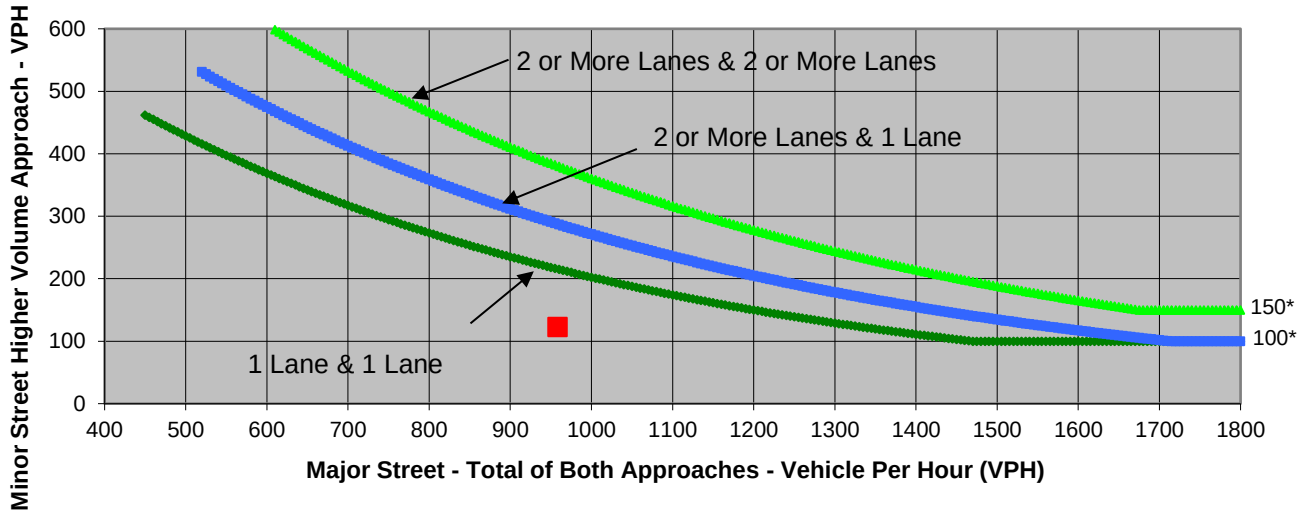
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	39	37
Through	510	419	6	7
Right	0	23	5	79
Total	516	442	50	123

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**958**	**123**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2030 Plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	14
Through	666	286	0	0
Right	89	0	0	3
Total	755	295	0	17

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.4
Approach with Worst Case Delay	WB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030 Plus Project	**0.1**	**17**	**1,067**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road
Minor Street	Project Driveway 1

Project	UC Merced LRDP Update
Scenario	2030 Plus Project
Peak Hour	AM

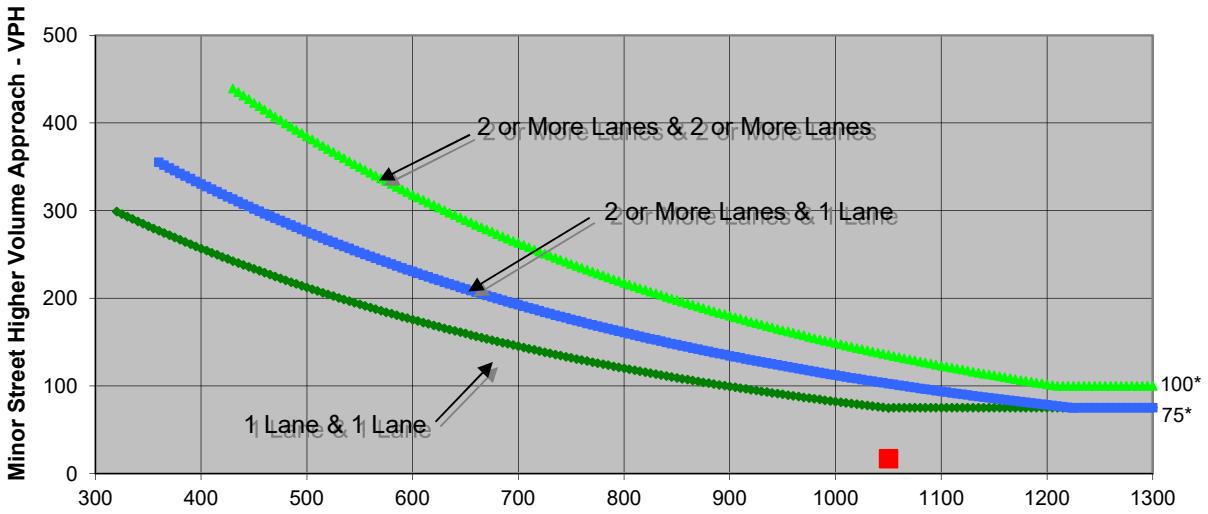
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	14
Through	666	286	0	0
Right	89	0	0	3
Total	755	295	0	17

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway 1	
Number of Approach Lanes	**1**	**2**	**NO**
Traffic Volume (VPH) *	**1,050**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2030 Plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	15
Through	752	291	0	0
Right	88	0	0	3
Total	840	300	0	18

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	23
Approach with Worst Case Delay	WB
Total Vehicles on Approach	18

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030 Plus Project	**0.1**	**18**	**1,158**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2030 Plus Project
		Peak Hour	AM

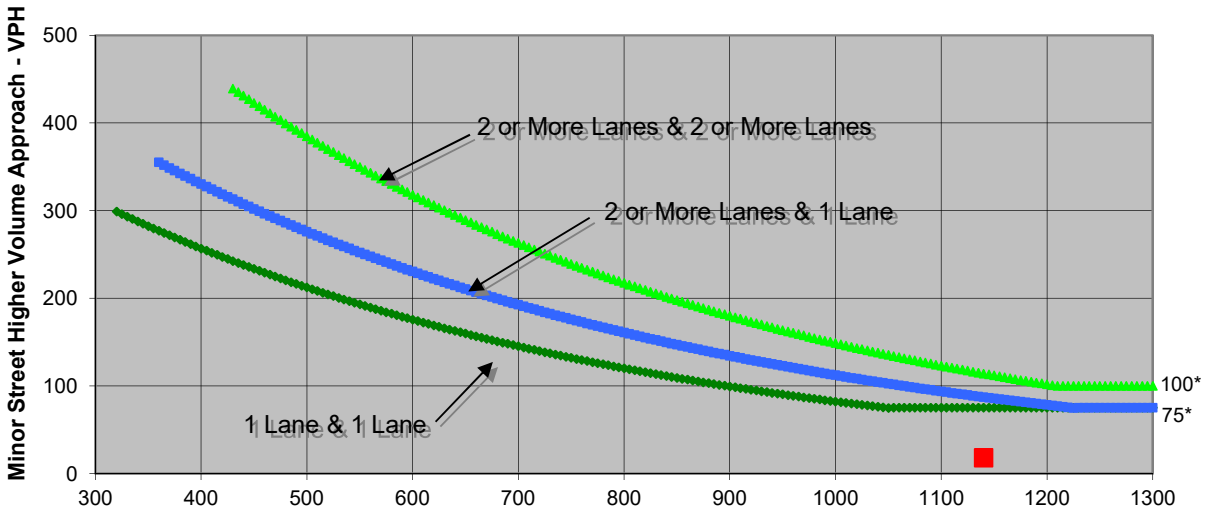
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	15
Through	752	291	0	0
Right	88	0	0	3
Total	840	300	0	18

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway 2	
Number of Approach Lanes	**1**	**2**	**NO**
Traffic Volume (VPH) *	**1,140**	**18**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	92	16	150
Through	76	171	89	212
Right	105	26	9	87
Total	187	289	114	449

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.8
Approach with Worst Case Delay	WB
Total Vehicles on Approach	449

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**2.6**	**289**	**1,039**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

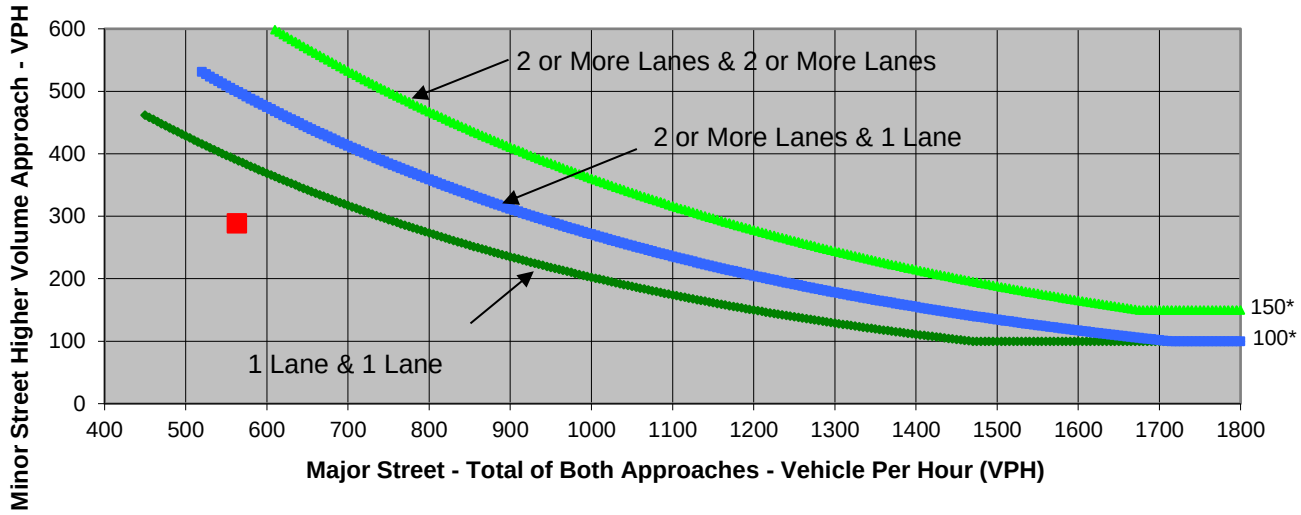
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	92	16	150
Through	76	171	89	212
Right	105	26	9	87
Total	187	289	114	449

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**563**	**289**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	359	794	0	0
Right	0	12	2	0
Total	361	806	7	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	21.2
Approach with Worst Case Delay	EB
Total Vehicles on Approach	7

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**0**	**7**	**1,174**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Rd
Minor Street	Cardella Rd

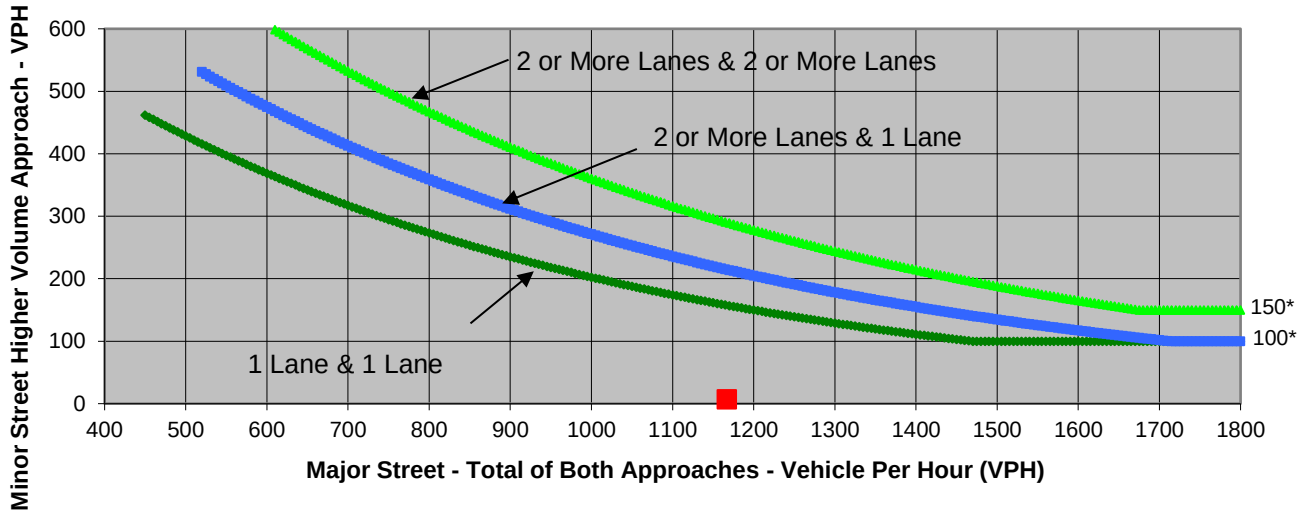
Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	359	794	0	0
Right	0	12	2	0
Total	361	806	7	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,167**	**7**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	51	97	38
Through	118	84	714	739
Right	15	75	129	36
Total	241	210	940	813

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	400.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	813

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**90.4**	**241**	**2,204**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

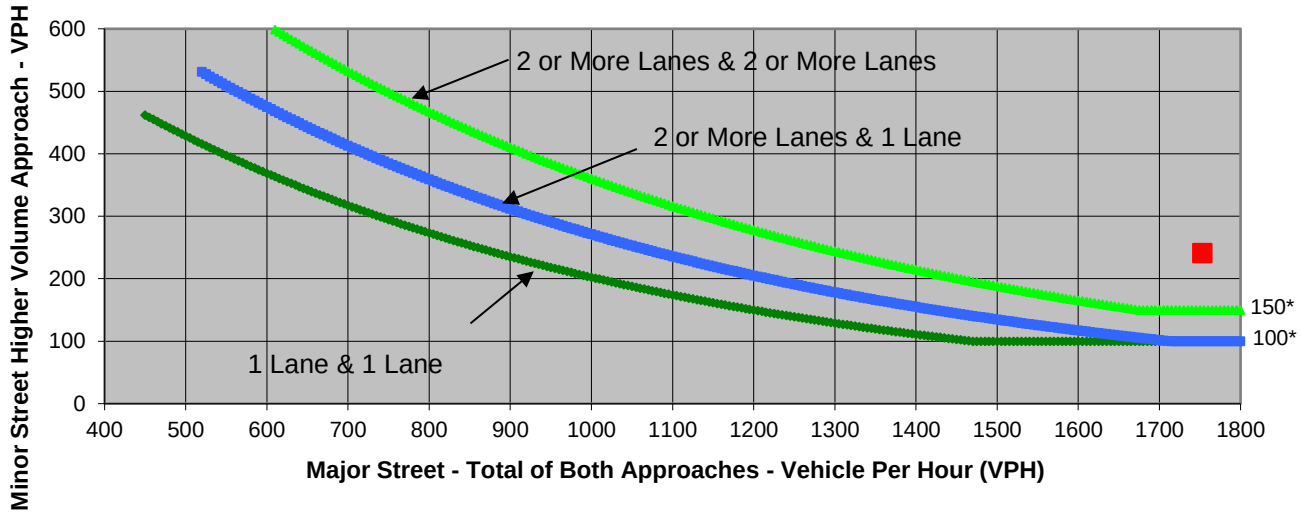
Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	51	97	38
Through	118	84	714	739
Right	15	75	129	36
Total	241	210	940	813

