Traffic Analysis

Blackstone-Shaw Activity Center

Fresno, California

Final

March 2020

Traffic Analysis

Blackstone-Shaw Activity Center

Fresno, California

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Project No. 22649.00

March 2020

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Section 1
Executive Summary

EXECUTIVE SUMMARY

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- Intersections analyzed
- Study scenarios
- Impacts
- Mitigation and recommendations

PROJECT DESCRIPTION

This traffic analysis evaluates the feasibility of implementing transportation improvements that are supportive of walking, biking, and taking transit in the vicinity of the intersection of Blackstone Avenue & Shaw Avenue to support transit-oriented development activity center at parcels within the intersection vicinity near the Fresno Area Express (FAX) Q bus rapid transit route. The Blackstone-Shaw Activity Center (BSAC) improvements include streetscape enhancements to create an environment encouraging of walking in the site vicinity as well as changes to the transportation system to support transit, walking, and biking across the two primary corridors.

The improvements evaluated in this traffic analysis include:

- converting a through motor vehicle lane on Blackstone Avenue in each direction to bus and turn (BAT) lanes;
- adding traffic signals at the following intersections:
    - Blackstone Avenue & the Yosemite Falls Driveway;
    - Blackstone Avenue & Santa Ana Avenue
    - Shaw Avenue & Effie Street
- installing a pedestrian half-signal at Shaw Avenue & Glenn Avenue
- adding leading pedestrian intervals for signalized intersections of Blackstone Avenue between San Jose Avenue and Santa Ana Avenue

The results of the traffic analysis indicate that the proposed transportation improvements to support a complete streets strategy for the Blackstone-Shaw Activity Center (BSAC) would result in mixed effects on motor vehicle operations within the study area. Some intersections would perform better with the proposed improvements while other intersections would perform worse. However, the project would entail significant improvements for people walking or taking transit in the study area. The project would also provide improved access to the potential development parcels and improved access from the current stop-controlled minor streets along Blackstone Avenue and Shaw Avenue in the study area. The findings of this analysis and our recommendations are summarized below. Additional studies may be required to determine the timing of potential traffic signal installations as well as the bus and turns (BAT) lane to determine broader corridor operational impacts. These improvements may be considered by the City of Fresno as pedestrian activity increases in the BSAC area and/or as development-related infrastructure funding or grant funding becomes available.

FINDINGS

Existing Conditions

- Using the Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) level of service methodologies the following intersections exceed the City's LOS E threshold in Existing conditions:
    - Shaw Avenue & Effie Street intersection operates at LOS F in the weekday AM and PM peak hours, and the weekend midday peak hour.
    - Shaw Avenue & Glenn Avenue intersection operates at LOS F in the weekend midday peak hour.
- Using SimTraffic simulation, all intersections operate at acceptable levels of service during the weekday AM and PM peak hours, and the weekend midday peak hour except for Blackstone Avenue & Santa Ana Avenue in the weekday PM peak hour which operates at LOS F.
- The following intersections are estimated to have 95th percentile queue lengths that exceed the available storage using SimTraffic simulation:
    - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
    - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.
    - Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Existing Plus Project Conditions

- Using the HCM level of service, all of the study intersections would operate at acceptable levels of service during the weekday AM and PM, and weekend midday peak hours.
- Using the SimTraffic simulation level of service methodologies, Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage using SimTraffic simulation:
    - Effie Street & Shaw Avenue for the westbound approach in the weekday PM and weekend midday peak hours.
    - Shaw Avenue & SR-41 southbound ramps for the eastbound approach in the weekday PM and weekend midday peak hours.
    - Fresno Street & Shaw Avenue for the westbound approach in the weekday PM peak hour.

Proposed Near-Term and Cumulative Land Use Changes

- The BSAC project evaluated in the traffic analysis is composed of both transportation improvements and assumed land use development changes within the study area for the Near-Term and Cumulative scenarios. The land use change components that are added to the existing volumes for near-term growth conditions and the Fresno COG's travel demand model volumes for the cumulative growth assumptions are summarized below:
    - The parcels surrounding the Blackstone Avenue & Shaw Avenue intersection are expected to redevelop, consisting of a total of:
        - 383 new residential units
        - 148,700 square feet of new retail development
        - 75,600 square feet of new office space
    - The new development is estimated to generate 8,435 daily net new trips with the proposed land use changes.
    - The BSAC land use changes are projected to results in 367 net new trips during the weekday AM peak hour, 823 net new trips during the weekday PM peak hour, and 694 net new trips during the weekend midday peak hour.

Near-Term Conditions

- Using the HCM level of service methodologies the following intersections exceed the City's LOS E threshold in Near-Term conditions:
    - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- Using SimTraffic simulation level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in near conditions:
    - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and weekend midday peak hours.
    - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
    - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday PM peak hour.
    - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- The following intersections are estimated to have 95th percentile queue lengths that exceed the available storage using SimTraffic simulation:

- Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
- Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.
- Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Near-Term Plus Project Conditions

- Using both the HCM level of service methodologies and Sim Traffic simulation, all of the study intersections would operate at acceptable levels of service during the weekday AM and PM, and weekend midday peak hours.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:
  - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday PM peak hour.
  - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours.
  - Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour.
  - Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM and weekend midday peak hours.
  - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.

Cumulative Conditions

- Using the HCM level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative conditions:
  - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
  - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
  - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours.
  - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- Using SimTraffic simulation level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative conditions:
  - Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekend midday peak hours.

  - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
  - Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours.
  - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage in Cumulative conditions using SimTraffic simulation:
  - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
  - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday PM and weekend midday peak hours.
  - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the weekday AM and PM, and weekend midday peak hours.
  - Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Cumulative Plus Project Conditions

- Using the HCM level of service methodologies, Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- Using the SimTraffic simulation, the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative Plus Project conditions:
  - Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Blackstone Avenue & Barstow Avenue would operate at LOS F in the weekday PM peak hour.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage using SimTraffic simulation:
  - Blackstone Avenue & Shaw Avenue for the westbound approach in the weekday PM peak hour.
  - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours.
  - Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour.
  - Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM, and weekend midday peak hours.

POTENTIAL MITIGATIONS

The following list summarizes recommendations for potential mitigations for the study area as part of the proposed project should land use changes equivalent to or exceeding the assumptions in this traffic impact analysis move forward:

- The signal timing along the Blackstone Avenue and Shaw Avenue corridors should be evaluated in more detail to improve the progression of vehicles along the corridors once potential land use development occurs.
- Monitoring and evaluating traffic patterns after future land use changes take place to align signal timings more closely with traffic patterns and optimize the available time to reduce vehicle delay.
- If queue lengths are expected to exceed available capacity in future analyses at Shaw Avenue and Effie Street, a more detailed signal timing analysis at the Effie Street and SR-41 southbound ramp terminal intersections could determine if interconnected signal phasing is feasible between the two intersections to reduce queuing and the potential for queue spillback onto the SR-41 ramps.
- For northbound and southbound queues on Blackstone Avenue the broader corridor signal progression north and south of the study area should be evaluated and considered to determine if corridor-wide signal progression may allow for reduced queuing at Blackstone Avenue & Shaw Avenue by improving overall north-south signal progression and reducing the number of vehicles in each signal cycle's platoon.

Overall, with the combined addition of the transportation and land use changes assumed as part of this study, some vehicle operational impacts, whether delay- or queuing-related, are likely to be a tradeoff with the improvements for people walking or biking that this project would entail. The project would also provide improved access to the potential development parcels and access from the current stop-controlled minor streets along Blackstone Avenue and Shaw Avenue in the study area. Fresno COG, the City of Fresno, Caltrans, and stakeholders should consider this broader multimodal context to determine the balance between the identified vehicle impacts and the broader mobility benefits provided by the proposed transportation improvements.

Additional details of the study methodology, findings, and recommendations are provided within this report.

Section 2
Introduction

INTRODUCTION

This report presents the findings of the transportation impact analysis conducted for the Blackstone-Shaw Activity Center study ("BSAC") in Fresno, California. The BSAC study evaluates the feasibility of implementing transportation improvements that are supportive of walking, biking, and taking transit in the vicinity of the intersection of Blackstone Avenue & Shaw Avenue to support transit-oriented development activity near the Fresno Area Express (FAX) Q bus rapid transit (BRT) route. The BSAC improvements include streetscape enhancements to create an environment encouraging of walking in the site vicinity as well as changes to the transportation system to support transit, walking, and biking across the two primary corridors.

The study evaluates these transportation improvements combined with proposed land use development projects that would be supportive of the Blackstone Avenue & Shaw Avenue intersection ("Blackstone-Shaw") as an activity center node along the FAX Q BRT route. The proposed land use projects would redevelop three currently vacant lots on the northwest, northeast, and southwest corners of Blackstone-Shaw as mixed-use projects with a combination of residential units as well as new retail and office space.

The purpose of the study is to assess potential impacts resulting from the implementation of the BSAC transportation improvements under existing conditions as well as Cumulative (2042) conditions with the proposed BSAC area land use developments. The project location and vicinity are shown in Figure 1.

PROJECT DESCRIPTION

This study evaluates the potential impacts of proposed transportation and land use changes within the BSAC study area. The transportation improvements evaluated in this traffic analysis include:

- converting a through motor vehicle lane on Blackstone Avenue in each direction to bus and turn (BAT) lanes;
- adding traffic signals at the following intersections:
    - Blackstone Avenue & the Yosemite Falls Driveway;
    - Blackstone Avenue & Santa Ana Avenue;
    - Shaw Avenue & Effie Street;
- installing a pedestrian "half-signal" at Shaw Avenue & Glenn Avenue; and,
- adding leading pedestrian intervals for signalized intersections of Blackstone Avenue between San Jose Avenue and Santa Ana Avenue.

In addition to the proposed transportation improvements for the BSAC study area, the study evaluates proposed land use changes at three parcels surrounding the Blackstone-Shaw intersection for the Near-Term scenario. These proposed land use changes are based on recent development interest in transforming the currently vacant parcels into a transit-supportive, mixed-use activity center around the FAX Q bus station at Blackstone-Shaw. The Fresno COG travel demand model's regional growth assumptions are then added to the proposed land use change growth for the Cumulative scenario.

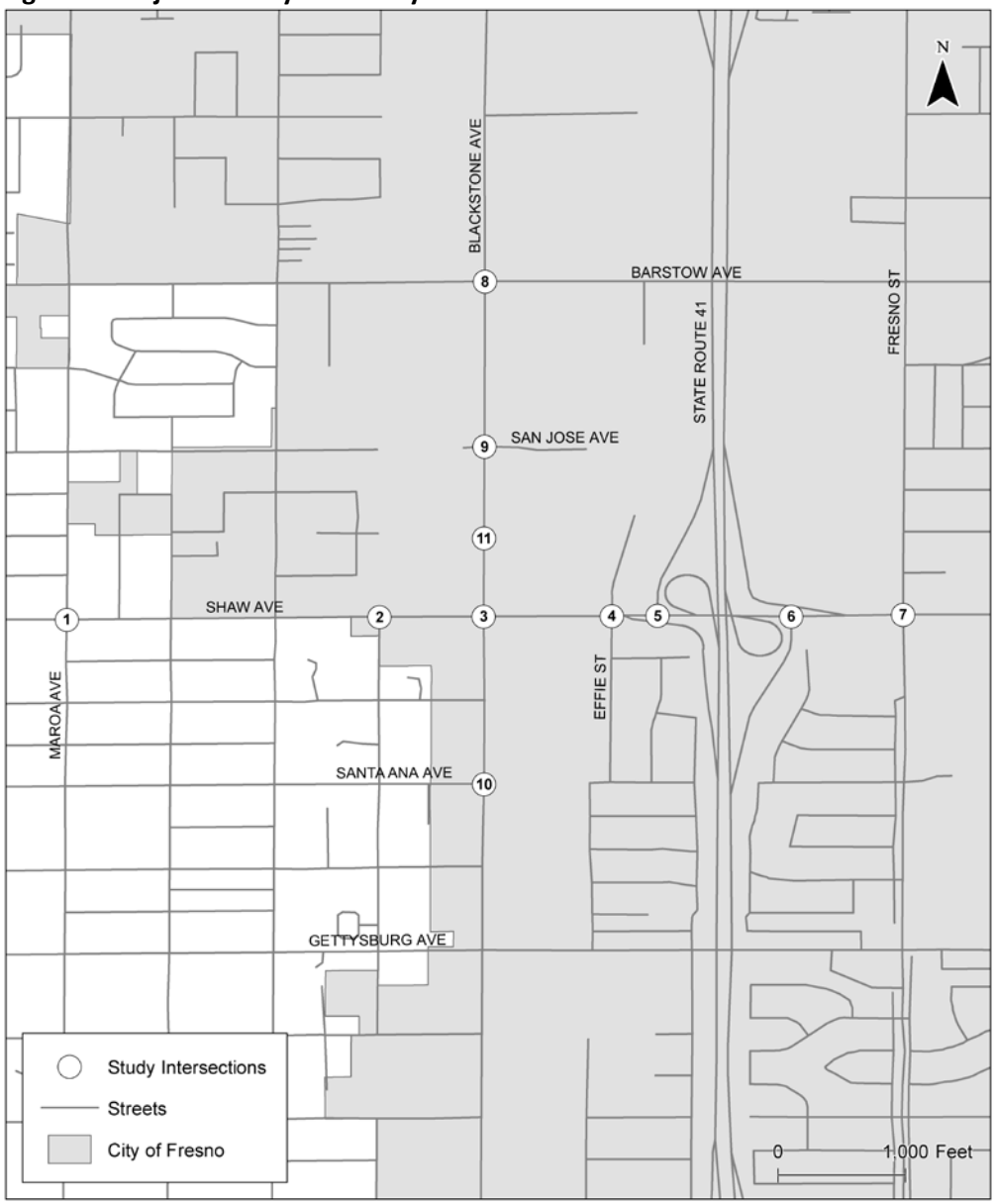
The assumed land use changes consist of a total of:

- 383 new residential units;
- 148,700 square feet of new retail development; and,
- 75,600 square feet of new office space.

SURROUNDING LAND USES

Land uses immediately surrounding the BSAC Project site include retail and office uses along both Blackstone Avenue and Shaw Avenue. Residential neighborhoods behind these commercial activities are served by local streets. Fresno State University is located approximately three miles east on Shaw Avenue.

Figure 1: Project Vicinity and Analysis Locations



Source: Kittelson & Associates, Inc., 2019.

ANALYSIS APPROACH

The analysis assessed the potential effects of the Blackstone-Shaw Activity Center in accordance with the City of Fresno *Traffic Impact Study Guidelines* (2009) and includes intersection delay, queueing, and signal warrant results for study intersections on Blackstone Avenue and Shaw Avenue. Merge/diverge analysis was performed for the State Route 41 (SR 41) on- and off-ramps on Shaw Avenue for Existing conditions.

Analysis Scenarios

Vehicle level of service (LOS) analysis was performed to assess the operations of the circulation system for the peak hours occurring during the weekday AM (7:00 – 9:00 AM), weekday PM (4:00 – 6:00 PM), and weekend midday (11:30 AM – 3:00 PM) peak periods, for the following scenarios:

- Existing
- Existing Plus Project
- Near-Term
- Near-Term Plus Project
- Cumulative (2042)
- Cumulative Plus Project

Analysis Methodologies and Level of Service Standards

"Level of service" describes the operating conditions experienced by users of a facility. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated A through F from best to worst, which cover the entire range of traffic operations that might occur. Levels of Service (LOS) A through E generally represent traffic volumes at less than roadway capacity, while LOS F represents over capacity and/or forced-flow conditions.

Intersection LOS

Intersection analyses were conducted using the operational methodology outlined in the *Highway Capacity Manual 6th Edition* (HCM)[1] as implemented by the Synchro software analysis tool. The following are the HCM methodologies for signalized and unsignalized intersections, respectively. Due to limitations in how Synchro has implemented the HCM 6th Edition, in the "plus project" conditions, intersections with adjustments to the signal timing to provide a leading pedestrian interval (LPI) needed to be evaluated using the HCM 2000 methodology. Additionally, the half-signal in the "plus project" conditions at Glenn

[1] Transportation Research Board, *Highway Capacity Manual, 6th Edition* Washington, D.C., 2016.

Avenue & Shaw Avenue was similarly modeled as a signalized intersection given limitations in how Synchro has implemented the HCM 6th Edition methodologies. This approach presents a conservative estimate of how the half-signal would operate.

Signalized intersection. The HCM procedure calculates a weighted average control delay in seconds per vehicle for all movements at a signalized intersection and assigns a level of service designation based upon the average delay per vehicle.

Unsignalized intersection. The HCM methodology calculates an average control delay in seconds per vehicle for each controlled intersection movement. A level of service designation for all-way stop-controlled intersections is based upon the weighted average control delay for all intersection legs, similar to the level of service designation for signalized intersections. For two-way stop-controlled intersections, the LOS for the worst movement is used as the LOS performance measure. Table 1 presents the relationship of average delay to level of service for both signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Signalized Intersection			Unsignalized Intersection
Average Delay Per Vehicle (Seconds)	**LOS**	**Description of Traffic Conditions**	**Average Delay Per Vehicle (Seconds)**
≤10.0	A	Free flowing. Most vehicles do not have to stop.	≤10.0
>10.0 and ≤20.0	B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.	>10.0 and ≤15.0
>20.0 and ≤35.0	C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.	>15.0 and ≤25.0
>35.0 and ≤55.0	D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.	>25.0 and ≤35.0
>55.0 and ≤80.0	E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.	>35.0 and ≤50.0
>80.0	F	Excessive delays. Intersection is jammed. Many cars have to wait through more than one red light, or more than 60 seconds. Traffic may back up into "up-stream" intersections.	>50.0

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*, Washington, D.C., 2016.

Study Locations

A set of intersections were selected for analysis in consultation with Fresno COG and City of Fresno staff. The intersection locations selected for analysis are listed below and shown in Figure 1.

Study Intersections

1. Shaw Avenue & Maroa Avenue
2. Shaw Avenue & Glenn Avenue
3. Shaw Avenue & Blackstone Avenue
4. Shaw Avenue & Effie Street
5. Shaw Avenue & SR 41 Southbound Ramps
6. Shaw Avenue & SR 41 Northbound Ramps
7. Shaw Avenue & Fresno Street
8. Barstow Avenue & Blackstone Avenue
9. San Jose Avenue & Blackstone Avenue
10. Santa Ana Avenue & Blackstone Avenue
11. Blackstone Avenue & Yosemite Falls Driveway

Section 3
Existing Conditions

EXISTING CONDITIONS

A description of the existing roadway, transit, bicycle and pedestrian components of the transportation system within the study area follows. A field inventory of the BSAC study area was conducted in October 2018. At that time, information was collected regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

ROADWAY NETWORK

The existing roadway network is composed of a freeway and arterial and local roadways.

Blackstone Avenue is a six-lane north-south roadway with a raised median in the project vicinity and a posted speed limit of 40 miles per hour. The facility extends from Nees Avenue near the State Route 41 interchange to Stanislaus Street in Downtown Fresno. It is classified as an arterial in the Fresno General Plan Land Use and Circulation Map (June 13, 2019). On-street parking is permitted within the study area, though it is not utilized. Sidewalks are provided on sides of the street within the study area. There is no existing or planned bicycle facility along Blackstone Avenue.

Shaw Avenue is a six-lane east-west roadway with a raised median in the project vicinity and a posted speed limit of 40 miles per hour. The facility extends from Lake Avenue in Fresno County west of the City of Fresno to Zediker Avenue in Fresno County east of the City. It is classified as an arterial in the city's General Plan Land Use and Circulation Map (June 13, 2019). On-street parking is not permitted within the study area. Sidewalks are provided on both sides of the street within the study area. There is no existing or planned bicycle facility along Shaw Avenue.

State Route 41 is a six-lane freeway east of the Project site with a posted speed limit of 65 miles per hour. The north-south route connects Fresno with nearby cities including Oakhurst to the north, and Lemoore to the south. The project site is served by the interchange at Shaw Avenue. The average daily traffic on SR 41 at Shaw Avenue is between approximately 128,000 and 142,000 vehicles per day (vpd)[2]. Bicyclists and pedestrians are prohibited on this facility.

Daily Volumes and Speeds

Segment volumes based on 24-hour counts and speed surveys were obtained from the City of Fresno. The most recent daily volumes and speed surveys for Blackstone Avenue and Shaw Avenue within the study area are shown in Table 2.

[2] 2017 Traffic Volumes, California Department of Transportation (Caltrans)
https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes/2017

Table 2: Existing BSAC Daily Traffic Segment Volumes and Speed Surveys

Segment	Direction	Volume	Year	85th Percentile Speed (mph)	Year	Speed Limit (mph)
Blackstone Ave North of Shaw Ave	NB	14,750	2015	39.7	2017	40
Blackstone Ave North of Shaw Ave	SB	15,395	2015			
Shaw Avenue East of Blackstone Ave	WB	25,371	2014	41.8	2015	40
Shaw Avenue East of Blackstone Ave	EB	23,696	2014			

Source: City of Fresno, 2014-2017.

Transit Service

The Fresno Area Express (FAX) provides transit service in the City of Fresno. FAX operates the Route 1/Q bus rapid transit (BRT) route along Blackstone Avenue. The FAX Q BRT route operates on 10-15 minute headways. The FAX Q route has stops along Blackstone Avenue at Barstow Avenue and Shaw Avenue in the study area. FAX Route 9 provides local bus service along Shaw Avenue with 15 minute headways. FAX Route 9 has bus stops at Maroa Avenue, Del Mar Avenue, Blackstone Avenue, and Fresno Street along Shaw Avenue in the study area.

Pedestrian and Bicycle Facilities

Bicycle and pedestrian facilities are important components of the transportation network in the study area. They not only offer non-motorized opportunities for both commute and recreational trips, but also provide connections to access the region's transit network. Bicycle routes and bicycle lanes are typical examples of bicycle transportation facilities in the study area. Bicycle facilities are defined by the following classes[3]:

- **Class I** – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- **Class II** – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.
- **Class III** – Provides a right-of-way designated by signs or permanent markings and shared with motorists.
- **Class IV** – Provides a separated on-street right-of-way designated for the exclusive use of bicycles.

[3] As detailed in Chapter 1000 of the California Department of Transportation's (Caltrans) Highway Design Manual.

The following bikeways are currently present within the study area:

- **Class I Bike Paths**
  - None
- **Class II Bike Lanes**
  - Barstow Avenue from Maroa Avenue to west of Blackstone Avenue
  - Barstow Avenue from Blackstone Avenue to Fresno Street
- **Class III Bike Routes**
  - None
- **Class IV Separated Bike Lanes**
  - None

There are no designated bicycle facilities on either Blackstone Avenue or Shaw Avenue in the project area.

Existing Pedestrian Facilities

There are existing pedestrian facilities on Blackstone Avenue and Shaw Avenue within the study area. Five-foot sidewalks are provided along the length of both corridors within the study area. Controlled pedestrian crossings are provided at the signalized intersections along the corridor. There are no marked crosswalks at uncontrolled or midblock locations along the two corridors in the study area.

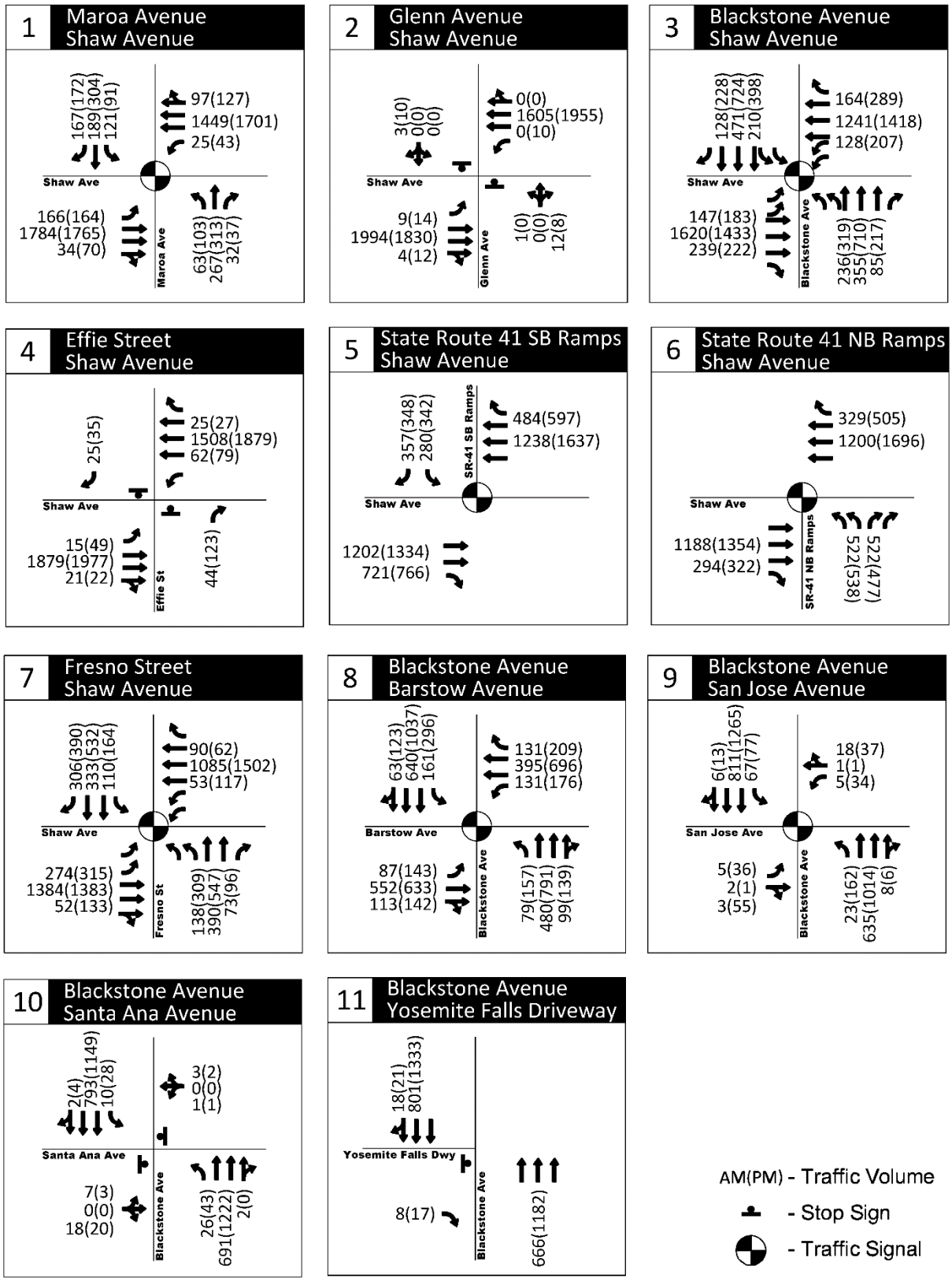
EXISTING TRAFFIC CONDITIONS

The existing operations of the study intersections were assessed for the weekday AM and PM and weekend midday peak hours. These peak hours represent the hours with the highest vehicle volumes during the study periods, which are the weekday morning peak period (7:00 AM to 9:00 AM), afternoon peak period (4:00 PM to 6:00 PM), and weekend midday peak period (11:30 AM – 3:00 PM). Weekday intersection traffic counts for vehicles, pedestrians, and bicycles were collected on Thursday, October 18, 2018 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Weekend midday counts were collected from 11:30 AM to 3:00 PM. on Saturday, October 20, 2018.[4] The existing intersection lane geometries and peak hour traffic volumes are shown in Figure 2 and Figure 3.

Appendix 1 provides the intersection turn movement counts collected at each intersection in October 2018.

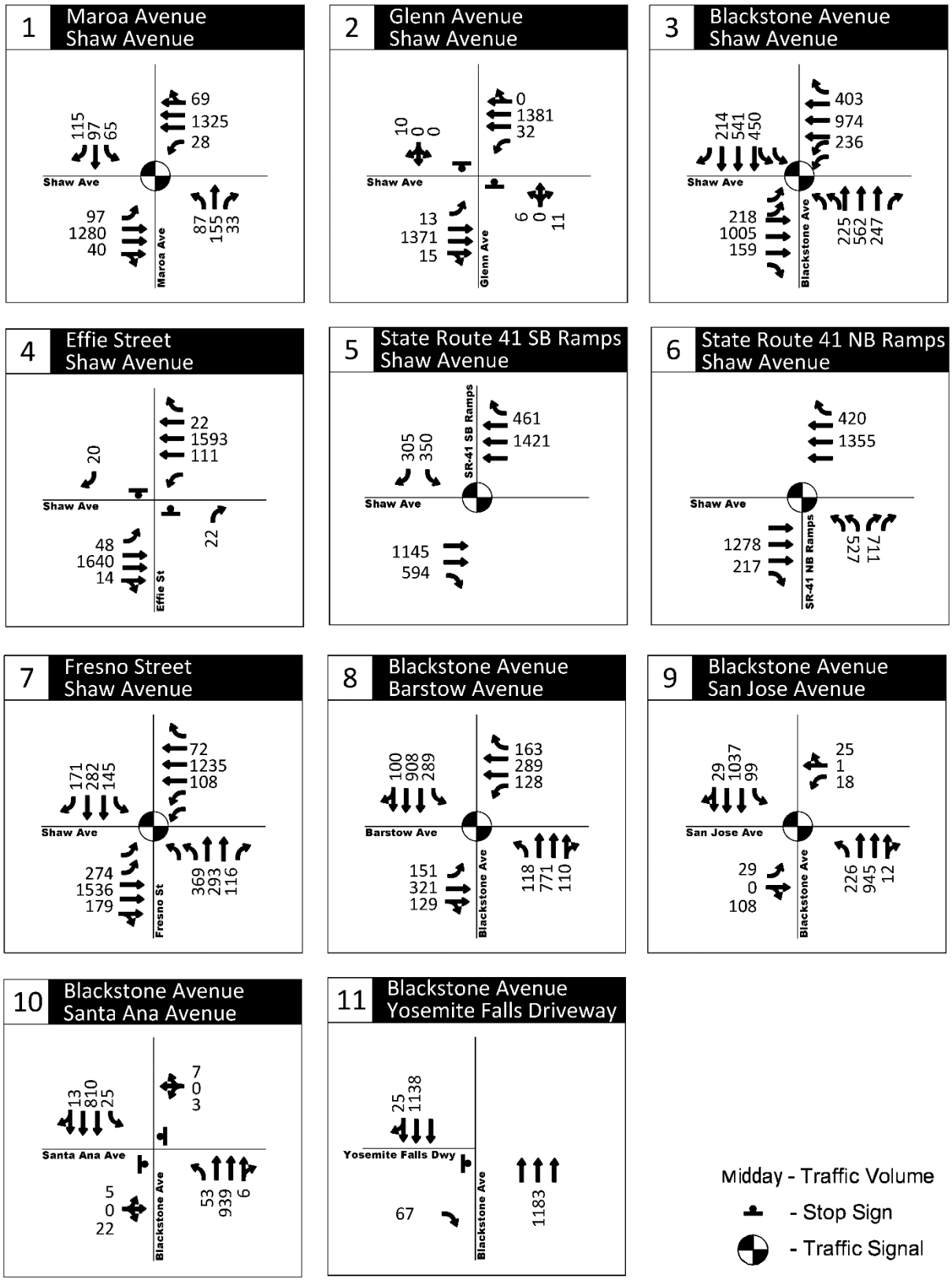
[4] All traffic counts occurred during typical weekdays, while local schools and colleges were in session, and on a non-holiday weekend.

Figure 2: Intersection Volumes – Existing Conditions – Weekday Peak Hours



Source: Kittelson & Associates, Inc., 2019.

Figure 3: Intersection Volumes – Existing Conditions – Weekend Peak Hour



Source: Kittelson & Associates, Inc., 2019.

Existing Intersection Operations

Intersection turning movement volumes, lane configurations, and traffic controls were used to calculate the levels of service at the study intersections for the AM, PM, and midday peak hours. Table 3 shows a list of study intersections, the applicable LOS standard, and the results for Existing conditions. As shown, all intersections operated at or better than the LOS standard set forth by the City during the AM, PM, and Saturday Midday peak hours, except the Glenn Avenue & Shaw Avenue, and Effie Street & Shaw Avenue intersections. The following movement at Glenn Avenue & Shaw Avenue operates at LOS F:

- northbound turns from the stop sign at Glenn Avenue in the midday peak hour.

The following movements at Effie Street & Shaw Avenue operate at LOS F:

- northbound right turns from the stop sign at Effie Street in the PM peak hour;
- eastbound left turns from Shaw Avenue in the PM peak hour; and,
- westbound left turns from Shaw Avenue in the AM, PM, and midday peak hours.

Table 3: Intersection Level of Service – Existing Conditions, Highway Capacity Manual

#	Intersection	Control	Existing AM		Existing PM		Existing Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	29.7	C	30.8	C	19.2	B
2	N Glenn Ave & W Shaw Ave	TWSC	46.4	E	42.5	E	**54.4**	**F**
3	N Blackstone Ave & Shaw Ave	Signalized	31.5	C	42.1	D	40.9	D
4	N Effie St & E Shaw Ave	TWSC	**81.3**	**F**	**>100.0**	**F**	**81.3**	**F**
5	E Shaw Ave & SR-41 SB Ramps	Signalized	17.8	B	16.8	B	16.6	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	24.6	C	13.5	B	18.9	B
7	N Fresno St & E Shaw Ave	Signalized	46.0	D	46.7	D	40.6	D
8	N Blackstone Ave & Barstow Ave	Signalized	47.7	D	57.3	E	46.6	D
9	N Blackstone Ave & San Jose Ave	Signalized	8.4	A	12.6	B	21.1	C
10	N Blackstone Ave & E Santa Ana Ave	TWSC	19.8	C	38.1	E	25.7	D
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	12.9	B	17.9	C	17.2	C

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

In addition to the HCM analysis in Synchro 10, an analysis using SimTraffic simulation was performed to evaluate operations of Existing conditions in the study area to better account for intersection spacing and signal coordination on the two corridors. The SimTraffic simulation was run through ten iterations (for a one-hour period) to obtain average simulated results and was calibrated to reflect observed conditions at the site. Table 4 presents the results of the SimTraffic intersection analysis. As shown, using the SimTraffic simulation, all of the study intersections operate at acceptable levels of service during the weekday AM and PM, and weekend midday peak hours except Blackstone Avenue & Santa Ana Avenue in the PM peak hour. The eastbound left from Santa Ana Avenue operates at LOS F in the PM peak hour. For the intersection of Effie Street and Shaw Avenue, the simulation indicates that vehicles are able to find breaks in the high volumes of conflicting traffic to make turn movements without excessive delays.

Table 4: Intersection Level of Service – Existing Conditions, SimTraffic Simulation

#	Intersection	Control	Existing AM		Existing PM		Existing Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	27.5	C	39.8	D	20.3	C
2	N Glenn Ave & W Shaw Ave	TWSC	18.1	C	28.0	D	31.6	D
3	N Blackstone Ave & Shaw Ave	Signalized	37.6	D	48.0	D	42.0	D
4	N Effie St & E Shaw Ave	TWSC	22.4	C	34.9	D	24.5	C
5	E Shaw Ave & SR-41 SB Ramps	Signalized	11.6	B	13.2	B	16.0	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	20.6	C	21.6	C	22.0	C
7	N Fresno St & E Shaw Ave	Signalized	37.0	D	70.0	E	48.0	D
8	N Blackstone Ave & Barstow Ave	Signalized	35.5	D	50.0	D	43.9	D
9	N Blackstone Ave & San Jose Ave	Signalized	7.3	A	14.1	B	16.4	B
10	N Blackstone Ave & E Santa Ana Ave	TWSC	28.0	D	**>100.0**	**F**	42.9	E
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	5.4	A	11.6	B	10.1	B

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

Appendix 2 contains the Existing conditions level of service worksheets.

FREEWAY RAMP JUNCTION LEVEL OF SERVICE

The Highway Capacity Software (HCS) was utilized to estimate LOS for the merge/diverge at on-ramps and off-ramps located on SR 41 at Shaw Avenue. The LOS analysis was conducted using the Highway Capacity Manual methodologies using the intersection volumes and freeway volumes gathered from the Caltrans' Performance Measurement System (PeMS) database. The LOS measured in the analysis is for the merge/diverge section of the roadway segment, and not for the ramp itself. The results of the Existing conditions freeway analyses in the AM and PM peak hours are shown in Table 5.

Table 5: SR 41 Freeway Ramp Junction Level of Service Results

Direction	Segment	AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
NB	Off-Ramp	37.9	E	37.1	E
	WB Shaw Avenue Loop On-Ramp	31.0	E	30.7	D
	EB Shaw Diagonal On-Ramp	32.3	E	33.3	D
SB	Off-Ramp	37.0	E	33.3	D
	WB Diagonal On-Ramp	31.7	D	30.9	D
	EB Shaw Avenue Loop On-Ramp	35.4	E	34.4	D

Source: Kittelson & Associates, Inc. 2019.

Overall, the merge/diverge sections of the northbound and southbound ramps operate at LOS D and E in the AM and PM peak hours. During the AM peak hour, on-ramps and off-ramps operate at LOS E with the exception of the eastbound Shaw Avenue loop on-ramp which operates at LOS D. During the PM peak hour, northbound and southbound ramps operate at LOS D with the exception of the northbound off-ramp which operates at LOS E.