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,753**	**241**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	189	290	0
Through	0	0	145	132
Right	0	606	0	57
Total	0	795	435	189

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	255.3
Approach with Worst Case Delay	SB
Total Vehicles on Approach	795

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**56.4**	**795**	**1,419**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

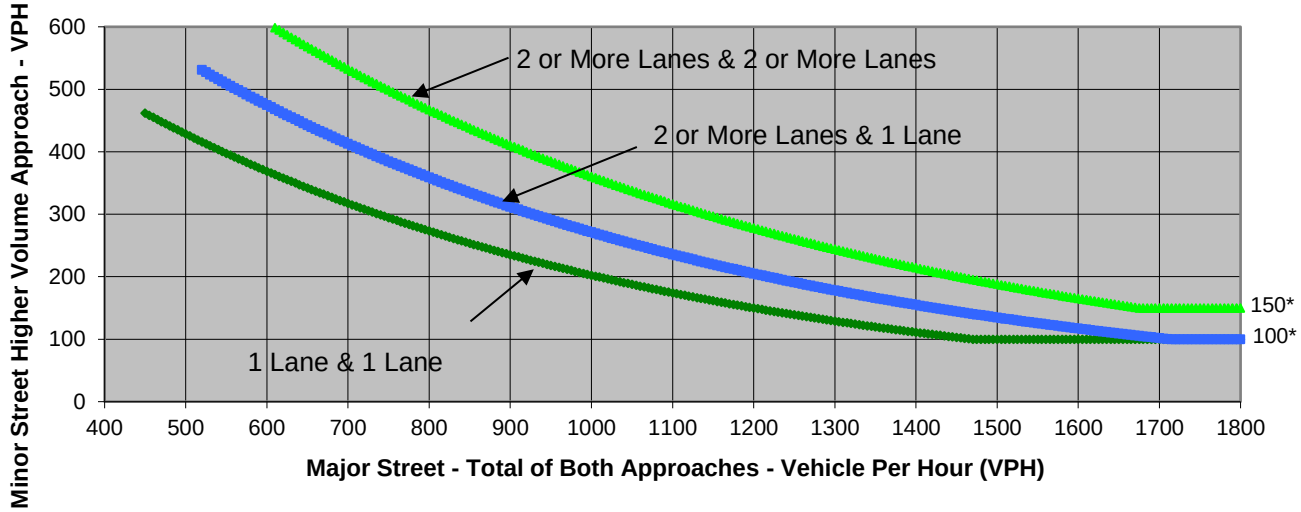
Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	189	290	0
Through	0	0	145	132
Right	0	606	0	57
Total	0	795	435	189

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**624**	**795**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	391	290	0
Through	0	0	0	633
Right	0	351	0	569
Total	0	742	290	1,202

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	177.7
Approach with Worst Case Delay	SB
Total Vehicles on Approach	742

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**36.6**	**742**	**2,234**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	16th St
Minor Street	Snelling Hwy (CA 59)

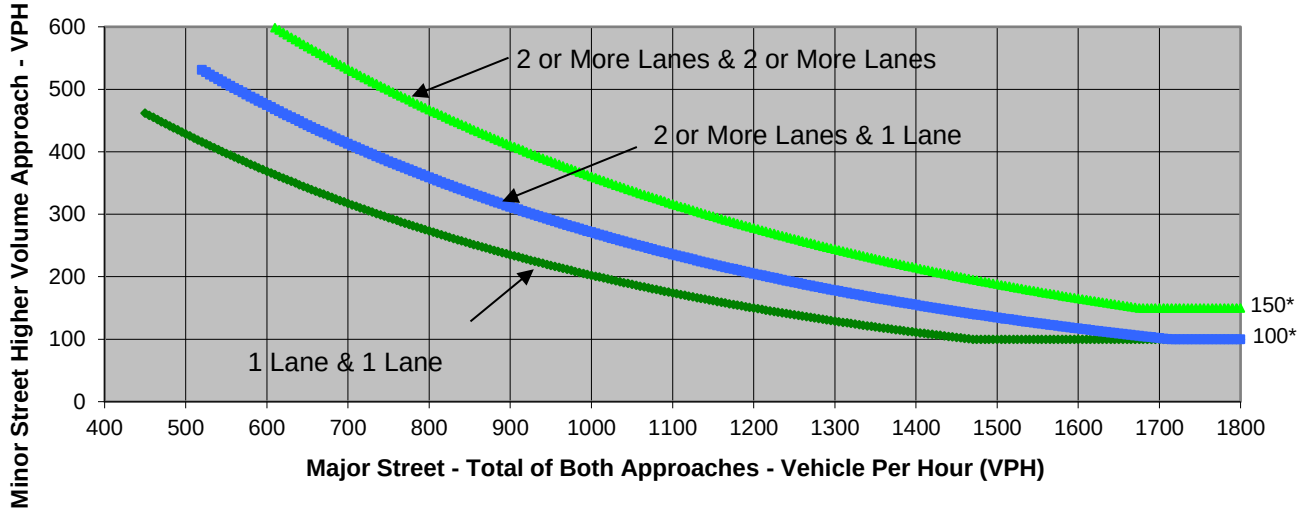
Project	UC Merced LRDP Update
Scenario	2030PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	391	290	0
Through	0	0	0	633
Right	0	351	0	569
Total	0	742	290	1,202

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,492**	**742**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	272	0	0	32
Through	651	620	0	1
Right	0	384	0	97
Total	923	1,004	0	130

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	55.6
Approach with Worst Case Delay	WB
Total Vehicles on Approach	130

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**2**	**130**	**2,057**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

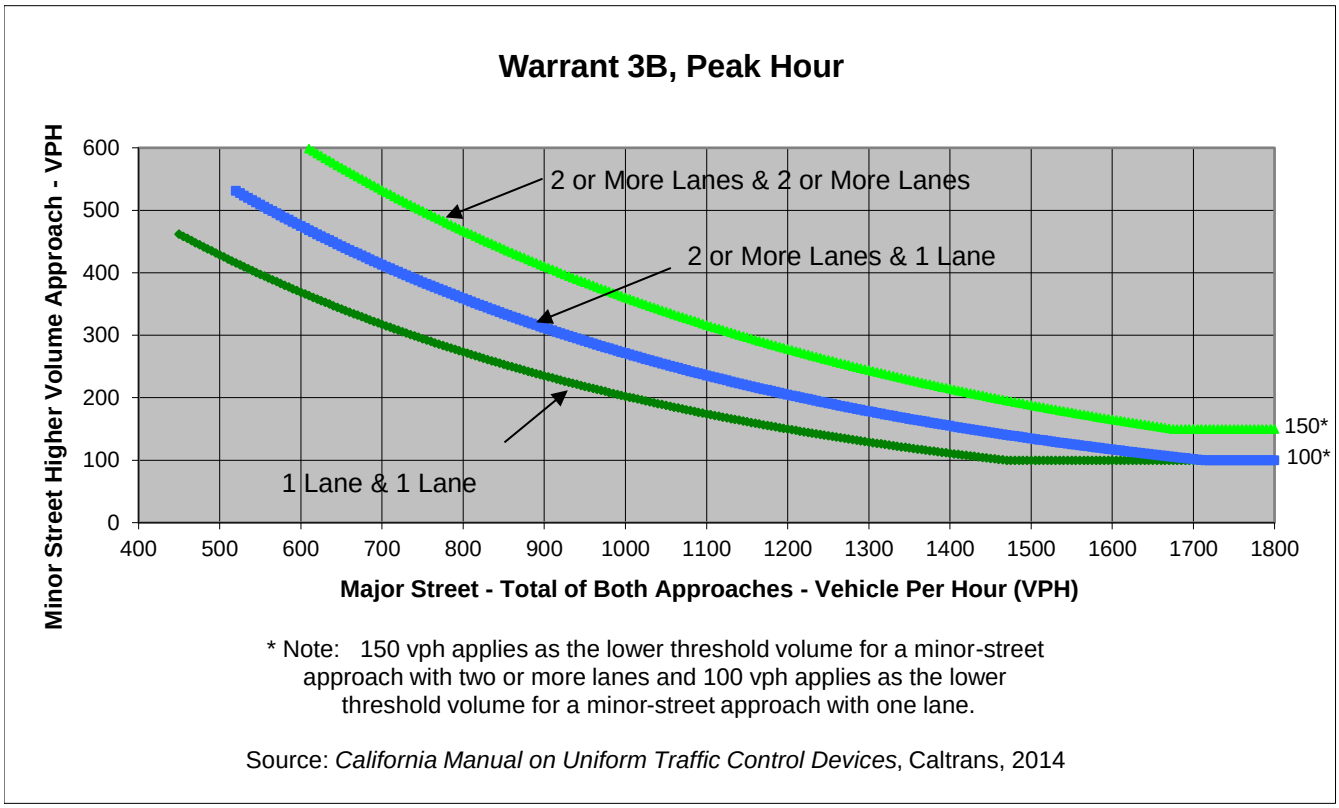
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	272	0	0	32
Through	651	620	0	1
Right	0	384	0	97
Total	923	1,004	0	130

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,927**	**130**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	29	25
Through	530	532	17	9
Right	0	59	7	88
Total	546	591	53	122

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	32.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	53

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030PP	**0.5**	**122**	**1,312**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

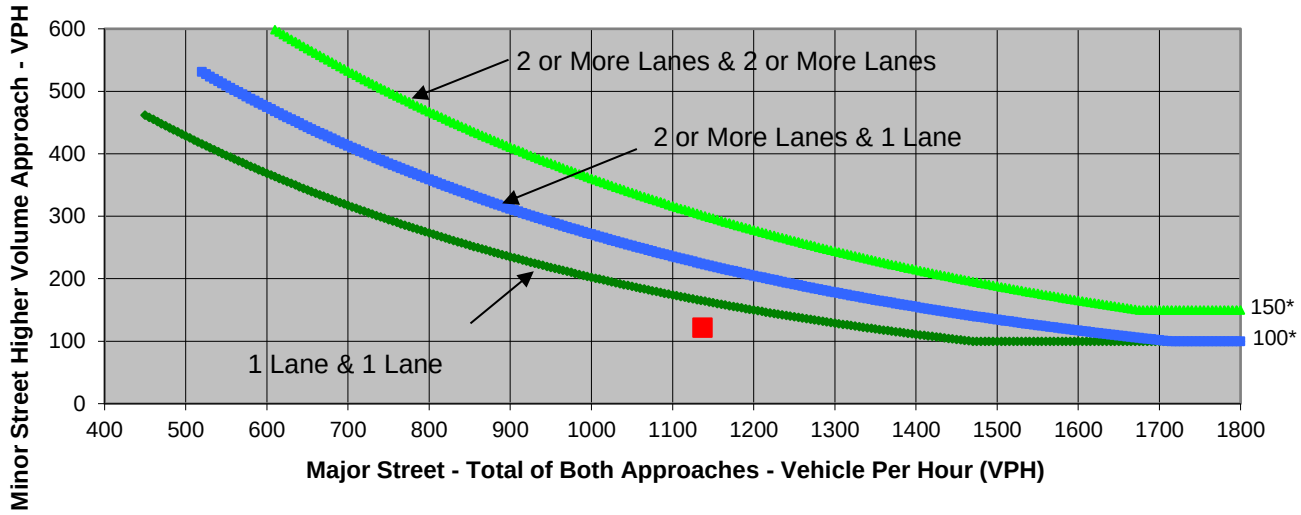
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2030PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	29	25
Through	530	532	17	9
Right	0	59	7	88
Total	546	591	53	122

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,137**	**122**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2030 Plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	14
Through	666	286	0	0
Right	89	0	0	3
Total	755	295	0	17

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.4
Approach with Worst Case Delay	WB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030 Plus Project	**0.1**	**17**	**1,067**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road
Minor Street	Project Driveway 1

Project	UC Merced LRDP Update
Scenario	2030 Plus Project
Peak Hour	PM

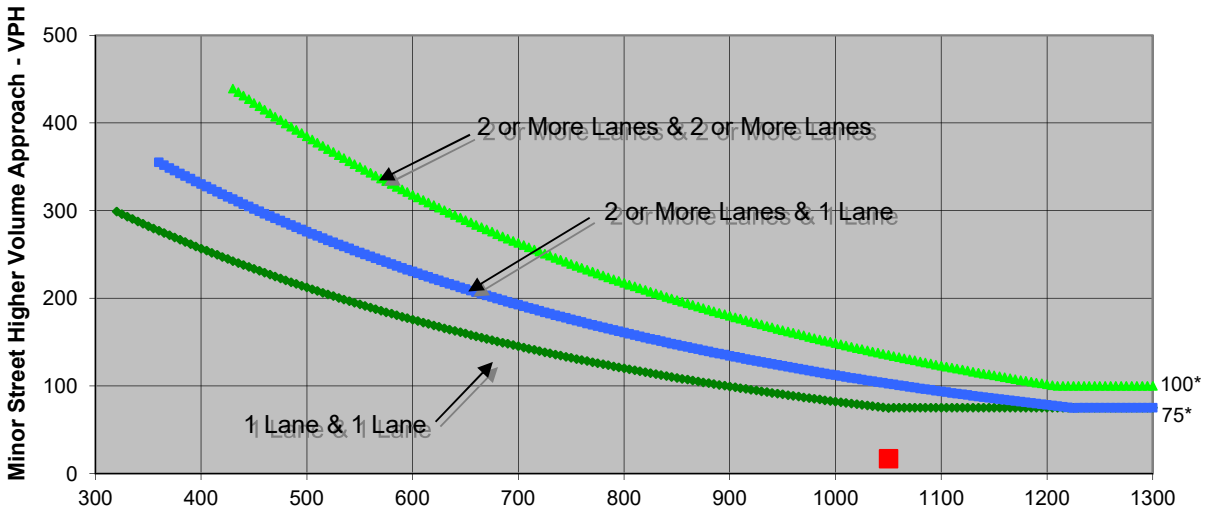
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	0	14
Through	666	286	0	0
Right	89	0	0	3
Total	755	295	0	17

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway 1	
Number of Approach Lanes	**1**	**2**	**NO**
Traffic Volume (VPH) *	**1,050**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2030 Plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	97
Through	360	653	0	0
Right	31	0	0	9
Total	391	656	0	106

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	13.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	106

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2030 Plus Project	**0.4**	**106**	**1,153**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road
Minor Street	Project Driveway 2

Project	UC Merced LRDP Update
Scenario	2030 Plus Project
Peak Hour	PM

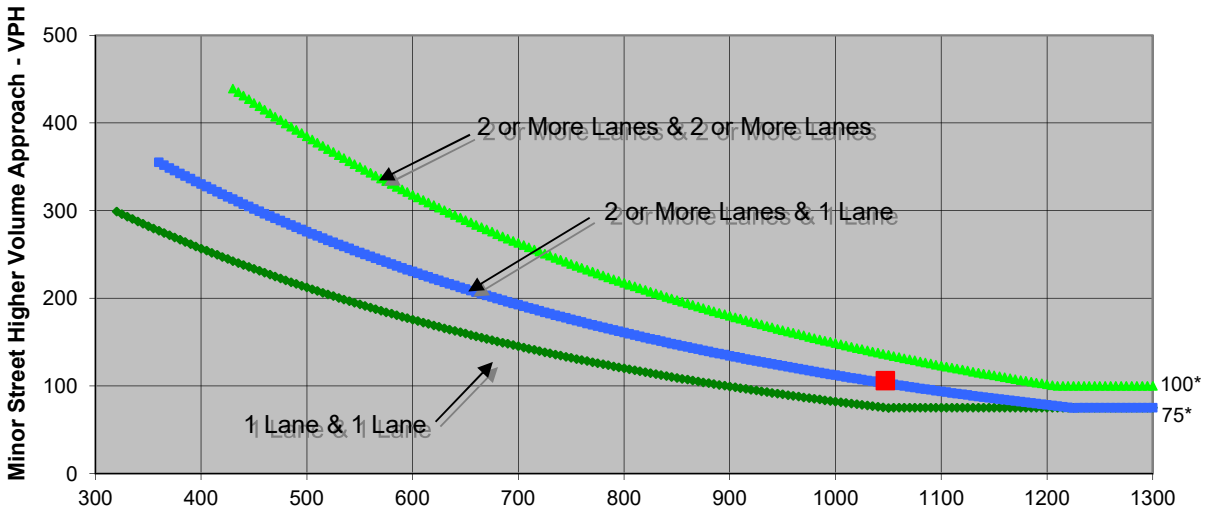
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	97
Through	360	653	0	0
Right	31	0	0	9
Total	391	656	0	106

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway 2	
Number of Approach Lanes	**1**	**2**	**YES**
Traffic Volume (VPH) *	**1,047**	**106**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	125	18	98
Through	88	121	250	128
Right	218	24	7	85
Total	311	270	275	311

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	96.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	311

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**8.3**	**311**	**1,167**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

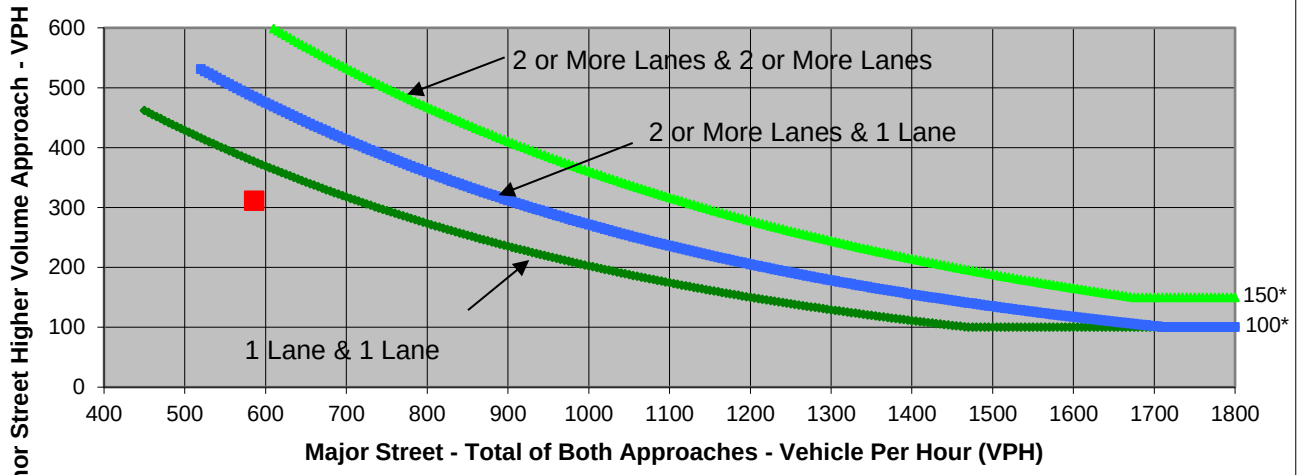
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	125	18	98
Through	88	121	250	128
Right	218	24	7	85
Total	311	270	275	311

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**586**	**311**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	UC Merced LRDP Update
Major Street	Lake Rd
Scenario	2035_NP
Minor Street	Cardella Rd
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	515	99	0	0
Right	0	9	2	0
Total	516	108	17	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	13.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**0.1**	**17**	**641**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

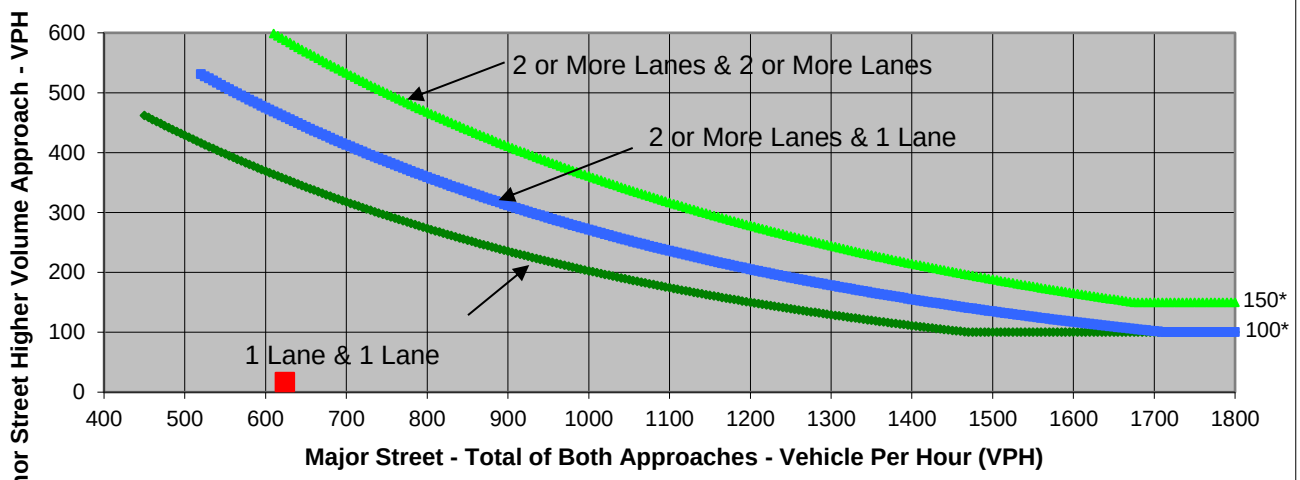
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	515	99	0	0
Right	0	9	2	0
Total	516	108	17	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**624**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	34	39	13
Through	54	142	502	514
Right	35	58	119	36
Total	270	234	660	563

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	236.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	563

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**36.9**	**270**	**1,727**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

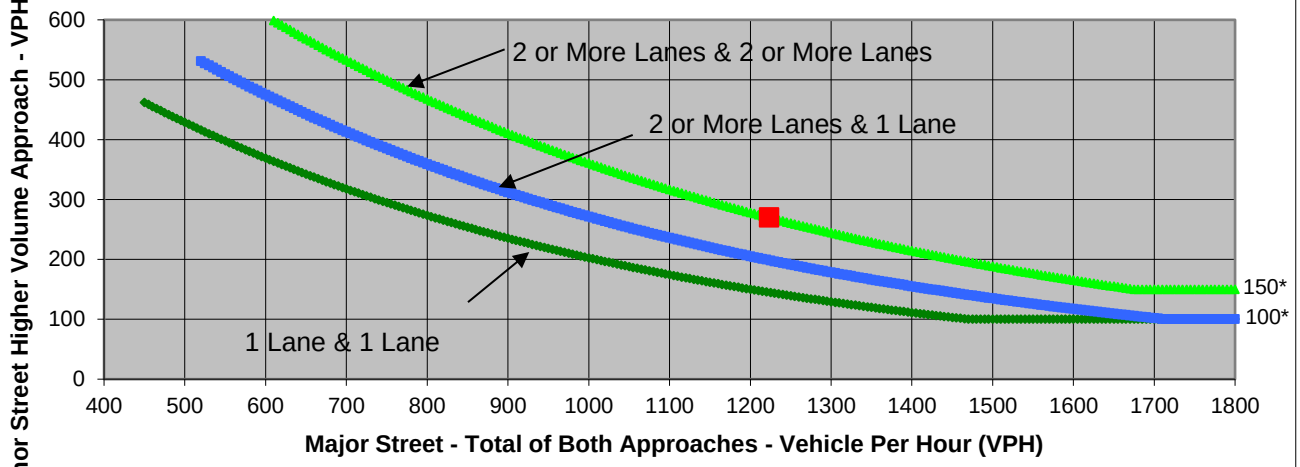
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	34	39	13
Through	54	142	502	514
Right	35	58	119	36
Total	270	234	660	563

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,223**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	37	388	0
Through	0	0	89	164
Right	0	56	0	89
Total	0	93	477	253

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.5
Approach with Worst Case Delay	SB
Total Vehicles on Approach	93

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**0.5**	**93**	**823**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

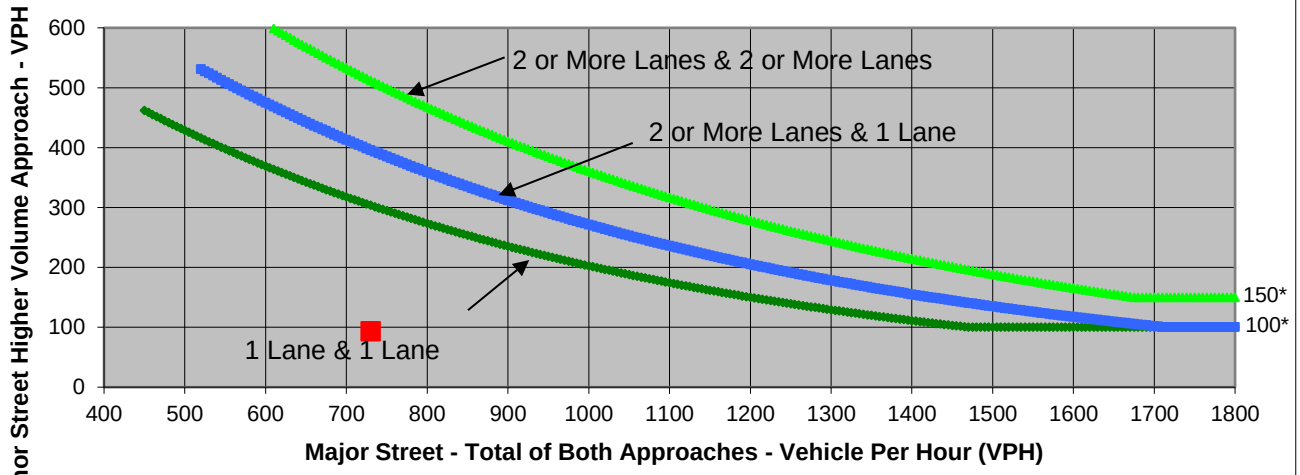
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	37	388	0
Through	0	0	89	164
Right	0	56	0	89
Total	0	93	477	253

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**730**	**93**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	382	343	0
Through	0	0	0	308
Right	0	407	0	376
Total	0	789	343	684

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	240.9
Approach with Worst Case Delay	SB
Total Vehicles on Approach	789

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**52.8**	**789**	**1,816**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