Appendix 3 contains the outputs of the HCS freeway analysis for Existing conditions.

Section 4
Transportation Impact Analysis

TRAFFIC ANALYSIS

The traffic analysis assesses how the study area's transportation system would operate with the implementation of the proposed BSAC project including transportation and land use changes. The potential impacts were identified by applying a set of significance criteria set forth by the City of Fresno.

SIGNIFICANCE CRITERIA

The City of Fresno *Traffic Impact Study Report Guidelines* (TIS Guidelines) (2009) defines a significant impact for study intersections if the changes in traffic operations caused by the proposed project results in any one of the following:

- triggers an intersection operating at an acceptable LOS to operate at an unacceptable LOS;
- triggers an intersection operating at an unacceptable LOS to operate at LOS F; or,
- increases the average delay for an intersection that is already operating at an unacceptable LOS.

The City of Fresno General Plan (2014) states that the BSAC study area is located within Transportation Impact Zone (TIZ) II. The General Plan states that roadways in TIZ II may operate acceptably with LOS E.

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

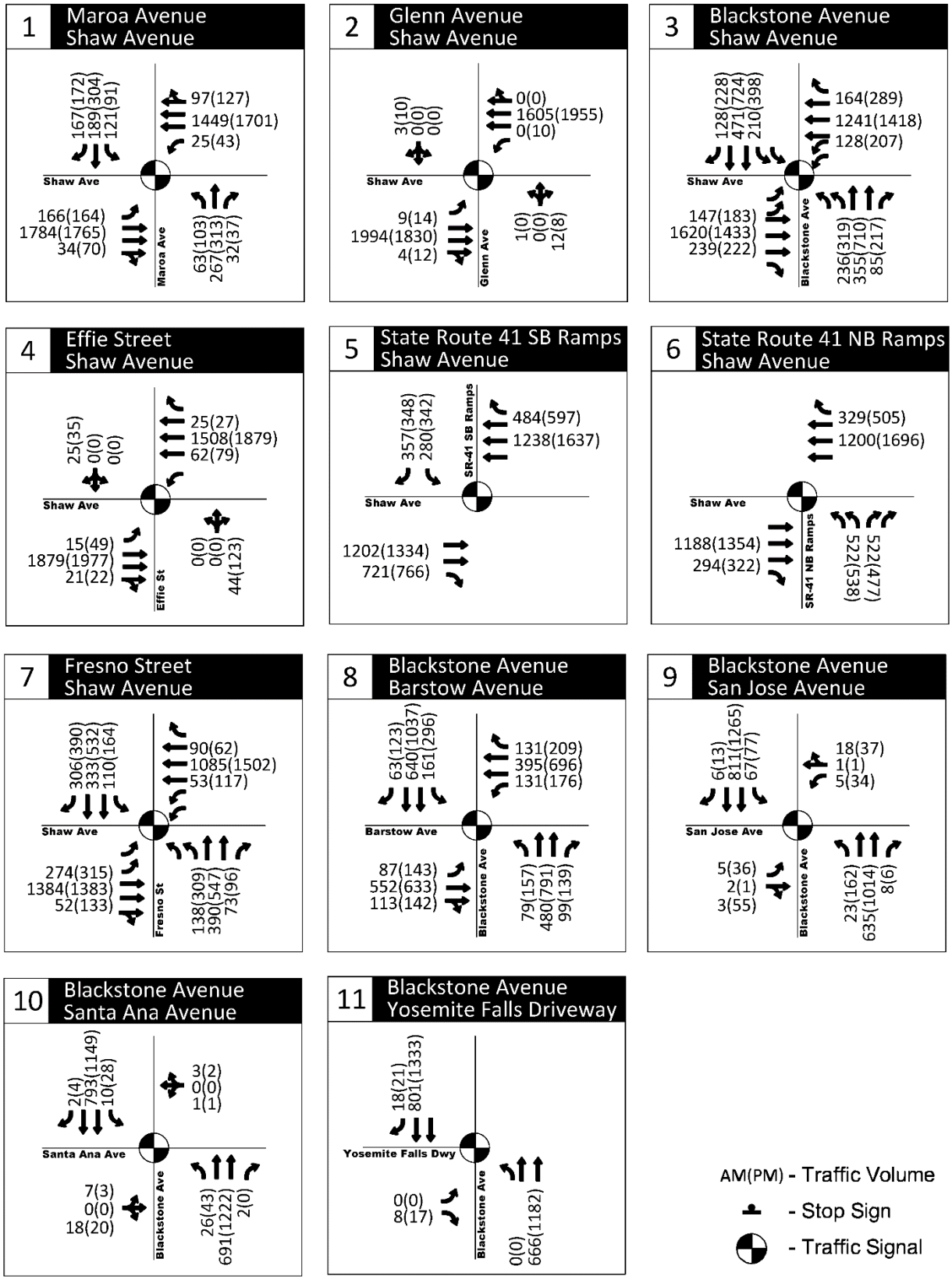
The Existing Plus Project traffic conditions were evaluated to determine the potential traffic impacts of the proposed transportation improvements if they were built and operating and added to existing traffic conditions. Existing traffic volumes for the weekday AM and PM peak hours (Figure 2) and weekend midday peak hours (Figure 3) were used for the analysis to arrive at the total traffic volumes, traffic control, and lane configurations shown in Figure 4 and Figure 5, respectively. The Existing Plus Project conditions show a change in lane use and traffic control, not an overall change in volumes compared to Existing conditions. Signal phasing and timing for the new signalized intersections was patterned off the nearest existing signalized intersections. Signal timings were then optimized and the signals were coordinated within the study area.

Existing Plus Project Intersection Levels of Service

The weekday AM and PM and weekend midday peak hour turning-movement volumes shown in Figure 4 and Figure 5 were used to conduct an operational analysis at each study intersection to determine Existing Plus Project traffic levels of service. The results of the Existing Plus Project analysis, shown in Table 6 and Table 7, indicate that all of the study intersections and site access points are forecast to operate at acceptable levels of service during the weekday AM and PM peak hours. As shown in Table 6, compared to Existing conditions without the BSAC transportation improvements, the project would improve operations at the intersection of Effie Street and Shaw Avenue from LOS F to LOS B or better due to the planned installation of a traffic signal.

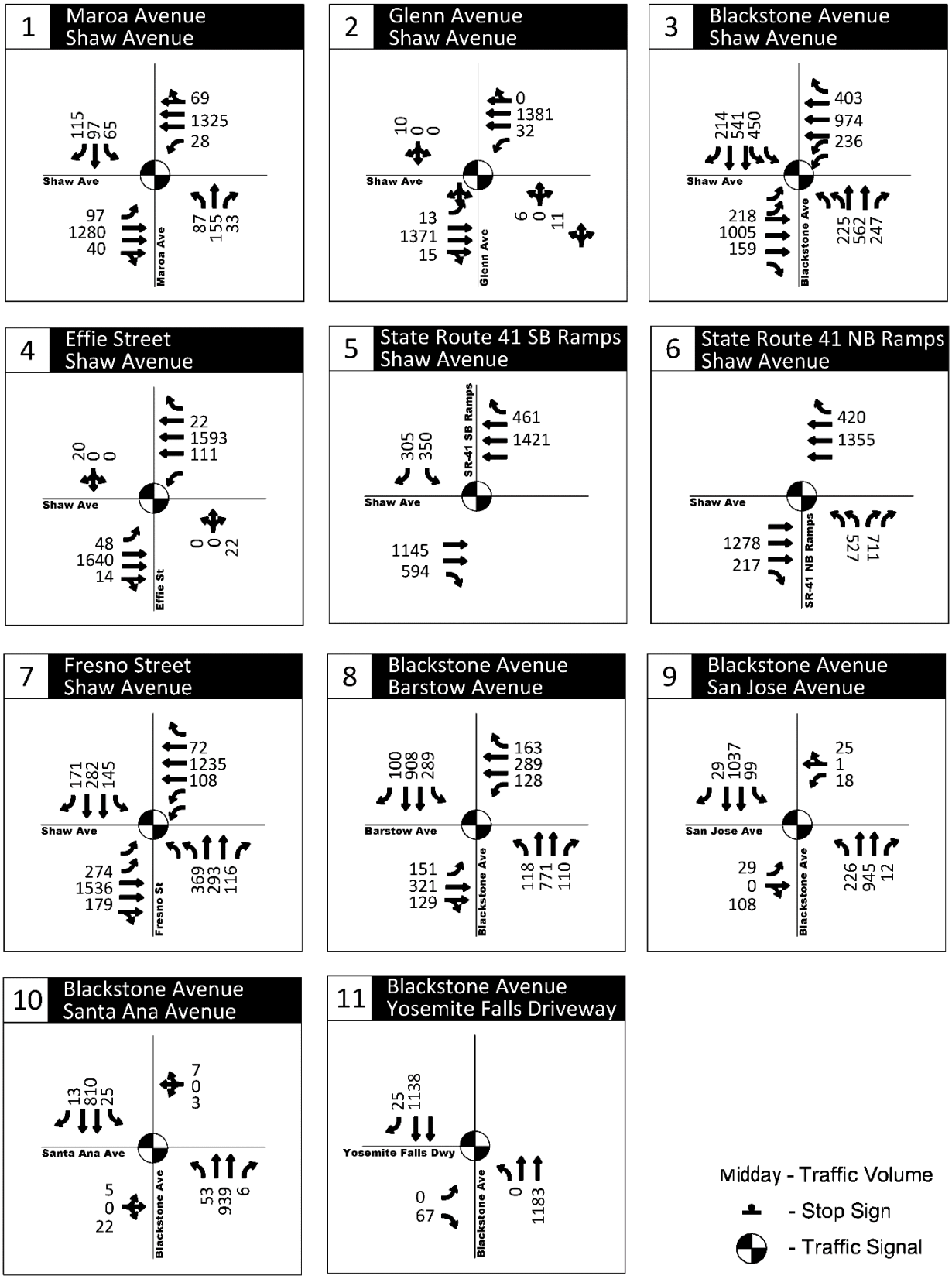
Appendix 4 contains the Existing Plus Project level of service worksheets.

Figure 4: Intersection Volumes – Existing Plus Project Conditions – Weekday Peak Hours



Source: Kittelson & Associates, Inc.

Figure 5: Intersection Volumes – Existing Plus Project Conditions – Weekend Peak Hour



Source: Kittelson & Associates, Inc.

Table 6: Intersection Level of Service – Existing Plus Project Conditions, Highway Capacity Manual

#	Intersection	Control	Existing + Project AM		Existing + Project PM		Existing + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	39.3	D	21.8	C	16.4	B
2	N Glenn Ave & W Shaw Ave	Signalized	2.0	A	1.3	A	1.2	A
3	N Blackstone Ave & Shaw Ave	Signalized	39.4	D	57.0	E	42.0	D
4	N Effie St & E Shaw Ave	Signalized	5.7	A	11.0	B	10.8	B
5	E Shaw Ave & SR-41 SB Ramps	Signalized	17.6	B	9.8	A	10.2	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	15.9	B	9.3	A	10.5	B
7	N Fresno St & E Shaw Ave	Signalized	30.4	C	46.7	D	44.0	D
8	N Blackstone Ave & Barstow Ave	Signalized	47.3	D	60.8	E	50.8	D
9	N Blackstone Ave & San Jose Ave	Signalized	8.4	A	16.3	B	20.6	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	9.5	A	11.0	B	9.3	A
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	3.7	A	3.3	A	4.3	A

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

In addition to the HCM analysis in Synchro 10, an analysis using SimTraffic simulation was performed to evaluate operations of Existing Plus Project conditions in the study area to better account for intersection spacing and signal coordination on the two corridors. Table 7 presents the results of the SimTraffic intersection analysis. As shown, using the SimTraffic simulation, all of the study intersections would operate at acceptable levels of service during the weekday AM and PM, and weekend midday peak hours with the exception of Fresno St & Shaw Avenue in the PM peak hour.

Table 7: Intersection Level of Service – Existing Plus Project Conditions, SimTraffic Simulation

#	Intersection	Control	Existing + Project AM		Existing + Project PM		Existing + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	24.9	C	41.0	D	19.1	B
2	N Glenn Ave & W Shaw Ave	Signalized	4.4	A	7.5	A	5.8	A
3	N Blackstone Ave & Shaw Ave	Signalized	33.8	C	46.5	D	40.1	D
4	N Effie St & E Shaw Ave	Signalized	9.7	A	14.2	B	13.9	B
5	E Shaw Ave & SR-41 SB Ramps	Signalized	12.0	B	12.5	B	14.1	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	14.3	B	15.0	B	17.1	B
7	N Fresno St & E Shaw Ave	Signalized	32.4	C	**81.3**	**F**	45.5	D
8	N Blackstone Ave & Barstow Ave	Signalized	32.6	C	62.8	E	38.9	D
9	N Blackstone Ave & San Jose Ave	Signalized	9.8	A	18.5	B	20.5	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	7.2	A	12.7	B	9.7	A
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	4.2	A	4.8	A	6.1	A

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

NEAR-TERM AND NEAR-TERM PLUS PROJECT TRAFFIC CONDITIONS

The Near-Term and Near-Term Plus Project analysis forecasts how the study area's transportation system would operate with growth and changes of the surrounding community based on specific near-term proposed land use changes around the Blackstone Avenue & Shaw Avenue intersection.

BSAC Area Development Travel Demand

The near-term growth considers potential land use development on three vacant parcels within the BSAC study area. The land use changes for the scenario are comprised of residential units, new office space, and new retail space. Specifically, the scenario was modeled with the addition of the following into the area surrounding the Blackstone Avenue & Shaw Avenue intersection:

- 383 new residential units;
- 148,700 square feet of new retail development; and,
- 75,600 square feet of new office space.

Trip Generation

The projected weekday daily, AM, and PM, and weekend midday peak-hour vehicle trip ends for the proposed near-term development are based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition – a standard industry reference used to determine vehicle trip generation. Table 8 summarizes the anticipated number of trips that would be generated by the potential land use changes. No trip reductions were assumed as part of the analysis to conservatively present the potential land use changes in relation to proposed transportation improvements.

Table 8: Project Trip Generation

Land Use	Amount	Units	ITE	Daily	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total	In	Out	Total
Development Zone 1: East of Blackstone Avenue													
Retail	59.3	KSF	820	2,238	35	21	56	139	128	267	108	118	226
Residential	208	Units	221	1,132	20	55	75	45	47	92	56	36	92
Total for Zone 1:				**3,370**	**55**	**76**	**131**	**184**	**175**	**359**	**164**	**154**	**318**
Development Zone 2: West of Blackstone Avenue													
Retail	89.4	KSF	820	3,376	53	32	85	210	193	403	164	177	341
Office	75.6	KSF	710	737	76	12	88	22	19	41	14	73	87
Residential	175	Units	221	952	16	47	63	38	39	77	47	30	77
Total for Zone 2:				**5,065**	**145**	**91**	**236**	**270**	**251**	**521**	**225**	**280**	**505**
Both Zones													
Retail	148.7	KSF	820	5,614	88	53	141	349	321	670	272	295	567
Office	75.6	KSF	710	737	76	12	88	22	19	41	14	73	87
Residential	383	Units	221	2,084	36	102	138	83	86	169	103	66	169
Total Trips:				**8,435**	**200**	**167**	**367**	**454**	**426**	**880**	**389**	**434**	**823**

Source: Kittelson & Associates, Inc., 2019; ITE *Trip Generation Manual* 10th Edition
KSF: Thousand Square Feet

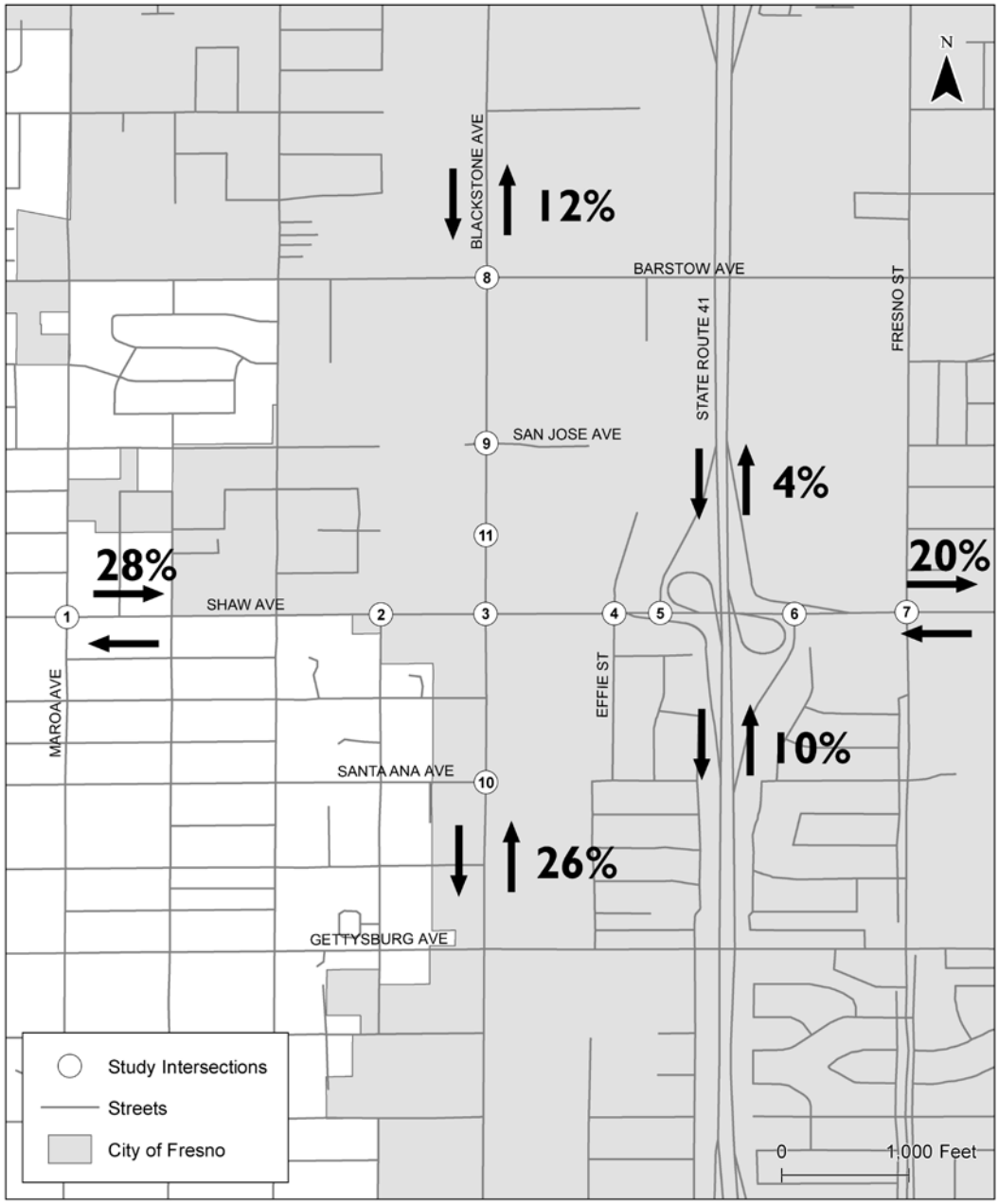
As such, 367 trips were used for the AM peak hour analysis, 823 trips were used for the PM peak hour analysis, and 880 trips were used for the weekend midday peak hour analysis.

Trip Distribution and Assignment

The Fresno COG regional travel demand model was used to assist in determining the trip distribution for the proposed land uses by running a select zone analysis for the two transportation analysis zones containing the development sites. The same distribution pattern was assumed for the AM, PM, and weekend midday peak hours given minimal variation in the travel patterns in the AM and PM select zone analyses. The final trip distribution and assignment assumptions were based on the select zone analysis and engineering judgement.

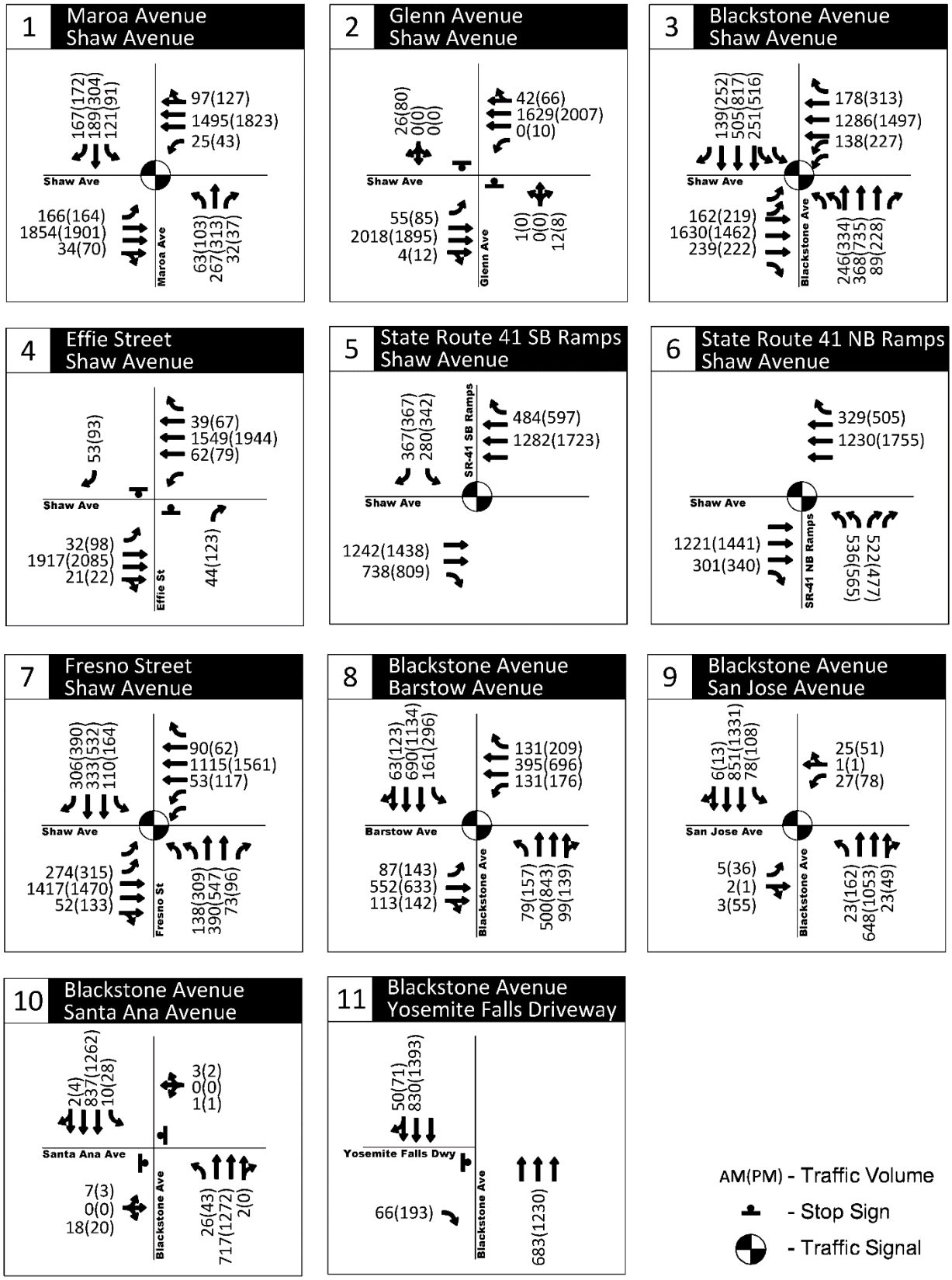
Figure 6 shows the resulting trip distribution and traffic assignment used for this study. The distribution pattern shown in Figure 6, as well as the number of trips generated by the land use changes assumed for the study combine to determine the development trips that are added to the study intersections for the near-term scenarios. The Near-Term traffic conditions are the sum of the trips generated by the potential land use changes and the existing volumes for each movement. Figure 7 and Figure 8 show the Near-Term conditions lane configurations, traffic control, and traffic volumes projected during the weekday AM and PM, and weekend midday peak hours, respectively. Figure 9 and Figure 10 show the Near-Term Plus Project conditions lane configurations, traffic control, and traffic volumes projected during the weekday AM and PM, and weekend midday peak hours. Note that the Near-Term Plus Project conditions show a change in lane use and traffic control, not an overall change in volumes compared to the Near-Term conditions.

Figure 6: BSAC Area Development Trip Distribution



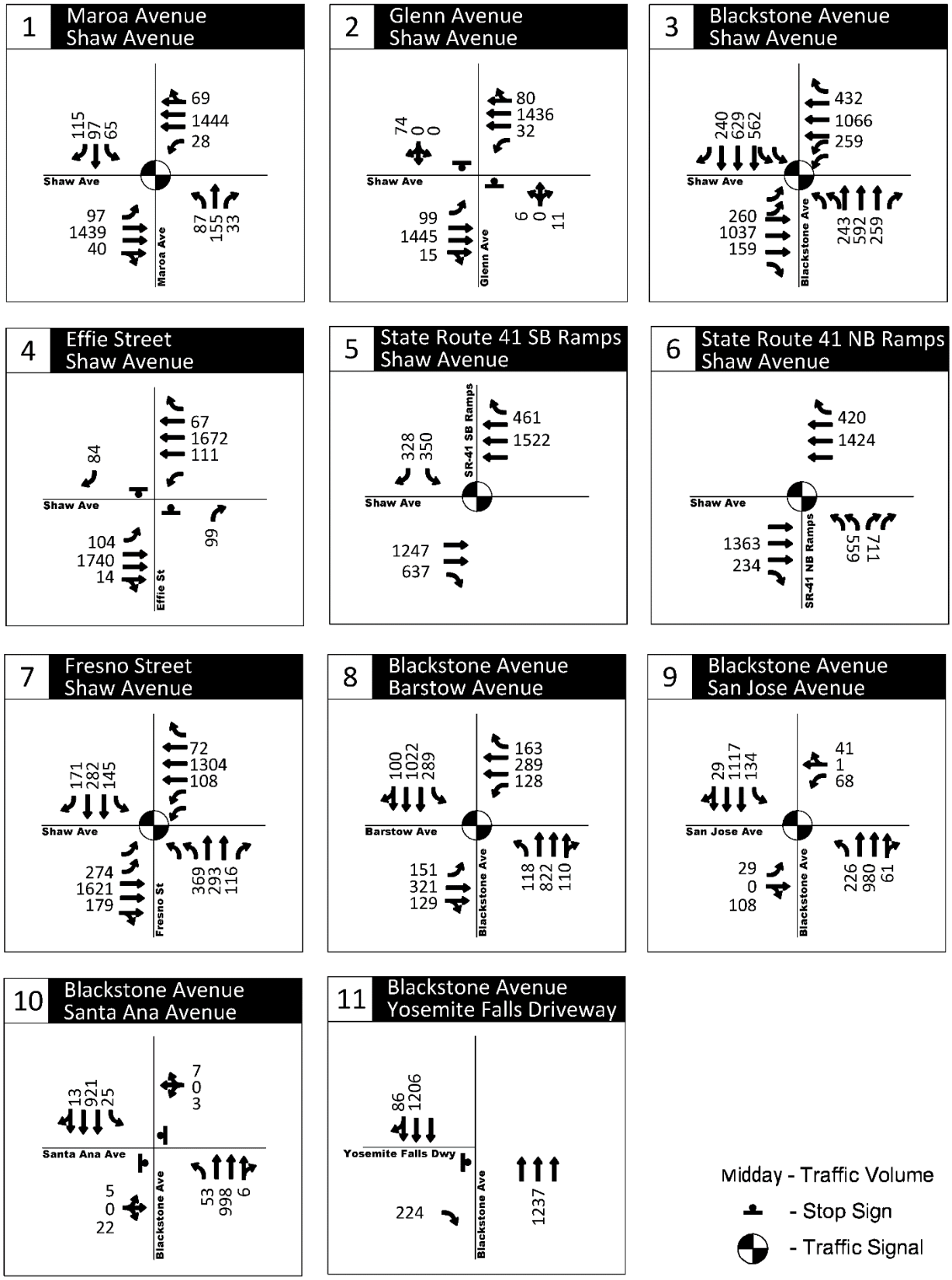
Source: Kittelson & Associates, 2019.

Figure 7: Intersection Volumes – Near-Term Conditions – Weekday Peak Hours



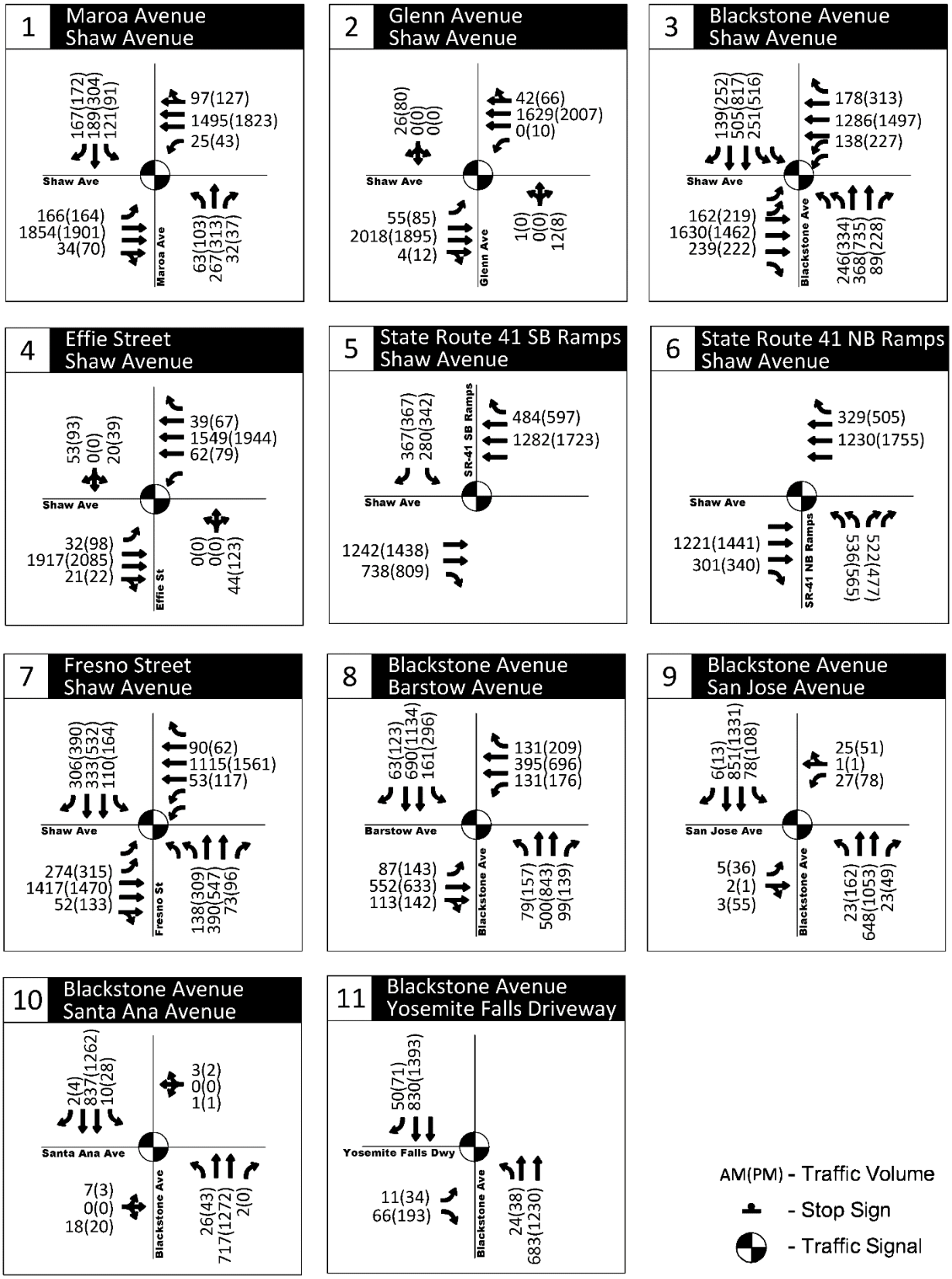
Source: Kittelson & Associates, Inc.

Figure 8: Intersection Volumes – Near-Term Conditions – Weekend Peak Hour



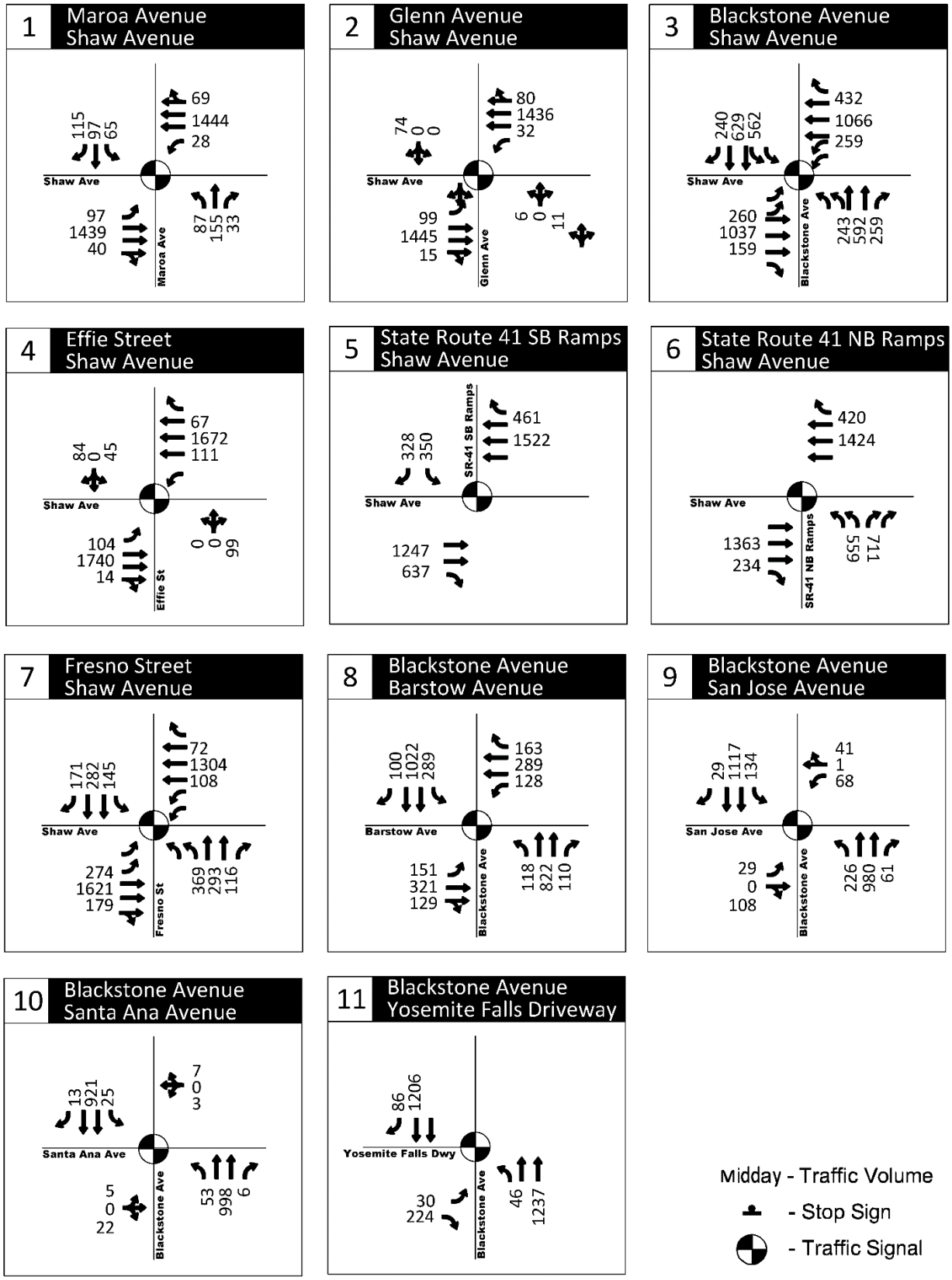
Source: Kittelson & Associates, Inc.

Figure 9: Intersection Volumes – Near-Term Plus Project Conditions – Weekday Peak Hours



Source: Kittelson & Associates, Inc.

Figure 10: Intersection Volumes – Near-Term Plus Project Conditions – Weekend Peak Hour



Source: Kittelson & Associates, Inc.

Near-Term Intersection Operations

The weekday AM and PM, and weekend midday peak hour turning-movement volumes, traffic control, and lane configurations shown in Figure 7 though Figure 10 were used to conduct an operational analysis at each study intersection to determine the Near-Term and Near-Term Plus Project levels of service. Table 9 and Table 10 present the Near-Term and Near-Term Plus Project intersection levels of service, respectively, for the weekday AM and PM, and weekend midday peak hours. Existing signal timing was assumed for the Near-Term conditions operations analysis and signal timings were optimized and coordinated in the Near-Term Plus Project conditions.

As shown in Table 9, with the specific development in the BSAC area, but without the proposed transportation improvements, the following intersections are forecast to operate below the City's LOS E significance threshold:

- Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - southbound from the stop sign at Glenn Avenue in the PM peak hour;
    - eastbound lefts from Shaw Avenue in the PM Peak hour; and,
    - northbound from the stop sign at Glenn Avenue Street in the AM and midday peak hours.
- Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - Southbound right turns Effie Street in the AM, PM and midday peak hours;
    - Northbound right turns from Effie Street in the PM peak hour;
    - Westbound left turns from Shaw Avenue in the AM, PM and midday peak hours; and,
    - Eastbound left turns from Shaw Avenue in the PM and midday peak hours.
- Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours. The following movement operates at LOS F:
    - Eastbound right turns from the Yosemite Falls driveway in the PM and midday peak hours.