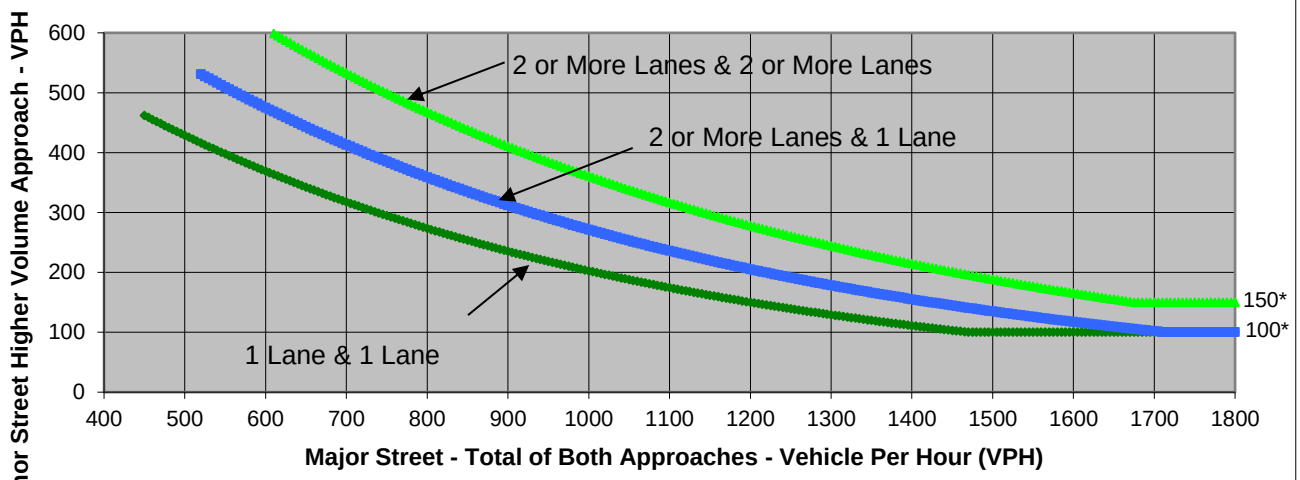
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	382	343	0
Through	0	0	0	308
Right	0	407	0	376
Total	0	789	343	684

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,027**	**789**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	254	0	0	50
Through	594	383	0	1
Right	0	240	0	114
Total	848	623	0	165

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	48.9
Approach with Worst Case Delay	WB
Total Vehicles on Approach	165

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**2.2**	**165**	**1,636**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

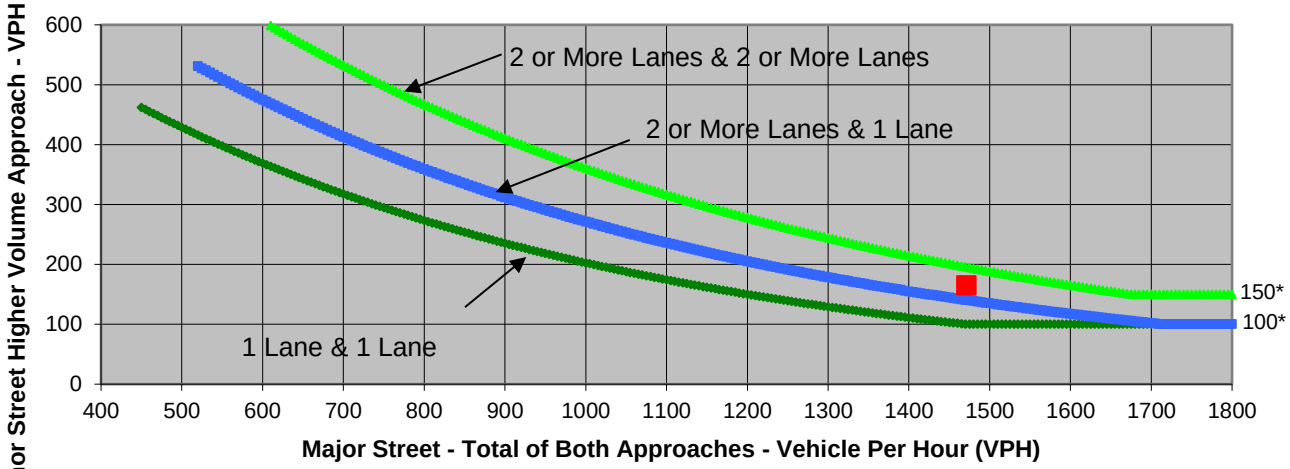
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	254	0	0	50
Through	594	383	0	1
Right	0	240	0	114
Total	848	623	0	165

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,471**	**165**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	UC Merced LRDP Update
Major Street	G St
Scenario	2035_NP
Minor Street	14th St/CA 99 NB Off Ramp
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	27	37
Through	509	429	8	8
Right	0	21	5	83
Total	515	450	40	128

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	40

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**0.3**	**128**	**1,133**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

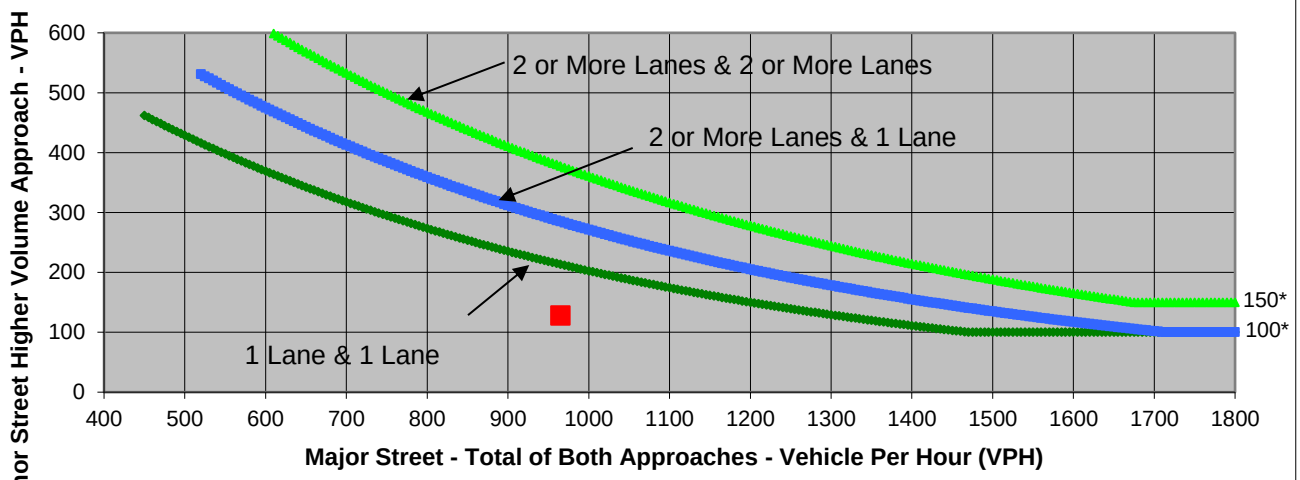
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035_NP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	27	37
Through	509	429	8	8
Right	0	21	5	83
Total	515	450	40	128

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**965**	**128**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	104	16	103
Through	81	179	92	214
Right	95	26	9	94
Total	182	309	117	411

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	411

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**2.1**	**309**	**1,019**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

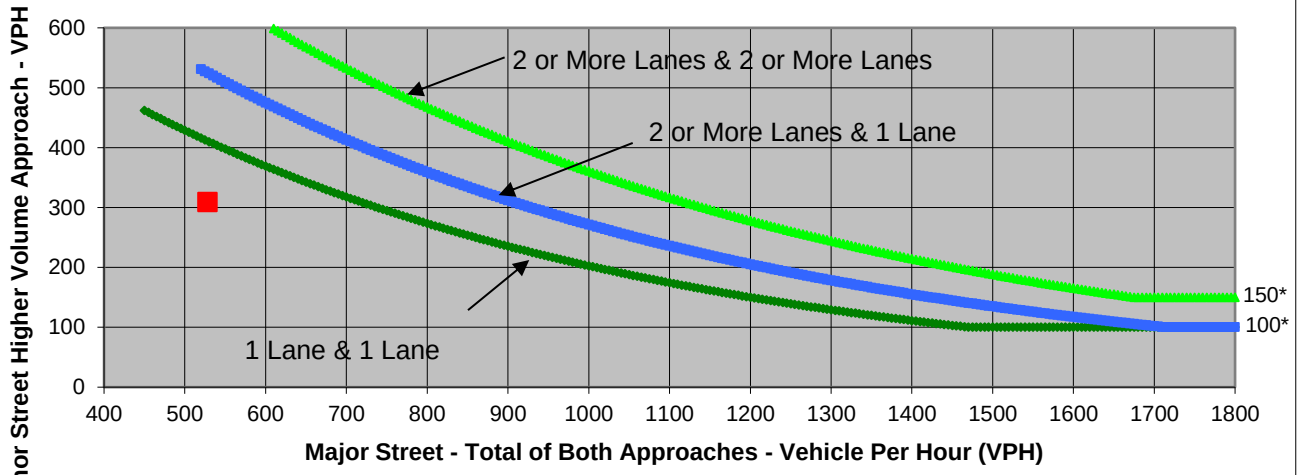
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	104	16	103
Through	81	179	92	214
Right	95	26	9	94
Total	182	309	117	411

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**528**	**309**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	161	432	0	0
Right	0	12	2	0
Total	163	444	7	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	7

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**0**	**7**	**614**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

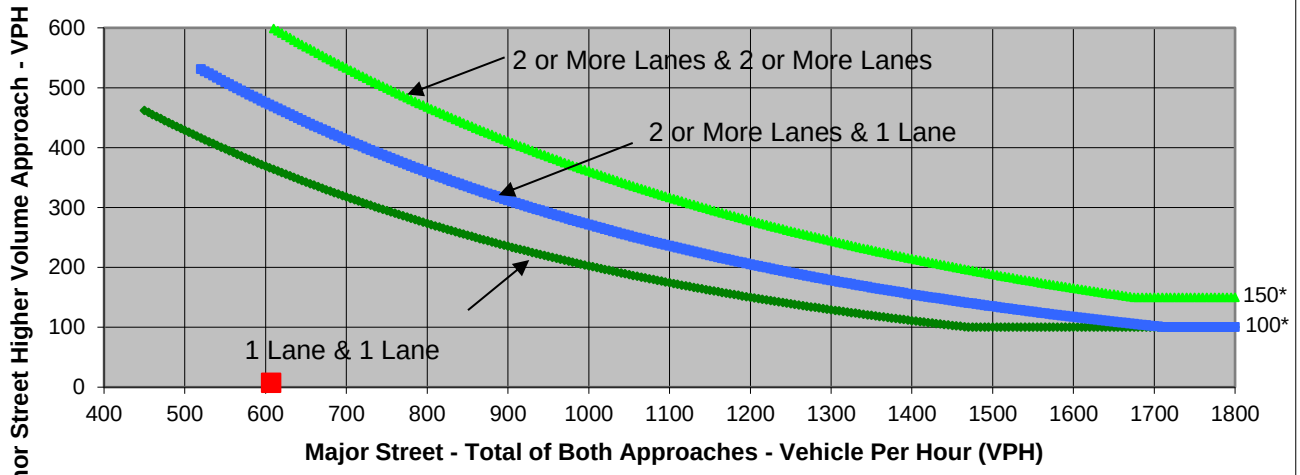
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	161	432	0	0
Right	0	12	2	0
Total	163	444	7	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**607**	**7**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	67	124	33
Through	147	108	639	548
Right	15	94	129	40
Total	270	269	892	621

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	251.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	621

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**43.4**	**270**	**2,052**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

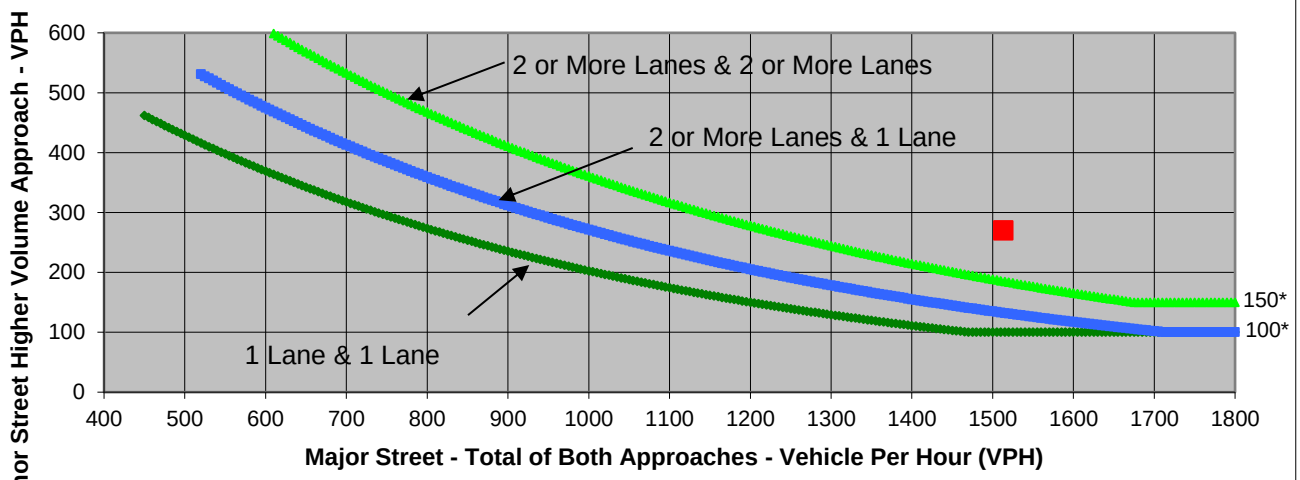
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	67	124	33
Through	147	108	639	548
Right	15	94	129	40
Total	270	269	892	621

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,513**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	114	120	0
Through	0	0	161	138
Right	0	319	0	29
Total	0	433	281	167

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	19.1
Approach with Worst Case Delay	SB
Total Vehicles on Approach	433

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**2.3**	**433**	**881**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

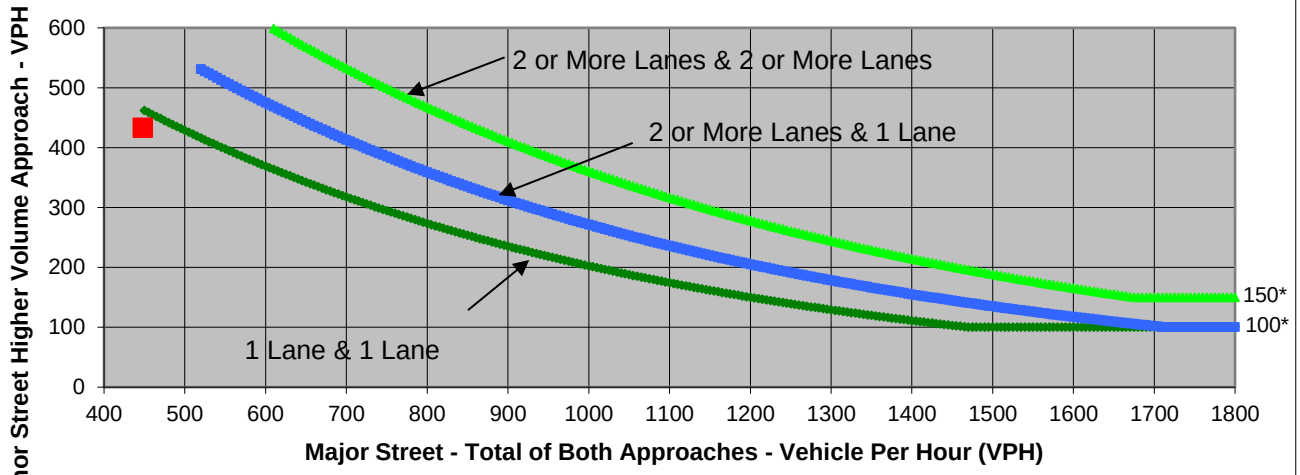
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	114	120	0
Through	0	0	161	138
Right	0	319	0	29
Total	0	433	281	167

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**448**	**433**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	419	290	0
Through	0	0	0	644
Right	0	341	0	618
Total	0	760	290	1,262

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	196
Approach with Worst Case Delay	WB
Total Vehicles on Approach	1,262

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**68.7**	**760**	**2,312**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

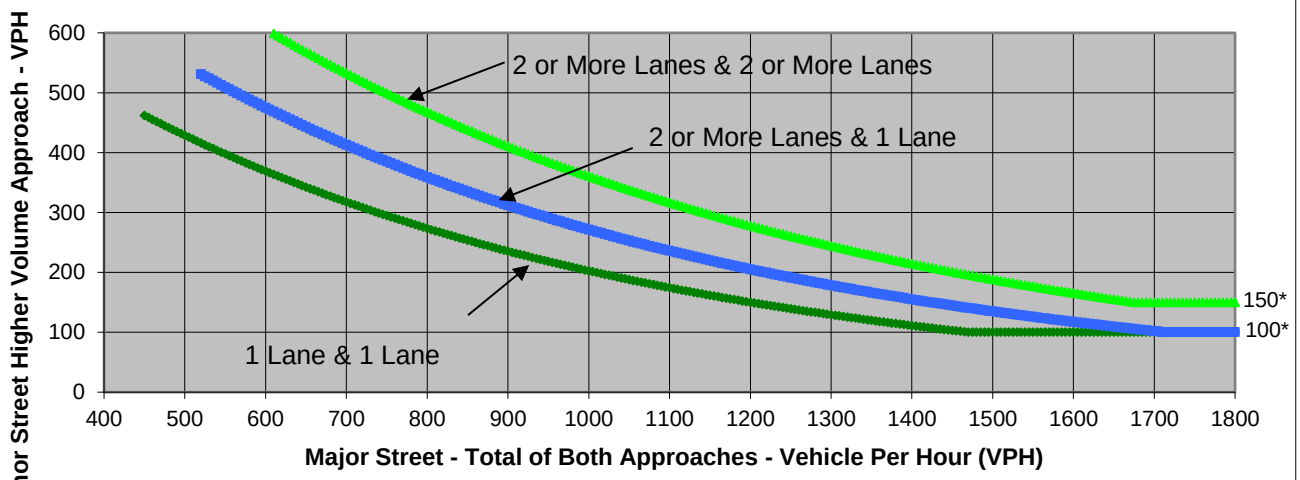
Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	419	290	0
Through	0	0	0	644
Right	0	341	0	618
Total	0	760	290	1,262

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,552**	**760**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	288	0	0	38
Through	819	698	0	1
Right	0	392	0	104
Total	1,107	1,090	0	143

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	147.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	143

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**5.9**	**143**	**2,340**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

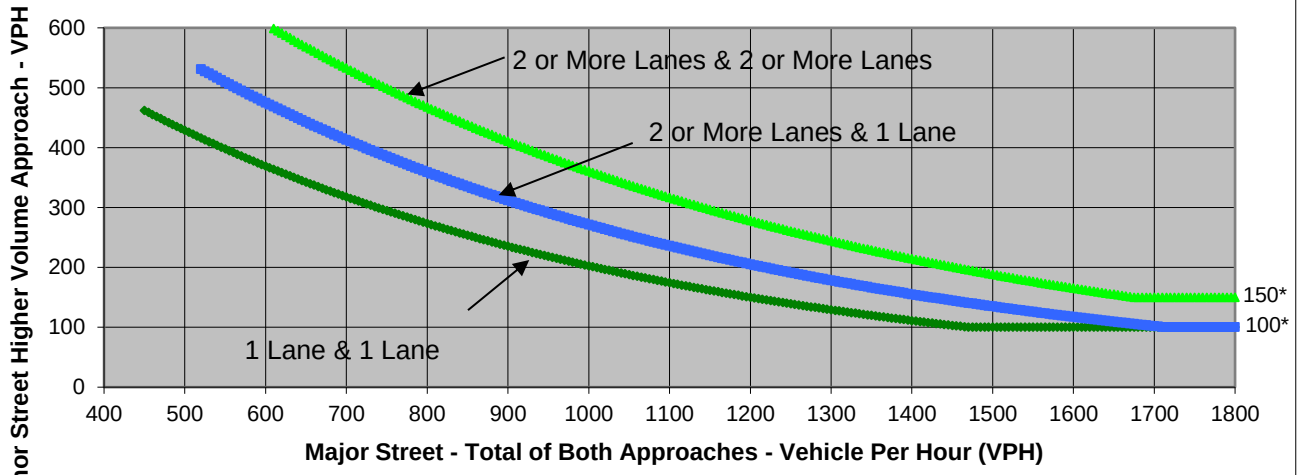
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	288	0	0	38
Through	819	698	0	1
Right	0	392	0	104
Total	1,107	1,090	0	143

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,197**	**143**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	25	25
Through	532	542	24	10
Right	0	48	7	99
Total	548	590	56	134

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	34.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	56

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035_NP	**0.5**	**134**	**1,328**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

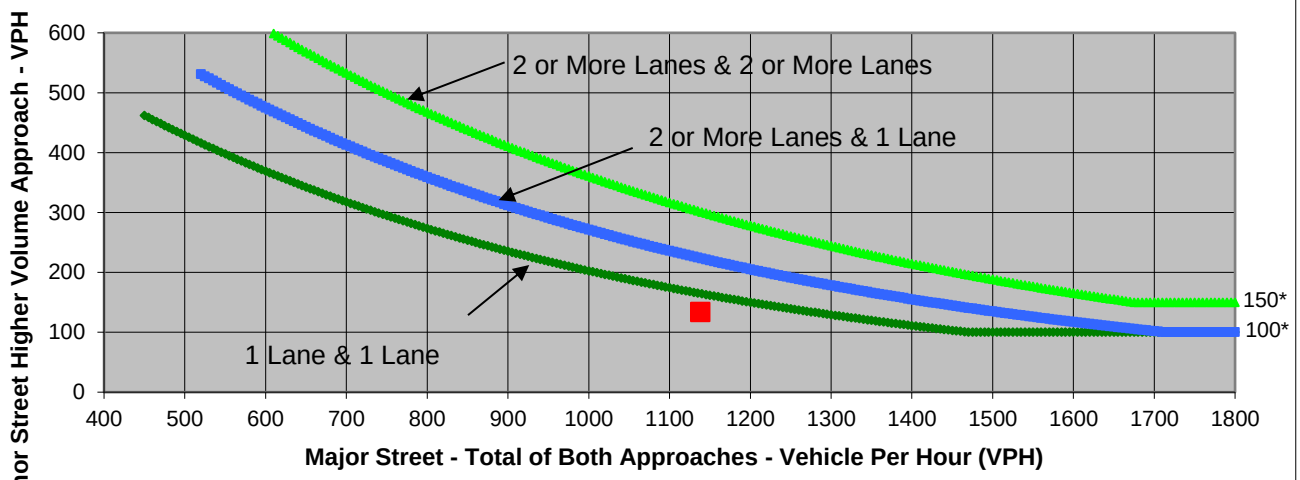
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035_NP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	25	25
Through	532	542	24	10
Right	0	48	7	99
Total	548	590	56	134

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,138**	**134**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	125	18	109
Through	88	121	250	128
Right	262	24	7	85
Total	355	270	275	322

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	138.9
Approach with Worst Case Delay	NB
Total Vehicles on Approach	355

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**13.7**	**355**	**1,222**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

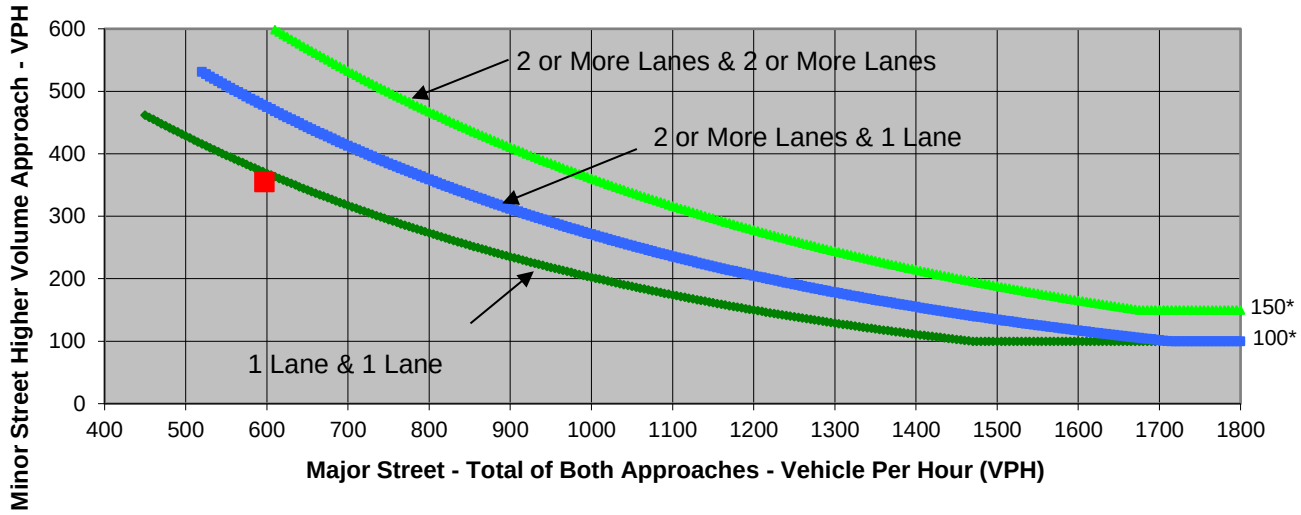
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	125	18	109
Through	88	121	250	128
Right	262	24	7	85
Total	355	270	275	322

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**597**	**355**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	1,027	338	0	0
Right	0	9	2	0
Total	1,028	347	17	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	34.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	17

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**0.2**	**17**	**1,392**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Rd
Minor Street	Cardella Rd

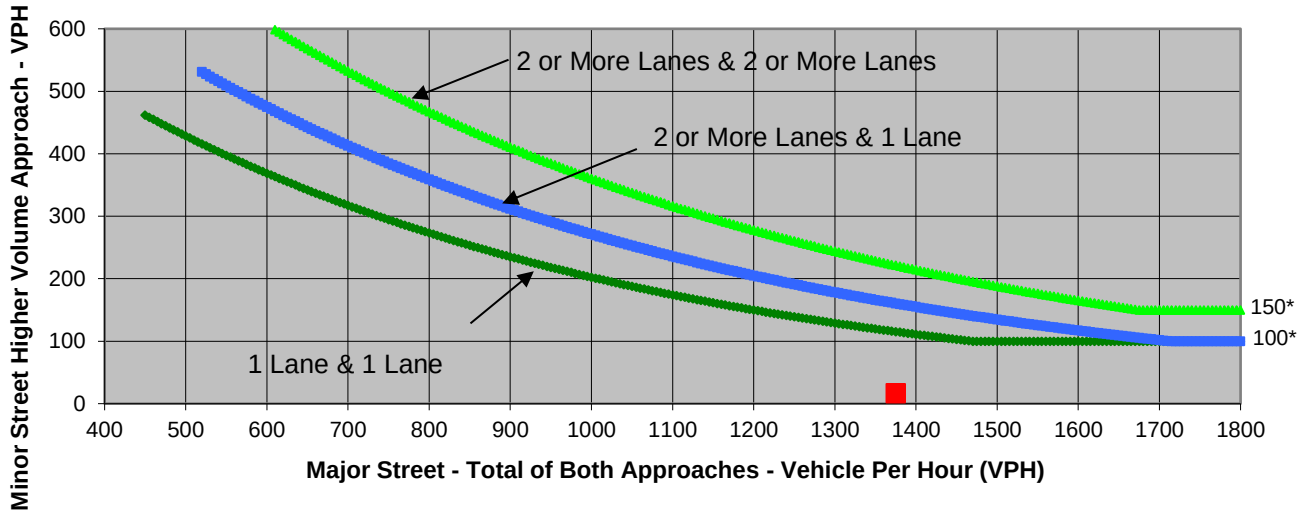
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	0	15	0
Through	1,027	338	0	0
Right	0	9	2	0
Total	1,028	347	17	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,375**	**17**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	34	39	14
Through	54	142	838	714
Right	35	58	119	37
Total	270	234	996	765

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	449.8
Approach with Worst Case Delay	SB
Total Vehicles on Approach	234

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**29.2**	**270**	**2,265**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