Table 9: Intersection Level of Service – Near-Term Conditions, Highway Capacity Manual

#	Intersection	Control	Near-Term AM		Near-Term PM		Near-Term Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	30.1	C	31.8	C	19.0	B
2	N Glenn Ave & W Shaw Ave	TWSC	**72.7**	**F**	**>100.0**	**F**	**>100.0**	**F**
3	N Blackstone Ave & Shaw Ave	Signalized	33.1	C	50.8	D	46.8	D
4	N Effie St & E Shaw Ave	TWSC	**>100.0**	**F**	**>100.0**	**F**	**>100.0**	**F**
5	E Shaw Ave & SR-41 SB Ramps	Signalized	18.1	B	17.4	B	17.1	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	24.6	C	13.4	B	18.9	B
7	N Fresno St & E Shaw Ave	Signalized	46.2	D	47.7	D	41.0	D
8	N Blackstone Ave & Barstow Ave	Signalized	48.0	D	57.5	E	46.1	D
9	N Blackstone Ave & San Jose Ave	Signalized	9.9	A	14.6	B	23.5	C
10	N Blackstone Ave & E Santa Ana Ave	TWSC	17.5	C	43.4	E	29.6	D
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	17.8	C	**>100.0**	**F**	**>100.0**	**F**

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = Two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

As shown in Table 10, in the Near-Term Plus Project scenario, all intersections are projected to have acceptable operations with the proposed transportation improvements.

Table 10: Intersection Level of Service – Near-Term Plus Project Conditions, Highway Capacity Manual

#	Intersection	Control	Near-Term + Project AM		Near-Term + Project PM		Near-Term + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	36.0	D	23.3	C	17.9	B
2	N Glenn Ave & W Shaw Ave	Signalized	2.8	A	5.3	A	3.6	A
3	N Blackstone Ave & Shaw Ave	Signalized	46.4	D	75.0	E	45.3	D
4	N Effie St & E Shaw Ave	Signalized	6.0	A	13.6	B	15.8	B
5	E Shaw Ave & SR-41 SB Ramps	Signalized	11.5	B	10.5	B	13.1	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	16.1	B	11.0	B	14.0	B
7	N Fresno St & E Shaw Ave	Signalized	30.6	C	44.6	D	33.6	C
8	N Blackstone Ave & Barstow Ave	Signalized	47.6	D	62.2	E	52.3	D
9	N Blackstone Ave & San Jose Ave	Signalized	8.9	A	16.2	B	21.8	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	8.8	A	10.1	B	11.1	B
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	7.8	A	11.4	B	11.7	B

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

In addition to the HCM analysis in Synchro 10, an analysis using SimTraffic simulation was performed to evaluate operations of Near-Term and Near-Term Plus Project conditions in the study area to better account for intersection spacing and signal coordination on the two corridors. Table 11 and Table 12 present the results of the SimTraffic intersection analysis for the Near-Term and Near-Term Plus Project conditions, respectively. As shown in Table 11, using SimTraffic simulation, the following intersections are forecast to operate below the City's LOS E significance threshold in Near-Term conditions without the proposed transportation improvements:

- Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and weekend midday peak hours. The following movement operates at LOS F:
    - Northbound left turns from Glenn Avenue.
- Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - Southbound right turns from Effie Street in the AM, PM, and midday peak hours; and,
    - Northbound right turns from Effie Street in the PM peak hour;
- Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday PM peak hour. The following movements operate at LOS F:
    - Eastbound left turns from Santa Ana Avenue in the weekday PM peak hour.
- Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours. The following movements operate at LOS F:
    - Eastbound right turns from the Yosemite Falls driveway in the PM and midday peak hours.

Table 11: Intersection Level of Service –Near-Term Conditions, SimTraffic Simulation

#	Intersection	Control	Near-Term AM		Near-Term PM		Near-Term Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	27.5	C	43.0	D	20.3	C
2	N Glenn Ave & W Shaw Ave	TWSC	**55.3**	**F**	30.4	D	**72.7**	**F**
3	N Blackstone Ave & Shaw Ave	Signalized	40.4	D	51.2	D	46.7	D
4	N Effie St & E Shaw Ave	TWSC	**>100.0**	**F**	**>100.0**	**F**	**>100.0**	**F**
5	E Shaw Ave & SR-41 SB Ramps	Signalized	11.8	B	13.6	B	16.0	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	20.7	C	22.5	C	22.0	C
7	N Fresno St & E Shaw Ave	Signalized	37.7	D	**>100.0**	**F**	49.6	D
8	N Blackstone Ave & Barstow Ave	Signalized	35.5	D	49.5	D	44.9	D
9	N Blackstone Ave & San Jose Ave	Signalized	9.1	A	17.6	B	19.5	B
10	N Blackstone Ave & E Santa Ana Ave	TWSC	24.9	C	**51.3**	**F**	34.7	D
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	18.5	C	**>100.0**	**F**	**>100.0**	**F**

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = Two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

As shown in Table 12, using the SimTraffic simulation, all intersections are projected to have acceptable operations in the Near-Term Plus Project scenario.

Table 12: Intersection Level of Service – Near-Term Plus Project Conditions, SimTraffic Simulation

#	Intersection	Control	Near-Term + Project AM		Near-Term + Project PM		Near-Term + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	23.9	C	46.8	D	17.2	B
2	N Glenn Ave & W Shaw Ave	Signalized	5.5	A	10.1	B	6.4	A
3	N Blackstone Ave & Shaw Ave	Signalized	44.0	D	60.9	E	47.2	D
4	N Effie St & E Shaw Ave	Signalized	11.4	B	19.4	B	20.9	C
5	E Shaw Ave & SR-41 SB Ramps	Signalized	13.6	B	13.2	B	18.5	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	14.1	B	14.5	B	18.8	B
7	N Fresno St & E Shaw Ave	Signalized	32.4	C	58.5	E	42.9	D
8	N Blackstone Ave & Barstow Ave	Signalized	33.4	C	57.9	E	38.3	D
9	N Blackstone Ave & San Jose Ave	Signalized	9.7	A	20.2	C	21.1	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	6.8	A	11.7	B	10.4	B
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	5.7	A	12.1	B	13.5	B

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

Overall, the transportation improvements generally reflect an improvement on Near-Term traffic operations alongside improvements for people walking and taking transit. Several intersections that would operate at LOS F with very high delay are brought to acceptable levels. The transportation improvements would also improve access from the minor street of current stop-controlled intersections and the potential development parcels.

Appendix 5 contains the Near-Term level of service worksheets. Appendix 6 contains the Near-Term Plus Project level of service worksheets.

CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

The Cumulative and Cumulative Plus Project analysis forecasts how the study area's transportation system would operate with growth and changes of the surrounding community by the year 2042. The changes of the surrounding community and associated traffic changes by 2042 were derived from the Fresno COG travel demand model. This model includes the approved and reasonably foreseeable land use growth anticipated in the City of Fresno and the surrounding jurisdictions by 2042. Additionally, in order to more accurately reflect expected land use changes within the immediate study area, the growth forecast by Fresno COG was supplemented with the addition of the Near-Term travel demand based on specific proposed land use changes around the Blackstone Avenue & Shaw Avenue intersection, as described above.

Traffic Volume Forecasting Approach

The Fresno COG model was used to forecast traffic volumes for the cumulative conditions in 2042. A detailed description of the forecasting process is provided below:

- **Estimate background traffic growth:** The model was used to forecast roadway segment volumes by identifying traffic volumes under the model's base year (2018) scenario and the future (2042) background conditions without the project.
- **Adjust future intersection volumes:** To minimize model calibration error, future model intersection volumes were post-processed to correlate model results with actual traffic counts. Rather than using raw model output, the future segment volumes at each intersection were calculated as the difference between the base year and future year model volumes added to the observed 2019 traffic count. The observed turn movement traffic counts were then factored (using the Furness method) to match the adjusted future segment volumes This method is referenced in the Transportation Research Board National Cooperative Highway Research Program Report (NCHRP) 765*: Analytical Travel Forecasting Approaches for Project-Level Planning and Design* (2014).
- **Reasonableness check:** The final adjusted model outputs for future traffic projections were reviewed and compared to traffic counts to ensure minor fluctuations and anomalies would not change the overall results of the analysis.

Cumulative Conditions Travel Demand

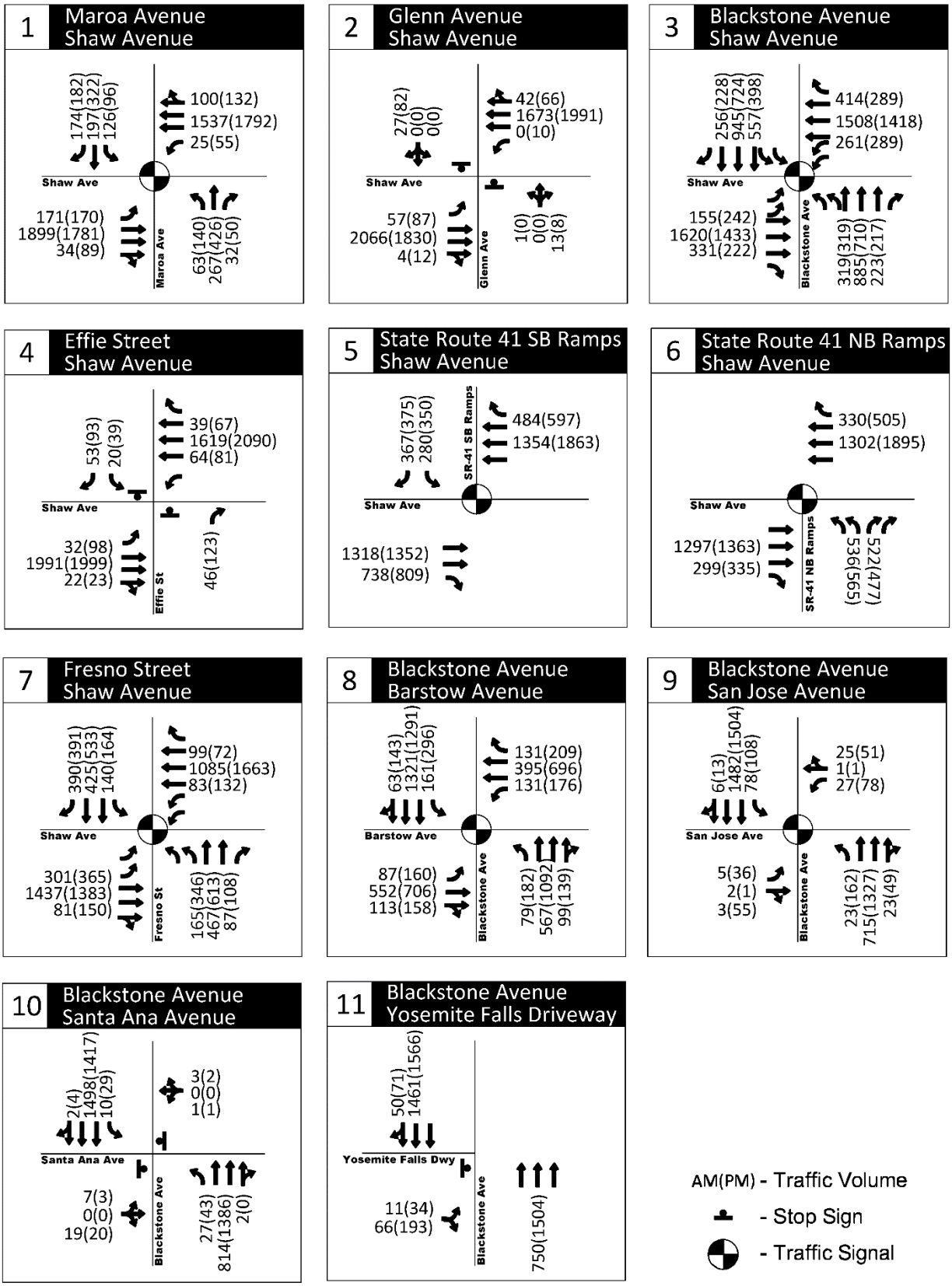
The cumulative growth also considers potential land use development on three vacant parcels within the BSAC study area. The land use changes for the scenario are comprised of residential units, new office space, and new retail space. Specifically, the scenario was modeled with the addition of the following into the area surrounding the Blackstone Avenue & Shaw Avenue intersection:

- 383 new residential units;
- 148,700 square feet of new retail development; and,
- 75,600 square feet of new office space.

As such, 367 trips were used for the AM peak hour analysis, 823 trips were used for the PM peak hour analysis, and 880 trips were used for the weekend midday peak hour analysis. The trips were distributed and assigned consistent with the methodology described in the Near-Term analysis above.

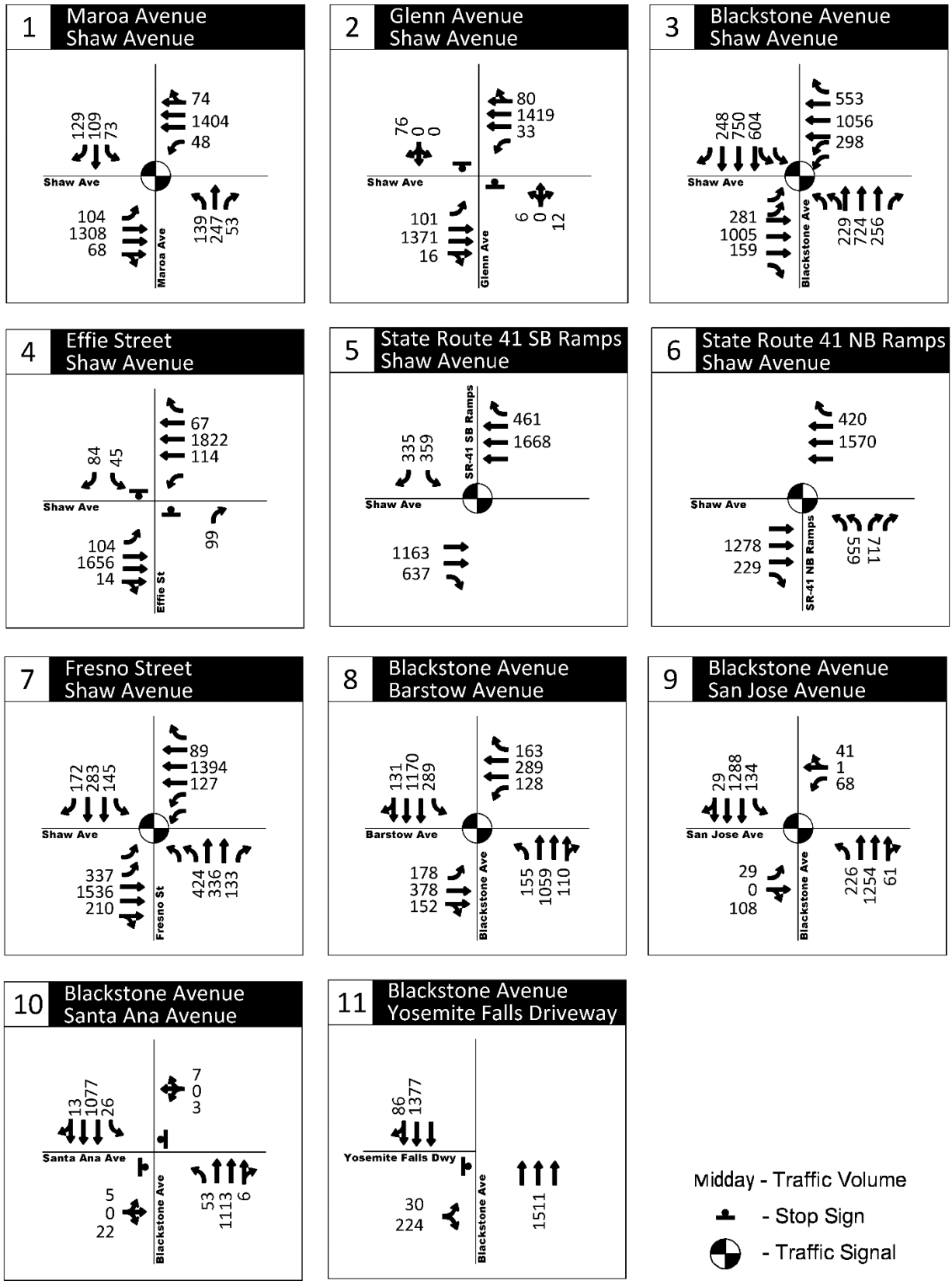
The Cumulative traffic conditions are the sum of the trips generated by the potential near-term land use changes and the Fresno COG model's forecast volumes for each movement. Figure 11 and Figure 12 show the Cumulative conditions lane configurations, traffic control, and traffic volumes projected during the weekday AM and PM, and weekend midday peak hours, respectively. Figure 13 and Figure 14 show the Cumulative Plus Project conditions lane configurations, traffic control, and traffic volumes projected during the weekday AM and PM, and weekend midday peak hours. Note that the Cumulative Plus Project conditions show a change in lane use and traffic control, not an overall change in volumes compared to the Cumulative conditions.

Figure 11: Intersection Volumes – Cumulative Conditions – Weekday Peak Hours



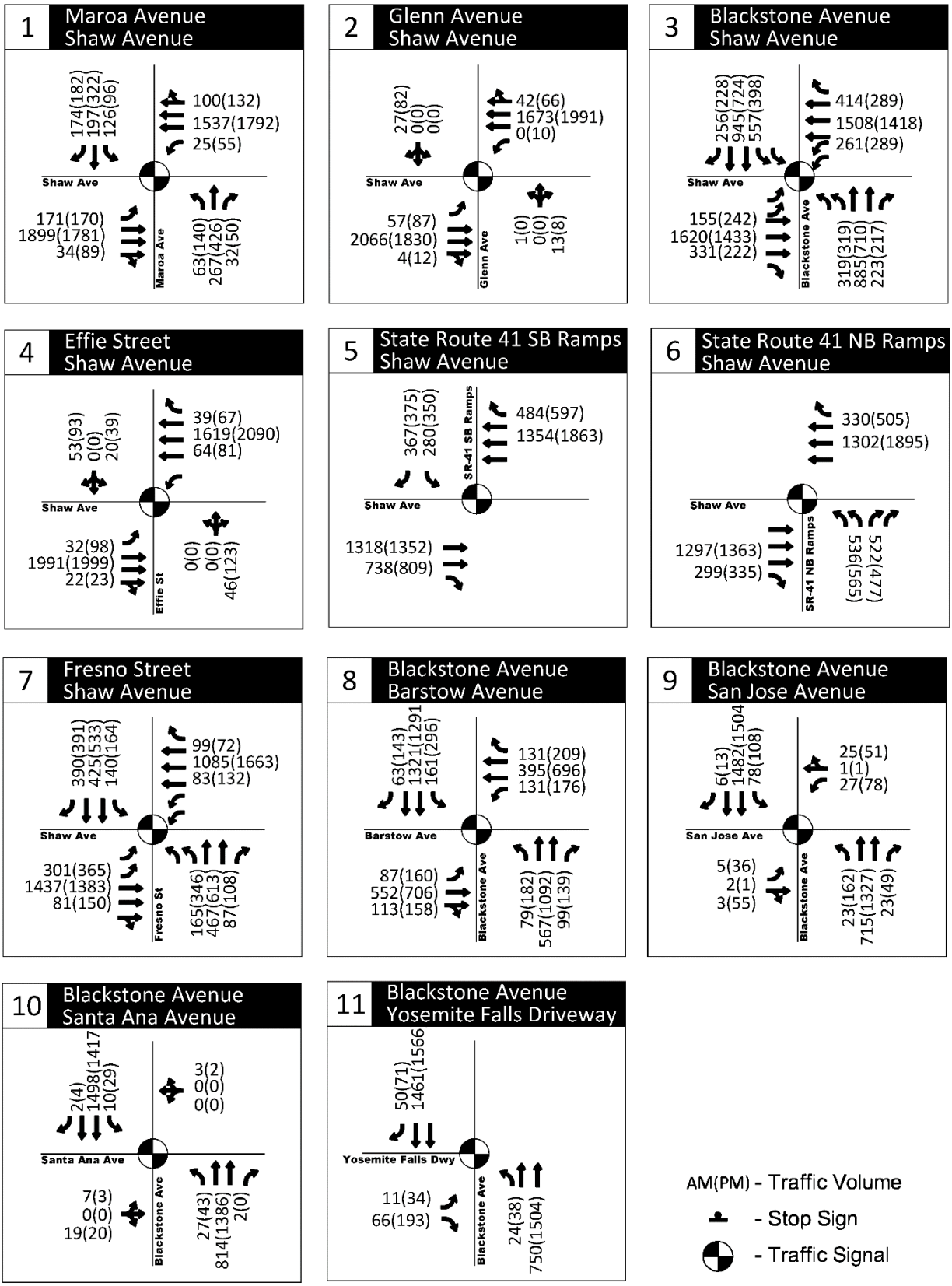
Source: Kittelson & Associates, Inc.

Figure 12: Intersection Volumes – Cumulative Conditions – Weekend Peak Hour



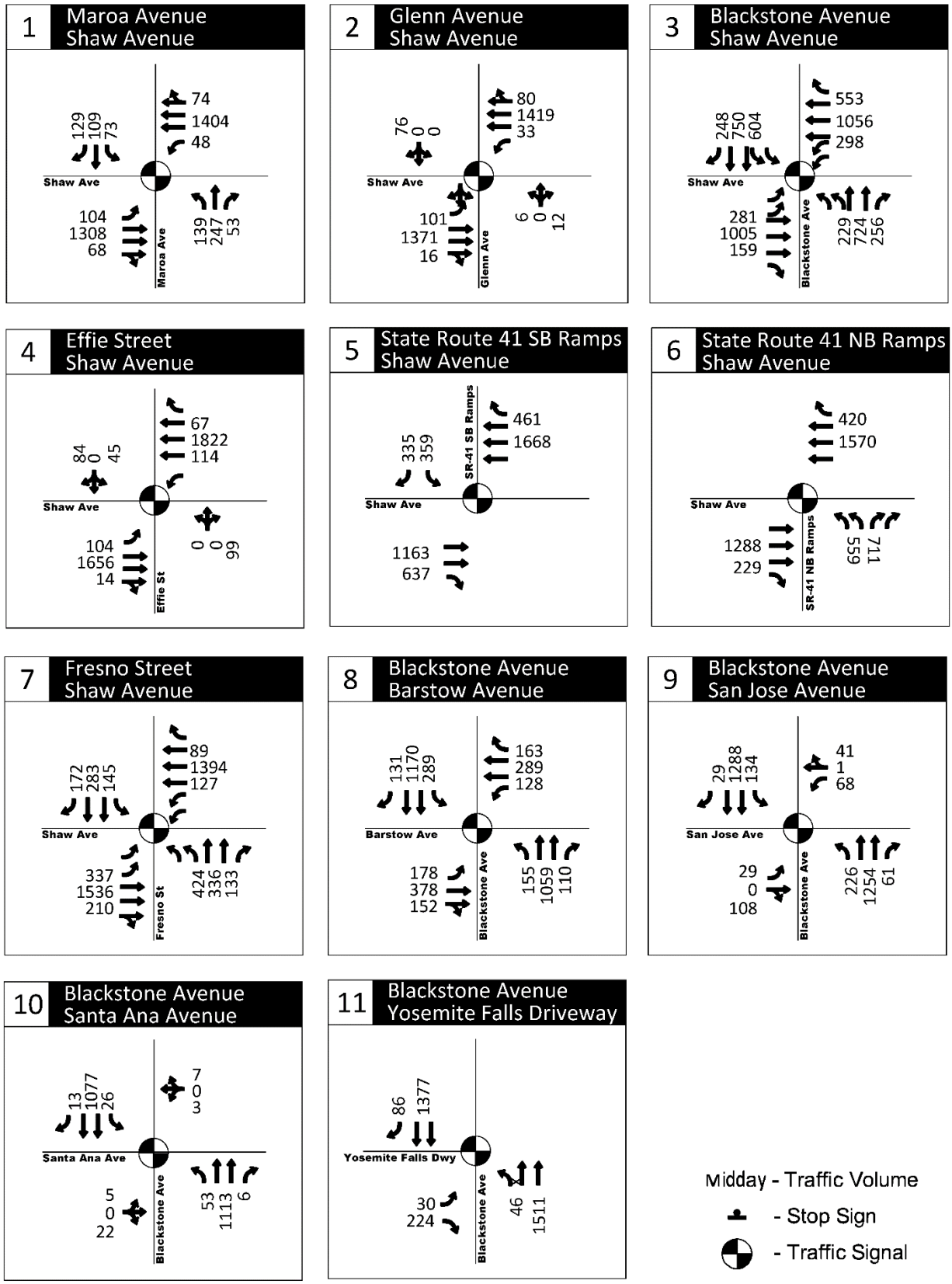
Source: Kittelson & Associates, Inc.

Figure 13: Intersection Volumes – Cumulative Plus Project Conditions – Weekday Peak Hours



Source: Kittelson & Associates, Inc.

Figure 14: Intersection Volumes – Cumulative Plus Project Conditions – Weekend Peak Hour



Source: Kittelson & Associates, Inc.

Cumulative Intersection Operations

The weekday AM and PM, and weekend midday peak hour turning-movement volumes, traffic control, and lane configurations shown in Figure 11 though Figure 14 were used to conduct an operational analysis at each study intersection to determine the Cumulative and Cumulative Plus Project levels of service. Table 13 and Table 14 present the Cumulative and Cumulative Plus Project intersection levels of service, respectively, for the weekday AM and PM, and weekend midday peak hours. Existing signal timing was assumed for the Cumulative conditions operations analysis and signal timings were optimized and coordinated in the Cumulative Plus Project conditions.

As shown in Table 13, with the 2042 cumulative development and specific development in the BSAC area, but without the proposed transportation improvements, the following intersections are forecast to operate below the City's LOS E significance threshold:

- Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - southbound from the stop sign at Glenn Avenue in the PM peak hour; and,
    - northbound from the stop sign at Glen Avenue Street in the weekeday AM and PM, and weekend midday peak hours.
- Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - Southbound right turns Effie Street in the AM, PM and midday peak hours;
    - Northbound right turns from Effie Street in the PM peak hour;
    - Westbound left turns from Shaw Avenue in the AM, PM and midday peak hours; and,
    - Eastbound left turns from Shaw Avenue in the PM and midday peak hours.
- Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours. The following movement operates at LOS F:
    - Eastbound turns from Santa Ana Avenue in the AM peak hour; and,
    - Westbound turns from the driveway opposite Santa Ana Avenue in the AM and PM peak hours.
- Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours. The following movement operates at LOS F:
    - Eastbound right turns from the Yosemite Falls driveway in the PM and midday peak hours.

Table 13: Intersection Level of Service – Cumulative Conditions, Highway Capacity Manual

#	Intersection	Control	Cumulative AM		Cumulative PM		Cumulative Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	31.0	C	37.3	D	23.2	C
2	N Glenn Ave & W Shaw Ave	TWSC	**78.2**	**F**	**>100.0**	**F**	**>100.0**	**F**
3	N Blackstone Ave & Shaw Ave	Signalized	47.3	D	58.4	E	55.7	E
4	N Effie St & E Shaw Ave	TWSC	**>100.0**	**F**	**>100.0**	**F**	**>100.0**	**F**
5	E Shaw Ave & SR-41 SB Ramps	Signalized	18.1	B	16.8	B	16.7	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	24.7	C	13.5	B	19.6	B
7	N Fresno St & E Shaw Ave	Signalized	53.3	D	58.7	E	44.6	D
8	N Blackstone Ave & Barstow Ave	Signalized	68.2	E	66.7	E	49.1	D
9	N Blackstone Ave & San Jose Ave	Signalized	8.4	A	13.7	B	22.4	C
10	N Blackstone Ave & E Santa Ana Ave	TWSC	**68.4**	**F**	**56.6**	**F**	37.9	E
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	44.5	E	**>100.0**	**F**	**>100.0**	**F**

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = Two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

As shown in Table 14, in the Cumulative Plus Project scenario, all intersections that are projected to have deficient LOS in the Cumulative (without project) scenario would have acceptable operations with the proposed transportation improvements. However, the following intersection is forecast to operate below the City's LOS E significance threshold:

- Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the Project.

Table 14: Intersection Level of Service – Cumulative Plus Project Conditions, Highway Capacity Manual

#	Intersection	Control	Cumulative + Project AM		Cumulative + Project PM		Cumulative + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	44.6	D	51.8	D	23.9	C
2	N Glenn Ave & W Shaw Ave	Signalized	3.4	A	5.9	A	2.9	A
3	N Blackstone Ave & Shaw Ave	Signalized	65.2	E	**91.7**	**F**	59.5	E
4	N Effie St & E Shaw Ave	Signalized	6.5	A	11.3	B	11.9	B
5	E Shaw Ave & SR-41 SB Ramps	Signalized	12.6	B	12.4	B	13.9	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	19.4	B	12.7	B	20.3	C
7	N Fresno St & E Shaw Ave	Signalized	41.2	D	55.3	E	37.5	D
8	N Blackstone Ave & Barstow Ave	Signalized	57.9	E	65.4	E	59.6	E
9	N Blackstone Ave & San Jose Ave	Signalized	7.8	A	16.4	B	20.7	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	10.9	B	10.0	A	11.1	B
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	9.4	A	11.6	B	11.4	B

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

In addition to the HCM analysis in Synchro 10, an analysis using SimTraffic simulation was performed to evaluate operations of Cumulative and Cumulative Plus Project conditions in the study area to better account for intersection spacing and signal coordination on the two corridors. Table 15 and Table 16 present the results of the SimTraffic intersection analysis for the Cumulative and Cumulative Plus Project conditions, respectively. As shown in Table 15, using the SimTraffic simulation, the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative conditions without the proposed transportation improvements:

- Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- Glenn Avenue & Shaw Avenue would operate at LOS F in the weekend midday peak hour. The following movement operates at LOS F:
    - Northbound left turns from Glenn Avenue.
- Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours. The following movements operate at LOS F:
    - Southbound right turns from Effie Street in the AM, PM, and midday peak hours.
- Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours. The following movements operate at LOS F:
    - Eastbound left turns from Santa Ana Avenue in the AM and PM peak hours.
- Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours. The following movements operate at LOS F:
    - Eastbound right turns from the Yosemite Falls driveway in the PM and midday peak hours.

Table 15: Intersection Level of Service – Cumulative Conditions, SimTraffic Simulation

#	Intersection	Control	Cumulative AM		Cumulative PM		Cumulative Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	28.2	C	**>100.0**	**F**	26.9	C
2	N Glenn Ave & W Shaw Ave	TWSC	21.3	C	30.7	D	**75.8**	**F**
3	N Blackstone Ave & Shaw Ave	Signalized	50.7	D	54.3	D	52.3	D
4	N Effie St & E Shaw Ave	TWSC	**>100.0**	**F**	**>100.0**	**F**	**>100.0**	**F**
5	E Shaw Ave & SR-41 SB Ramps	Signalized	12.0	B	13.9	B	18.0	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	20.5	C	22.2	C	21.8	C
7	N Fresno St & E Shaw Ave	Signalized	40.6	D	**>100.0**	**F**	62.2	E
8	N Blackstone Ave & Barstow Ave	Signalized	38.6	D	68.7	E	50.3	D
9	N Blackstone Ave & San Jose Ave	Signalized	9.4	A	16.7	B	19.8	B
10	N Blackstone Ave & E Santa Ana Ave	TWSC	**82.1**	**F**	**73.8**	**F**	40.1	E
11	N Blackstone Ave & Yosemite Falls Dwy	TWSC	42.5	E	**>100.0**	**F**	**>100.0**	**F**

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
TWSC = Two-way stop control
LOS findings in grey represent intersections operating below the applicable LOS standard

As shown in Table 16, using the SimTraffic simulation, the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative Plus Project conditions:

- Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
- Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the project.
- Blackstone Avenue & Barstow Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the project.

Table 16: Intersection Level of Service – Cumulative Plus Project Conditions, SimTraffic Simulation

#	Intersection	Control	Cumulative + Project AM		Cumulative + Project PM		Cumulative + Project Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	N Maroa Ave & W Shaw Ave	Signalized	27.7	C	**89.4**	**F**	20.0	B
2	N Glenn Ave & W Shaw Ave	Signalized	5.4	A	7.2	A	6.4	A
3	N Blackstone Ave & Shaw Ave	Signalized	43.0	D	**81.7**	**F**	58.3	E
4	N Effie St & E Shaw Ave	Signalized	10.7	B	23.7	C	14.2	B
5	E Shaw Ave & SR-41 SB Ramps	Signalized	12.5	B	22.5	B	16.6	B
6	SR-41 NB Ramps & E Shaw Ave	Signalized	14.9	B	15.8	B	20.5	B
7	N Fresno St & E Shaw Ave	Signalized	38.5	D	55.2	D	49.0	D
8	N Blackstone Ave & Barstow Ave	Signalized	40.8	D	**>100.0**	**F**	48.2	D
9	N Blackstone Ave & San Jose Ave	Signalized	12.6	B	23.4	C	20.3	C
10	N Blackstone Ave & E Santa Ana Ave	Signalized	9.2	A	9.4	A	10.8	B
11	N Blackstone Ave & Yosemite Falls Dwy	Signalized	13.5	B	15.7	B	13.9	B

Source: Kittelson & Associates, Inc. 2019.
LOS = Level of service
LOS findings in grey represent intersections operating below the applicable LOS standard

Overall, the transportation improvements generally reflect an improvement on Cumulative traffic operations alongside improvements for people walking and taking transit. Several intersections that would operate at LOS F with very high delay are brought to acceptable levels while causing degradation to LOS F at the Blackstone Avenue & Shaw Avenue and Blackstone Avenue & Barstow Avenue intersections. The transportation improvements would also improve access from the minor street of current stop-controlled intersections and the potential development parcels.

Appendix 7 contains the Cumulative level of service worksheets. Appendix 8 contains the Cumulative Plus Project level of service worksheets.

Recommendations

The identified deficient traffic operations at the intersections of Blackstone Avenue & Shaw Avenue, Maroa Avenue & Shaw Avenue, and Blackstone Avenue & Barstow Avenue could potentially be improved in the Cumulative Plus Project scenarios through the following:

- Coordinating the signal progression of the broader Blackstone Avenue and Shaw Avenue corridors to manage the flow of vehicles into the Blackstone Avenue & Shaw Avenue intersection to help reduce congestion at this intersection and potential spillback to upstream intersections.

Monitoring and evaluating traffic patterns after land use changes take place to align signal timings more closely with traffic patterns and optimize the available time to reduce vehicle delay.

Section 5 Queuing Analysis

QUEUEING ANALYSIS

The calibrated SimTraffic simulation model used to evaluate intersection operations was also used to estimate 95th percentile queue lengths for the study intersections in the weekday AM and PM and weekend midday peak hours due to Synchro's implementation of the HCM 6th Edition methodology not providing 95th percentile queue lengths. This analysis is used to identifying where existing or forecast 95th percentile queue lengths could exceed available storage. Where queue lengths exceed available storage, potential mitigations are provided.

EXISTING AND EXISTING PLUS PROJECT CONDITIONS

Table 17 and Table 18 present the results of the SimTraffic queuing analysis for the Existing and Existing Plus Project conditions, respectively.

Existing Conditions Queue Evaluation

As shown in Table 17, using the SimTraffic simulation, the following intersections are estimated to have 95th percentile queue lengths that exceed the available storage under Existing conditions:

- Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours. Through traffic queues past the unsignalized Glenn Avenue intersection.
- Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours. Through traffic queues past the unsignalized Effie Street intersection.
- Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour. Through traffic queues past the Angus Street signalized intersection.

Existing Plus Project Conditions Queue Evaluation

Table 18 shows that for the Existing Plus Project conditions (with proposed transportation improvements), the following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:

- Effie Street & Shaw Avenue for the westbound approach in the weekday PM and weekend midday peak hours. Through traffic would queue past the signalized SR-41 southbound ramp terminal intersection.
- Shaw Avenue & SR-41 southbound ramps for the eastbound approach in the weekday PM and weekend midday peak hours. Through traffic would queue past the signalized Effie Street intersection.
- Fresno Street & Shaw Avenue for the westbound approach in the weekday PM peak hour. Through traffic would queue past the Angus Street signalized intersection.

Mitigations

The queues exceeding available storage in the Existing conditions could be mitigated through adjustments to the signal timing along the Shaw Avenue corridor to improve signal progression along the corridor. Additionally, for the Existing Plus Project scenario on Shaw Avenue at Effie Street and the SR-41 southbound ramps more detailed signal timing analysis at the two intersections could provide better interconnect for the signal phasing at the two intersections to determine appropriate timings to reduce queuing and the potential for queue spillback onto the SR-41 ramps.

Table 17: Existing Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	335	421			181	363			309	522		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	114	40			25	49			103	30		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	**588**	365	147	151	338	366	240	327	**581**	521	275	302
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	135	74			109	109			204	101		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	**280**	158			**264**	411			**283**	228		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	277	389			358	329			330	331		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	418	378			533	465			377	**1,228**		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			211	236			337	460			343	452
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			101	117			265	259			225	166
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			35	23			43	41			45	46
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			13	10			5	7			46	5

Source: Kittelson & Associates, Inc., 2019.