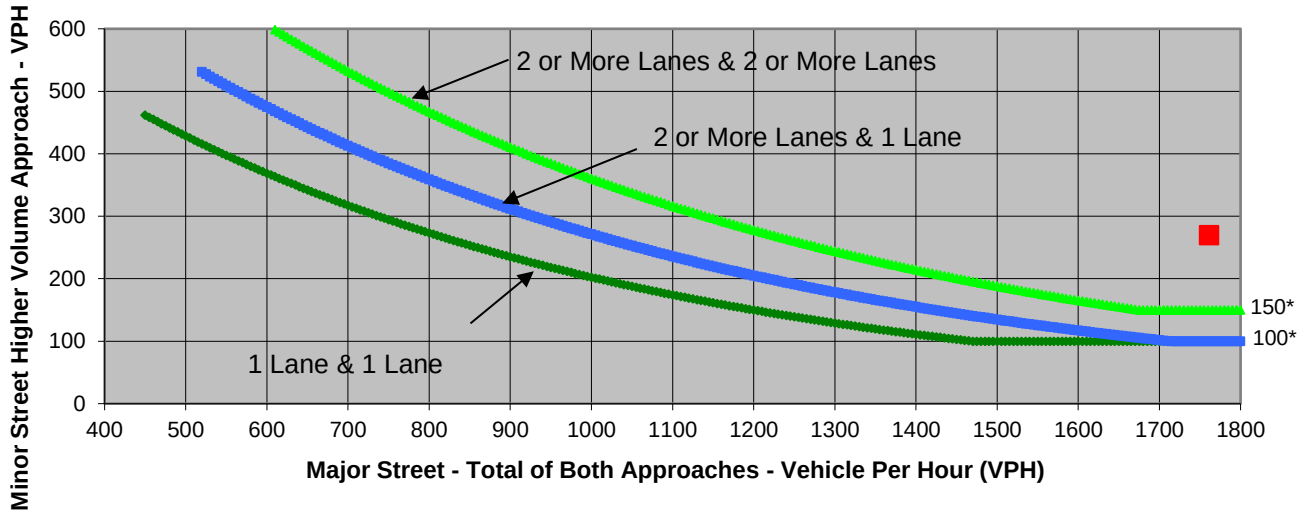
Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	181	34	39	14
Through	54	142	838	714
Right	35	58	119	37
Total	270	234	996	765

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,761**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	55	779	0
Through	0	0	89	164
Right	0	277	0	210
Total	0	332	868	374

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	25.9
Approach with Worst Case Delay	SB
Total Vehicles on Approach	332

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**2.4**	**332**	**1,574**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

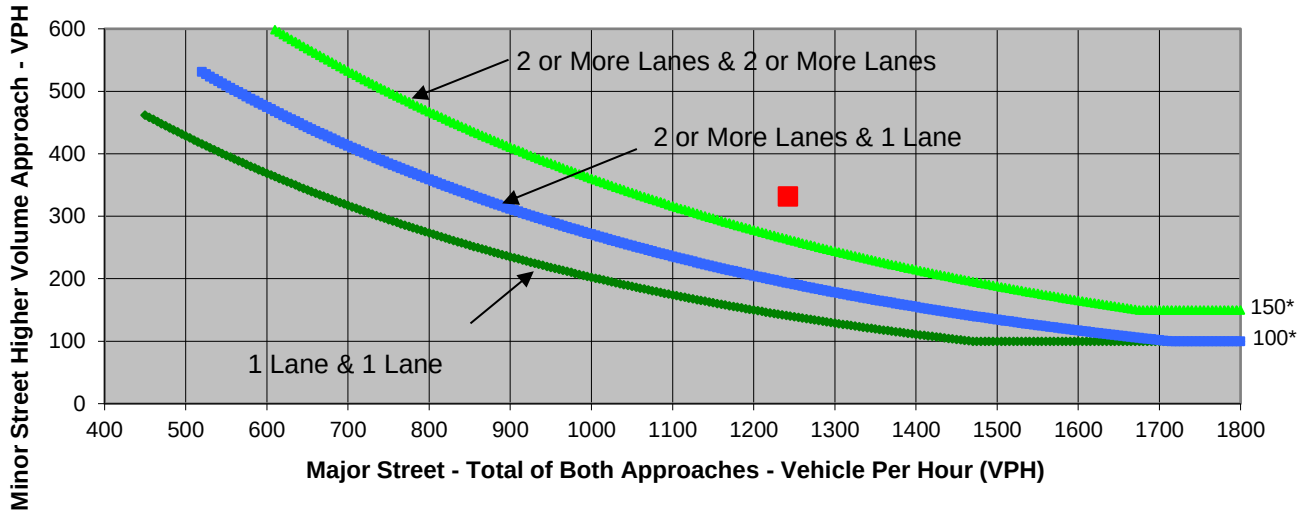
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	55	779	0
Through	0	0	89	164
Right	0	277	0	210
Total	0	332	868	374

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,242**	**332**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	382	343	0
Through	0	0	0	308
Right	0	412	0	379
Total	0	794	343	687

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	244.8
Approach with Worst Case Delay	SB
Total Vehicles on Approach	794

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**54**	**794**	**1,824**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	16th St
Minor Street	Snelling Hwy (CA 59)

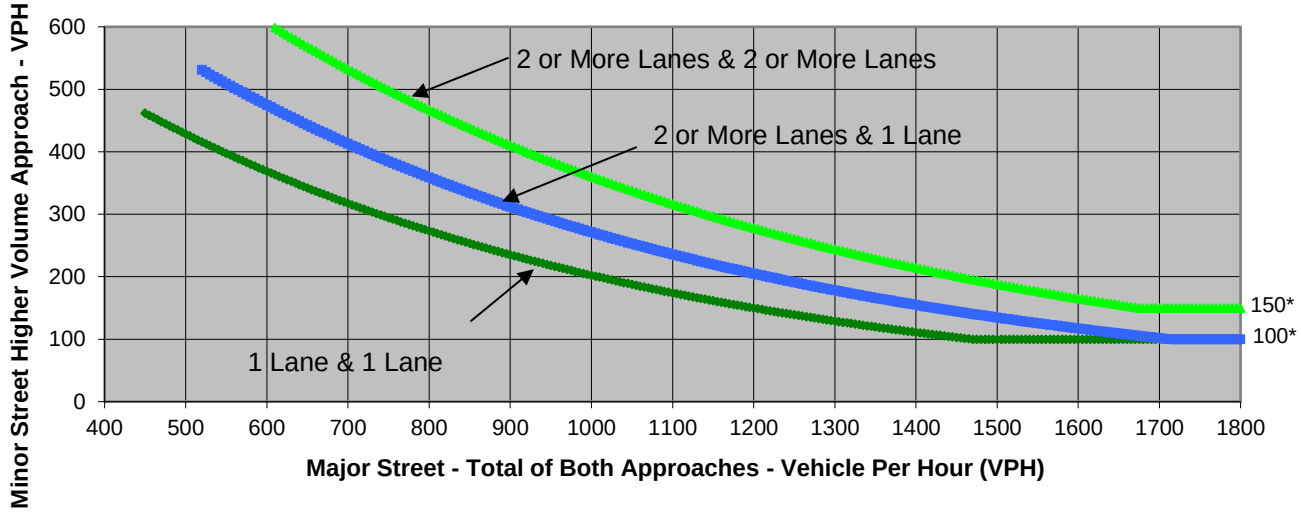
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	382	343	0
Through	0	0	0	308
Right	0	412	0	379
Total	0	794	343	687

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,030**	**794**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	254	0	0	50
Through	587	384	0	1
Right	0	242	0	114
Total	841	626	0	165

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	54.6
Approach with Worst Case Delay	WB
Total Vehicles on Approach	165

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**2.5**	**165**	**1,632**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

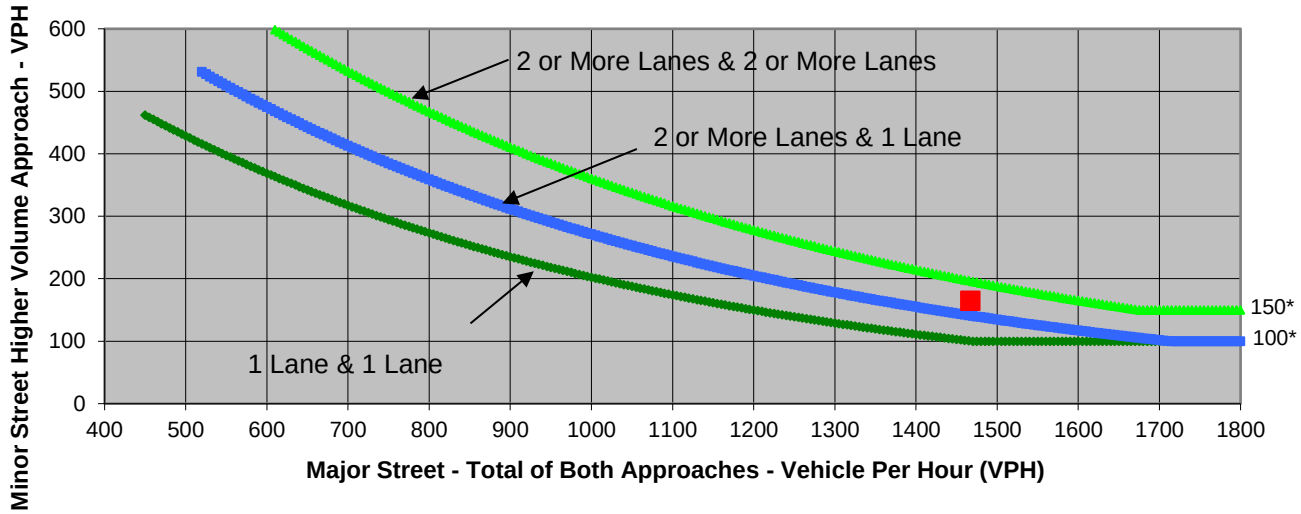
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	254	0	0	50
Through	587	384	0	1
Right	0	242	0	114
Total	841	626	0	165

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,467**	**165**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	45	37
Through	516	430	8	8
Right	0	23	5	83
Total	522	453	58	128

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	25.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	58

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**0.4**	**128**	**1,161**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

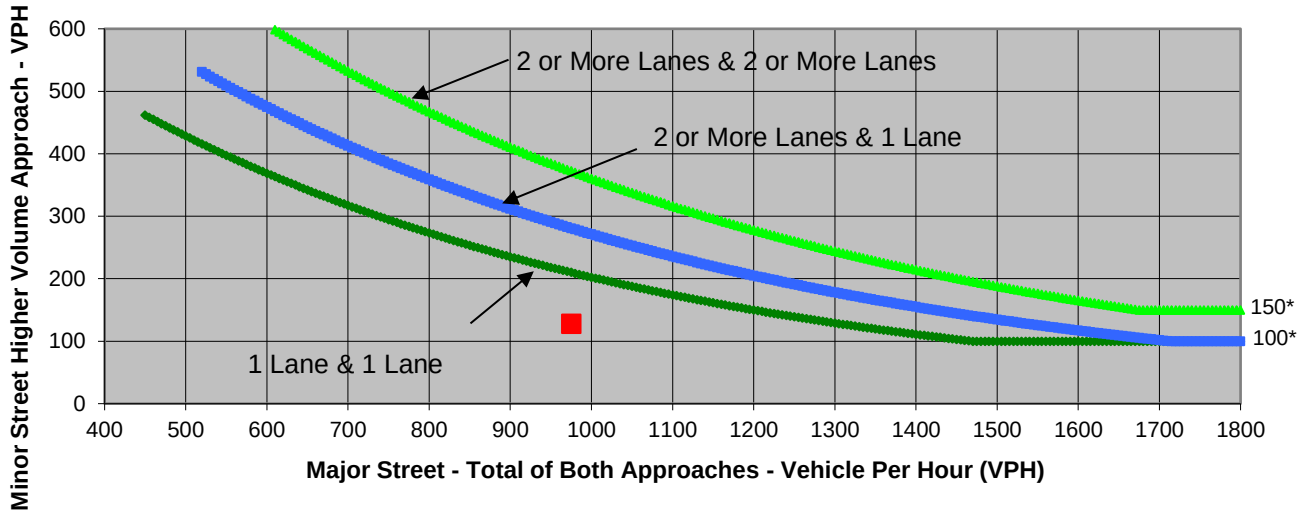
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035PP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	45	37
Through	516	430	8	8
Right	0	23	5	83
Total	522	453	58	128

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**975**	**128**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2035 Plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	14	0	20
Through	748	336	0	0
Right	131	0	0	5
Total	879	350	0	25

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	25.4
Approach with Worst Case Delay	WB
Total Vehicles on Approach	25

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035 Plus Project	**0.2**	**25**	**1,254**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2035 Plus Project
		Peak Hour	AM

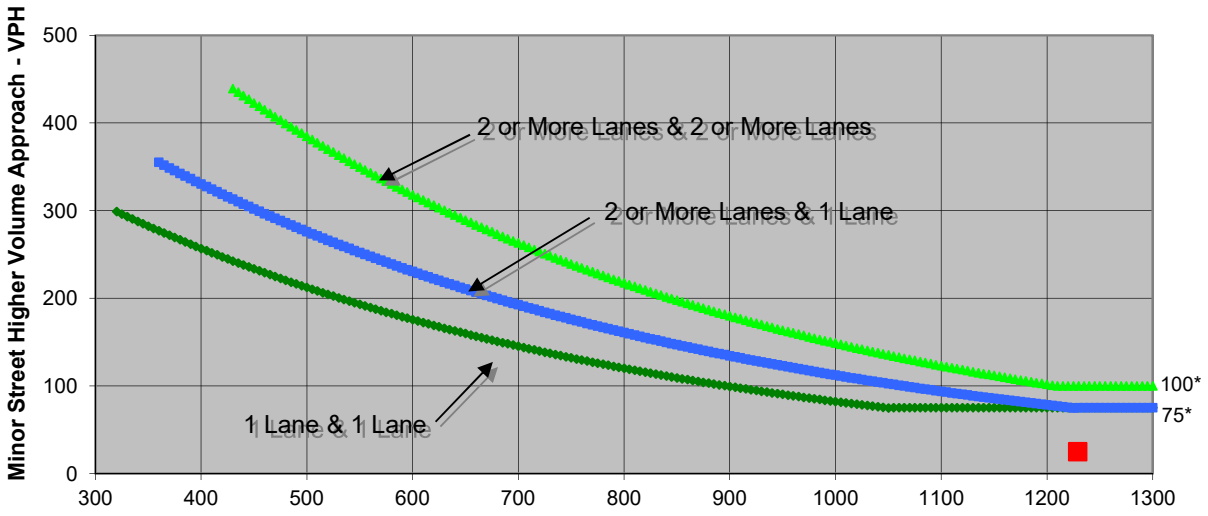
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	14	0	20
Through	748	336	0	0
Right	131	0	0	5
Total	879	350	0	25