Table 18: Existing Plus Project Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	323	254			186	319			291	466		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	201	117			170	206			257	306		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	354	314	434	254	318	315	250	361	343	447	365	375
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	144	220			368	**246**			441	**241**		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	200	305			**239**	285			**257**	223		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	175	215			248	189			211	210		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	370	392			449	594			279	**1,390**		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			166	252			322	495			388	879
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			172	117			262	328			301	262
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			185	160			227	247			324	389
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			158	144			226	160			229	56

Source: Kittelson & Associates, Inc., 2019.

NEAR-TERM AND NEAR-TERM PLUS PROJECT CONDITIONS

Table 19 and Table 20 present the results of the SimTraffic queuing analysis for the cumulative and cumulative plus project conditions, respectively.

Near-Term Queue Evaluation

Table 19 shows the following intersections are forecast to have 95th percentile queue lengths that exceed the available storage in near-term conditions (with BSAC area development and without proposed transportation improvements):

- Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours. Through traffic queues past the unsignalized Glenn Avenue intersection.
- Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours. Through traffic queues past the unsignalized Effie Street intersection.
- Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour. Through traffic queues past the Angus Street signalized intersection.

Near-Term Plus Project Queue Evaluation

Table 22 shows the that for the near-term plus project conditions, the following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:

- Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday PM peak hour. Through traffic would queue past the pedestrian half-signal at the Glenn Avenue intersection.
- Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours. Through traffic would queue past the signalized Yosemite Falls Driveway intersection.
- Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour. Through traffic would queue past the access-controlled, unsignalized intersection at Fairmont Avenue.
- Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM and weekend midday peak hours. Through traffic would queue past the SR-41 southbound ramps.
- Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours. Through traffic queues past the unsignalized Effie Street intersection.

Mitigations

The intersections with a significant impact per the City's TIS Guidelines and queues exceeding available storage in the near-term conditions could be mitigated through adjustments to the signal timing along the Shaw Avenue corridor to improve the progression of vehicles along the corridor. For the queue lengths exceeding available capacity in the near-term plus project scenario on Shaw Avenue at Effie Street, once expected trips due to the proposed land use changes surrounding the study area are confirmed, more detailed signal timing analysis at the Effie Street and SR-41 southbound ramp terminal intersections could provide better interconnection between the signal phasing at the two intersections to determine appropriate timings to reduce queuing and the potential for queue spillback onto the SR-41 ramps. For the northbound and southbound queues on Blackstone Avenue, with the implementation of the proposed through lane reduction to allow for a bus and turn lane, evaluating the signal progression north and south of the study area for the broader corridor may allow for reduced queuing at Blackstone Avenue & Shaw Avenue by improving overall north-south signal progression and reducing the number of vehicles in each signal cycle's platoon.

Table 19: Near-Term Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	337	418			214	370			324	525		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	205	9			92	15			113	55		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	613	389	174	224	341	374	244	491	600	548	306	375
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	130	80			115	118			220	101		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	280	163			271	460			293	235		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	276	417			386	350			363	339		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	426	437			569	517			400	1,859		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			200	242			347	476			307	508
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			117	125			269	302			251	123
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			39	24			49	41			49	45
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			17	12			230	109			86	8

Source: Kittelson & Associates, Inc., 2019.

Table 20: Near-Term Plus Projects Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	318	254			231	141			353	493		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	208	124			236	56			245	396		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	353	349	668	280	282	689	273	535	609	611	509	461
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	216	231			389	305			625	276		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	272	271			267	406			255	265		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	183	228			220	240			167	191		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	348	402			446	495			297	1,019		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			153	286			262	557			397	959
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			114	129			313	199			361	196
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			189	153			249	231			330	426
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			86	192			383	280			293	352

Source: Kittelson & Associates, Inc., 2019.

CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS

Table 21 and Table 22 present the results of the SimTraffic queuing analysis for the cumulative and cumulative plus project conditions, respectively.

Cumulative Queue Evaluation

Table 21 shows the following intersections are forecast to have 95th percentile queue lengths that exceed the available storage in cumulative conditions (with BSAC area development and without proposed transportation improvements):

- Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours. Through traffic would queue past the unsignalized Glenn Avenue intersection.
- Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday PM and weekend midday peak hours. Through traffic would queue past the unsignalized Yosemite Falls Driveway intersection.
- Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours. Through traffic would queue past the Effie Street intersection.
- Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour. Through traffic would queue past the Angus Street signalized intersection.

Cumulative Plus Project Queue Evaluation

Table 22 shows the that for the cumulative plus project conditions, the following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:

- Blackstone Avenue & Shaw Avenue for the westbound approach in the weekday PM peak hour. Through traffic would queue past the Effie Street intersection.
- Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours. Through traffic would queue past the signalized Yosemite Falls Driveway intersection.
- Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour. Through traffic would queue past the access-controlled, unsignalized intersection at Fairmont Avenue.
- Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM and weekend midday peak hours. Through traffic would queue past the SR-41 southbound ramps.

Mitigations

The intersections with a significant impact per the City's TIS Guidelines and queues exceeding available storage in the cumulative conditions could be mitigated through adjustments to the signal timing along the Shaw Avenue corridor to improve the progression of vehicles along the corridor. For the queue lengths exceeding available capacity in the cumulative plus project scenario on Shaw Avenue at Effie Street, once expected trips due to the proposed land use changes surrounding the study area are confirmed, more detailed signal timing analysis at the Effie Street and SR-41 southbound ramp terminal intersections could provide better interconnection between the signal phasing at the two intersections to determine appropriate timings to reduce queuing and the potential for queue spillback onto the SR-41 ramps. For the northbound and southbound queues on Blackstone Avenue, with the implementation of the proposed through lane reduction to allow for a bus and turn lane, evaluating the signal progression north and south of the study area for the broader corridor may allow for reduced queuing at Blackstone Avenue & Shaw Avenue by improving overall north-south signal progression and reducing the number of vehicles in each signal cycle's platoon.

Table 21: Cumulative Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	341	432			219	382			321	525		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	212	6			87	51			168	30		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	641	409	177	495	352	475	316	684	585	531	408	539
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	167	75			116	113			196	102		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	288	167			261	581			285	291		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	288	411			351	402			316	333		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	466	420			526	865			376	2,785		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			231	442			442	575			421	573
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			122	99			272	318			291	173
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			42	25			51	47			51	50
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			99	121			97	383			219	306

Source: Kittelson & Associates, Inc., 2019.

Table 22: Cumulative Plus Projects Conditions, Simulation Queue Results

#	Intersection		AM				Midday				PM			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
1	N Maroa Ave & W Shaw Ave	Storage	2,510	2,510			2,510	2,510			2,510	2,510		
		Queue	374	295			207	328			427	302		
2	N Glenn Ave & W Shaw Ave	Storage	1,910	546			1,910	546			1,910	546		
		Queue	229	122			138	198			140	153		
3	N Blackstone Ave & Shaw Ave	Storage	561	695	560	515	561	695	560	515	561	695	560	515
		Queue	453	343	218	599	377	576	449	581	556	818	639	520
4	N Effie St & E Shaw Ave	Storage	695	226			695	226			695	226		
		Queue	146	252			172	273			241	296		
5	E Shaw Ave & SR-41 SB Ramps	Storage	227	711			227	711			227	711		
		Queue	174	250			150	473			137	509		
6	SR-41 NB Ramps & E Shaw Ave	Storage	711	650			711	650			711	650		
		Queue	206	273			193	361			168	184		
7	N Fresno St & E Shaw Ave	Storage	619	1,225			619	1,225			619	1,225		
		Queue	357	423			487	693			300	831		
8	N Blackstone Ave & Barstow Ave	Storage			1,220	1,241			1,220	1,241			1,220	1,241
		Queue			161	529			349	756			530	1,139
9	N Blackstone Ave & San Jose Ave	Storage			1,210	1,220			1,210	1,220			654	1,220
		Queue			244	198			313	206			434	246
10	N Blackstone Ave & E Santa Ana Ave	Storage			1,240	1,210			1,240	1,210			1,240	1,210
		Queue			223	352			282	261			374	130
11	N Blackstone Ave & Yosemite Falls Dwy	Storage			508	654			508	654			508	654
		Queue			218	460			187	471			474	473

Source: Kittelson & Associates, Inc., 2019.

SIGNAL WARRANTS

Signal warrant analysis based on the California MUTCD Warrant #3 (Peak Hour Warrant) was conducted for the following unsignalized intersections for the Existing conditions:

- Shaw Avenue & Glenn Avenue
- Shaw Avenue & Effie Street
- Santa Ana Avenue & Blackstone Avenue
- Blackstone Avenue & Yosemite Falls Driveway

The results of the signal warrant analysis are shown in Table 23.

Table 23: Existing Conditions Peak Hour Signal Warrant Results

Peak Hour	Warrant Part Met?	Shaw Avenue & Glenn Avenue	Shaw Avenue & Effie Street	Santa Ana Avenue & Blackstone Avenue	Blackstone Avenue &Yosemite Falls Driveway
AM	Part A	No	No	No	No
	Part B	No	No	No	No
Midday	Part A	No	No	No	No
	Part B	No	No	No	No
PM	Part A	No	No	No	No
	Part B	No	**Yes**	No	No

Source: Kittelson & Associates, Inc., 2019.

The Shaw Avenue & Effie Street intersection meets Part B of the Peak Hour Warrant based on the afternoon volume on Effie Street turning right onto Shaw Avenue. However, given the existing right-turn only movement presents minor conflicts to the major approach versus through or left-turn movements, the need for a signal based on the volumes used for this warrant may not be necessary. Any decision to signalize the intersection should consider additional analyses including the Eight-Hour Signal Warrant as well as the potential for future volumes and any additional turn movements at the intersection. None of the remaining three intersections meet the Peak Hour Warrant.

Appendix 9 contains the signal warrant worksheets.

Section 6
Conclusion

CONCLUSION

The results of the traffic analysis indicate that the proposed Blackstone-Shaw Activity Center transportation improvements can be implemented with some level of service and queuing impacts. The BSAC project would improve vehicle operations and queuing at some intersections while having a significant impact on other intersections under Existing Plus Project, Near-Term Plus Project and Cumulative Plus Project conditions. The vehicle operations consequences of the BSAC project should be weighed against the improvements to pedestrian accessibility and safety, as well as to transit operations with the addition of the controlled pedestrian crossings with leading pedestrian intervals and the bus and turn lane along Blackstone Avenue. Additional studies may be required to determine the timing of potential traffic signal installations as well as the bus and turns (BAT) lane to determine broader corridor operational impacts. These improvements may be considered by the City of Fresno as pedestrian activity increases in the BSAC area and/or as development-related infrastructure funding or grant funding becomes available. The findings of this analysis and our recommendations are summarized below.

FINDINGS

Existing Conditions

- Using the *Highway Capacity Manual* (HCM) level of service methodologies the following intersections exceed the City's LOS E threshold in Existing conditions:
    - Shaw Avenue & Effie Street and Shaw Avenue intersection operates at LOS F in the weekday AM and PM, and the weekend midday peak hour.
    - Shaw Avenue & Glenn Avenue intersection operates at LOS F in the weekend midday peak hour.
- Using SimTraffic simulation, all intersections operate at acceptable levels of service during all study peak hours except Blackstone Avenue & Santa Ana Avenue operates at LOS F in the PM peak hour.
- The following intersections are estimated to have 95th percentile queue lengths that exceed the available storage:
    - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
    - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.
    - Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Existing Plus Project Conditions

- Using the HCM level of service methodologies, all of the study intersections would operate at acceptable levels of service during the weekday AM and PM, and weekend midday peak hours.
- Using the HCM level of service methodologies, Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the Project.

- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:
    - Effie Street & Shaw Avenue for the westbound approach in the weekday PM and weekend midday peak hours.
    - Shaw Avenue & SR-41 southbound ramps for the eastbound approach in the weekday PM and weekend midday peak hours.
    - Fresno Street & Shaw Avenue for the westbound approach in the weekday PM peak hour.

Near-Term Conditions

- Traffic volumes were projected using additional traffic from potential additional land use development in the BSAC area added to the existing volumes.
    - The parcels surrounding the Blackstone Avenue & Shaw Avenue intersection are expected to redevelop, consisting of a total of:
        - 383 new residential units
        - 148,700 square feet of new retail development
        - 75,600 square feet of new office space
    - The new development is estimated to generate 8,435 daily net new trips with the proposed land use changes.
    - The BSAC land use changes are projected to results in 367 net new trips during the weekday AM peak hour, 823 net new trips during the weekday AM peak hour, and 694 net new trips during the weekend midday peak hour.
- Using the HCM level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in near-term (without transportation improvement) conditions:
    - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- Using SimTraffic simulation level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in near conditions:
    - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and weekend midday peak hours.
    - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
    - Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
    - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday PM peak hour.

  - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage in near-term conditions:
  - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
  - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.
  - Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Near-Term Plus Project Conditions

- Using both the HCM level of service methodologies and Sim Traffic simulation, all of the study intersections would operate at acceptable levels of service during the weekday AM and PM and weekend midday peak hours.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:
  - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday PM peak hour.
  - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours.
  - Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour.
  - Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM and weekend midday peak hours.
  - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.

Cumulative Conditions

- Traffic volumes were forecast to the year 2042 based on the Fresno COG regional travel demand model.
- Traffic from potential additional land use development in the BSAC area from the Near-Term analysis was added to the cumulative forecasts.
- Using the HCM level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in cumulative (without transportation improvement) conditions:
  - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
  - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.

  - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours.
  - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- Using SimTraffic simulation level of service methodologies the following intersections are forecast to operate below the City's LOS E significance threshold in cumulative conditions:
  - Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Glenn Avenue & Shaw Avenue would operate at LOS F in the weekend midday peak hour.
  - Effie Street & Shaw Avenue would operate at LOS F in the weekday AM and PM, and weekend midday peak hours.
  - Fresno Street & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Blackstone Avenue & Santa Ana Avenue would operate at LOS F in the weekday AM and PM peak hours.
  - Blackstone Avenue & Yosemite Falls Driveway would operate at LOS F in the weekday PM and weekend midday peak hours.
- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage in cumulative conditions:
  - Blackstone Avenue & Shaw Avenue for the eastbound approach in the weekday AM and PM peak hours.
  - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday PM and weekend midday peak hours.
  - Shaw Avenue & State Route 41 (SR-41) southbound ramps for the eastbound direction in the AM, midday, and PM peak hours.
  - Fresno Street & Shaw Avenue for the westbound approach in the PM peak hour.

Cumulative Plus Project Conditions

- Using the HCM level of service methodologies, Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the Project.
- Using the SimTraffic simulation, the following intersections are forecast to operate below the City's LOS E significance threshold in Cumulative Plus Project conditions:
  - Maroa Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour.
  - Blackstone Avenue & Shaw Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the project.
  - Blackstone Avenue & Barstow Avenue would operate at LOS F in the weekday PM peak hour. This is considered a significant impact per the City's TIS Guidelines as the intersection would degrade from LOS E to LOS F with the project.

- The following intersections are forecast to have 95th percentile queue lengths that exceed the available storage:
    - Blackstone Avenue & Shaw Avenue for the westbound approach in the weekday PM peak hour.
    - Blackstone Avenue & Shaw Avenue for the southbound approach in the weekday AM and PM, and weekend midday peak hours.
    - Blackstone Avenue & Shaw Avenue for the northbound approach in the weekday PM peak hour.
    - Effie Street & Shaw Avenue for the westbound approach in the weekday AM and PM and weekend midday peak hours.

POTENTIAL MITIGATIONS

The following list summarizes recommendations for potential mitigations for the study area:

- The signal timing along the Blackstone Avenue and Shaw Avenue corridors should be evaluated in more detail to improve the progression of vehicles along the corridors once potential land use development occurs.
- Monitor and evaluate traffic patterns after future land use changes take place to align signal timings more closely with traffic patterns and optimize the available time to reduce vehicle delay.
- If queue lengths are expected to exceed available capacity in future analyses at Shaw Avenue and Effie Street, a more detailed signal timing analysis at the Shaw Street intersections with Effie Street and the SR-41 southbound ramps could determine if interconnected signal phasing is feasible between the two intersections to reduce queuing and the potential for queue spillback onto the SR-41 ramps.
- For northbound and southbound queues on Blackstone Avenue, the broader corridor signal progression north and south of the study area should be evaluated and considered to determine if corridor-wide signal progression may allow for reduced queuing at Blackstone Avenue & Shaw Avenue by improving overall north-south signal progression and reducing the number of vehicles in each signal cycle's platoon.

Overall, with the combined addition of the transportation and land use changes assumed in this study, some vehicle operational impacts, whether delay- or queuing-related, are likely to be a tradeoff with the improved conditions for people walking or biking. The project would also provide improved access to the potential development parcels and access from the current stop-controlled minor streets along Blackstone Avenue and Shaw Avenue in the study area. Fresno COG, the City of Fresno, Caltrans, and stakeholders should consider this broader multimodal context to determine the balance between the identified vehicle impacts and the broader mobility benefits provided by the proposed transportation improvements.

Appendix 1
Traffic Count Data

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

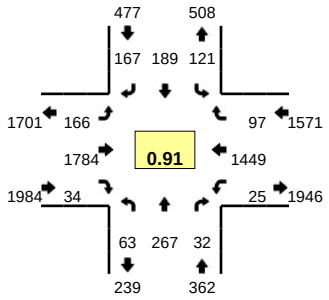
LOCATION: N Maroa Ave -- W Shaw Ave

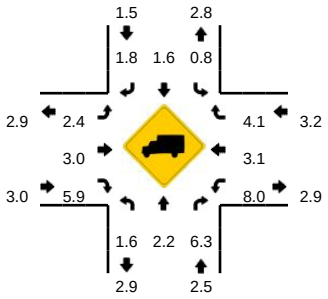
CITY/STATE: Fresno, CA

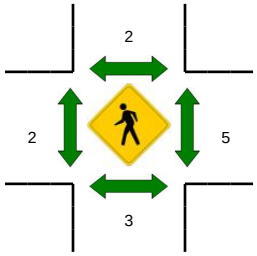
QC JOB #: 14816901

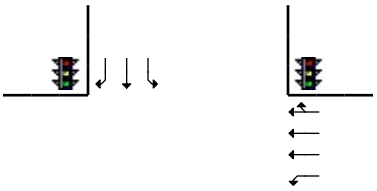
DATE: Thu, Oct 18 2018

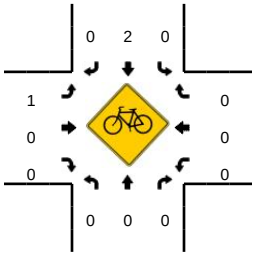
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

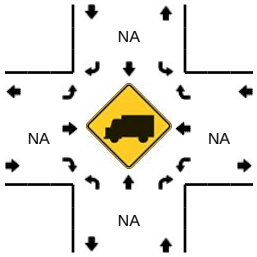


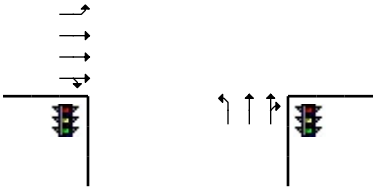


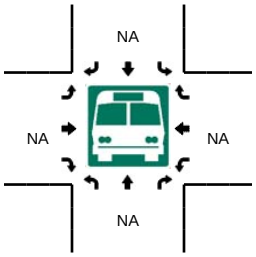












5-Min Count Period Beginning At	N Maroa Ave (Northbound)				N Maroa Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	7	1	0	5	4	6	0	3	63	1	0	1	50	4	0	150	
7:05 AM	4	7	1	0	6	1	6	0	5	99	1	0	1	69	7	0	207	
7:10 AM	8	15	1	0	9	13	8	0	2	123	3	1	0	79	5	0	267	
7:15 AM	5	7	1	0	15	6	6	0	6	119	5	0	2	79	3	0	254	
7:20 AM	1	12	1	0	6	11	11	0	5	173	5	0	0	87	1	0	313	
7:25 AM	3	13	2	0	14	16	14	0	6	128	2	0	1	41	3	1	244	
7:30 AM	2	13	4	0	10	13	8	0	9	185	2	0	2	119	7	1	375	
7:35 AM	2	24	2	0	17	24	12	0	10	149	3	1	2	104	3	0	353	
7:40 AM	3	24	5	0	18	14	11	0	9	168	5	3	0	101	8	0	369	
7:45 AM	9	25	3	0	10	18	13	0	12	178	2	4	2	113	15	1	405	
7:50 AM	5	28	1	0	12	17	15	0	14	163	5	1	2	128	6	2	399	
7:55 AM	3	20	2	0	8	19	7	0	19	172	2	0	2	142	12	1	409	3745
8:00 AM	6	27	2	0	16	14	13	0	8	136	2	1	0	128	6	1	360	3955
8:05 AM	4	27	1	0	11	19	22	0	22	146	2	2	1	123	10	0	390	4138
8:10 AM	10	23	4	0	6	13	12	0	17	132	1	4	2	113	7	2	346	4217
8:15 AM	6	17	3	0	6	17	17	0	7	138	2	2	1	117	6	1	340	4303
8:20 AM	4	14	2	0	5	10	18	0	13	115	5	2	2	135	9	0	334	4324
8:25 AM	9	25	3	0	2	11	19	0	4	102	3	2	0	126	8	0	314	4394
8:30 AM	6	12	0	0	2	10	16	0	7	93	2	1	1	141	2	0	293	4312
8:35 AM	3	14	2	0	6	6	6	0	7	108	1	1	0	102	11	0	267	4226
8:40 AM	4	16	1	0	7	10	10	0	8	111	2	2	0	108	4	0	283	4140
8:45 AM	3	18	0	0	10	9	9	0	13	137	5	2	2	109	8	0	325	4060
8:50 AM	13	16	4	0	5	8	15	0	12	124	0	4	0	107	5	0	313	3974
8:55 AM	8	12	2	0	4	3	17	0	12	130	4	2	4	114	5	1	318	3883

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	68	292	24	0	120	216	140	0	180	2052	36	20	24	1532	132	16	4852
Heavy Trucks	0	8	0		0	8	0		8	52	0		0	56	0		132
Pedestrians		4				4				4				12			24
Bicycles	0	0	0		0	0	0		1	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

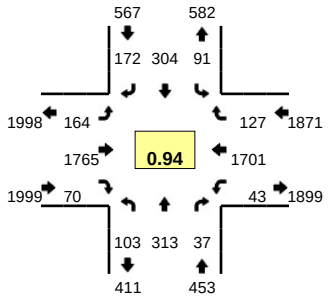
LOCATION: N Maroa Ave -- W Shaw Ave

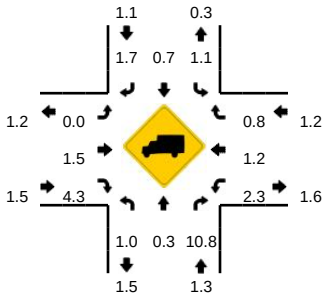
CITY/STATE: Fresno, CA

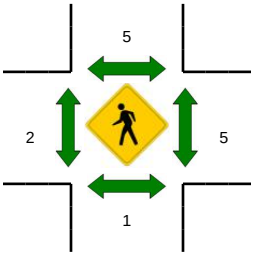
QC JOB #: 14816902

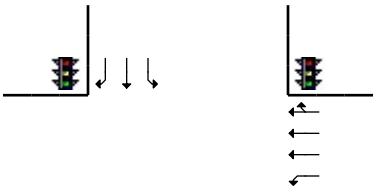
DATE: Thu, Oct 18 2018

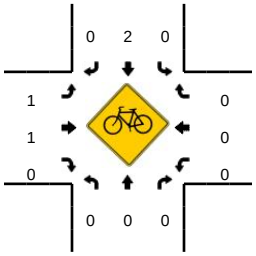
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

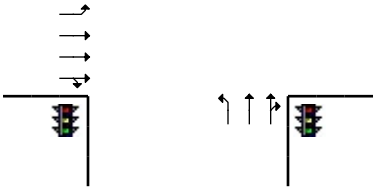


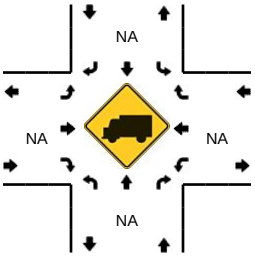


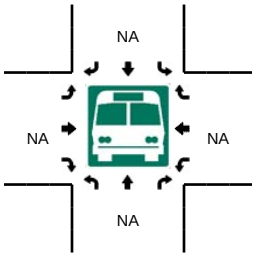












5-Min Count Period Beginning At	N Maroa Ave (Northbound)				N Maroa Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	19	0	0	3	13	14	0	7	108	5	0	1	116	10	0	305	
4:05 PM	6	21	2	0	2	26	5	0	5	126	4	1	3	154	4	4	363	
4:10 PM	9	17	2	0	7	15	13	0	9	112	8	0	6	102	8	0	308	
4:15 PM	8	22	4	0	1	14	14	0	13	173	2	0	0	129	10	1	391	
4:20 PM	5	25	4	0	6	11	12	0	14	109	3	2	3	117	11	1	323	
4:25 PM	10	16	4	0	7	17	14	0	14	133	2	3	4	153	14	0	391	
4:30 PM	8	16	3	0	5	12	13	0	19	126	6	3	5	109	9	1	335	
4:35 PM	11	23	2	0	11	19	14	0	10	121	2	3	0	129	12	0	357	
4:40 PM	7	19	4	0	7	17	13	0	10	157	11	0	2	160	14	0	421	
4:45 PM	9	29	2	0	3	19	14	0	10	111	3	4	2	132	13	1	352	
4:50 PM	10	27	0	0	9	29	12	0	9	109	6	0	0	121	3	0	335	
4:55 PM	5	25	4	0	5	14	17	0	14	135	7	1	0	149	14	0	390	4271
5:00 PM	6	18	3	0	11	20	11	0	10	155	5	3	4	137	10	0	393	4359
5:05 PM	6	33	0	0	5	33	14	0	13	174	8	3	3	121	11	0	424	4420
5:10 PM	11	41	4	0	7	26	18	0	14	153	7	2	3	137	13	2	438	4550
5:15 PM	10	25	4	0	11	28	12	0	13	150	7	2	6	145	13	1	427	4586
5:20 PM	11	36	4	0	9	31	15	0	11	160	6	2	5	143	7	1	441	4704
5:25 PM	9	20	4	0	5	25	15	0	12	167	5	2	3	155	8	0	430	4743
5:30 PM	9	24	2	0	5	23	18	0	18	161	8	3	2	148	11	1	433	4841
5:35 PM	9	31	4	0	6	32	16	0	9	119	1	1	5	148	15	0	396	4880
5:40 PM	4	14	4	0	7	23	9	0	13	123	1	2	5	136	10	1	352	4811
5:45 PM	13	19	4	0	11	20	15	0	6	159	9	1	1	161	12	0	431	4890
5:50 PM	8	26	8	0	9	21	14	0	7	109	2	1	1	104	10	1	321	4876
5:55 PM	3	15	1	0	7	9	10	0	7	129	4	0	1	110	10	0	306	4792

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	408	48	0	108	340	180	0	152	1852	80	24	56	1700	132	16	5224
Heavy Trucks	0	0	12		0	0	4		0	28	0		0	24	0		68
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		1	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

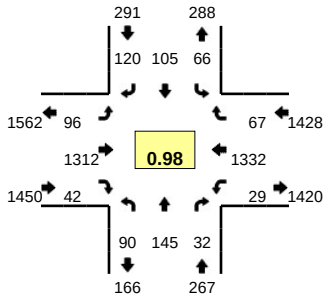
LOCATION: N Maroa Ave -- W Shaw Ave

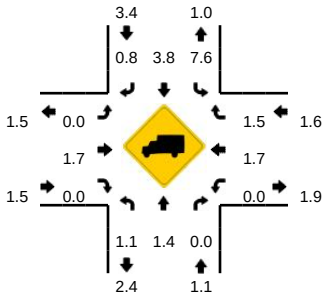
CITY/STATE: Fresno, CA

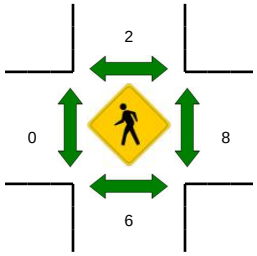
QC JOB #: 14816903

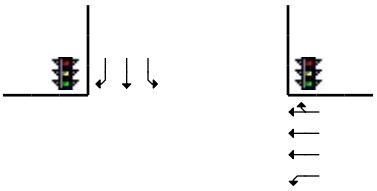
DATE: Sat, Oct 20 2018

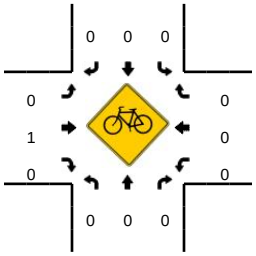
Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:30 PM -- 12:45 PM

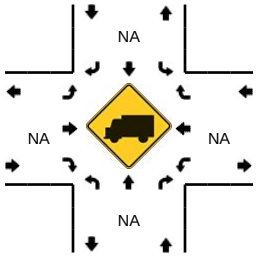


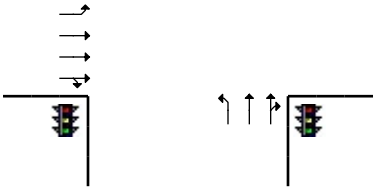


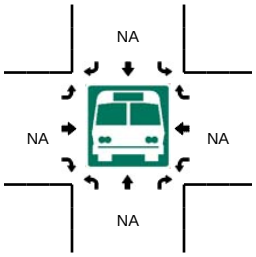












5-Min Count Period Beginning At	N Maroa Ave (Northbound)				N Maroa Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:45 AM	8	16	1	0	2	11	7	0	7	127	4	3	1	109	3	1	300	
11:50 AM	5	10	3	0	5	9	11	0	12	115	0	4	1	94	2	3	274	
11:55 AM	7	15	4	0	2	16	10	0	2	95	2	2	4	119	11	1	290	
12:00 PM	9	16	1	0	6	6	8	0	5	116	3	4	3	98	2	0	277	
12:05 PM	10	9	2	0	7	10	7	0	3	103	6	1	0	119	9	1	287	
12:10 PM	7	10	1	0	4	11	14	0	2	127	2	0	5	83	9	0	275	
12:15 PM	9	12	2	0	6	16	15	0	6	114	5	0	1	102	5	1	294	
12:20 PM	6	13	4	0	2	10	9	0	4	122	3	1	1	106	7	0	288	
12:25 PM	8	14	6	0	6	6	7	0	6	94	4	2	1	103	5	2	264	3323
12:30 PM	6	15	2	0	5	7	11	0	5	104	3	1	1	123	6	0	289	3382
12:35 PM	11	10	0	0	8	10	11	0	7	119	3	1	4	112	8	1	305	3396
12:40 PM	3	8	2	0	2	5	12	0	6	117	2	2	1	116	3	1	280	3423
12:45 PM	7	13	5	0	6	9	13	0	2	97	2	0	0	118	5	0	277	3400
12:50 PM	8	9	2	0	6	9	6	0	12	120	4	2	4	101	5	0	288	3414
12:55 PM	11	9	1	0	5	10	12	0	10	102	6	2	1	121	6	0	296	3420
1:00 PM	5	16	3	0	8	9	9	0	5	80	2	4	1	111	8	3	264	3407
1:05 PM	10	16	3	0	6	12	11	0	5	107	5	2	3	102	8	1	291	3411
1:10 PM	6	10	2	0	6	2	4	0	8	136	3	3	1	117	1	1	300	3436
1:15 PM	6	22	3	0	5	8	10	0	4	82	3	3	0	95	7	1	249	3391
1:20 PM	4	19	4	0	8	8	9	0	3	98	3	1	1	93	4	0	255	3358
1:25 PM	3	9	3	0	7	9	8	0	9	148	2	2	4	121	3	1	329	3423
1:30 PM	7	7	7	0	6	14	5	0	6	95	0	2	2	111	8	1	271	3405
1:35 PM	5	13	0	0	4	7	11	0	4	106	5	0	2	112	1	3	273	3373
1:40 PM	1	9	2	0	4	12	12	0	8	136	6	0	3	134	3	1	331	3424

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	80	132	16	0	60	88	136	0	72	1360	32	16	24	1404	68	8	3496
Heavy Trucks	4	4	0		4	8	0		0	16	0		0	20	0		56
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

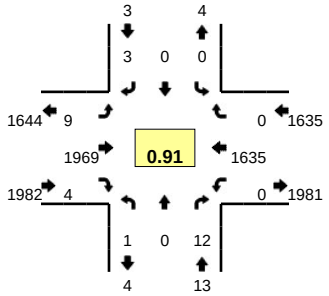
Type of peak hour being reported: Intersection Peak

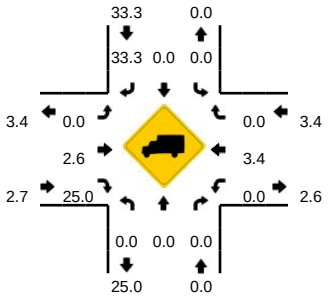
Method for determining peak hour: Total Entering Volume

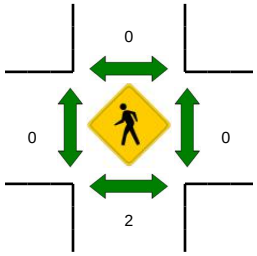
LOCATION: N Glen Ave -- W Shaw Ave
CITY/STATE: Fresno, CA

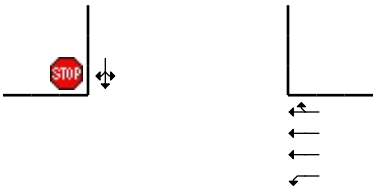
QC JOB #: 14816904
DATE: Thu, Oct 18 2018

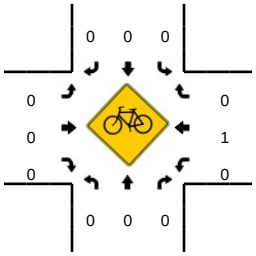
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

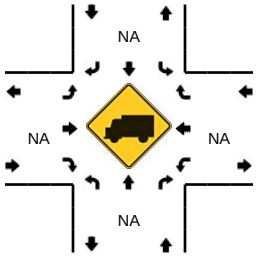


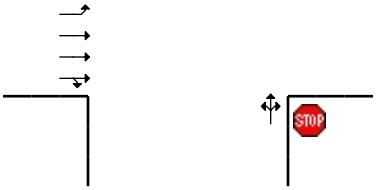


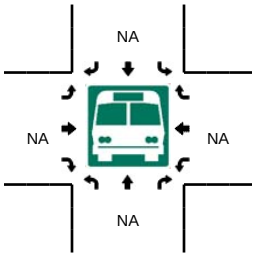












5-Min Count Period Beginning At	N Glen Ave (Northbound)				N Glen Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	64	1	0	0	62	0	0	128	
7:05 AM	0	0	0	0	0	0	0	0	0	106	2	0	0	64	0	0	172	
7:10 AM	0	0	3	0	0	0	0	0	0	123	0	0	0	89	0	0	215	
7:15 AM	0	0	1	0	0	0	0	0	0	101	0	0	0	77	0	0	179	
7:20 AM	0	0	0	0	0	0	0	0	0	205	1	0	0	72	0	0	278	
7:25 AM	0	0	0	0	0	0	0	0	0	142	0	0	0	74	0	0	216	
7:30 AM	0	0	0	0	0	0	0	0	0	182	0	0	0	113	0	0	295	
7:35 AM	0	0	0	0	0	0	0	0	0	186	0	0	0	125	0	0	311	
7:40 AM	1	0	0	0	0	0	0	0	0	191	0	0	0	121	0	0	313	
7:45 AM	0	0	4	0	0	0	0	0	0	196	1	1	0	128	0	0	330	
7:50 AM	0	0	0	0	0	0	0	0	1	160	0	1	0	134	0	0	296	
7:55 AM	0	0	1	0	0	0	0	0	2	196	0	1	0	169	0	0	369	3102
8:00 AM	0	0	2	0	0	0	0	0	0	167	1	0	0	150	0	0	320	3294
8:05 AM	0	0	2	0	0	0	0	0	0	144	0	0	0	136	0	0	282	3404
8:10 AM	0	0	0	0	0	0	1	0	1	137	1	0	0	161	0	0	301	3490
8:15 AM	0	0	1	0	0	0	0	0	0	159	0	1	0	105	0	0	266	3577
8:20 AM	0	0	2	0	0	0	1	0	0	123	0	1	0	147	0	0	274	3573
8:25 AM	0	0	0	0	0	0	1	0	0	128	1	0	0	146	0	0	276	3633
8:30 AM	0	0	0	0	0	0	0	0	0	89	0	0	1	121	0	0	211	3549
8:35 AM	0	0	0	0	0	0	0	0	0	106	0	0	0	140	0	0	246	3484
8:40 AM	0	0	0	0	0	0	0	0	0	117	1	1	0	116	0	1	236	3407
8:45 AM	0	0	0	0	0	0	0	0	0	153	1	0	0	99	0	0	253	3330
8:50 AM	0	0	0	0	0	0	0	0	1	126	0	0	0	137	0	0	264	3298
8:55 AM	0	0	2	0	0	0	0	0	0	106	0	1	0	110	0	0	219	3148

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	20	0	0	0	0	0	12	2208	4	12	0	1724	0	0	3980
Heavy Trucks	0	0	0		0	0	0		0	48	0		0	64	0		112
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

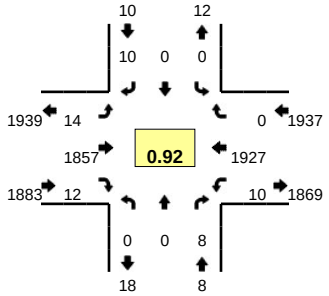
LOCATION: N Glen Ave -- W Shaw Ave

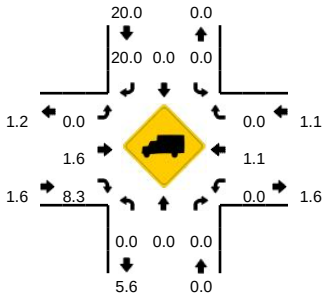
CITY/STATE: Fresno, CA

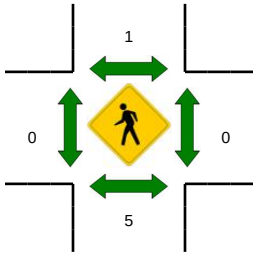
QC JOB #: 14816905

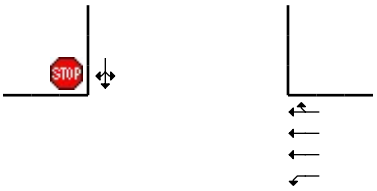
DATE: Thu, Oct 18 2018

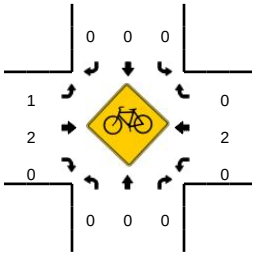
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

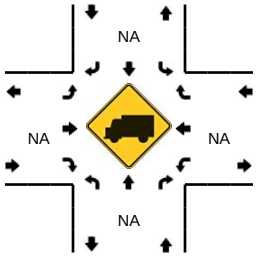


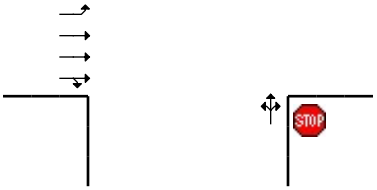


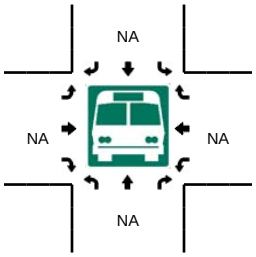












5-Min Count Period Beginning At	N Glen Ave (Northbound)				N Glen Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	0	0	0	0	0	134	0	0	1	146	0	2	284	
4:05 PM	0	0	0	0	0	0	1	0	1	111	0	0	1	161	0	1	276	
4:10 PM	0	0	2	0	0	0	0	0	0	150	1	1	0	128	0	1	283	
4:15 PM	0	0	3	0	0	0	1	0	0	153	0	0	0	118	0	2	277	
4:20 PM	0	0	1	0	0	0	0	0	1	125	0	0	0	169	0	1	297	
4:25 PM	0	0	1	0	0	0	0	0	1	134	2	0	0	162	0	1	301	
4:30 PM	0	0	4	0	0	0	0	0	0	142	2	0	2	154	0	0	304	
4:35 PM	0	0	0	0	0	0	0	0	1	138	1	0	0	175	0	0	315	
4:40 PM	0	0	0	0	0	0	2	0	0	133	1	1	0	148	0	1	286	
4:45 PM	0	0	1	0	0	0	0	0	0	137	1	0	1	146	1	0	287	
4:50 PM	0	0	1	0	0	0	2	0	2	159	0	0	1	140	0	0	305	
4:55 PM	0	0	0	0	0	0	1	0	1	109	0	0	0	182	0	0	293	3508
5:00 PM	0	0	1	0	0	0	2	0	1	153	1	0	1	140	0	0	299	3523
5:05 PM	0	0	0	0	0	0	2	0	1	185	4	0	0	165	0	0	357	3604
5:10 PM	0	0	1	0	0	0	0	0	0	160	1	1	2	179	0	0	344	3665
5:15 PM	0	0	0	0	0	0	1	0	1	163	1	0	0	162	0	0	328	3716
5:20 PM	0	0	1	0	0	0	1	0	1	185	1	0	1	181	0	1	372	3791
5:25 PM	0	0	1	0	0	0	1	0	1	165	1	0	1	157	0	1	328	3818
5:30 PM	0	0	0	0	0	0	0	0	2	145	1	0	0	162	0	0	310	3824
5:35 PM	0	0	0	0	0	0	0	0	0	142	1	0	0	162	0	0	305	3814
5:40 PM	0	0	2	0	0	0	0	0	1	131	0	1	0	152	0	2	289	3817
5:45 PM	0	0	1	0	0	0	0	0	1	160	1	0	0	145	0	0	308	3838
5:50 PM	0	0	2	0	0	0	0	0	0	142	2	1	0	128	0	0	275	3808
5:55 PM	0	0	0	0	0	0	0	0	1	117	1	0	2	114	0	1	236	3751

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	8	0	0	0	8	0	8	2032	12	4	12	2088	0	4	4176
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	24	0		48
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

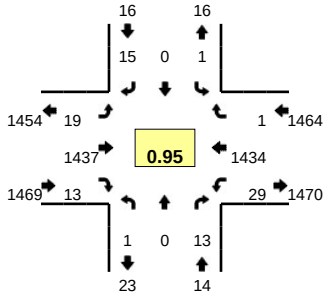
LOCATION: N Glen Ave -- W Shaw Ave

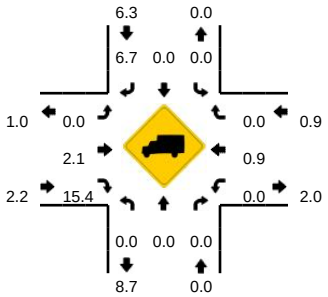
CITY/STATE: Fresno, CA

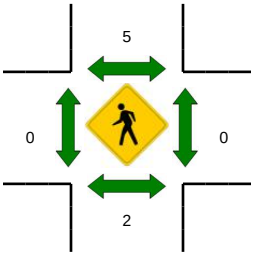
QC JOB #: 14816906

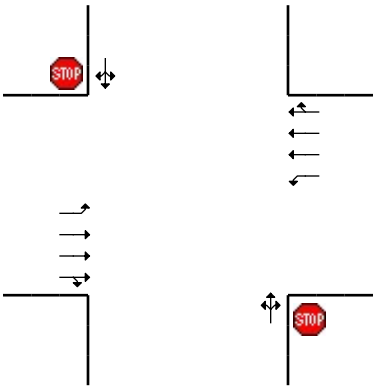
DATE: Sat, Oct 20 2018

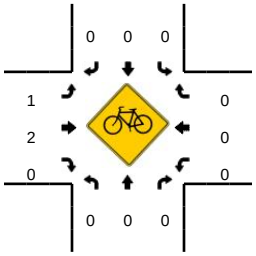
Peak-Hour: 1:25 PM -- 2:25 PM
Peak 15-Min: 1:25 PM -- 1:40 PM

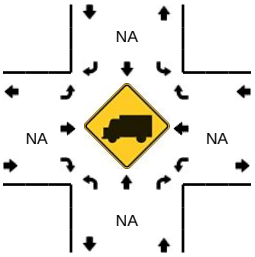


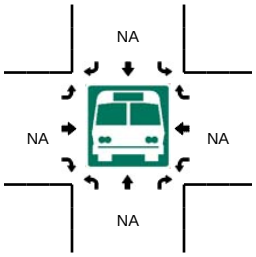












5-Min Count Period Beginning At	N Glen Ave (Northbound)				N Glen Ave (Southbound)				W Shaw Ave (Eastbound)				W Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:55 PM	1	0	0	0	0	0	1	0	0	129	1	1	2	103	0	1	239	2887
1:00 PM	0	0	2	0	0	0	1	0	0	97	2	0	1	138	0	3	244	2921
1:05 PM	0	0	2	0	0	0	1	0	0	91	2	1	0	119	0	0	216	2871
1:10 PM	1	0	0	0	0	0	1	0	1	130	2	0	0	111	0	2	248	2886
1:15 PM	0	0	1	0	0	0	1	0	3	108	1	1	0	110	0	5	230	2916
1:20 PM	0	0	3	0	0	0	0	0	3	116	0	0	0	94	1	1	218	2876
1:25 PM	0	0	2	0	1	0	0	0	5	112	0	0	0	140	0	0	260	2883
1:30 PM	0	0	0	0	0	0	2	0	1	139	2	1	2	122	0	2	271	2874
1:35 PM	1	0	1	0	0	0	0	0	1	125	0	0	2	115	0	0	245	2872
1:40 PM	0	0	3	0	0	0	2	0	2	124	2	1	0	107	0	3	244	2875
1:45 PM	0	0	0	0	0	0	0	0	1	92	1	1	0	154	0	1	250	2877
1:50 PM	0	0	0	0	0	0	1	0	0	107	0	0	0	97	1	4	210	2875
1:55 PM	0	0	1	0	0	0	1	0	0	147	3	0	1	128	0	1	282	2918
2:00 PM	0	0	3	0	0	0	1	0	1	89	0	0	2	123	0	1	220	2894
2:05 PM	0	0	1	0	0	0	2	0	1	146	1	0	1	121	0	1	274	2952
2:10 PM	0	0	2	0	0	0	1	0	0	97	2	0	2	108	0	1	213	2917
2:15 PM	0	0	0	0	0	0	2	0	2	111	0	0	0	106	0	5	226	2913
2:20 PM	0	0	0	0	0	0	3	0	1	148	2	1	0	113	0	0	268	2963
2:25 PM	0	0	2	0	0	0	2	0	3	112	0	0	1	116	0	2	238	2941
2:30 PM	0	0	0	0	0	0	1	0	0	117	0	0	0	115	0	2	235	2905
2:35 PM	0	0	1	0	0	0	1	0	0	134	1	0	1	88	1	2	229	2889
2:40 PM	0	0	1	0	0	0	0	0	0	130	0	0	1	116	0	5	253	2898
2:45 PM	0	0	1	0	0	0	1	0	0	129	0	0	3	140	0	2	276	2924
2:50 PM	0	0	0	0	0	0	0	0	0	108	0	1	1	115	0	0	225	2939

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	12	0	4	0	8	0	28	1504	8	4	16	1508	0	8	3104
Heavy Trucks	0	0	0		0	0	0		0	36	0		0	12	0		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

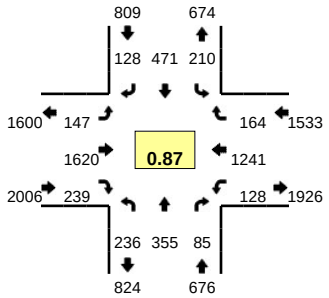
LOCATION: N Blackstone Ave -- Shaw Ave

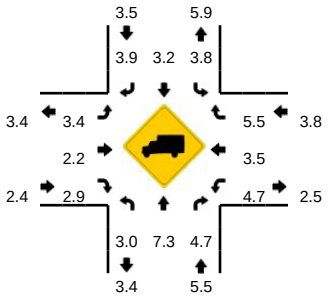
CITY/STATE: Fresno, CA

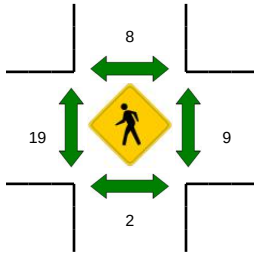
QC JOB #: 14816907

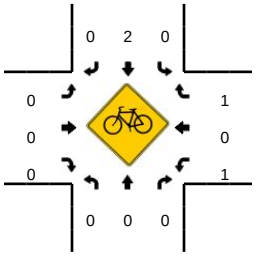
DATE: Thu, Oct 18 2018

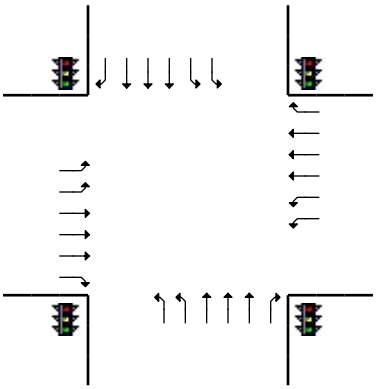
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

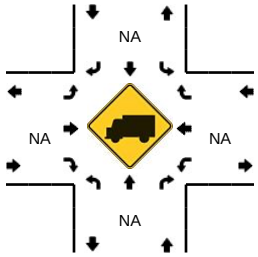


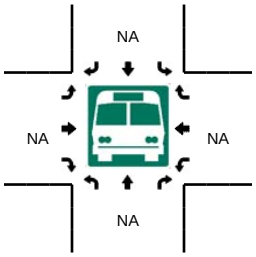












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Shaw Ave (Eastbound)				Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	9	8	0	6	7	2	0	6	45	7	0	6	64	7	1	174	
7:05 AM	16	14	9	1	17	27	3	0	4	95	13	0	5	46	6	0	256	
7:10 AM	11	16	6	0	18	30	2	0	10	102	12	0	4	68	2	0	281	
7:15 AM	10	20	4	0	11	25	9	1	2	115	12	0	4	76	12	1	302	
7:20 AM	10	18	5	0	28	33	3	0	5	148	18	0	4	60	8	0	340	
7:25 AM	8	13	6	0	3	34	8	0	7	146	28	0	9	63	15	0	340	
7:30 AM	21	29	3	2	26	46	10	0	10	117	19	0	6	72	11	1	373	
7:35 AM	16	31	7	0	15	44	9	0	26	117	10	0	8	84	15	3	385	
7:40 AM	19	32	9	1	20	46	13	0	14	187	8	0	12	126	11	2	500	
7:45 AM	30	29	6	0	29	38	10	0	11	176	17	0	7	102	15	2	472	
7:50 AM	24	31	9	0	12	52	15	0	7	152	30	0	16	104	15	1	468	
7:55 AM	24	28	2	1	10	50	14	0	24	136	23	0	12	140	13	1	478	4369
8:00 AM	18	28	8	0	15	38	11	0	15	125	27	0	6	108	21	1	421	4616
8:05 AM	26	24	5	1	21	25	13	2	6	121	12	0	10	103	14	4	387	4747
8:10 AM	15	43	8	0	15	48	13	0	13	98	15	0	10	89	9	4	380	4846
8:15 AM	11	28	14	0	16	19	6	3	7	129	29	0	8	124	14	0	408	4952
8:20 AM	19	39	8	0	20	31	6	3	7	116	21	0	5	126	11	0	412	5024
8:25 AM	14	25	5	1	13	25	2	1	17	76	14	0	9	108	16	3	329	5013
8:30 AM	14	31	10	0	16	43	12	0	7	73	8	0	2	109	12	0	337	4977
8:35 AM	13	21	6	0	16	31	8	1	7	66	14	0	5	82	16	2	288	4880
8:40 AM	20	33	9	3	12	23	8	0	21	110	11	2	15	107	14	8	396	4776
8:45 AM	24	36	8	0	19	25	9	1	10	122	21	0	8	97	14	0	394	4698
8:50 AM	18	41	11	4	12	39	8	0	13	96	12	0	8	93	13	2	370	4600
8:55 AM	21	19	9	1	15	18	7	0	11	114	12	0	5	112	17	2	363	4485

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	292	368	96	4	244	544	152	0	128	2060	220	0	140	1328	164	20	5760
Heavy Trucks	12	24	4		8	8	12		12	24	4		16	28	4		156
Pedestrians		4				8				8				4			24
Bicycles	0	0	0		0	1	0		0	0	0		1	0	1		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

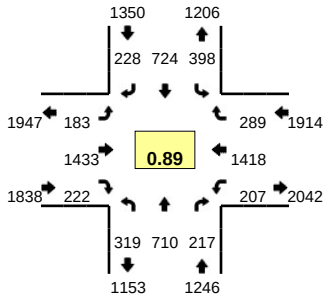
LOCATION: N Blackstone Ave -- Shaw Ave

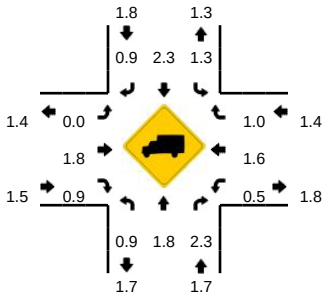
CITY/STATE: Fresno, CA

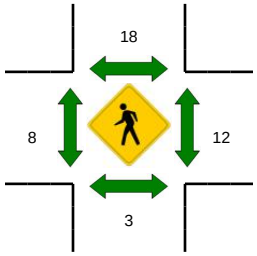
QC JOB #: 14816908

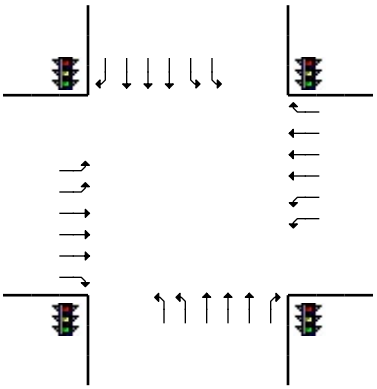
DATE: Thu, Oct 18 2018

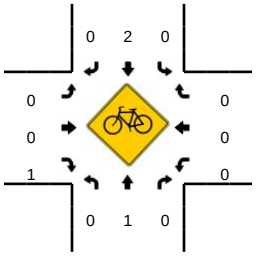
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

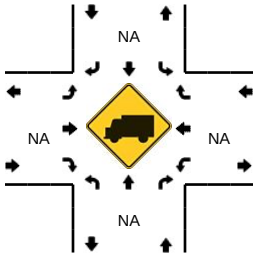


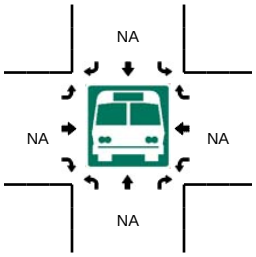












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Shaw Ave (Eastbound)				Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	23	47	17	3	30	59	14	3	14	98	15	0	14	113	29	0	479	
4:05 PM	17	37	12	1	29	52	19	6	8	89	18	2	20	85	17	5	417	
4:10 PM	28	57	10	4	17	61	19	5	14	100	22	1	18	104	23	2	485	
4:15 PM	28	29	14	2	32	20	13	0	24	116	23	0	19	96	20	3	439	
4:20 PM	26	65	17	5	17	44	18	9	13	105	10	0	17	141	22	4	513	
4:25 PM	20	53	9	3	13	63	13	1	17	121	19	0	20	135	27	2	516	
4:30 PM	25	65	13	2	32	53	14	5	16	110	16	0	11	81	15	1	459	
4:35 PM	29	71	17	0	30	51	17	4	8	67	19	0	19	103	20	3	458	
4:40 PM	19	62	17	1	30	56	15	2	19	116	16	0	10	132	24	2	521	
4:45 PM	34	34	16	1	36	44	23	4	12	125	15	2	11	124	23	4	508	
4:50 PM	19	48	17	2	17	34	15	1	18	122	15	0	20	133	25	4	490	
4:55 PM	21	43	12	1	28	51	22	0	8	90	19	0	21	122	34	1	473	5758
5:00 PM	16	77	22	0	35	72	17	3	18	88	22	1	17	73	21	1	483	5762
5:05 PM	36	64	20	3	38	60	22	2	11	121	20	0	13	117	19	0	546	5891
5:10 PM	35	58	13	3	40	76	19	3	18	156	16	0	6	130	27	1	601	6007
5:15 PM	27	46	26	3	25	60	23	2	10	147	26	1	20	151	28	5	600	6168
5:20 PM	19	82	23	1	29	65	16	4	16	133	20	0	21	122	27	1	579	6234
5:25 PM	28	62	12	3	38	81	21	1	20	124	19	1	17	77	14	0	518	6236
5:30 PM	23	75	23	3	25	68	18	4	12	96	16	1	10	112	26	3	515	6292
5:35 PM	18	59	16	3	27	57	17	4	15	115	18	0	17	125	21	2	514	6348
5:40 PM	36	58	18	3	32	60	15	5	8	125	17	0	5	113	21	5	521	6348
5:45 PM	29	55	13	1	24	67	16	3	9	118	23	0	23	98	20	3	502	6342
5:50 PM	27	50	14	2	25	55	17	3	14	119	11	2	12	81	14	4	450	6302
5:55 PM	13	42	9	1	25	37	13	6	20	88	19	2	16	87	35	3	416	6245

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	324	744	248	28	376	804	232	36	176	1744	248	4	188	1612	328	28	7120
Heavy Trucks	8	20	4		4	12	4		0	24	4		0	12	4		96
Pedestrians		0				16				4				8			28
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

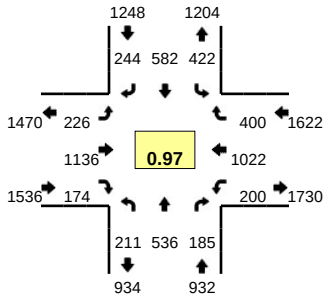
LOCATION: N Blackstone Ave -- Shaw Ave

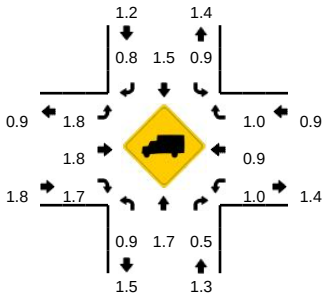
CITY/STATE: Fresno, CA

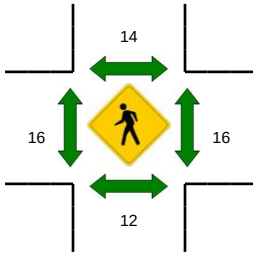
QC JOB #: 14816909

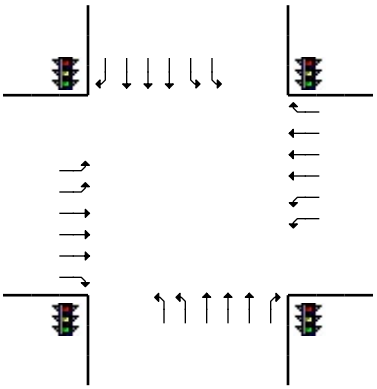
DATE: Sat, Oct 20 2018

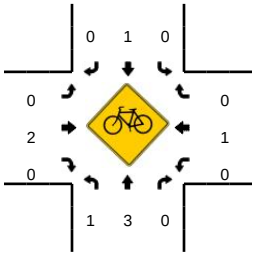
Peak-Hour: 1:55 PM -- 2:55 PM
Peak 15-Min: 2:35 PM -- 2:50 PM

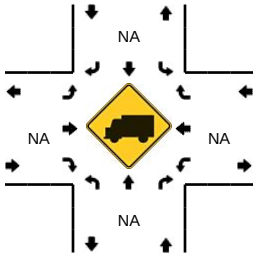


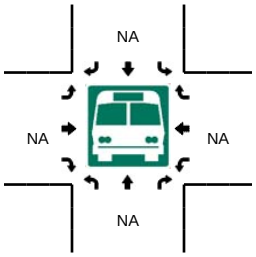












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Shaw Ave (Eastbound)				Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:00 PM	23	31	15	1	35	36	11	4	12	70	21	1	21	81	27	3	392	5290
1:05 PM	15	67	19	0	33	47	25	3	13	64	11	0	16	81	38	4	436	5294
1:10 PM	16	36	16	2	29	34	14	3	20	107	12	0	19	80	31	9	428	5253
1:15 PM	15	54	15	0	32	45	16	8	15	85	10	0	8	82	24	6	415	5265
1:20 PM	14	40	15	1	33	49	18	4	18	82	22	2	14	81	46	5	444	5246
1:25 PM	11	50	14	3	21	50	12	2	18	77	17	2	14	95	27	7	420	5207
1:30 PM	13	55	13	2	24	44	17	12	14	100	18	2	12	90	33	3	452	5209
1:35 PM	13	49	16	1	38	42	22	8	20	85	17	1	9	87	31	4	443	5197
1:40 PM	26	23	14	1	32	54	23	7	19	100	20	2	18	114	38	4	495	5263
1:45 PM	17	63	21	1	27	36	18	2	14	57	19	0	12	84	26	3	400	5235
1:50 PM	9	42	21	1	32	60	20	4	15	65	19	3	17	57	19	6	390	5195
1:55 PM	27	50	17	3	21	50	25	7	16	116	20	1	8	104	37	2	504	5219
2:00 PM	12	44	12	1	34	32	19	4	27	77	11	1	22	74	32	6	408	5235
2:05 PM	15	42	18	0	19	46	19	5	13	105	13	2	8	110	46	5	466	5265
2:10 PM	14	44	18	1	30	53	15	3	8	81	15	1	15	76	32	4	410	5247
2:15 PM	18	40	14	3	37	56	19	8	24	74	19	1	15	51	31	4	414	5246
2:20 PM	18	56	20	1	38	61	18	2	9	106	13	0	5	78	20	3	448	5250
2:25 PM	12	39	11	1	30	52	17	5	23	89	16	1	20	88	39	3	446	5276
2:30 PM	21	51	15	2	31	54	25	7	13	97	10	0	10	76	26	0	438	5262
2:35 PM	18	48	19	3	39	50	25	5	23	107	13	2	13	75	23	4	467	5286
2:40 PM	19	30	13	2	36	27	17	2	21	110	18	1	9	93	34	3	435	5226
2:45 PM	12	49	18	1	31	49	26	3	22	80	15	1	22	104	44	3	480	5306
2:50 PM	6	43	10	1	22	52	19	3	15	94	11	1	12	93	36	4	422	5338
2:55 PM	17	36	14	1	40	34	20	10	10	63	14	0	15	87	31	2	394	5228

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	196	508	200	24	424	504	272	40	264	1188	184	16	176	1088	404	40	5528
Heavy Trucks	0	8	4		0	4	0		4	24	0		4	24	8		80
Pedestrians		28				12				12				4			56
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

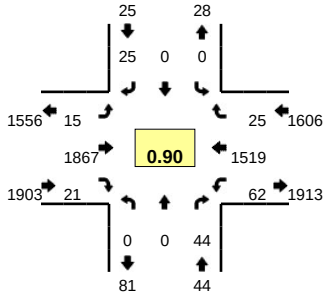
Type of peak hour being reported: Intersection Peak

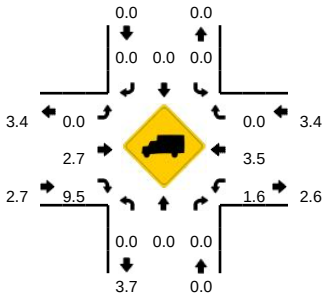
Method for determining peak hour: Total Entering Volume

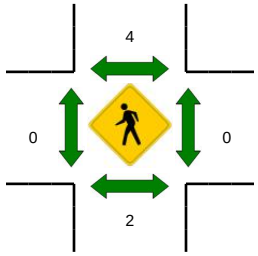
LOCATION: N Effie St -- E Shaw Ave
CITY/STATE: Fresno, CA

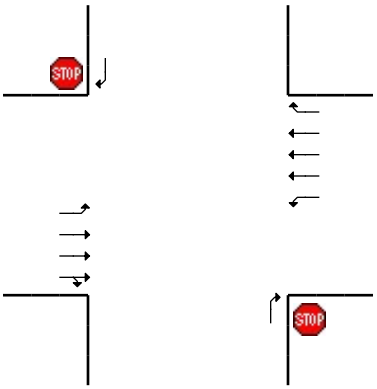
QC JOB #: 14816910
DATE: Thu, Oct 18 2018

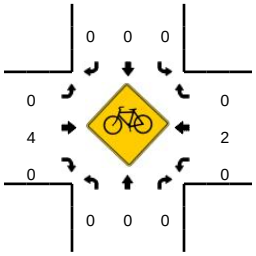
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

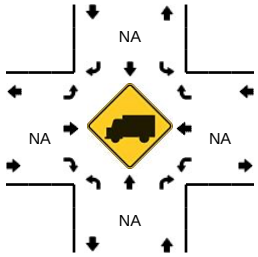


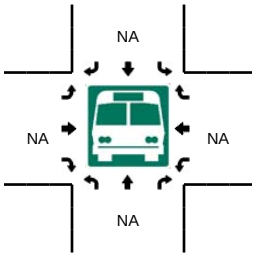












5-Min Count Period Beginning At	N Effie St (Northbound)				N Effie St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	4	0	0	0	0	0	0	64	2	2	8	64	1	0	145	
7:05 AM	0	0	1	0	0	0	0	0	1	108	2	0	4	71	0	1	188	
7:10 AM	0	0	4	0	0	0	3	0	0	132	2	1	6	76	3	0	227	
7:15 AM	0	0	2	0	0	0	2	0	0	140	0	0	2	85	0	0	231	
7:20 AM	0	0	6	0	0	0	0	0	0	162	2	0	5	61	1	0	237	
7:25 AM	0	0	4	0	0	0	2	0	0	156	1	1	5	88	2	1	260	
7:30 AM	0	0	4	0	0	0	3	0	0	148	1	1	3	117	3	0	280	
7:35 AM	0	0	2	0	0	0	1	0	1	174	1	1	3	112	2	0	297	
7:40 AM	0	0	8	0	0	0	3	0	0	204	0	2	2	126	1	0	346	
7:45 AM	0	0	2	0	0	0	4	0	0	199	4	0	2	143	1	0	355	
7:50 AM	0	0	3	0	0	0	1	0	0	151	1	1	5	118	1	0	281	
7:55 AM	0	0	5	0	0	0	1	0	0	155	1	1	6	142	5	0	316	3163
8:00 AM	0	0	0	0	0	0	1	0	0	140	3	0	3	143	3	0	293	3311
8:05 AM	0	0	4	0	0	0	2	0	1	143	3	1	9	144	3	0	310	3433
8:10 AM	0	0	5	0	0	0	5	0	0	144	1	1	3	83	2	0	244	3450
8:15 AM	0	0	3	0	0	0	1	0	1	126	2	1	11	160	1	1	307	3526
8:20 AM	0	0	4	0	0	0	1	0	0	127	3	2	8	143	1	0	289	3578
8:25 AM	0	0	8	0	0	0	3	0	0	111	1	0	8	102	4	0	237	3555
8:30 AM	0	0	6	0	0	0	4	0	0	79	3	1	6	138	3	0	240	3515
8:35 AM	0	0	5	0	0	0	4	0	0	102	1	0	5	123	6	0	246	3464
8:40 AM	0	0	3	0	0	0	5	0	0	142	0	0	5	98	0	0	253	3371
8:45 AM	0	0	6	0	0	0	2	0	0	126	0	0	10	113	0	0	257	3273
8:50 AM	0	0	2	0	0	0	3	0	1	144	3	0	9	142	2	0	306	3298
8:55 AM	0	0	3	0	0	0	3	0	1	108	2	1	9	117	0	0	244	3226

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	48	0	0	0	32	0	4	2308	20	12	28	1524	16	0	3992
Heavy Trucks	0	0	0		0	0	0		0	56	0		0	36	0		92
Pedestrians		4				8				0				0			12
Bicycles	0	0	0		0	0	0		0	1	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

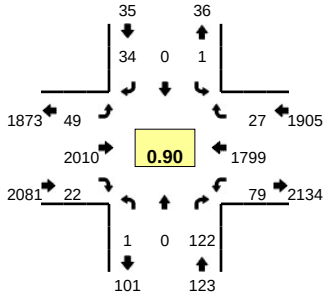
Type of peak hour being reported: Intersection Peak

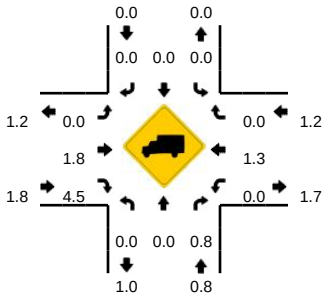
Method for determining peak hour: Total Entering Volume

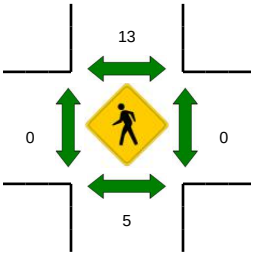
LOCATION: N Effie St -- E Shaw Ave
CITY/STATE: Fresno, CA

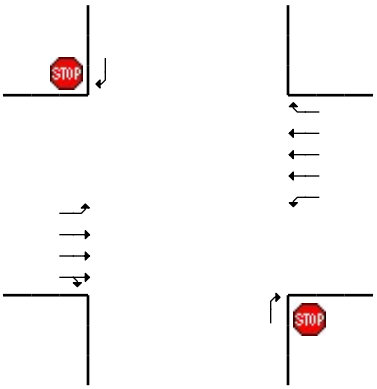
QC JOB #: 14816911
DATE: Thu, Oct 18 2018

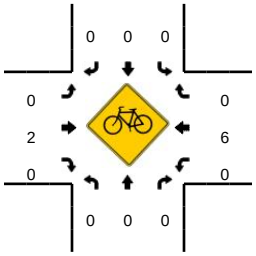
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

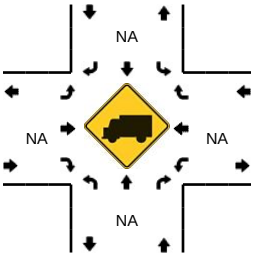


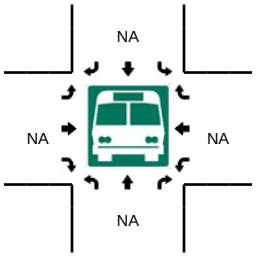












5-Min Count Period Beginning At	N Effie St (Northbound)				N Effie St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	11	0	0	0	3	0	0	136	1	2	7	128	3	0	291	
4:05 PM	0	0	6	0	0	0	1	0	0	137	2	5	5	143	2	0	301	
4:10 PM	0	0	4	0	0	0	0	0	0	130	2	1	6	136	1	1	281	
4:15 PM	0	0	6	0	0	0	3	0	1	163	1	2	7	133	2	0	318	
4:20 PM	0	0	8	0	0	0	0	0	0	143	1	0	7	165	1	1	326	
4:25 PM	0	0	1	0	0	0	1	0	2	154	1	5	4	158	3	0	329	
4:30 PM	0	0	8	0	0	0	2	0	1	162	0	3	7	137	2	1	323	
4:35 PM	0	0	5	0	0	0	2	0	0	132	2	1	9	145	4	0	300	
4:40 PM	0	0	10	0	0	0	4	0	1	149	3	2	8	171	2	1	351	
4:45 PM	0	0	5	0	0	0	3	0	3	166	0	3	7	140	2	0	329	
4:50 PM	0	0	7	0	0	0	1	0	0	157	0	1	5	154	3	0	328	
4:55 PM	0	0	4	0	0	0	3	0	2	132	1	4	9	157	5	0	317	3794
5:00 PM	0	0	14	0	0	0	2	0	1	164	2	5	1	137	1	0	327	3830
5:05 PM	0	0	8	0	0	0	1	0	0	173	1	7	8	146	0	0	344	3873
5:10 PM	0	0	22	0	1	0	5	0	0	180	5	3	10	152	3	0	381	3973
5:15 PM	0	0	11	1	0	0	1	0	0	204	2	2	7	188	0	0	416	4071
5:20 PM	0	0	8	0	0	0	3	0	1	202	1	5	3	125	4	0	352	4097
5:25 PM	0	0	10	0	0	0	3	0	1	163	2	3	6	135	2	0	325	4093
5:30 PM	0	0	12	0	0	0	4	0	0	164	1	2	7	174	3	0	367	4137
5:35 PM	0	0	11	0	0	0	4	0	0	156	4	3	7	120	2	0	307	4144
5:40 PM	0	0	7	0	0	0	3	0	0	160	3	3	5	140	2	1	324	4117
5:45 PM	0	0	5	0	0	0	1	0	1	152	1	2	12	127	3	0	304	4092
5:50 PM	0	0	10	0	0	0	3	0	1	167	1	2	1	114	3	0	302	4066
5:55 PM	0	0	7	0	0	0	1	0	0	137	0	4	3	107	3	0	262	4011

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	164	4	4	0	36	0	4	2344	32	40	80	1860	28	0	4596
Heavy Trucks	0	0	4		0	0	0		0	28	0		0	24	0		56
Pedestrians		12				8				0				0			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

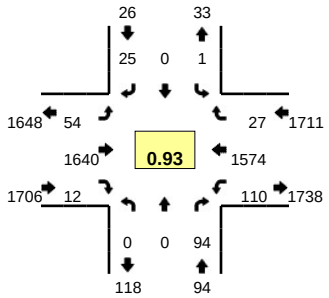
Type of peak hour being reported: Intersection Peak

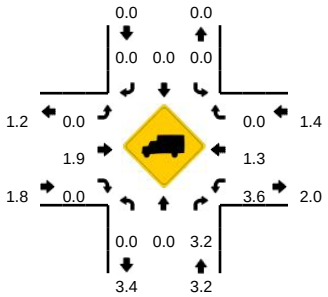
Method for determining peak hour: Total Entering Volume

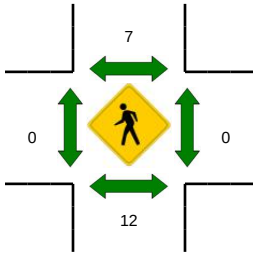
LOCATION: N Effie St -- E Shaw Ave
CITY/STATE: Fresno, CA