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway	
Number of Approach Lanes	**1**	**2**	**NO**
Traffic Volume (VPH) *	**1,229**	**25**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2035 Plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	14	0	22
Through	874	342	0	0
Right	128	0	0	5
Total	1,002	356	0	27

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	31.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	27

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035 Plus Project	**0.2**	**27**	**1,385**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2035 Plus Project
		Peak Hour	AM

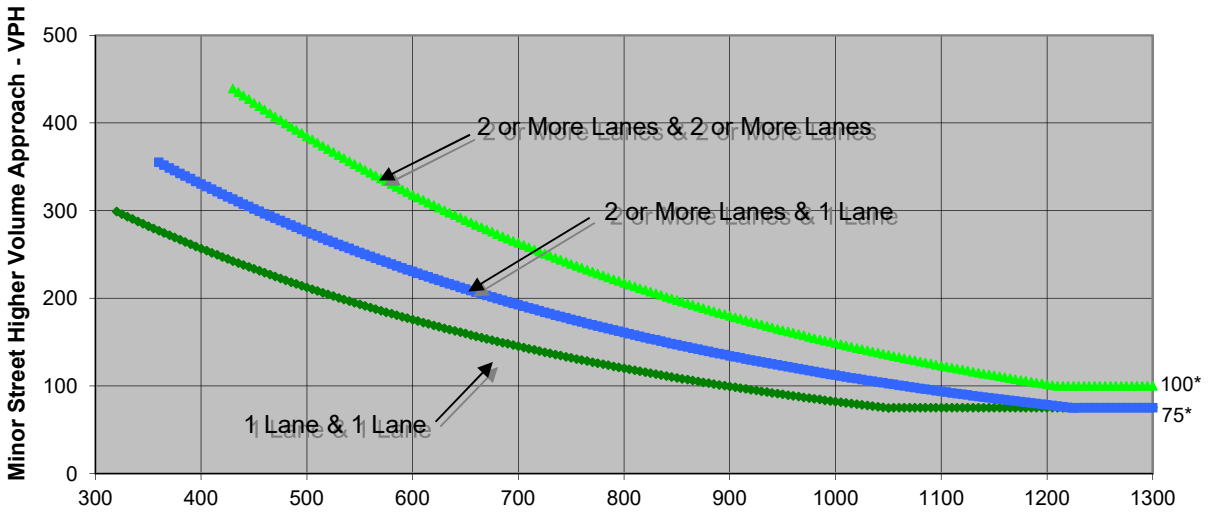
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	14	0	22
Through	874	342	0	0
Right	128	0	0	5
Total	1,002	356	0	27

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway	
Number of Approach Lanes	**1**	**2**	**NO**
Traffic Volume (VPH) *	**1,358**	**27**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	104	16	175
Through	81	179	92	214
Right	110	26	9	94
Total	197	309	117	483

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	27.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	483

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**3.7**	**309**	**1,106**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

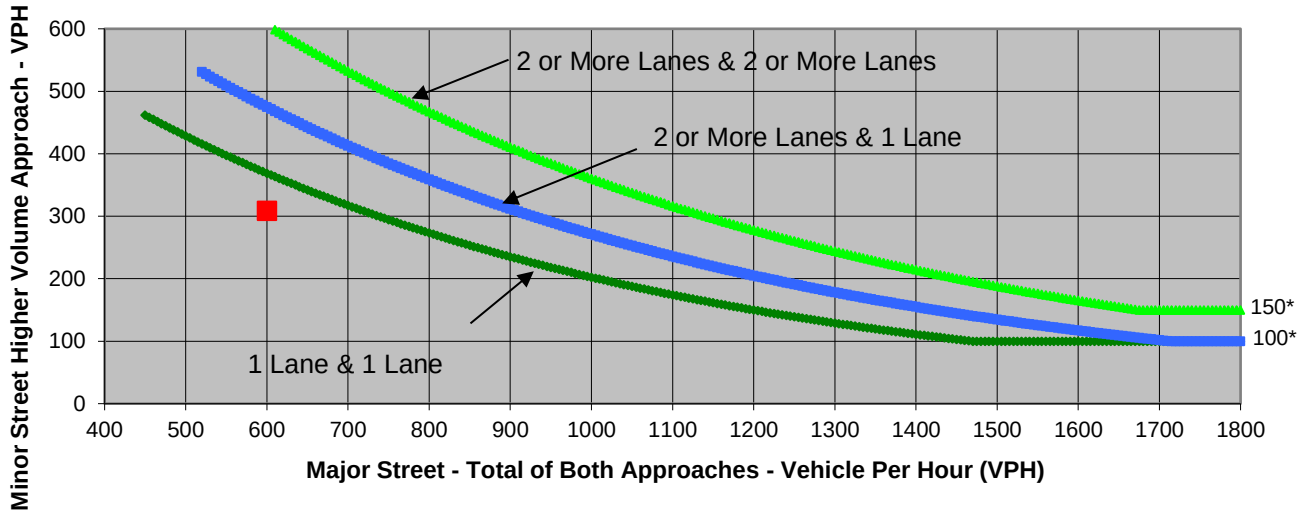
Major Street	Bellevue Rd	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	104	16	175
Through	81	179	92	214
Right	110	26	9	94
Total	197	309	117	483

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Bellevue Rd	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**600**	**309**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	437	957	0	0
Right	0	12	2	0
Total	439	969	7	0

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	28.1
Approach with Worst Case Delay	EB
Total Vehicles on Approach	7

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**0.1**	**7**	**1,415**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

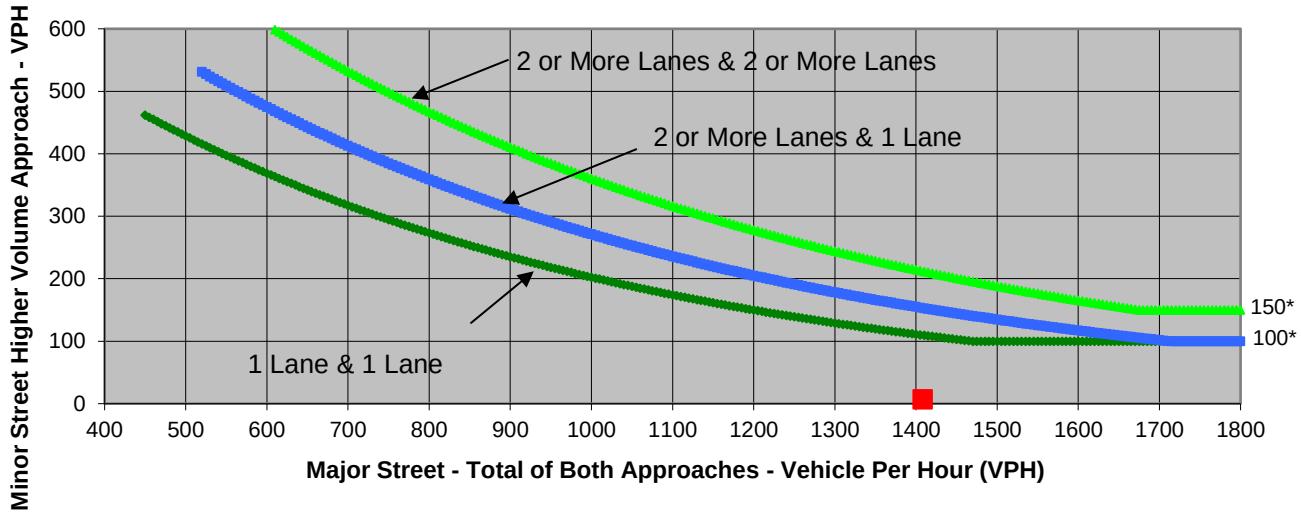
Major Street	Lake Rd	Project	UC Merced LRDP Update
Minor Street	Cardella Rd	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	5	0
Through	437	957	0	0
Right	0	12	2	0
Total	439	969	7	0

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Rd	Cardella Rd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,408**	**7**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Parsons Ave/Gardner Ave	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	67	124	40
Through	147	108	846	886
Right	15	94	129	43
Total	270	269	1,099	969

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	606.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	969

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**163.1**	**270**	**2,607**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Parsons Ave/Gardner Ave

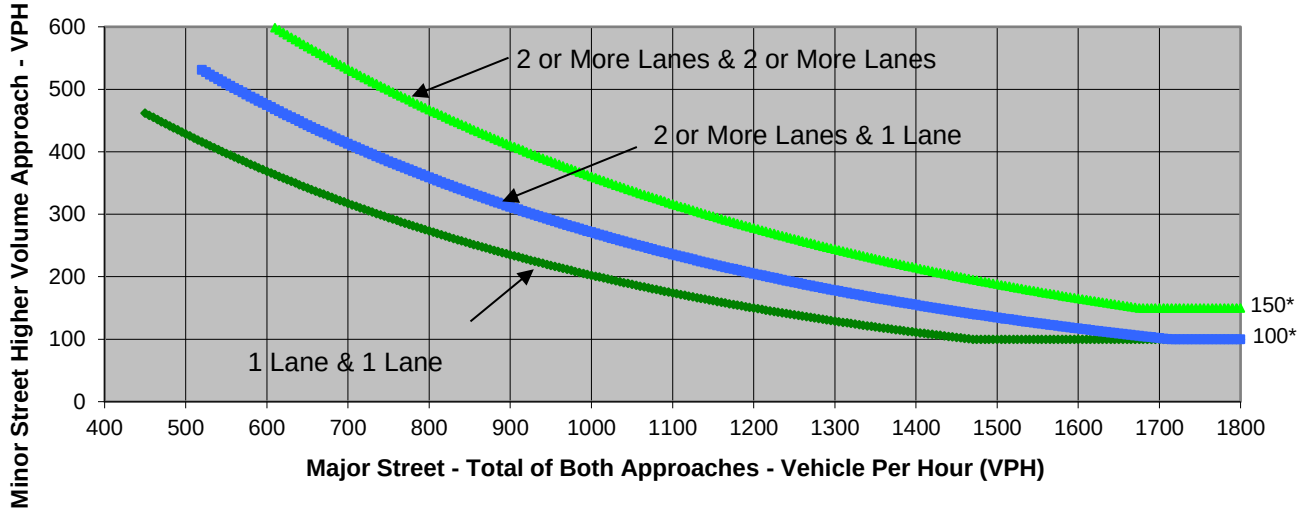
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	108	67	124	40
Through	147	108	846	886
Right	15	94	129	43
Total	270	269	1,099	969

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Parsons Ave/Gardner Ave	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**2,068**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Yosemite Ave	Project	UC Merced LRDP Update
Minor Street	Lake Rd	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	223	354	0
Through	0	0	161	138
Right	0	735	0	71
Total	0	958	515	209

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	503.4
Approach with Worst Case Delay	SB
Total Vehicles on Approach	958

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**134**	**958**	**1,682**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	Yosemite Ave
Minor Street	Lake Rd

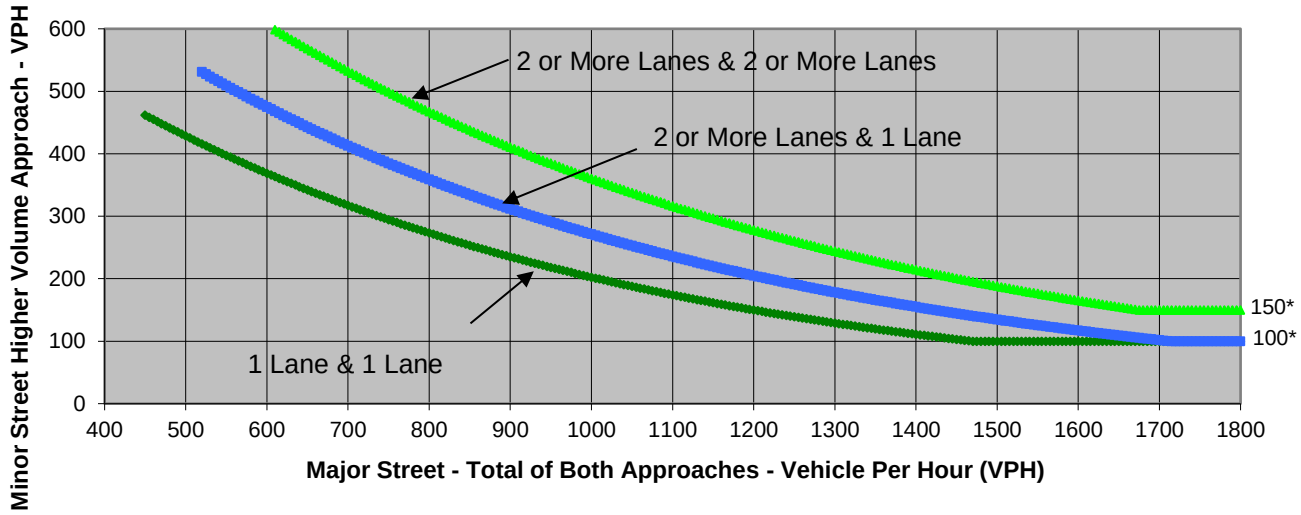
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	223	354	0
Through	0	0	161	138
Right	0	735	0	71
Total	0	958	515	209