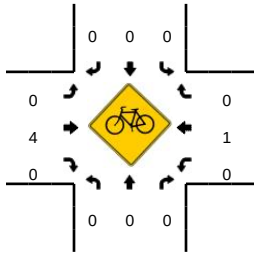
QC JOB #: 14816912
DATE: Sat, Oct 20 2018

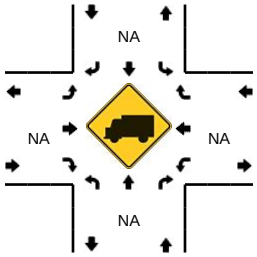
Peak-Hour: 12:30 PM -- 1:30 PM
Peak 15-Min: 12:30 PM -- 12:45 PM

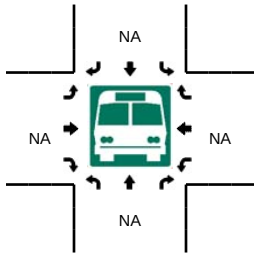












5-Min Count Period Beginning At	N Effie St (Northbound)				N Effie St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	0	4	0	0	0	1	0	2	143	1	4	5	119	3	1	283	
12:05 PM	0	0	6	0	0	0	4	0	0	144	2	3	11	121	0	1	292	
12:10 PM	0	0	3	0	0	0	2	0	0	160	1	2	6	112	1	0	287	
12:15 PM	0	0	10	0	0	0	1	0	0	151	0	1	7	123	2	0	295	
12:20 PM	0	0	8	0	0	0	2	0	0	128	2	4	6	138	0	0	288	
12:25 PM	0	0	11	0	0	0	1	0	0	135	2	1	9	114	1	0	274	3256
12:30 PM	0	0	11	0	0	0	0	0	0	151	1	1	11	157	3	1	336	3376
12:35 PM	0	0	8	0	0	0	2	1	0	142	1	3	15	124	7	0	303	3404
12:40 PM	0	0	7	0	0	0	1	0	0	142	0	3	8	145	1	0	307	3445
12:45 PM	0	0	6	0	0	0	2	0	0	127	2	4	12	117	2	1	273	3464
12:50 PM	0	0	5	0	0	0	2	0	0	119	1	4	9	153	1	0	294	3482
12:55 PM	0	0	4	0	0	0	0	0	1	142	1	5	6	124	2	0	285	3517
1:00 PM	0	0	13	0	0	0	2	0	1	122	1	6	6	130	2	2	285	3519
1:05 PM	0	0	5	0	0	0	4	0	0	121	1	7	12	140	0	0	290	3517
1:10 PM	0	0	11	0	0	0	3	0	1	161	1	5	1	93	1	0	277	3507
1:15 PM	0	0	9	0	0	0	1	0	0	143	1	2	12	141	2	0	311	3523
1:20 PM	0	0	8	0	0	0	4	0	2	129	0	2	6	129	5	0	285	3520
1:25 PM	0	0	7	0	0	0	4	0	0	141	2	7	8	121	1	0	291	3537
1:30 PM	0	0	2	0	0	0	2	0	1	131	1	6	5	148	1	0	297	3498
1:35 PM	0	0	2	0	0	0	3	0	2	119	1	4	9	126	1	0	267	3462
1:40 PM	0	0	7	0	0	0	2	0	1	141	1	3	9	151	1	0	316	3471
1:45 PM	0	0	4	0	0	0	2	0	0	110	0	2	7	138	3	3	269	3467
1:50 PM	0	0	3	0	0	0	1	0	2	131	0	6	5	94	4	0	246	3419
1:55 PM	0	0	5	0	0	0	0	0	0	142	1	0	12	141	2	1	304	3438

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	104	0	0	0	12	4	0	1740	8	28	136	1704	44	4	3784
Heavy Trucks	0	0	0		0	0	0		0	28	0		4	28	0		60
Pedestrians		32				0				0				0			32
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

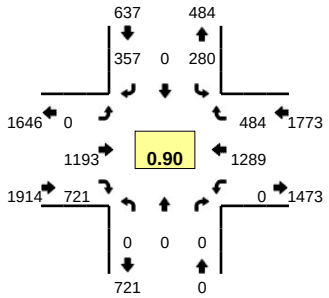
Type of peak hour being reported: Intersection Peak

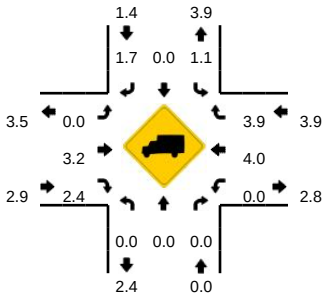
Method for determining peak hour: Total Entering Volume

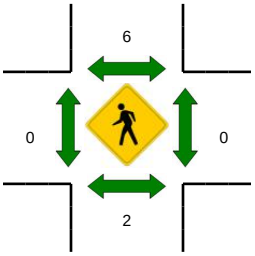
LOCATION: SR-41 SB Ramps -- E Shaw Ave
CITY/STATE: Fresno, CA

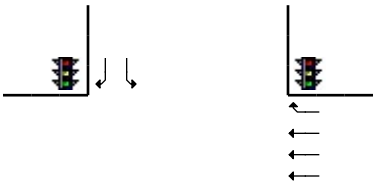
QC JOB #: 14816913
DATE: Thu, Oct 18 2018

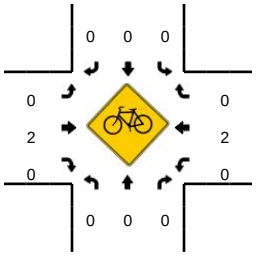
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

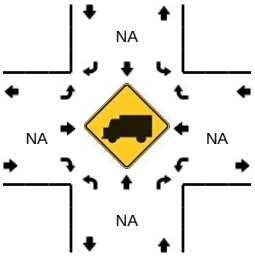


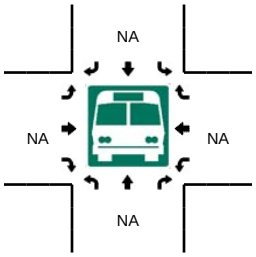












5-Min Count Period Beginning At	SR-41 SB Ramps (Northbound)				SR-41 SB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	12	0	20	0	0	42	31	0	0	64	26	0	195	
7:05 AM	0	0	0	0	17	0	14	0	0	58	52	0	0	62	33	0	236	
7:10 AM	0	0	0	0	12	0	18	0	0	67	62	0	0	47	24	0	230	
7:15 AM	0	0	0	0	27	0	9	0	0	54	53	0	0	75	36	0	254	
7:20 AM	0	0	0	0	29	0	12	0	0	116	83	0	0	75	40	0	355	
7:25 AM	0	0	0	0	27	0	27	0	0	72	71	0	0	68	30	0	295	
7:30 AM	0	0	0	0	31	0	20	0	0	70	64	0	0	74	48	0	307	
7:35 AM	0	0	0	0	24	0	16	0	0	118	81	0	0	118	50	0	407	
7:40 AM	0	0	0	0	18	0	24	0	0	117	73	0	0	92	61	0	385	
7:45 AM	0	0	0	0	28	0	25	0	0	115	81	0	0	115	48	0	412	
7:50 AM	0	0	0	0	21	0	15	0	0	107	61	0	0	115	30	0	349	
7:55 AM	0	0	0	0	24	0	36	0	0	123	48	0	0	147	45	0	423	3848
8:00 AM	0	0	0	0	17	0	45	0	0	97	53	0	0	93	33	0	338	3991
8:05 AM	0	0	0	0	23	0	40	0	0	97	59	0	0	108	32	0	359	4114
8:10 AM	0	0	0	0	20	0	23	0	0	93	73	0	0	95	35	0	339	4223
8:15 AM	0	0	0	0	19	0	38	0	0	73	39	0	0	100	40	0	309	4278
8:20 AM	0	0	0	0	34	0	37	0	0	70	48	0	0	123	28	0	340	4263
8:25 AM	0	0	0	0	21	0	38	0	0	113	41	0	0	109	34	0	356	4324
8:30 AM	0	0	0	0	22	0	36	0	0	71	44	0	0	99	20	0	292	4309
8:35 AM	0	0	0	0	32	0	32	0	0	47	46	0	0	91	31	0	279	4181
8:40 AM	0	0	0	0	30	0	21	0	0	83	47	0	0	109	31	0	321	4117
8:45 AM	0	0	0	0	22	0	25	0	0	88	32	0	0	97	30	0	294	3999
8:50 AM	0	0	0	0	31	0	31	0	0	107	53	0	0	107	31	0	360	4010
8:55 AM	0	0	0	0	37	0	30	0	0	83	32	0	0	105	18	0	305	3892

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	280	0	260	0	0	1400	940	0	0	1300	636	0	4816
Heavy Trucks	0	0	0		4	0	12		0	52	28		0	40	16		152
Pedestrians		4				8				0				0			12
Bicycles	0	0	0		0	0	0		0	1	0		0	2	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

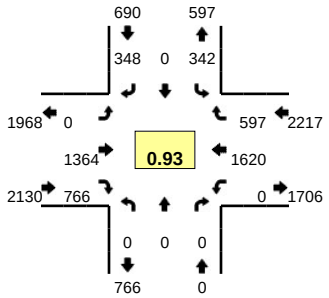
LOCATION: SR-41 SB Ramps -- E Shaw Ave

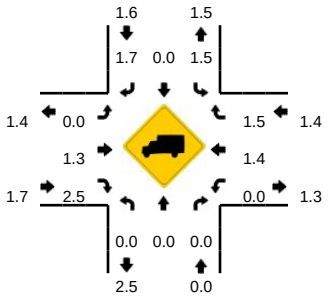
CITY/STATE: Fresno, CA

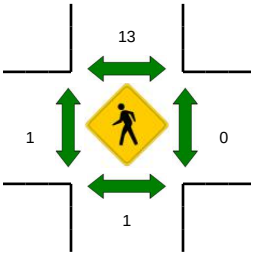
QC JOB #: 14816914

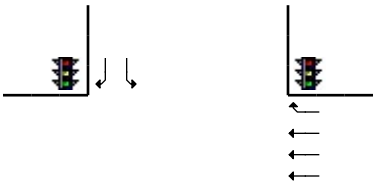
DATE: Thu, Oct 18 2018

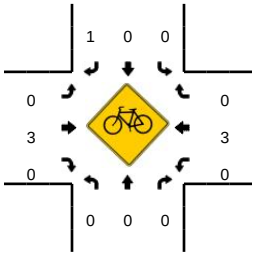
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

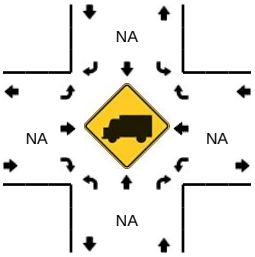


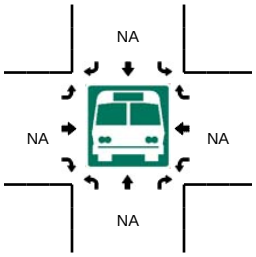












5-Min Count Period Beginning At	SR-41 SB Ramps (Northbound)				SR-41 SB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	23	0	20	0	0	137	55	0	0	147	40	0	422	
4:05 PM	0	0	0	0	35	0	26	0	0	94	54	0	0	119	49	0	377	
4:10 PM	0	0	0	0	40	0	29	0	0	62	54	0	0	108	28	0	321	
4:15 PM	0	0	0	0	27	0	31	0	0	114	67	0	0	122	39	0	400	
4:20 PM	0	0	0	0	23	0	20	0	0	96	62	0	0	165	49	0	415	
4:25 PM	0	0	0	0	24	0	43	0	0	79	40	0	0	118	43	0	347	
4:30 PM	0	0	0	0	23	0	21	0	0	109	61	0	0	104	34	0	352	
4:35 PM	0	0	0	0	22	0	22	0	0	101	68	0	0	167	58	0	438	
4:40 PM	0	0	0	0	36	0	39	0	0	113	48	0	0	119	49	0	404	
4:45 PM	0	0	0	0	35	0	33	0	0	86	51	0	0	120	34	0	359	
4:50 PM	0	0	0	0	24	0	24	0	0	147	46	0	0	148	52	0	441	
4:55 PM	0	0	0	0	26	0	43	0	0	73	62	0	0	132	56	0	392	4668
5:00 PM	0	0	0	0	39	0	28	0	0	92	56	0	0	88	37	0	340	4586
5:05 PM	0	0	0	0	20	0	24	0	0	137	75	0	0	148	59	0	463	4672
5:10 PM	0	0	0	0	28	0	26	0	0	126	87	0	0	148	66	0	481	4832
5:15 PM	0	0	0	0	27	0	32	0	0	98	73	0	0	143	40	0	413	4845
5:20 PM	0	0	0	0	24	0	22	0	0	147	70	0	0	138	45	0	446	4876
5:25 PM	0	0	0	0	24	0	23	0	0	138	62	0	0	130	58	0	435	4964
5:30 PM	0	0	0	0	37	0	32	0	0	106	68	0	0	139	43	0	425	5037
5:35 PM	0	0	0	0	27	0	27	0	0	117	37	0	0	101	27	0	336	4935
5:40 PM	0	0	0	0	13	0	19	0	0	126	74	0	0	156	43	0	431	4962
5:45 PM	0	0	0	0	38	0	23	0	0	101	50	0	0	98	47	0	357	4960
5:50 PM	0	0	0	0	36	0	27	0	0	103	62	0	0	82	25	0	335	4854
5:55 PM	0	0	0	0	26	0	18	0	0	109	50	0	0	130	41	0	374	4836

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	300	0	328	0	0	1444	940	0	0	1756	660	0	5428
Heavy Trucks	0	0	0		4	0	0		0	16	8		0	16	8		52
Pedestrians		4				12				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

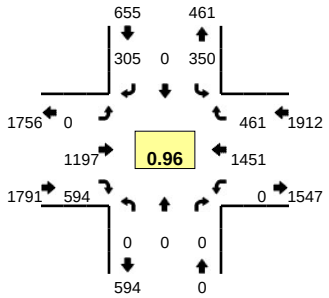
Type of peak hour being reported: Intersection Peak

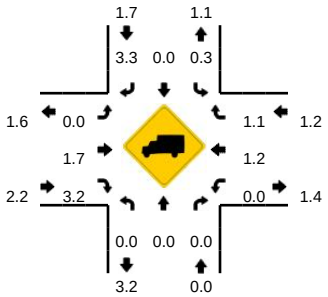
Method for determining peak hour: Total Entering Volume

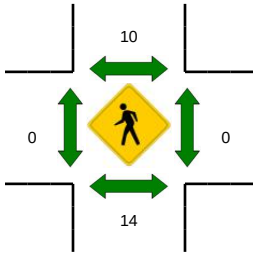
LOCATION: SR-41 SB Ramps -- E Shaw Ave
CITY/STATE: Fresno, CA

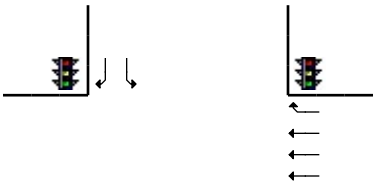
QC JOB #: 14816915
DATE: Sat, Oct 20 2018

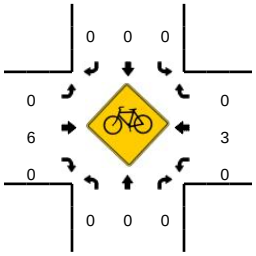
Peak-Hour: 12:20 PM -- 1:20 PM
Peak 15-Min: 1:05 PM -- 1:20 PM

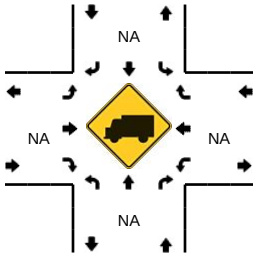


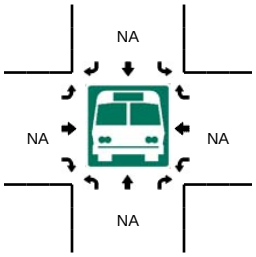












5-Min Count Period Beginning At	SR-41 SB Ramps (Northbound)				SR-41 SB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:50 AM	0	0	0	0	39	0	24	0	0	97	39	0	0	111	36	0	346	
11:55 AM	0	0	0	0	27	0	20	0	0	95	51	0	0	128	41	0	362	
12:00 PM	0	0	0	0	39	0	24	0	0	81	55	0	0	88	33	0	320	
12:05 PM	0	0	0	0	30	0	23	0	0	99	62	0	0	104	34	0	352	
12:10 PM	0	0	0	0	18	0	22	0	0	128	37	0	0	119	40	0	364	
12:15 PM	0	0	0	0	44	0	21	0	0	77	52	0	0	85	35	0	314	
12:20 PM	0	0	0	0	32	0	19	0	0	124	37	0	0	156	40	0	408	
12:25 PM	0	0	0	0	37	0	29	0	0	95	53	0	0	102	26	0	342	4039
12:30 PM	0	0	0	0	22	0	24	0	0	100	59	0	0	136	23	0	364	4110
12:35 PM	0	0	0	0	35	0	23	0	0	105	37	0	0	121	31	0	352	4138
12:40 PM	0	0	0	0	30	0	25	0	0	104	56	0	0	121	50	0	386	4222
12:45 PM	0	0	0	0	27	0	21	0	0	90	46	0	0	128	38	0	350	4260
12:50 PM	0	0	0	0	30	0	24	0	0	88	46	0	0	116	29	0	333	4247
12:55 PM	0	0	0	0	16	0	26	0	0	114	46	0	0	133	50	0	385	4270
1:00 PM	0	0	0	0	38	0	31	0	0	62	49	0	0	80	41	0	301	4251
1:05 PM	0	0	0	0	23	0	28	0	0	105	49	0	0	147	46	0	398	4297
1:10 PM	0	0	0	0	34	0	23	0	0	106	58	0	0	90	43	0	354	4287
1:15 PM	0	0	0	0	26	0	32	0	0	104	58	0	0	121	44	0	385	4358
1:20 PM	0	0	0	0	39	0	29	0	0	78	47	0	0	82	45	0	320	4270
1:25 PM	0	0	0	0	33	0	19	0	0	96	54	0	0	136	40	0	378	4306
1:30 PM	0	0	0	0	38	0	26	0	0	84	49	0	0	116	49	0	362	4304
1:35 PM	0	0	0	0	21	0	16	0	0	92	44	0	0	139	35	0	347	4299
1:40 PM	0	0	0	0	34	0	30	0	0	100	47	0	0	124	56	0	391	4304
1:45 PM	0	0	0	0	53	0	30	0	0	73	29	0	0	104	38	0	327	4281

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	332	0	332	0	0	1260	660	0	0	1432	532	0	4548
Heavy Trucks	0	0	0		0	0	12		0	24	16		0	12	12		76
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

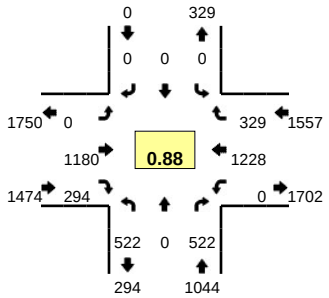
Type of peak hour being reported: Intersection Peak

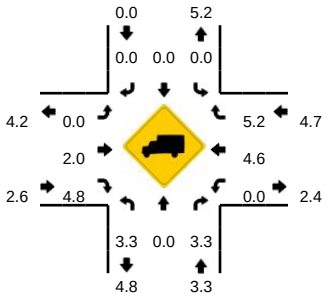
Method for determining peak hour: Total Entering Volume

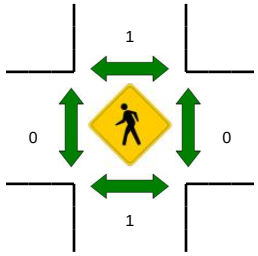
LOCATION: SR-41 NB Ramps -- E Shaw Ave
CITY/STATE: Fresno, CA

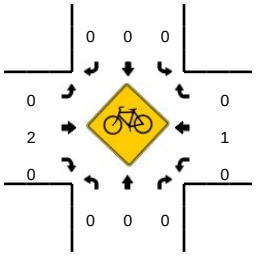
QC JOB #: 14816916
DATE: Thu, Oct 18 2018

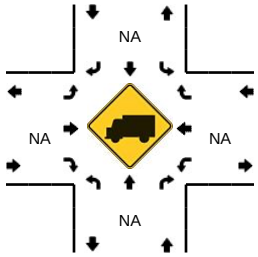
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

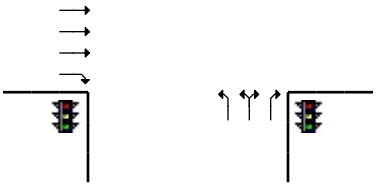


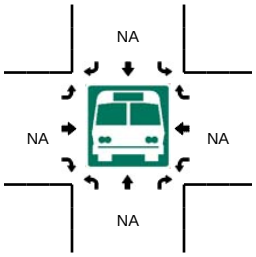












5-Min Count Period Beginning At	SR-41 NB Ramps (Northbound)				SR-41 NB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	31	0	23	0	0	0	0	0	0	58	6	0	0	53	12	0	183	
7:05 AM	33	0	25	0	0	0	0	0	0	57	8	0	0	55	16	0	194	
7:10 AM	26	0	37	0	0	0	0	0	0	88	16	0	0	84	24	0	275	
7:15 AM	22	0	42	0	0	0	0	0	0	96	25	0	0	86	20	0	291	
7:20 AM	35	0	43	0	0	0	0	0	0	83	19	0	0	44	23	0	247	
7:25 AM	24	0	39	0	0	0	0	0	0	101	15	0	0	126	25	0	330	
7:30 AM	41	0	61	0	0	0	0	0	0	100	26	0	0	111	26	0	365	
7:35 AM	56	0	49	0	0	0	0	0	0	101	22	0	0	96	26	0	350	
7:40 AM	45	0	54	0	0	0	0	0	0	95	30	0	0	101	27	0	352	
7:45 AM	30	0	39	0	0	0	0	0	0	147	28	0	0	139	36	0	419	
7:50 AM	54	0	61	0	0	0	0	0	0	117	21	0	0	104	33	0	390	
7:55 AM	50	0	38	0	0	0	0	0	0	74	20	0	0	90	38	0	310	3706
8:00 AM	40	0	37	0	0	0	0	0	0	108	33	0	0	99	35	0	352	3875
8:05 AM	39	0	40	0	0	0	0	0	0	86	25	0	0	82	20	0	292	3973
8:10 AM	53	0	30	0	0	0	0	0	0	67	18	0	0	90	17	0	275	3973
8:15 AM	51	0	32	0	0	0	0	0	0	85	25	0	0	99	23	0	315	3997
8:20 AM	39	0	42	0	0	0	0	0	0	99	31	0	0	91	23	0	325	4075
8:25 AM	58	0	40	0	0	0	0	0	0	68	22	0	0	74	23	0	285	4030
8:30 AM	42	0	42	0	0	0	0	0	0	82	14	0	0	86	17	0	283	3948
8:35 AM	38	0	26	0	0	0	0	0	0	84	16	0	0	86	11	0	261	3859
8:40 AM	57	0	31	0	0	0	0	0	0	83	22	0	0	69	21	0	283	3790
8:45 AM	52	0	42	0	0	0	0	0	0	79	24	0	0	66	19	0	282	3653
8:50 AM	40	0	28	0	0	0	0	0	0	126	27	0	0	117	13	0	351	3614
8:55 AM	44	0	42	0	0	0	0	0	0	91	18	0	0	73	17	0	285	3589

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	516	0	616	0	0	0	0	0	0	1436	316	0	0	1376	384	0	4644
Heavy Trucks	8	0	32		0	0	0		0	24	16		0	64	16		160
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

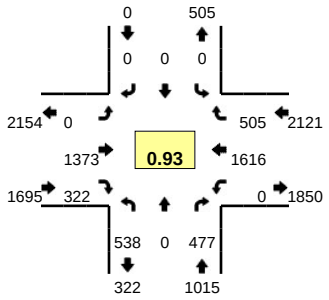
Type of peak hour being reported: Intersection Peak

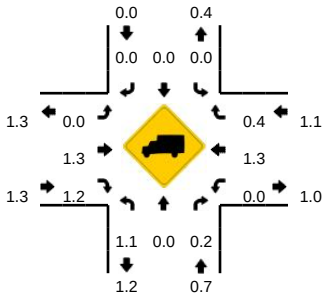
Method for determining peak hour: Total Entering Volume

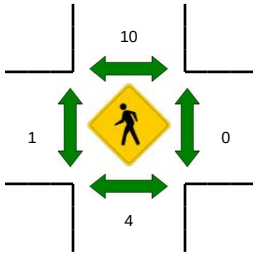
LOCATION: SR-41 NB Ramps -- E Shaw Ave
CITY/STATE: Fresno, CA

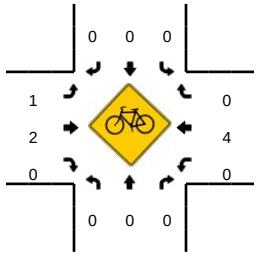
QC JOB #: 14816917
DATE: Thu, Oct 18 2018

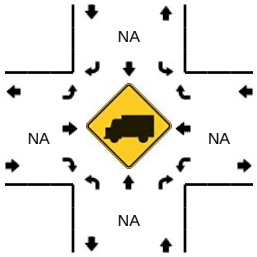
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

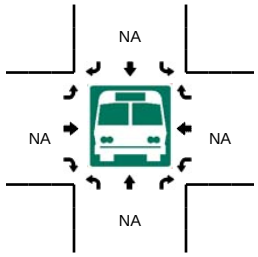












5-Min Count Period Beginning At	SR-41 NB Ramps (Northbound)				SR-41 NB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	58	0	56	0	0	0	0	0	0	96	23	0	0	96	36	0	365	
4:05 PM	44	0	52	0	0	0	0	0	0	104	15	0	0	110	41	0	366	
4:10 PM	32	0	33	0	0	0	0	0	0	119	23	0	0	135	34	0	376	
4:15 PM	63	0	43	0	0	0	0	0	0	95	25	0	0	121	41	0	388	
4:20 PM	47	0	48	0	0	0	0	0	0	63	10	0	0	114	39	0	321	
4:25 PM	40	0	30	0	0	0	0	0	0	143	24	0	0	139	27	0	403	
4:30 PM	57	0	41	0	0	0	0	0	0	89	21	0	0	131	28	0	367	
4:35 PM	52	0	45	0	0	0	0	0	0	97	22	0	0	122	32	0	370	
4:40 PM	51	0	42	0	0	0	0	0	0	129	21	0	0	115	41	0	399	
4:45 PM	52	0	49	0	0	0	0	0	0	117	38	0	0	151	48	0	455	
4:50 PM	48	0	32	0	0	0	0	0	0	81	18	0	0	126	34	0	339	
4:55 PM	33	0	33	0	0	0	0	0	0	106	10	0	0	126	43	0	351	4500
5:00 PM	40	0	32	0	0	0	0	0	0	120	43	0	0	155	43	0	433	4568
5:05 PM	52	0	53	0	0	0	0	0	0	108	22	0	0	139	46	0	420	4622
5:10 PM	47	0	46	0	0	0	0	0	0	103	28	0	0	133	50	0	407	4653
5:15 PM	31	0	36	0	0	0	0	0	0	150	28	0	0	180	41	0	466	4731
5:20 PM	45	0	38	0	0	0	0	0	0	111	25	0	0	103	44	0	366	4776
5:25 PM	52	0	36	0	0	0	0	0	0	111	25	0	0	128	40	0	392	4765
5:30 PM	32	0	41	0	0	0	0	0	0	137	32	0	0	141	40	0	423	4821
5:35 PM	55	0	39	0	0	0	0	0	0	100	32	0	0	119	35	0	380	4831
5:40 PM	32	0	30	0	0	0	0	0	0	109	30	0	0	118	41	0	360	4792
5:45 PM	31	0	29	0	0	0	0	0	0	122	19	0	0	109	43	0	353	4690
5:50 PM	41	0	45	0	0	0	0	0	0	111	34	0	0	95	34	0	360	4711
5:55 PM	40	0	53	0	0	0	0	0	0	92	19	0	0	89	35	0	328	4688

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	520	0	540	0	0	0	0	0	0	1444	312	0	0	1808	548	0	5172
Heavy Trucks	4	0	4		0	0	0		0	16	0		0	8	8		40
Pedestrians		8				4				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

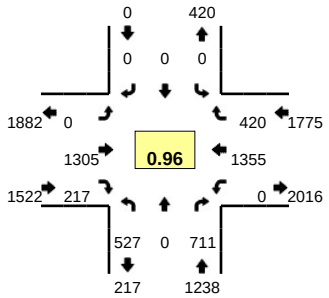
Type of peak hour being reported: Intersection Peak

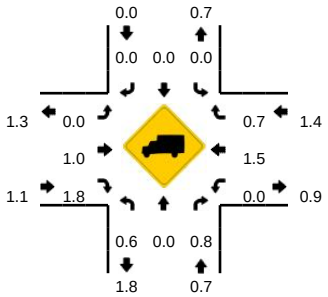
Method for determining peak hour: Total Entering Volume

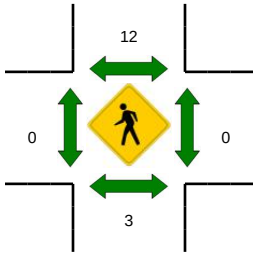
LOCATION: SR-41 NB Ramps -- E Shaw Ave
CITY/STATE: Fresno, CA

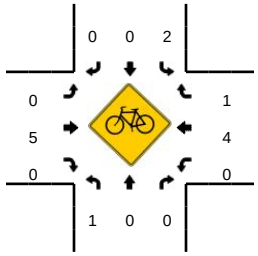
QC JOB #: 14816918
DATE: Sat, Oct 20 2018

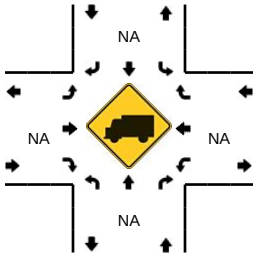
Peak-Hour: 12:20 PM -- 1:20 PM
Peak 15-Min: 12:20 PM -- 12:35 PM

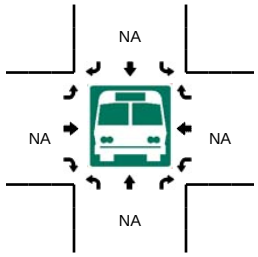












5-Min Count Period Beginning At	SR-41 NB Ramps (Northbound)				SR-41 NB Ramps (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:50 AM	53	0	58	0	0	0	0	0	0	94	21	0	0	94	30	0	350	
11:55 AM	41	0	68	0	0	0	0	0	0	94	10	0	0	83	29	0	325	
12:00 PM	39	0	42	0	0	0	0	0	0	120	17	0	0	111	30	0	359	
12:05 PM	44	0	59	0	0	0	0	0	0	107	32	0	0	80	28	0	350	
12:10 PM	35	0	66	0	0	0	0	0	0	87	21	0	0	101	41	0	351	
12:15 PM	56	0	51	0	0	0	0	0	0	123	21	0	0	111	38	0	400	
12:20 PM	38	0	68	0	0	0	0	0	0	123	21	0	0	112	31	0	393	
12:25 PM	47	0	73	0	0	0	0	0	0	106	14	0	0	108	27	0	375	4289
12:30 PM	56	0	51	0	0	0	0	0	0	135	18	0	0	115	44	0	419	4380
12:35 PM	50	0	56	0	0	0	0	0	0	113	15	0	0	126	33	0	393	4435
12:40 PM	46	0	56	0	0	0	0	0	0	97	10	0	0	107	33	0	349	4434
12:45 PM	50	0	65	0	0	0	0	0	0	108	23	0	0	97	29	0	372	4436
12:50 PM	48	0	69	0	0	0	0	0	0	80	16	0	0	113	35	0	361	4447
12:55 PM	41	0	47	0	0	0	0	0	0	112	19	0	0	117	42	0	378	4500
1:00 PM	33	0	52	0	0	0	0	0	0	93	12	0	0	121	42	0	353	4494
1:05 PM	42	0	59	0	0	0	0	0	0	90	22	0	0	98	37	0	348	4492
1:10 PM	45	0	57	0	0	0	0	0	0	115	28	0	0	105	40	0	390	4531
1:15 PM	31	0	58	0	0	0	0	0	0	133	19	0	0	136	27	0	404	4535
1:20 PM	32	0	55	0	0	0	0	0	0	103	20	0	0	145	29	0	384	4526
1:25 PM	43	0	54	0	0	0	0	0	0	111	19	0	0	125	32	0	384	4535
1:30 PM	43	0	57	0	0	0	0	0	0	93	18	0	0	109	31	0	351	4467
1:35 PM	69	0	46	0	0	0	0	0	0	98	21	0	0	126	37	0	397	4471
1:40 PM	46	0	64	0	0	0	0	0	0	93	17	0	0	105	33	0	358	4480
1:45 PM	35	0	53	0	0	0	0	0	0	107	15	0	0	84	31	0	325	4433

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	564	0	768	0	0	0	0	0	0	1456	212	0	0	1340	408	0	4748
Heavy Trucks	0	0	12		0	0	0		0	16	4		0	28	0		60
Pedestrians		8				4				0				0			12
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

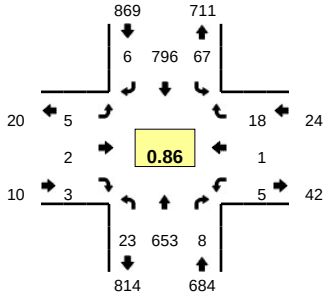
LOCATION: N Blackstone Ave -- San Jose Ave

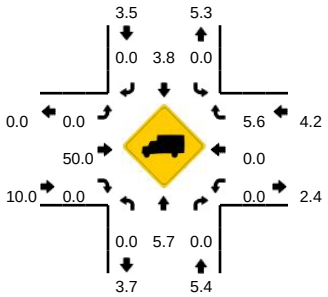
CITY/STATE: Fresno, CA

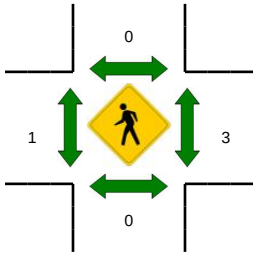
QC JOB #: 14816919

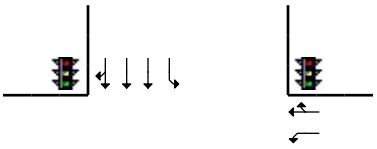
DATE: Thu, Oct 18 2018

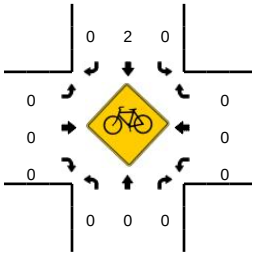
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

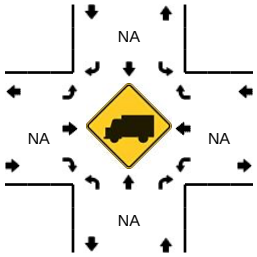


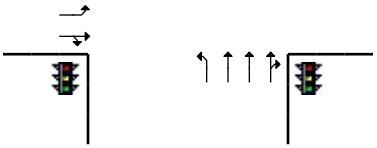


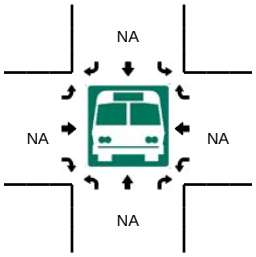












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				San Jose Ave (Eastbound)				San Jose Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	27	0	0	1	25	0	1	0	0	0	0	1	0	1	0	56	
7:05 AM	0	25	0	0	0	48	0	3	0	0	0	0	0	0	0	0	76	
7:10 AM	0	24	1	0	0	54	0	3	0	0	0	0	2	0	1	0	85	
7:15 AM	2	35	0	0	1	50	0	1	0	0	0	0	1	0	2	0	92	
7:20 AM	0	28	2	0	2	65	0	1	0	0	0	0	0	0	1	0	99	
7:25 AM	1	29	0	3	4	56	0	4	0	0	0	0	0	0	0	0	97	
7:30 AM	0	53	1	0	1	80	0	3	0	0	0	0	0	0	1	0	139	
7:35 AM	1	60	0	1	0	70	1	2	0	0	0	0	2	0	2	0	139	
7:40 AM	1	54	1	1	2	83	1	2	0	0	0	0	0	0	2	0	147	
7:45 AM	0	51	2	0	3	90	3	7	1	0	0	0	0	0	1	0	158	
7:50 AM	0	65	0	1	4	81	0	2	0	0	2	0	0	0	2	0	157	
7:55 AM	1	56	1	0	1	56	1	1	0	0	0	0	0	0	1	0	118	1363
8:00 AM	2	64	0	1	5	63	0	6	0	0	0	0	0	0	1	0	142	1449
8:05 AM	1	48	0	3	1	69	0	1	1	1	0	0	1	0	2	0	128	1501
8:10 AM	1	48	1	1	2	52	0	1	0	0	0	0	0	0	1	0	107	1523
8:15 AM	1	53	0	0	4	54	0	3	0	0	1	0	1	1	0	0	118	1549
8:20 AM	0	42	0	1	5	44	0	3	1	0	0	0	1	0	3	0	100	1550
8:25 AM	5	59	2	1	4	54	0	4	2	1	0	0	0	0	2	0	134	1587
8:30 AM	0	36	1	3	2	58	0	1	0	0	0	0	0	0	1	0	102	1550
8:35 AM	4	46	0	1	0	56	2	5	0	0	1	0	0	0	0	0	115	1526
8:40 AM	1	64	1	3	2	43	0	1	0	0	2	0	1	0	1	0	119	1498
8:45 AM	4	64	3	1	2	55	3	4	0	0	0	0	2	0	1	0	139	1479
8:50 AM	2	34	3	2	2	48	1	5	1	0	0	0	0	0	1	0	99	1421
8:55 AM	9	52	1	3	2	39	1	2	1	0	1	0	1	0	2	0	114	1417

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	680	12	8	36	1016	16	44	4	0	8	0	0	0	20	0	1848
Heavy Trucks	0	36	0		0	28	0		0	0	0		0	0	0		64
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

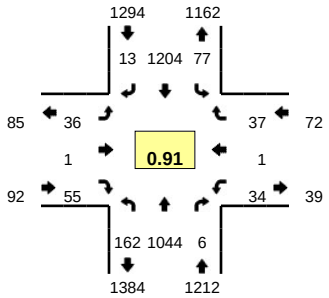
Type of peak hour being reported: Intersection Peak

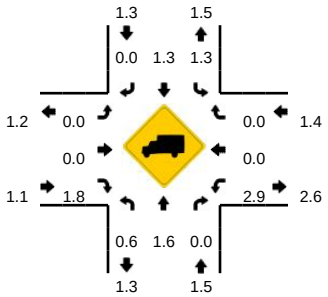
Method for determining peak hour: Total Entering Volume

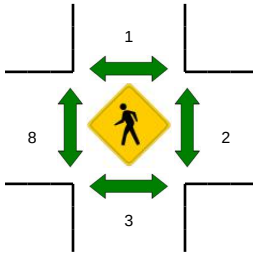
LOCATION: N Blackstone Ave -- San Jose Ave
CITY/STATE: Fresno, CA

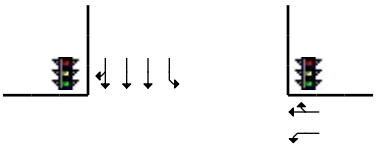
QC JOB #: 14816920
DATE: Thu, Oct 18 2018

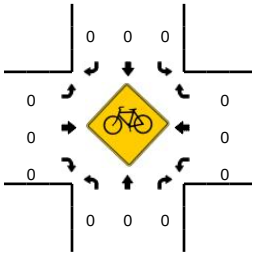
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

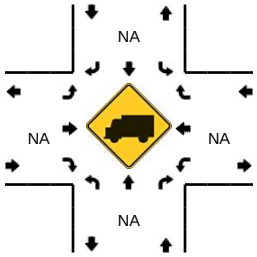


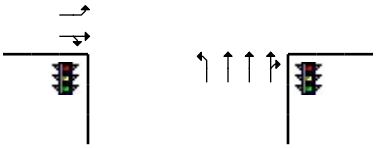


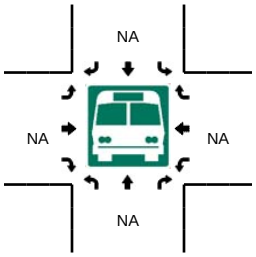












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				San Jose Ave (Eastbound)				San Jose Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	65	1	5	4	78	0	4	3	0	6	0	1	0	4	0	181	
4:05 PM	6	71	1	3	5	78	1	3	1	0	3	0	0	0	1	0	173	
4:10 PM	5	63	2	3	1	87	2	5	3	0	2	0	1	0	1	0	175	
4:15 PM	1	94	0	4	3	89	0	3	0	0	8	0	1	0	3	0	206	
4:20 PM	4	80	0	4	3	77	0	3	2	0	3	0	2	0	2	0	180	
4:25 PM	9	60	1	9	2	81	2	5	6	0	4	0	7	1	3	0	190	
4:30 PM	5	94	0	6	2	79	1	7	4	0	5	0	1	0	2	0	206	
4:35 PM	8	95	1	8	3	81	1	2	1	0	5	0	0	0	3	0	208	
4:40 PM	5	101	0	6	2	96	0	4	0	0	5	0	2	0	6	0	227	
4:45 PM	4	66	0	5	0	82	3	6	2	0	3	0	3	0	2	0	176	
4:50 PM	6	78	0	9	1	91	1	4	4	0	4	0	4	0	3	0	205	
4:55 PM	4	54	0	9	5	102	2	5	2	0	3	0	2	0	1	0	189	2316
5:00 PM	14	105	1	8	3	87	1	3	3	0	2	0	5	0	7	0	239	2374
5:05 PM	8	92	1	15	0	114	1	0	2	0	4	0	5	0	5	0	247	2448
5:10 PM	7	110	0	4	3	101	1	6	2	0	10	0	3	0	4	0	251	2524
5:15 PM	6	87	1	5	3	111	3	5	2	0	6	0	2	0	1	0	232	2550
5:20 PM	5	85	0	7	1	115	1	1	4	0	5	0	1	0	3	0	228	2598
5:25 PM	2	81	0	5	2	106	3	4	2	0	3	0	1	0	3	0	212	2620
5:30 PM	4	111	0	4	7	99	0	5	5	1	6	0	3	0	2	0	247	2661
5:35 PM	6	77	1	7	2	93	0	4	8	0	2	0	5	1	5	0	211	2664
5:40 PM	7	82	2	10	2	93	0	6	1	0	5	0	0	0	2	0	210	2647
5:45 PM	2	82	0	8	3	92	0	2	1	0	5	0	3	0	1	0	199	2670
5:50 PM	13	68	0	10	1	93	1	3	4	0	2	0	1	0	4	0	200	2665
5:55 PM	7	67	0	10	3	64	1	4	1	0	2	0	0	0	3	0	162	2638

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	116	1228	8	108	24	1208	12	36	28	0	64	0	52	0	64	0	2948
Heavy Trucks	4	8	0		0	24	0		0	0	4		0	0	0		40
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

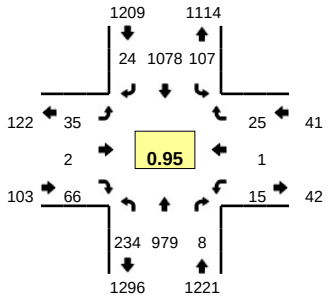
LOCATION: N Blackstone Ave -- San Jose Ave

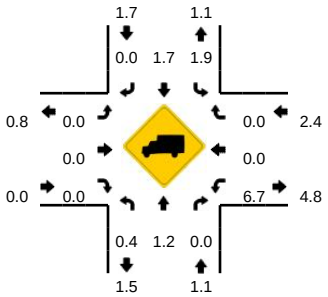
CITY/STATE: Fresno, CA

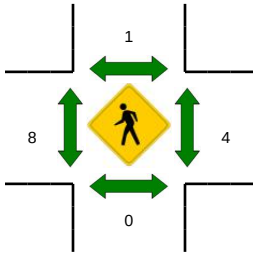
QC JOB #: 14816921

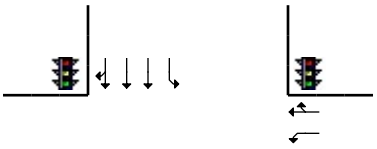
DATE: Sat, Oct 20 2018

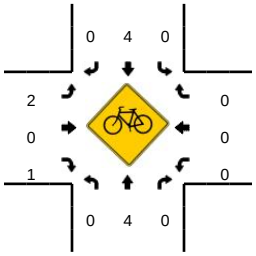
Peak-Hour: 1:55 PM -- 2:55 PM
Peak 15-Min: 2:20 PM -- 2:35 PM

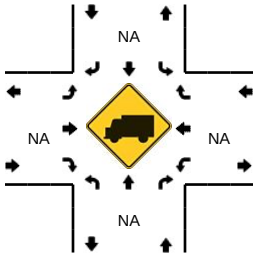


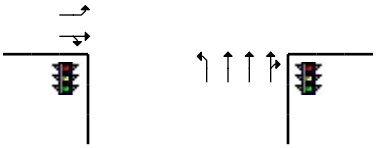


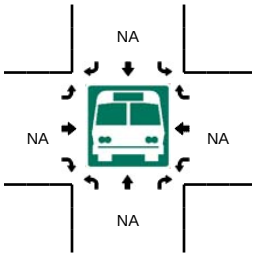












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				San Jose Ave (Eastbound)				San Jose Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:00 PM	2	86	0	5	3	82	4	9	0	0	5	0	3	1	3	0	203	2496
1:05 PM	12	85	2	9	5	70	2	6	3	0	6	0	3	0	5	0	208	2487
1:10 PM	8	88	2	7	4	83	3	5	4	0	5	0	0	0	2	0	211	2504
1:15 PM	5	66	0	14	3	81	2	5	3	0	3	0	1	0	1	0	184	2478
1:20 PM	11	98	0	13	2	62	1	7	4	0	3	0	1	0	2	0	204	2464
1:25 PM	11	64	3	9	1	93	3	7	6	1	3	0	1	1	2	0	205	2463
1:30 PM	10	96	0	11	2	93	2	3	2	0	4	0	0	0	3	0	226	2470
1:35 PM	8	83	1	9	4	76	2	5	2	0	5	0	3	0	1	0	199	2463
1:40 PM	8	88	0	4	1	97	4	5	2	0	2	0	3	1	2	0	217	2488
1:45 PM	5	88	0	9	2	75	3	8	4	0	5	0	0	0	2	0	201	2478
1:50 PM	11	74	0	8	4	81	1	7	3	0	7	0	0	0	2	0	198	2471
1:55 PM	6	82	0	10	2	95	3	3	4	0	5	0	0	0	1	0	211	2467
2:00 PM	7	97	0	9	2	97	4	6	0	0	5	0	2	0	5	0	234	2498
2:05 PM	11	74	0	6	3	62	2	7	3	1	6	0	1	0	0	0	176	2466
2:10 PM	4	75	0	12	4	84	1	2	4	0	8	0	0	0	3	0	197	2452
2:15 PM	6	75	1	14	6	78	5	7	1	0	4	0	3	0	5	0	205	2473
2:20 PM	5	83	2	12	1	121	1	8	6	0	5	0	2	1	2	0	249	2518
2:25 PM	16	72	2	13	2	80	0	5	6	0	5	0	1	0	2	0	204	2517
2:30 PM	9	98	0	15	1	75	1	7	3	0	12	0	1	0	2	0	224	2515
2:35 PM	8	73	0	14	4	113	0	9	3	1	2	0	0	0	2	0	229	2545
2:40 PM	12	91	0	14	4	84	2	7	2	0	6	0	0	0	0	0	222	2550
2:45 PM	6	64	1	6	1	96	1	9	0	0	6	0	2	0	1	0	193	2542
2:50 PM	7	95	2	12	2	93	4	5	3	0	2	0	3	0	2	0	230	2574
2:55 PM	9	64	0	12	1	70	0	5	0	1	9	0	1	0	3	0	175	2538

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	120	1012	16	160	16	1104	8	80	60	0	88	0	16	4	24	0	2708
Heavy Trucks	4	8	0		0	16	0		0	0	0		4	0	0		32
Pedestrians		0				4				4				4			12
Bicycles	0	2	0		0	2	0		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

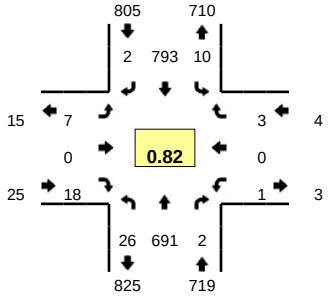
LOCATION: N Blackstone Ave -- E Santa Ana Ave

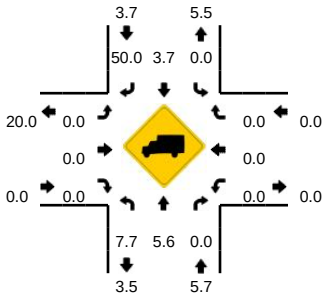
CITY/STATE: Fresno, CA

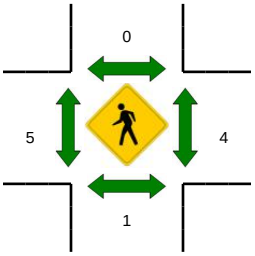
QC JOB #: 14816922

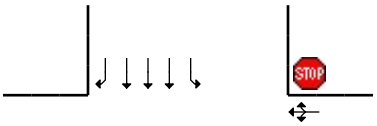
DATE: Thu, Oct 18 2018

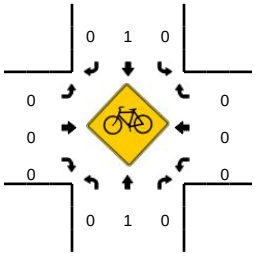
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

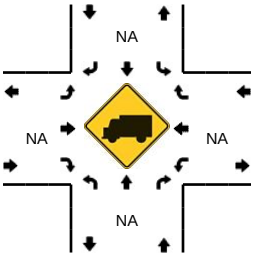


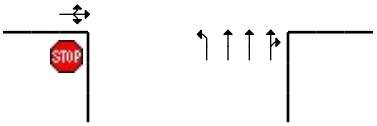


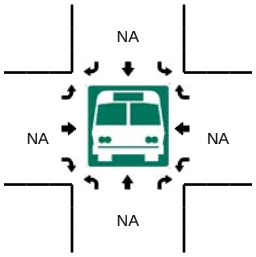












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				E Santa Ana Ave (Eastbound)				E Santa Ana Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	30	0	0	0	26	0	0	0	0	0	0	0	0	0	0	56	
7:05 AM	0	35	0	1	0	38	0	0	0	0	0	0	0	0	0	0	74	
7:10 AM	0	28	0	2	1	42	0	0	1	0	0	0	0	0	1	0	75	
7:15 AM	0	34	0	1	2	40	0	1	0	0	1	0	0	0	0	0	79	
7:20 AM	2	27	0	1	0	63	0	1	2	0	1	0	0	0	0	0	97	
7:25 AM	0	37	0	0	0	69	0	1	2	0	2	0	0	0	0	0	111	
7:30 AM	2	50	0	1	0	65	0	2	2	0	0	0	0	0	1	0	123	
7:35 AM	1	53	0	3	0	54	0	1	0	0	1	0	0	0	1	0	114	
7:40 AM	0	72	0	2	0	71	0	2	0	0	6	0	0	0	0	0	153	
7:45 AM	3	64	0	1	0	70	1	0	0	0	0	0	0	0	0	0	139	
7:50 AM	2	69	0	1	0	104	0	1	1	0	1	0	0	0	0	0	179	
7:55 AM	0	47	1	1	0	71	0	0	0	0	3	0	0	0	0	0	123	1323
8:00 AM	0	57	0	1	0	71	0	0	0	0	0	0	0	0	0	0	129	1396
8:05 AM	1	66	0	1	0	52	0	0	0	0	2	0	0	0	0	0	122	1444
8:10 AM	2	53	0	1	0	58	0	1	1	0	1	0	0	0	1	0	118	1487
8:15 AM	1	60	0	1	0	59	1	1	0	0	0	0	1	0	0	0	124	1532
8:20 AM	1	63	1	0	1	49	0	0	1	0	2	0	0	0	0	0	118	1553
8:25 AM	0	39	0	1	0	47	1	0	0	0	2	0	0	0	0	0	90	1532
8:30 AM	2	47	0	2	0	53	0	1	0	0	1	0	0	0	1	0	107	1516
8:35 AM	0	56	2	1	0	41	0	0	0	0	1	0	0	0	0	0	101	1503
8:40 AM	1	69	0	3	1	42	0	2	0	0	1	0	0	0	0	0	119	1469
8:45 AM	1	64	0	3	0	64	0	0	1	0	2	0	0	0	0	0	135	1465
8:50 AM	1	61	0	0	0	45	1	0	0	0	2	0	0	0	0	0	110	1396
8:55 AM	1	75	0	0	0	42	0	0	1	0	2	0	0	0	0	0	121	1394

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	820	0	16	0	980	4	12	4	0	28	0	0	0	0	0	1884
Heavy Trucks	4	60	0		0	44	4		0	0	0		0	0	0		112
Pedestrians		0				0				4				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

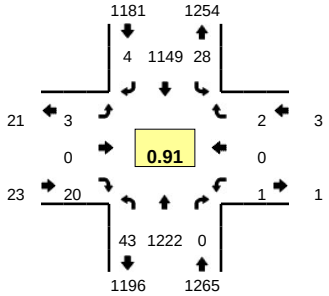
LOCATION: N Blackstone Ave -- E Santa Ana Ave

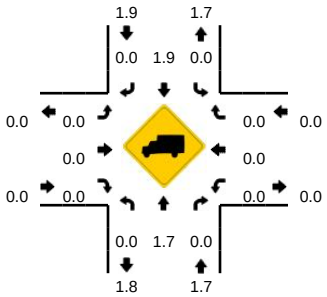
CITY/STATE: Fresno, CA

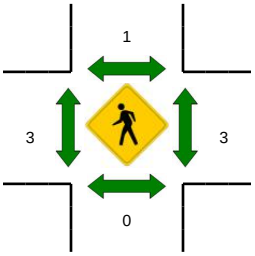
QC JOB #: 14816923

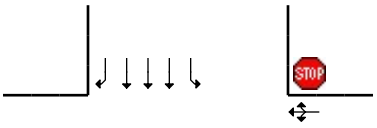
DATE: Thu, Oct 18 2018

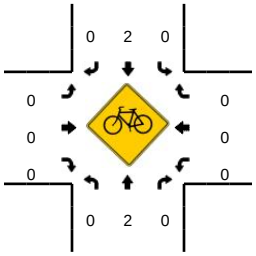
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

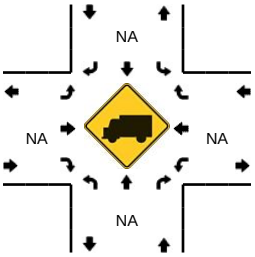


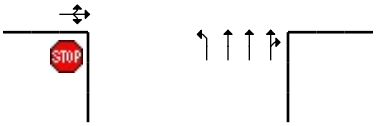


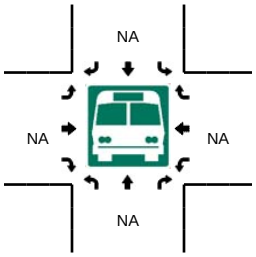












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				E Santa Ana Ave (Eastbound)				E Santa Ana Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	65	0	6	0	77	3	1	0	0	3	0	1	0	1	0	157	
4:05 PM	0	77	0	2	0	82	2	2	1	0	3	0	0	0	1	0	170	
4:10 PM	1	71	0	1	1	88	1	3	0	0	2	0	0	0	1	0	169	
4:15 PM	1	93	0	1	2	63	0	1	1	0	1	0	0	0	0	0	163	
4:20 PM	3	104	0	2	0	78	0	0	0	0	1	0	0	0	0	0	188	
4:25 PM	2	72	0	5	0	79	0	2	0	0	2	0	0	0	1	0	163	
4:30 PM	3	121	0	5	0	75	0	1	0	0	1	0	0	0	0	0	206	
4:35 PM	1	91	0	2	0	86	0	1	0	0	3	0	1	0	1	0	186	
4:40 PM	3	92	0	3	0	86	2	1	0	0	0	0	0	0	0	0	187	
4:45 PM	1	85	0	3	0	73	1	1	1	0	0	0	0	0	0	0	165	
4:50 PM	0	75	0	2	0	79	2	2	1	0	3	0	0	0	0	0	164	
4:55 PM	1	97	0	3	0	75	0	2	0	0	2	0	0	0	0	0	180	2098
5:00 PM	2	96	0	1	1	105	0	4	0	0	2	0	0	0	0	0	211	2152
5:05 PM	1	111	0	0	0	91	1	5	0	0	3	0	0	0	2	0	214	2196
5:10 PM	1	106	0	1	0	107	1	1	0	0	4	0	1	0	0	0	222	2249
5:15 PM	4	119	0	4	0	111	0	1	1	0	1	0	0	0	0	0	241	2327
5:20 PM	2	121	0	5	0	87	0	2	0	0	0	0	0	0	0	0	217	2356
5:25 PM	3	78	0	4	0	112	0	1	0	0	1	0	0	0	0	0	199	2392
5:30 PM	2	108	0	1	0	95	0	1	0	0	2	0	0	0	0	0	209	2395
5:35 PM	0	113	0	2	0	92	0	1	0	0	2	0	0	0	0	0	210	2419
5:40 PM	0	86	0	0	0	85	1	3	0	0	1	0	0	0	0	0	176	2408
5:45 PM	0	94	0	1	0	111	0	3	1	0	1	0	0	0	0	0	211	2454
5:50 PM	1	93	0	4	0	78	1	3	1	0	1	0	0	0	0	0	182	2472
5:55 PM	3	68	0	5	0	67	0	3	0	0	2	0	0	0	0	0	148	2440

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	1384	0	40	0	1220	4	16	4	0	20	0	4	0	0	0	2720
Heavy Trucks	0	24	0		0	20	0		0	0	0		0	0	0		44
Pedestrians		0				4				4				0			8
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

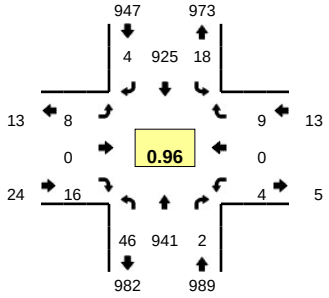
LOCATION: N Blackstone Ave -- E Santa Ana Ave

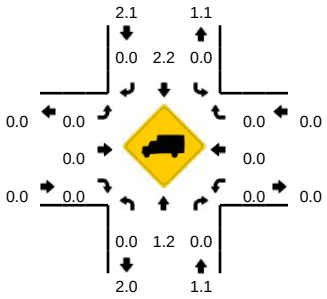
CITY/STATE: Fresno, CA

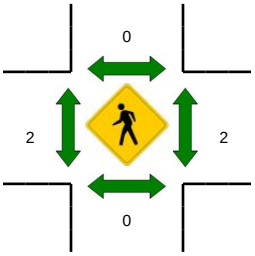
QC JOB #: 14816924

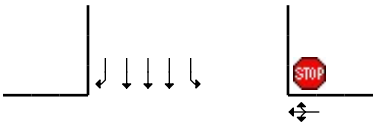
DATE: Sat, Oct 20 2018

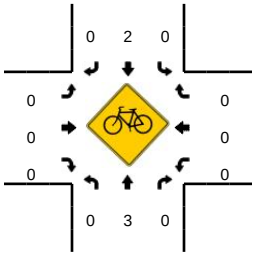
Peak-Hour: 1:35 PM -- 2:35 PM
Peak 15-Min: 2:10 PM -- 2:25 PM

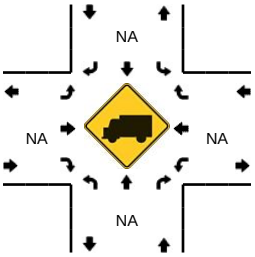


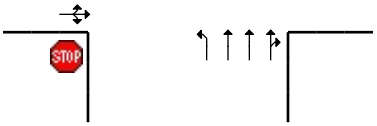


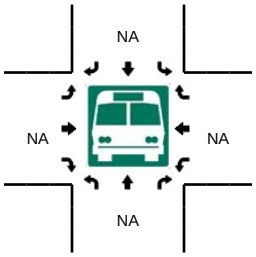












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				E Santa Ana Ave (Eastbound)				E Santa Ana Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:00 PM	1	71	1	5	2	63	2	1	0	0	0	0	1	0	0	0	147	1902
1:05 PM	0	88	0	2	0	72	0	2	0	0	1	0	0	0	1	0	166	1916
1:10 PM	0	78	1	4	0	62	1	1	0	0	3	0	0	0	0	0	150	1901
1:15 PM	0	65	1	2	1	57	3	0	0	0	4	0	0	0	0	0	133	1883
1:20 PM	0	66	0	4	1	77	0	0	0	0	3	0	0	0	0	0	151	1877
1:25 PM	1	86	1	4	0	84	3	1	0	0	0	0	0	0	1	0	181	1889
1:30 PM	0	54	0	3	2	67	2	0	1	0	1	0	0	0	3	0	133	1881
1:35 PM	2	92	0	2	0	76	1	2	0	0	1	0	1	0	2	0	179	1907
1:40 PM	1	57	0	4	1	88	1	1	2	0	0	0	0	0	2	0	157	1886
1:45 PM	1	91	0	3	0	70	0	1	1	0	2	0	1	0	2	0	172	1893
1:50 PM	0	84	0	7	0	84	0	3	0	0	1	0	0	0	0	0	179	1917
1:55 PM	0	69	1	5	1	71	1	1	0	0	1	0	0	0	0	0	150	1898
2:00 PM	0	76	0	4	0	51	0	4	0	0	2	0	0	0	0	0	137	1888
2:05 PM	0	86	0	1	1	62	0	1	1	0	3	0	0	0	0	0	155	1877
2:10 PM	2	68	0	3	0	88	1	0	1	0	1	0	0	0	0	0	164	1891
2:15 PM	1	87	1	3	0	92	0	1	0	0	3	0	1	0	1	0	190	1948
2:20 PM	1	65	0	2	0	87	0	0	1	0	0	0	1	0	1	0	158	1955
2:25 PM	0	59	0	2	0	82	0	0	1	0	0	0	0	0	1	0	145	1919
2:30 PM	1	107	0	1	0	74	0	1	1	0	2	0	0	0	0	0	187	1973
2:35 PM	0	79	1	4	1	73	0	3	0	0	0	0	0	0	0	0	161	1955
2:40 PM	3	75	0	2	0	71	0	1	0	0	1	0	0	0	0	0	153	1951
2:45 PM	0	57	0	0	1	68	1	1	0	0	0	0	0	0	0	0	128	1907
2:50 PM	2	84	0	7	0	61	0	3	0	0	0	0	0	0	0	0	157	1885
2:55 PM	0	63	0	5	1	68	0	1	0	0	0	0	0	0	1	0	139	1874

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	880	4	32	0	1068	4	4	8	0	16	0	8	0	8	0	2048
Heavy Trucks	0	8	0		0	28	0		0	0	0		0	0	0		36
Pedestrians		0				0				4				8			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

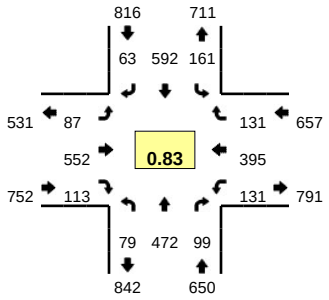
LOCATION: N Blackstone Ave -- Barstow Ave

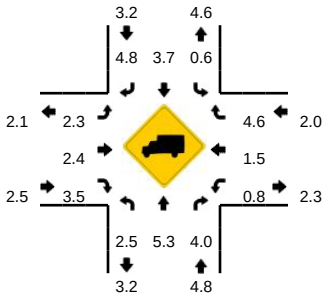
QC JOB #: 14816925

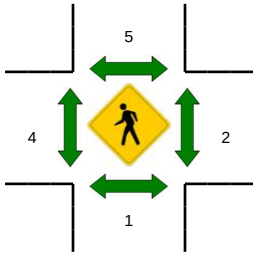
CITY/STATE: Fresno, CA

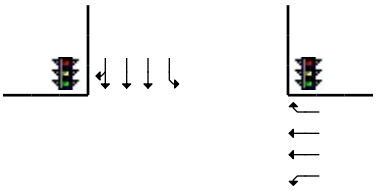
DATE: Thu, Oct 18 2018

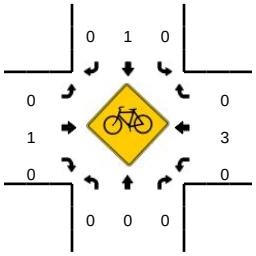
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

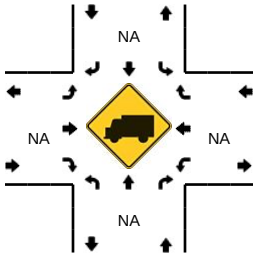


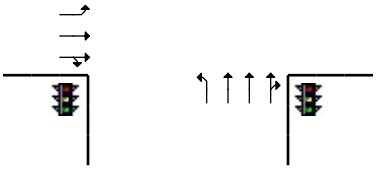


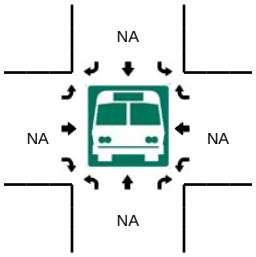












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Barstow Ave (Eastbound)				Barstow Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	9	2	0	0	14	4	1	6	10	2	0	5	14	5	0	72	
7:05 AM	5	18	5	1	1	29	1	1	5	22	8	0	4	18	4	0	122	
7:10 AM	4	19	2	0	4	38	5	0	5	21	8	0	5	13	3	0	127	
7:15 AM	5	28	4	0	7	36	0	0	9	27	6	0	7	15	4	0	148	
7:20 AM	0	18	6	1	5	35	2	2	8	43	10	0	10	25	9	0	174	
7:25 AM	4	22	5	0	6	55	2	2	6	37	5	0	5	19	8	0	176	
7:30 AM	6	31	10	1	8	44	6	1	0	39	13	0	5	17	9	0	190	
7:35 AM	5	35	11	0	8	44	3	2	5	57	9	0	18	36	9	0	242	
7:40 AM	12	33	5	0	12	81	7	2	10	57	12	0	14	35	11	0	291	
7:45 AM	11	54	10	0	13	45	3	0	6	43	8	0	17	36	17	0	263	
7:50 AM	10	31	8	0	25	63	6	1	9	70	15	0	12	55	10	0	315	
7:55 AM	9	37	11	1	14	57	7	0	11	44	6	0	12	28	9	0	246	2366
8:00 AM	4	48	14	0	15	49	5	2	6	41	11	0	6	26	13	0	240	2534
8:05 AM	7	35	6	0	4	41	5	3	13	42	12	0	11	46	17	0	242	2654
8:10 AM	2	28	8	1	10	46	5	3	6	37	9	0	7	40	12	0	214	2741
8:15 AM	7	50	5	2	15	46	9	5	7	39	13	0	4	21	7	0	230	2823
8:20 AM	4	41	7	0	6	32	3	2	6	35	4	0	9	20	9	0	178	2827
8:25 AM	1	34	6	1	9	33	4	0	5	52	8	0	13	36	14	0	216	2867
8:30 AM	1	46	8	1	9	55	6	1	3	35	6	0	8	16	3	0	198	2875
8:35 AM	6	24	6	0	12	39	4	1	8	24	12	0	4	24	7	0	171	2804
8:40 AM	7	38	9	1	10	31	6	1	5	36	3	0	10	31	7	0	195	2708
8:45 AM	8	37	6	1	15	52	7	4	7	41	5	0	10	23	9	0	225	2670
8:50 AM	11	46	6	1	5	40	2	3	10	24	4	0	9	22	11	0	194	2549
8:55 AM	2	28	8	1	4	23	5	4	7	37	12	0	8	32	7	0	178	2481

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	132	472	92	0	200	756	64	12	100	680	140	0	172	504	152	0	3476
Heavy Trucks	4	24	4		4	16	8		4	12	8		4	12	4		104
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

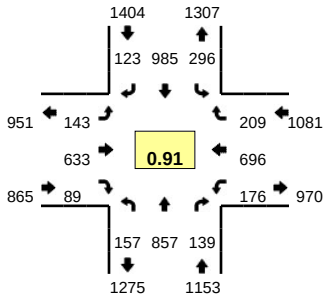
LOCATION: N Blackstone Ave -- Barstow Ave

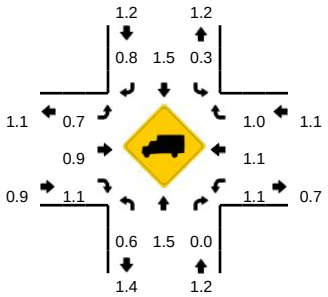
CITY/STATE: Fresno, CA

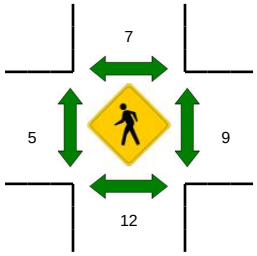
QC JOB #: 14816926

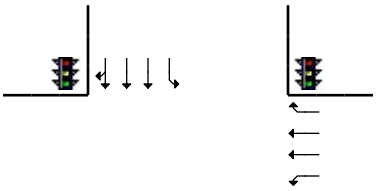
DATE: Thu, Oct 18 2018

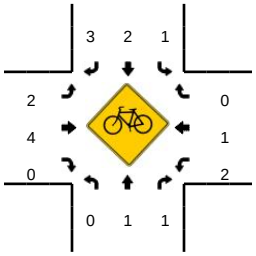
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

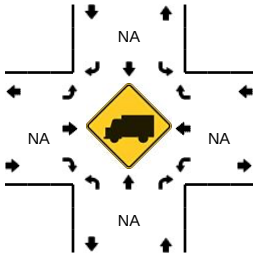


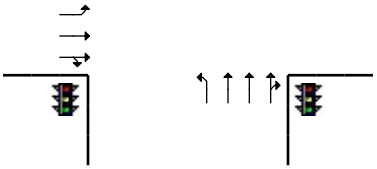


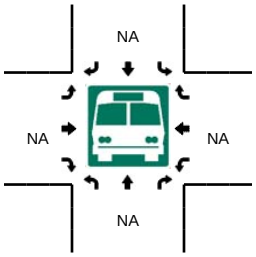












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Barstow Ave (Eastbound)				Barstow Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	55	7	3	19	57	15	7	11	32	8	0	7	40	15	0	287	
4:05 PM	4	68	18	1	16	89	9	7	18	38	5	0	12	31	17	0	333	
4:10 PM	5	66	7	1	14	66	11	2	7	35	6	0	9	38	13	0	280	
4:15 PM	9	61	7	0	5	65	8	7	12	37	6	0	9	46	9	0	281	
4:20 PM	8	58	8	3	13	66	10	3	6	45	7	0	10	63	14	0	314	
4:25 PM	9	60	14	3	12	63	10	5	10	32	6	0	11	59	8	0	302	
4:30 PM	11	59	12	2	17	53	8	7	10	40	8	0	15	48	11	0	301	
4:35 PM	11	86	12	4	14	75	17	8	12	23	4	0	8	34	13	0	321	
4:40 PM	6	58	7	2	9	87	15	10	8	49	4	0	11	47	9	0	322	
4:45 PM	16	103	10	1	17	73	9	10	7	53	8	0	13	49	12	0	381	
4:50 PM	10	60	6	1	17	66	12	10	12	44	4	0	12	53	16	0	323	
4:55 PM	11	41	10	3	14	77	9	13	9	51	9	0	14	71	10	0	342	3787
5:00 PM	6	59	10	0	20	78	8	7	12	46	12	0	16	50	21	0	345	3845
5:05 PM	15	74	16	1	16	81	13	7	12	54	7	0	14	55	19	0	384	3896
5:10 PM	16	55	8	5	30	84	11	7	11	51	5	0	14	61	18	0	376	3992
5:15 PM	12	87	18	2	14	112	7	7	11	55	4	0	15	63	28	0	435	4146
5:20 PM	10	89	14	1	10	112	16	9	12	64	3	0	15	62	9	0	426	4258
5:25 PM	12	82	9	4	21	86	9	5	8	45	8	0	12	58	22	0	381	4337
5:30 PM	5	57	15	2	16	71	9	6	15	66	12	0	17	67	21	0	379	4415
5:35 PM	13	93	14	2	11	70	13	6	15	47	8	0	18	51	18	0	379	4473
5:40 PM	6	57	9	3	12	75	7	11	19	57	9	0	16	56	15	0	352	4503
5:45 PM	13	53	11	3	22	92	14	7	6	44	5	0	12	39	15	0	336	4458
5:50 PM	9	66	12	3	14	66	6	6	8	33	5	0	11	42	10	0	291	4426
5:55 PM	14	50	13	2	15	60	10	7	9	31	9	0	8	26	14	0	268	4352

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	136	1032	164	28	180	1240	128	84	124	656	60	0	168	732	236	0	4968
Heavy Trucks	0	16	0		0	8	4		4	4	0		4	8	0		48
Pedestrians		12				4				4				4			24
Bicycles	0	0	1		0	0	3		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

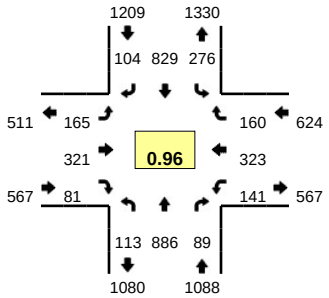
Type of peak hour being reported: Intersection Peak

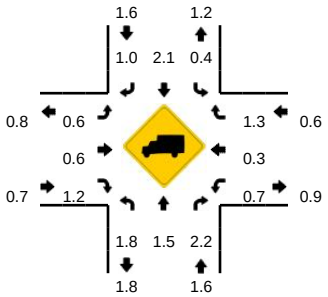
Method for determining peak hour: Total Entering Volume