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Yosemite Ave	Lake Rd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**724**	**958**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	16th St	Project	UC Merced LRDP Update
Minor Street	Snelling Hwy (CA 59)	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	422	290	0
Through	0	0	0	644
Right	0	374	0	619
Total	0	796	290	1,263

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	219.5
Approach with Worst Case Delay	SB
Total Vehicles on Approach	796

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**48.5**	**796**	**2,349**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street	16th St
Minor Street	Snelling Hwy (CA 59)

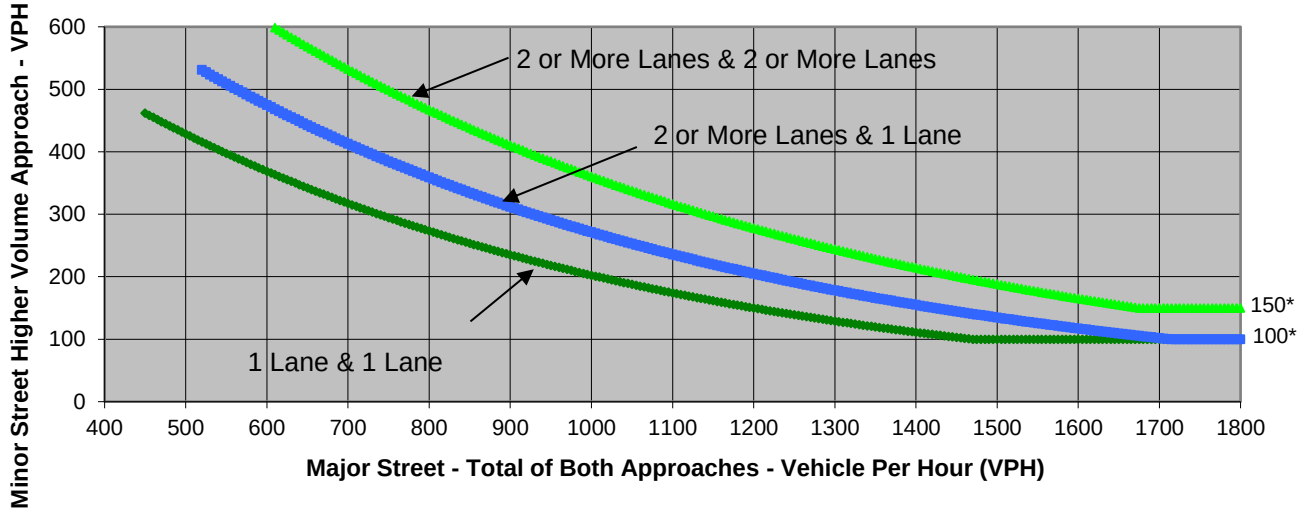
Project	UC Merced LRDP Update
Scenario	2035PP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	422	290	0
Through	0	0	0	644
Right	0	374	0	619
Total	0	796	290	1,263

Major Street Direction

	North/South
X	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	16th St	Snelling Hwy (CA 59)	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,553**	**796**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	288	0	0	38
Through	714	707	0	1
Right	0	408	0	104
Total	1,002	1,115	0	143

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	162.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	143

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**6.4**	**143**	**2,260**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

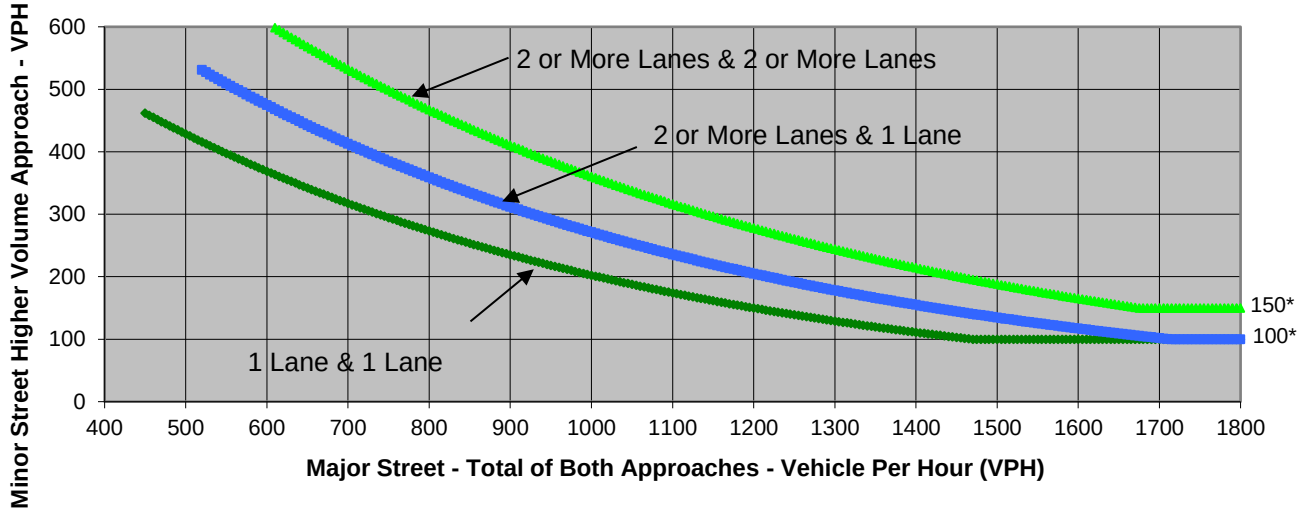
Major Street	MLK Jr Way	Project	UC Merced LRDP Update
Minor Street	CA 99 NB Ramps	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	288	0	0	38
Through	714	707	0	1
Right	0	408	0	104
Total	1,002	1,115	0	143

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	MLK Jr Way	CA 99 NB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,117**	**143**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	31	25
Through	534	548	24	10
Right	0	64	7	99
Total	550	612	62	134

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	38
Approach with Worst Case Delay	EB
Total Vehicles on Approach	62

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035PP	**0.7**	**134**	**1,358**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

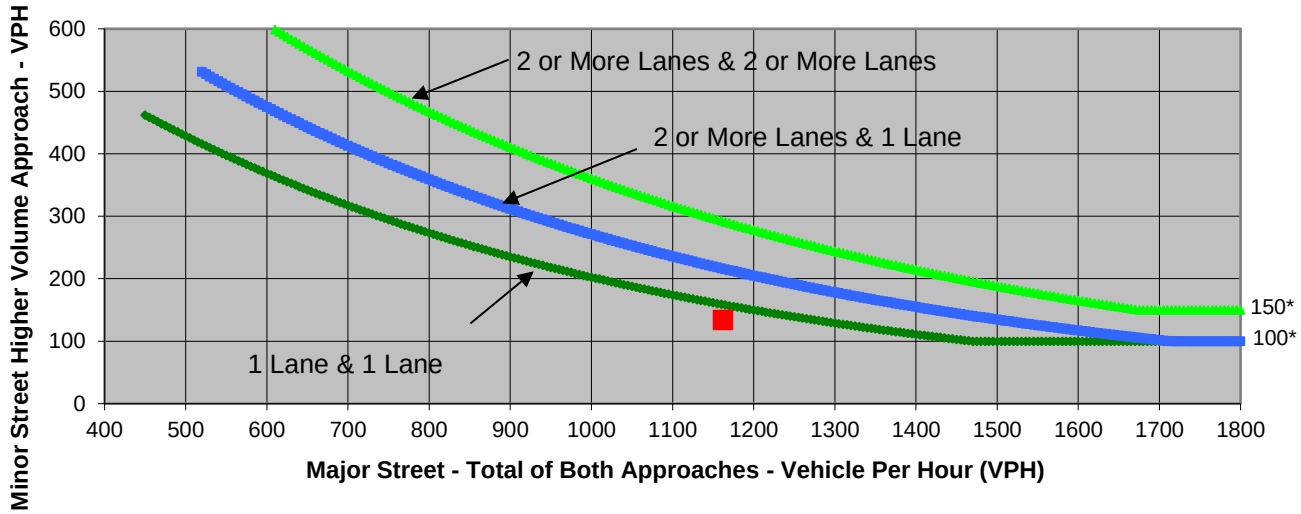
Major Street	G St	Project	UC Merced LRDP Update
Minor Street	14th St/CA 99 NB Off Ramp	Scenario	2035PP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	16	0	31	25
Through	534	548	24	10
Right	0	64	7	99
Total	550	612	62	134

Major Street Direction

X	North/South
	East/West



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	G St	14th St/CA 99 NB Off Ramp	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,162**	**134**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2035 Plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	0	125
Through	392	649	0	0
Right	46	0	0	28
Total	438	654	0	153

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	40.9	
Approach with Worst Case Delay	WB	
Total Vehicles on Approach	153	

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035 Plus Project	**1.7**	**153**	**1,245**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 1	Scenario	2035 Plus Project
		Peak Hour	PM

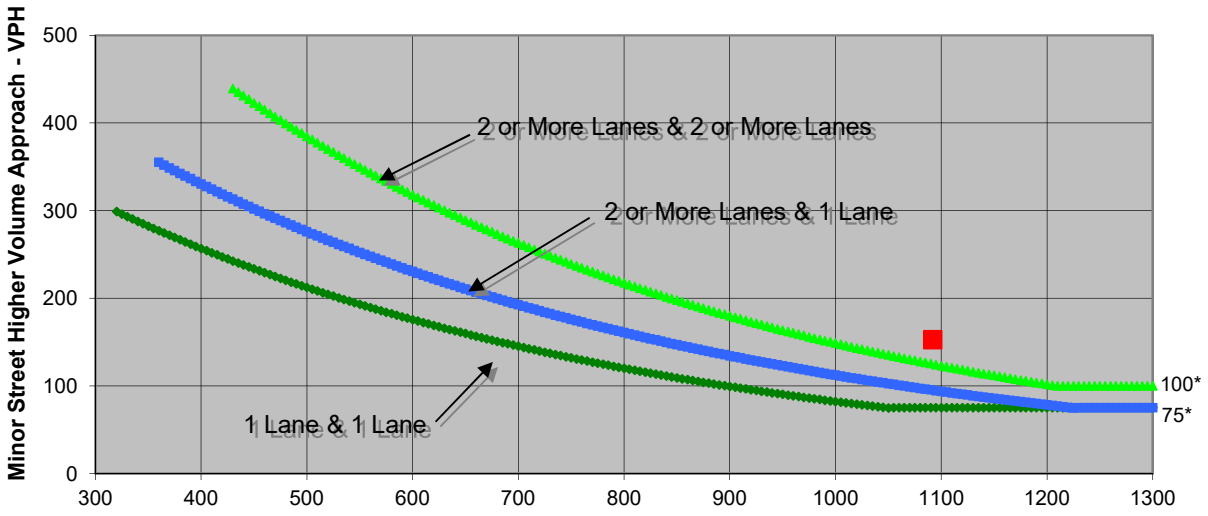
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	0	125
Through	392	649	0	0
Right	46	0	0	28
Total	438	654	0	153

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway	
Number of Approach Lanes	**1**	**2**	**YES**
Traffic Volume (VPH) *	**1,092**	**153**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Lake Road	Project	UC Merced LRDP Update
Minor Street	Project Driveway 2	Scenario	2035 Plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	0	142
Through	425	769	0	0
Right	45	0	0	13
Total	470	774	0	155

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	90.4
Approach with Worst Case Delay	WB
Total Vehicles on Approach	155

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
2035 Plus Project	**3.9**	**155**	**1,399**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Lake Road
Minor Street	Project Driveway 2

Project	UC Merced LRDP Update
Scenario	2035 Plus Project
Peak Hour	PM

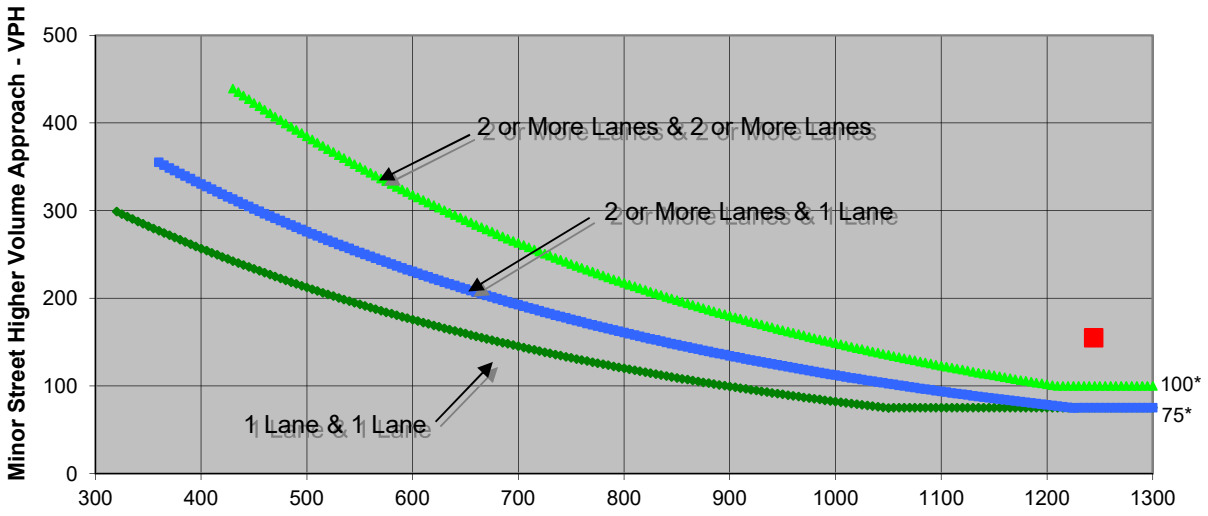
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	0	142
Through	425	769	0	0
Right	45	0	0	13
Total	470	774	0	155

Major Street Direction

x	North/South
	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



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

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Lake Road	Project Driveway	
Number of Approach Lanes	**1**	**2**	**YES**
Traffic Volume (VPH) *	**1,244**	**155**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.