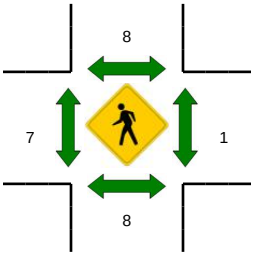
LOCATION: N Blackstone Ave -- Barstow Ave
CITY/STATE: Fresno, CA

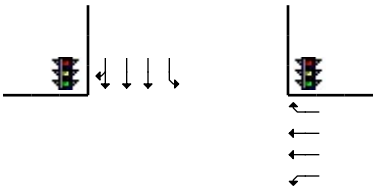
QC JOB #: 14816927
DATE: Sat, Oct 20 2018

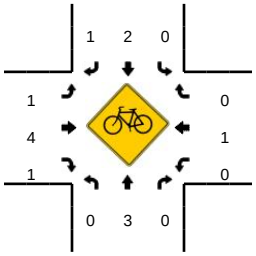
Peak-Hour: 12:55 PM -- 1:55 PM
Peak 15-Min: 12:55 PM -- 1:10 PM

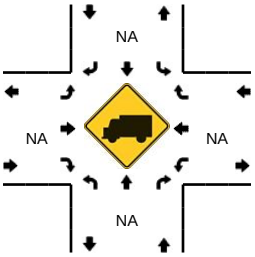


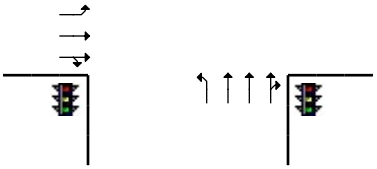


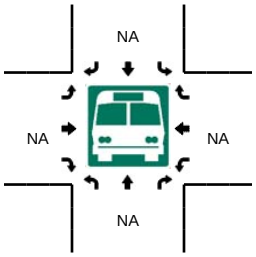












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Barstow Ave (Eastbound)				Barstow Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:25 PM	9	52	7	1	12	73	13	8	15	30	9	0	12	27	13	0	281	3302
12:30 PM	5	84	7	4	11	94	6	10	4	20	0	0	9	18	13	0	285	3335
12:35 PM	9	74	13	2	10	60	11	6	16	31	6	0	14	21	13	0	286	3342
12:40 PM	7	61	8	4	18	79	6	8	11	19	10	0	6	22	21	0	280	3378
12:45 PM	5	69	11	4	14	57	6	6	6	22	5	0	19	28	16	0	268	3367
12:50 PM	7	64	8	3	22	56	9	10	10	21	6	0	6	24	7	0	253	3364
12:55 PM	8	65	13	3	19	87	7	12	21	32	4	0	12	19	9	0	311	3391
1:00 PM	5	80	5	5	13	75	10	14	14	33	8	0	8	25	10	0	305	3401
1:05 PM	8	92	3	1	18	60	10	11	10	28	5	0	7	26	15	0	294	3420
1:10 PM	9	79	10	2	9	50	10	13	18	24	7	0	13	26	22	0	292	3426
1:15 PM	3	48	15	5	11	66	5	6	16	45	11	0	11	31	15	0	288	3438
1:20 PM	0	71	5	0	8	64	12	6	15	21	4	0	20	30	11	0	267	3410
1:25 PM	11	81	11	2	14	79	11	5	11	5	5	0	11	17	19	0	282	3411
1:30 PM	7	52	5	1	15	56	7	9	17	32	11	0	12	39	12	0	275	3401
1:35 PM	6	71	7	6	16	71	7	13	2	21	5	0	15	25	7	0	272	3387
1:40 PM	6	101	7	2	9	93	11	9	13	27	8	0	11	19	10	0	326	3433
1:45 PM	13	50	3	2	11	34	12	12	17	37	6	0	15	39	14	0	265	3430
1:50 PM	8	96	5	0	14	94	2	9	11	16	7	0	6	27	16	0	311	3488
1:55 PM	14	49	13	5	13	72	6	8	8	22	13	0	7	22	10	0	262	3439
2:00 PM	6	76	7	0	20	90	10	7	13	22	7	0	9	12	10	0	289	3423
2:05 PM	8	73	4	1	8	49	11	3	8	14	2	0	12	27	10	0	230	3359
2:10 PM	7	70	8	4	19	102	8	13	10	18	3	0	9	27	11	0	309	3376
2:15 PM	2	62	8	7	13	56	11	7	15	26	7	0	7	38	14	0	273	3361
2:20 PM	2	85	5	0	10	83	14	9	10	22	4	0	17	17	16	0	294	3388

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	948	84	36	200	888	108	148	180	372	68	0	108	280	136	0	3640
Heavy Trucks	0	8	4		4	12	0		0	4	0		0	0	0		32
Pedestrians		8				4				4				0			16
Bicycles	0	1	0		0	1	0		0	1	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

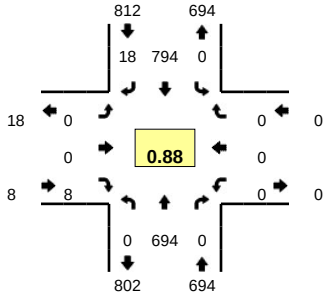
Type of peak hour being reported: Intersection Peak

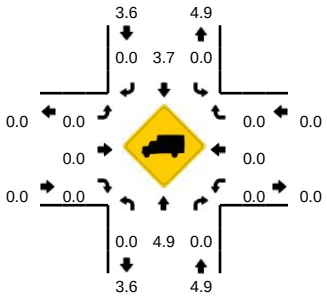
Method for determining peak hour: Total Entering Volume

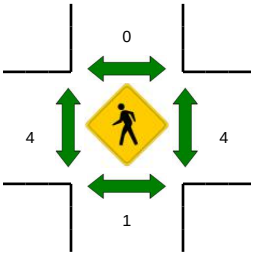
LOCATION: N Blackstone Ave -- Yosemite Falls Dwy
CITY/STATE: Fresno, CA

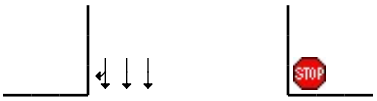
QC JOB #: 14816928
DATE: Thu, Oct 18 2018

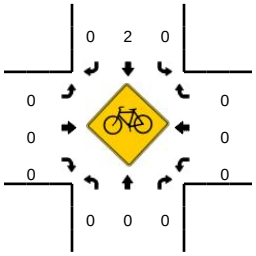
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

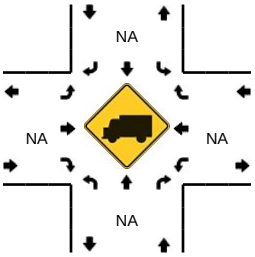


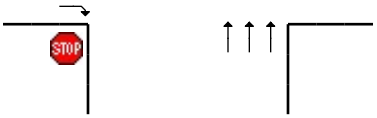


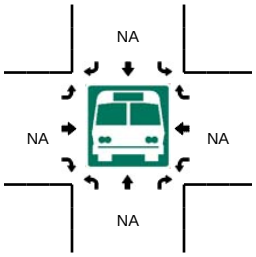












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Yosemite Falls Dwy (Eastbound)				Yosemite Falls Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	17	0	0	0	20	1	0	0	0	0	0	0	0	0	0	38	
7:05 AM	0	25	0	0	0	36	0	0	0	0	1	0	0	0	0	0	62	
7:10 AM	0	25	0	0	0	55	1	0	0	0	0	0	0	0	0	0	81	
7:15 AM	0	42	0	0	0	55	0	0	0	0	1	0	0	0	0	0	98	
7:20 AM	0	28	0	0	0	56	1	0	0	0	0	0	0	0	0	0	85	
7:25 AM	0	35	0	0	0	53	1	0	0	0	0	0	0	0	0	0	89	
7:30 AM	0	43	0	0	0	74	1	0	0	0	0	0	0	0	0	0	118	
7:35 AM	0	76	0	0	0	68	1	0	0	0	0	0	0	0	0	0	145	
7:40 AM	0	63	0	0	0	86	0	0	0	0	0	0	0	0	0	0	149	
7:45 AM	0	52	0	0	0	81	2	0	0	0	0	0	0	0	0	0	135	
7:50 AM	0	52	0	0	0	88	1	0	0	0	0	0	0	0	0	0	141	
7:55 AM	0	64	0	0	0	59	3	0	0	0	0	0	0	0	0	0	126	1267
8:00 AM	0	65	0	0	0	70	1	0	0	0	0	0	0	0	0	0	136	1365
8:05 AM	0	47	0	0	0	57	5	0	0	0	2	0	0	0	0	0	111	1414
8:10 AM	0	53	0	0	0	65	1	0	0	0	0	0	0	0	0	0	119	1452
8:15 AM	0	68	0	0	0	53	0	0	0	0	5	0	0	0	0	0	126	1480
8:20 AM	0	51	0	0	0	46	1	0	0	0	1	0	0	0	0	0	99	1494
8:25 AM	0	60	0	0	0	47	2	0	0	0	0	0	0	0	0	0	109	1514
8:30 AM	0	51	0	0	0	61	2	0	0	0	0	0	0	0	0	0	114	1510
8:35 AM	0	39	0	0	0	64	1	0	0	0	0	0	0	0	0	0	104	1469
8:40 AM	0	71	0	0	0	43	4	0	0	0	1	0	0	0	0	0	119	1439
8:45 AM	0	67	0	0	0	54	0	0	0	0	1	0	0	0	0	0	122	1426
8:50 AM	0	52	0	0	0	57	1	0	0	0	2	0	0	0	0	0	112	1397
8:55 AM	0	57	0	0	0	41	2	0	0	0	1	0	0	0	0	0	101	1372

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	764	0	0	0	940	12	0	0	0	0	0	0	0	0	0	1716
Heavy Trucks	0	44	0		0	24	0		0	0	0		0	0	0		68
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

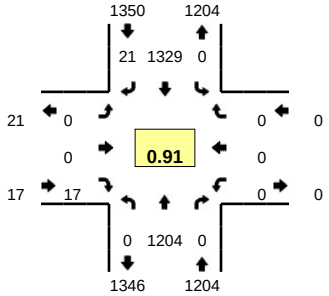
LOCATION: N Blackstone Ave -- Yosemite Falls Dwy

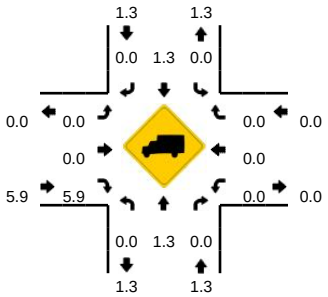
CITY/STATE: Fresno, CA

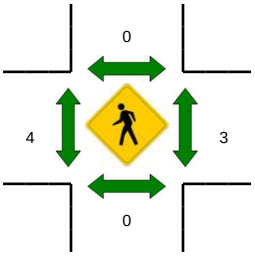
QC JOB #: 14816929

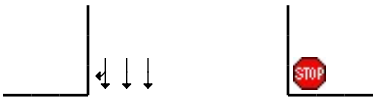
DATE: Thu, Oct 18 2018

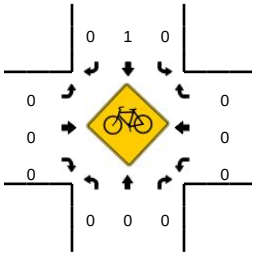
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

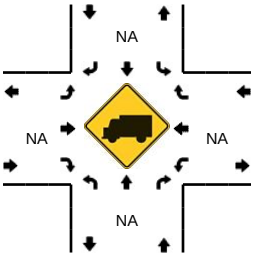


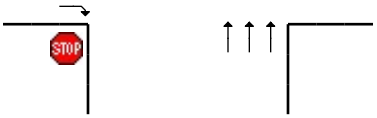


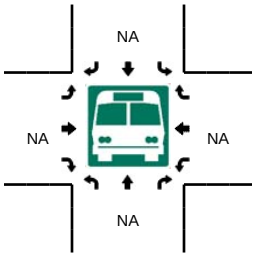












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Yosemite Falls Dwy (Eastbound)				Yosemite Falls Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	86	0	0	0	93	0	0	0	0	1	0	0	0	0	0	180	
4:05 PM	0	62	0	0	0	90	1	0	0	0	5	0	0	0	0	0	158	
4:10 PM	0	92	0	0	0	109	2	0	0	0	0	0	0	0	0	0	203	
4:15 PM	0	89	0	0	0	86	1	0	0	0	2	0	0	0	0	0	178	
4:20 PM	0	103	0	0	0	90	3	0	0	0	1	0	0	0	0	0	197	
4:25 PM	0	100	0	0	0	92	1	0	0	0	1	0	0	0	0	0	194	
4:30 PM	0	90	0	0	0	84	4	0	0	0	1	0	0	0	0	0	179	
4:35 PM	0	96	0	0	0	101	1	0	0	0	2	0	0	0	0	0	200	
4:40 PM	0	99	0	0	0	94	0	0	0	0	0	0	0	0	0	0	193	
4:45 PM	0	96	0	0	0	105	3	0	0	0	2	0	0	0	0	0	206	
4:50 PM	0	91	0	0	0	86	2	0	0	0	0	0	0	0	0	0	179	
4:55 PM	0	81	0	0	0	115	0	0	0	0	3	0	0	0	0	0	199	2266
5:00 PM	0	122	0	0	0	101	0	0	0	0	1	0	0	0	0	0	224	2310
5:05 PM	0	84	0	0	0	117	1	0	0	0	2	0	0	0	0	0	204	2356
5:10 PM	0	110	0	0	0	130	1	0	0	0	1	0	0	0	0	0	242	2395
5:15 PM	0	107	0	0	0	125	2	0	0	0	0	0	0	0	0	0	234	2451
5:20 PM	0	113	0	0	0	115	1	0	0	0	3	0	0	0	0	0	232	2486
5:25 PM	0	95	0	0	0	133	4	0	0	0	0	0	0	0	0	0	232	2524
5:30 PM	0	88	0	0	0	108	3	0	0	0	1	0	0	0	0	0	200	2545
5:35 PM	0	115	0	0	0	104	1	0	0	0	2	0	0	0	0	0	222	2567
5:40 PM	0	81	0	0	0	103	1	0	0	0	3	0	0	0	0	0	188	2562
5:45 PM	0	93	0	0	0	117	3	0	0	0	1	0	0	0	0	0	214	2570
5:50 PM	0	81	0	0	0	91	0	0	0	0	1	0	0	0	0	0	173	2564
5:55 PM	0	115	0	0	0	85	4	0	0	0	2	0	0	0	0	0	206	2571

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1320	0	0	0	1480	16	0	0	0	16	0	0	0	0	0	2832
Heavy Trucks	0	24	0		0	20	0		0	0	0		0	0	0		44
Pedestrians		0				0				8				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

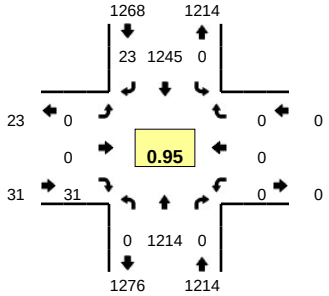
LOCATION: N Blackstone Ave -- Yosemite Falls Dwy

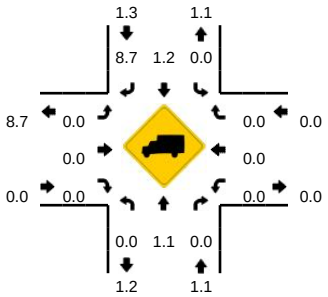
QC JOB #: 14816930

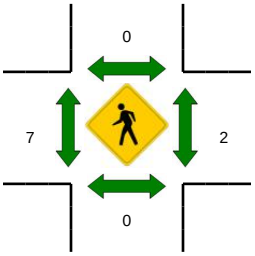
CITY/STATE: Fresno, CA

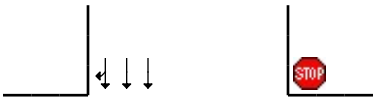
DATE: Sat, Oct 20 2018

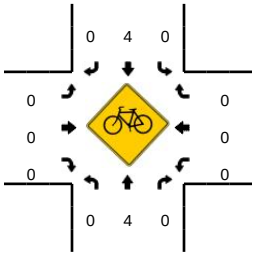
Peak-Hour: 1:55 PM -- 2:55 PM
Peak 15-Min: 2:35 PM -- 2:50 PM

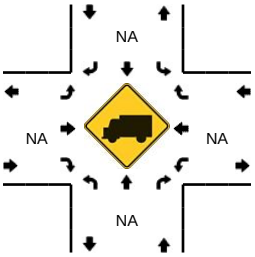


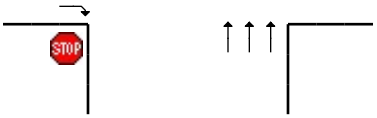


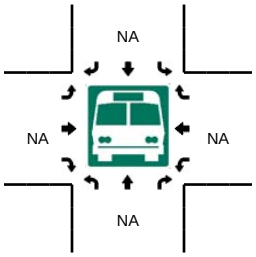












5-Min Count Period Beginning At	N Blackstone Ave (Northbound)				N Blackstone Ave (Southbound)				Yosemite Falls Dwy (Eastbound)				Yosemite Falls Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:00 PM	0	92	0	0	0	80	0	0	0	0	3	0	0	0	0	0	175	2431
1:05 PM	0	106	0	0	0	107	0	0	0	0	6	0	0	0	0	0	219	2482
1:10 PM	0	111	0	0	0	77	1	0	0	0	4	0	0	0	0	0	193	2453
1:15 PM	0	85	0	0	0	89	4	0	0	0	8	0	0	0	0	0	186	2422
1:20 PM	0	106	0	0	0	93	3	0	0	0	3	0	0	0	0	0	205	2413
1:25 PM	0	86	0	0	0	99	1	0	0	0	2	0	0	0	0	0	188	2394
1:30 PM	0	109	0	0	0	94	3	0	0	0	5	0	0	0	0	0	211	2405
1:35 PM	0	108	0	0	0	93	1	0	0	0	2	0	0	0	0	0	204	2385
1:40 PM	0	114	0	0	0	103	1	0	0	0	0	0	0	0	0	0	218	2420
1:45 PM	0	84	0	0	0	97	1	0	0	0	3	0	0	0	0	0	185	2410
1:50 PM	0	91	0	0	0	107	2	0	0	0	4	0	0	0	0	0	204	2396
1:55 PM	0	106	0	0	0	97	2	0	0	0	1	0	0	0	0	0	206	2394
2:00 PM	0	108	0	0	0	97	1	0	0	0	2	0	0	0	0	0	208	2427
2:05 PM	0	114	0	0	0	96	3	0	0	0	1	0	0	0	0	0	214	2422
2:10 PM	0	86	0	0	0	102	5	0	0	0	3	0	0	0	0	0	196	2425
2:15 PM	0	84	0	0	0	100	2	0	0	0	4	0	0	0	0	0	190	2429
2:20 PM	0	90	0	0	0	109	0	0	0	0	3	0	0	0	0	0	202	2426
2:25 PM	0	112	0	0	0	107	1	0	0	0	3	0	0	0	0	0	223	2461
2:30 PM	0	88	0	0	0	115	0	0	0	0	0	0	0	0	0	0	203	2453
2:35 PM	0	114	0	0	0	102	1	0	0	0	1	0	0	0	0	0	218	2467
2:40 PM	0	98	0	0	0	128	1	0	0	0	4	0	0	0	0	0	231	2480
2:45 PM	0	117	0	0	0	85	2	0	0	0	6	0	0	0	0	0	210	2505
2:50 PM	0	97	0	0	0	107	5	0	0	0	3	0	0	0	0	0	212	2513
2:55 PM	0	92	0	0	0	99	4	0	0	0	2	0	0	0	0	0	197	2504

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1316	0	0	0	1260	16	0	0	0	44	0	0	0	0	0	2636
Heavy Trucks	0	16	0		0	4	4		0	0	0		0	0	0		24
Pedestrians		0				0				8				4			12
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

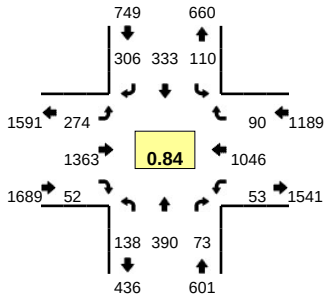
Type of peak hour being reported: Intersection Peak

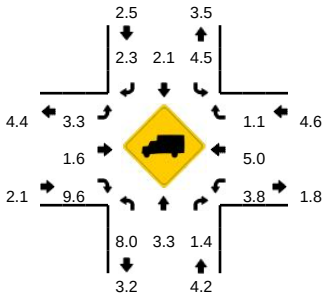
Method for determining peak hour: Total Entering Volume

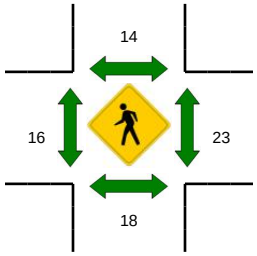
LOCATION: N Fresno St -- E Shaw Ave
CITY/STATE: Fresno, CA

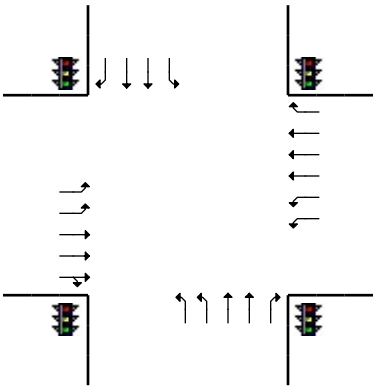
QC JOB #: 14816931
DATE: Thu, Oct 18 2018

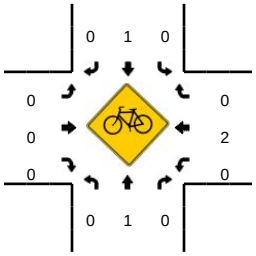
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

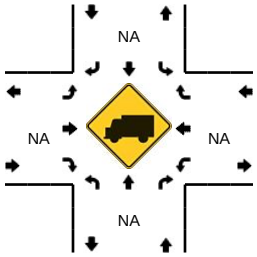


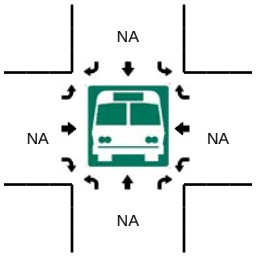












5-Min Count Period Beginning At	N Fresno St (Northbound)				N Fresno St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	10	1	0	2	13	19	0	13	60	8	7	0	33	2	0	175	
7:05 AM	1	9	0	0	2	14	20	0	13	70	3	6	4	43	1	0	186	
7:10 AM	12	6	0	0	6	13	20	0	7	73	3	5	3	60	4	1	213	
7:15 AM	10	13	2	0	4	17	22	1	17	109	2	9	0	61	2	0	269	
7:20 AM	12	26	3	0	5	12	22	1	14	98	2	7	2	52	3	0	259	
7:25 AM	12	17	2	0	7	27	22	0	15	99	7	10	6	70	5	0	299	
7:30 AM	17	32	9	0	12	25	32	1	17	113	4	6	3	69	10	1	351	
7:35 AM	12	33	6	0	12	21	31	0	12	145	3	10	4	95	5	2	391	
7:40 AM	6	38	5	0	11	28	45	0	10	118	4	8	2	99	7	0	381	
7:45 AM	10	62	5	0	10	44	36	0	15	132	2	6	10	92	5	0	429	
7:50 AM	8	40	9	0	10	43	28	2	14	119	7	10	4	98	9	1	402	
7:55 AM	14	30	10	1	11	36	22	2	20	152	5	7	5	99	9	0	423	3778
8:00 AM	10	27	8	0	5	28	19	1	15	114	4	14	2	77	12	0	336	3939
8:05 AM	14	34	5	1	4	28	22	0	17	67	5	7	7	98	6	0	315	4068
8:10 AM	15	21	6	0	3	20	13	2	16	101	2	9	3	63	10	0	284	4139
8:15 AM	8	32	4	0	8	13	20	1	15	105	4	9	1	108	7	0	335	4205
8:20 AM	10	24	4	0	8	20	16	0	5	98	5	7	2	78	5	0	282	4228
8:25 AM	8	23	11	0	10	17	20	0	21	93	3	10	7	68	6	1	298	4227
8:30 AM	7	23	4	0	6	20	16	0	9	84	5	6	3	61	5	0	249	4125
8:35 AM	13	21	3	0	5	20	24	1	16	92	7	8	2	60	4	0	276	4010
8:40 AM	14	29	3	0	7	13	15	0	7	86	4	9	6	71	6	0	270	3899
8:45 AM	19	28	8	0	6	21	17	0	13	98	2	7	8	55	11	1	294	3764
8:50 AM	7	35	8	0	10	23	22	3	17	99	5	10	2	82	1	1	325	3687
8:55 AM	10	44	9	1	8	26	20	1	20	110	7	2	1	71	4	1	335	3599

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	528	96	4	124	492	344	16	196	1612	56	92	76	1156	92	4	5016
Heavy Trucks	12	12	0		0	8	20		8	24	12		8	64	4		172
Pedestrians		24				20				28				36			108
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

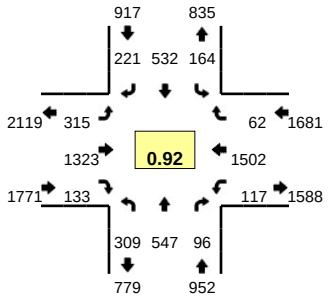
Type of peak hour being reported: Intersection Peak

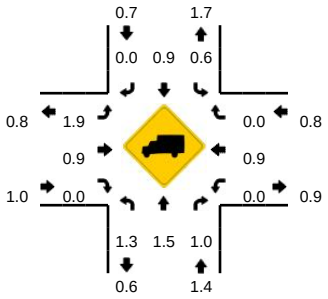
Method for determining peak hour: Total Entering Volume

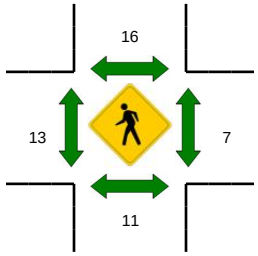
LOCATION: N Fresno St -- E Shaw Ave
CITY/STATE: Fresno, CA

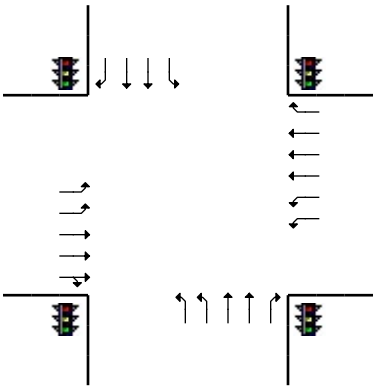
QC JOB #: 14816932
DATE: Thu, Oct 18 2018

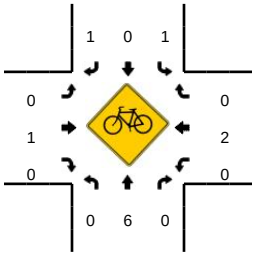
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

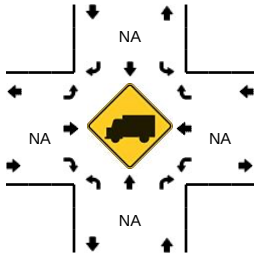


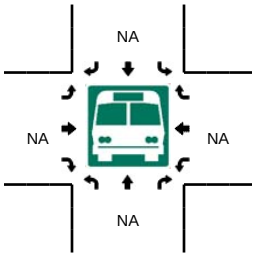












5-Min Count Period Beginning At	N Fresno St (Northbound)				N Fresno St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	23	30	9	1	11	33	21	0	16	119	12	11	8	84	6	1	385	
4:05 PM	25	46	5	0	8	32	18	0	21	109	14	11	10	93	7	0	399	
4:10 PM	24	24	10	0	7	42	15	0	30	138	10	7	2	103	7	1	420	
4:15 PM	20	42	12	0	13	28	19	1	20	108	17	4	9	150	8	1	452	
4:20 PM	30	31	9	1	15	33	17	1	14	100	11	5	5	119	4	0	395	
4:25 PM	23	37	11	1	10	48	23	2	18	86	11	6	4	90	10	1	381	
4:30 PM	19	35	6	1	11	42	26	0	21	116	8	6	7	98	5	3	404	
4:35 PM	26	40	8	0	10	41	19	1	18	106	4	7	9	124	6	0	419	
4:40 PM	22	31	3	0	14	33	20	1	24	109	11	6	9	95	4	0	382	
4:45 PM	25	42	6	1	8	29	17	0	24	127	11	2	8	155	5	1	461	
4:50 PM	23	51	11	0	15	36	9	0	12	111	15	6	9	153	9	2	462	
4:55 PM	29	45	10	0	16	62	25	0	11	53	2	3	4	82	6	0	348	4908
5:00 PM	22	45	8	0	14	49	22	0	20	106	11	4	15	122	6	0	444	4967
5:05 PM	21	41	5	1	9	51	24	1	25	93	19	9	13	131	1	0	444	5012
5:10 PM	23	28	5	1	12	30	19	0	22	143	14	13	10	167	4	1	492	5084
5:15 PM	21	46	7	0	10	40	10	0	23	108	11	11	12	152	9	3	463	5095
5:20 PM	23	49	13	1	11	52	19	0	20	139	16	9	12	126	3	0	493	5193
5:25 PM	31	49	6	1	14	45	14	1	18	120	8	11	5	112	6	0	441	5253
5:30 PM	39	45	6	0	21	49	20	0	18	124	9	12	8	87	3	0	441	5290
5:35 PM	19	53	9	0	18	52	18	1	23	128	13	10	3	83	5	0	435	5306
5:40 PM	28	53	10	0	13	37	24	0	7	71	4	2	10	132	5	1	397	5321
5:45 PM	28	27	2	0	13	46	18	1	14	132	14	7	3	101	5	0	411	5271
5:50 PM	19	43	7	1	13	31	12	2	17	120	13	8	6	93	6	0	391	5200
5:55 PM	18	18	5	0	9	36	17	0	16	99	21	9	9	113	4	2	376	5228

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	268	492	100	8	132	488	192	0	260	1560	164	132	136	1780	64	16	5792
Heavy Trucks	0	8	0		0	4	0		12	12	0		0	24	0		60
Pedestrians		12				8				8				4			32
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

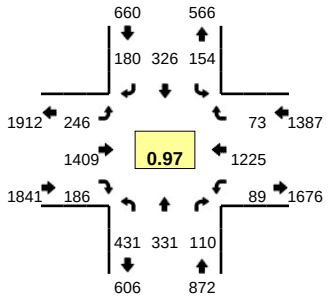
Type of peak hour being reported: Intersection Peak

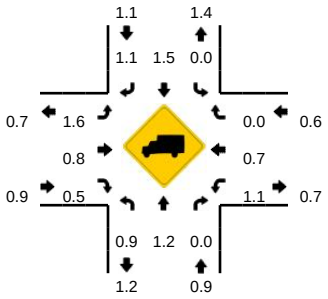
Method for determining peak hour: Total Entering Volume

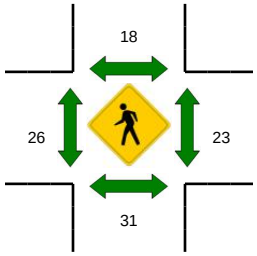
LOCATION: N Fresno St -- E Shaw Ave
CITY/STATE: Fresno, CA

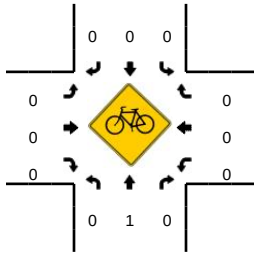
QC JOB #: 14816933
DATE: Sat, Oct 20 2018

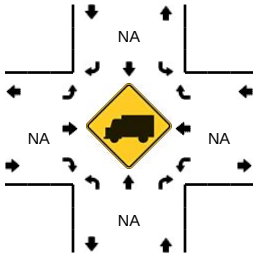
Peak-Hour: 1:50 PM -- 2:50 PM
Peak 15-Min: 2:35 PM -- 2:50 PM

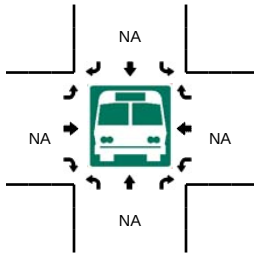












5-Min Count Period Beginning At	N Fresno St (Northbound)				N Fresno St (Southbound)				E Shaw Ave (Eastbound)				E Shaw Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:00 PM	41	28	3	3	10	25	13	1	8	119	11	7	9	106	6	2	392	4658
1:05 PM	26	19	11	3	6	18	9	0	13	112	12	12	10	100	7	0	358	4670
1:10 PM	32	30	9	2	9	19	12	0	16	120	13	5	6	91	3	2	369	4657
1:15 PM	30	28	10	2	10	40	15	1	13	133	9	6	4	87	6	0	394	4670
1:20 PM	25	30	9	2	9	13	15	0	16	138	10	14	12	110	5	1	409	4688
1:25 PM	22	12	7	2	10	17	13	2	10	124	19	11	8	144	2	2	405	4696
1:30 PM	37	23	11	1	17	28	20	0	13	106	11	5	5	71	5	1	354	4658
1:35 PM	39	33	18	0	8	35	26	0	14	106	6	4	10	89	0	1	389	4676
1:40 PM	32	29	8	1	12	39	14	1	11	116	15	7	9	91	4	0	389	4651
1:45 PM	25	24	10	2	14	19	18	2	21	121	23	11	10	75	3	2	380	4630
1:50 PM	36	33	6	1	13	29	17	2	11	133	14	7	2	94	5	0	403	4631
1:55 PM	38	20	13	0	16	25	17	0	16	113	14	10	10	88	3	0	383	4625
2:00 PM	29	19	8	0	8	23	5	0	13	135	22	6	9	137	10	0	424	4657
2:05 PM	39	20	6	2	13	33	10	1	17	124	20	2	1	90	7	1	386	4685
2:10 PM	23	46	6	2	11	34	17	0	13	100	10	9	12	90	4	0	377	4693
2:15 PM	24	35	7	1	12	23	19	0	10	113	18	6	7	98	3	0	376	4675
2:20 PM	34	32	14	1	21	27	18	0	13	135	12	14	3	106	6	3	439	4705
2:25 PM	44	21	9	0	11	26	14	0	13	106	12	6	7	93	7	0	369	4669
2:30 PM	35	34	14	2	15	26	17	0	14	93	10	7	7	94	1	2	371	4686
2:35 PM	44	24	8	1	11	37	15	0	13	108	15	3	8	104	8	0	399	4696
2:40 PM	37	21	11	0	11	24	15	0	12	123	23	8	9	121	12	0	427	4734
2:45 PM	37	26	8	1	9	19	16	0	14	126	16	9	8	110	7	0	406	4760
2:50 PM	24	18	7	1	9	38	15	0	23	124	19	12	8	96	6	0	400	4757
2:55 PM	38	36	6	0	10	19	15	0	17	99	15	4	5	102	6	2	374	4748

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	472	284	108	8	124	320	184	0	156	1428	216	80	100	1340	108	0	4928
Heavy Trucks	4	4	0		0	4	0		0	4	0		4	12	0		32
Pedestrians		16				16				28				4			64
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/8/2018 6:34 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix 2
Existing Conditions Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1784	34	25	1449	97	63	267	32	121	189	167
Future Volume (veh/h)	166	1784	34	25	1449	97	63	267	32	121	189	167
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	182	1960	37	27	1592	107	69	293	35	133	208	184
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	208	2894	55	50	2317	156	254	535	437	222	535	445
Arrive On Green	0.12	0.57	0.57	0.03	0.48	0.48	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5118	97	1697	4848	326	990	1870	1527	1058	1870	1555
Grp Volume(v), veh/h	182	1293	704	27	1109	590	69	293	35	133	208	184
Grp Sat Flow(s),veh/h/ln	1781	1689	1838	1697	1689	1796	990	1870	1527	1058	1870	1555
Q Serve(g_s), s	12.3	32.9	32.9	1.9	31.1	31.2	7.3	16.2	2.0	14.8	10.9	11.7
Cycle Q Clear(g_c), s	12.3	32.9	32.9	1.9	31.1	31.2	18.2	16.2	2.0	31.0	10.9	11.7
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1910	1039	50	1614	859	254	535	437	222	535	445
V/C Ratio(X)	0.87	0.68	0.68	0.54	0.69	0.69	0.27	0.55	0.08	0.60	0.39	0.41
Avail Cap(c_a), veh/h	234	1910	1039	139	1614	859	274	573	468	243	573	477
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	18.7	18.7	58.4	24.7	24.8	42.3	36.9	31.8	50.0	35.0	35.3
Incr Delay (d2), s/veh	24.7	1.9	3.6	3.3	2.4	4.5	1.7	2.6	0.2	7.8	1.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.5	14.0	0.9	12.4	13.7	1.9	7.8	0.8	4.4	5.2	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	20.6	22.2	61.7	27.2	29.2	44.0	39.4	32.0	57.7	36.3	37.0
LnGrp LOS	E	C	C	E	C	C	D	D	C	E	D	D
Approach Vol, veh/h		2179			1726			397			525	
Approach Delay, s/veh		25.9			28.4			39.6			42.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.5	18.3	63.2		40.5	7.6	73.9				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		37.4	16.0	54.1		37.4	10.0	60.1				
Max Q Clear Time (g_c+I1), s		33.0	14.3	33.2		20.2	3.9	34.9				
Green Ext Time (p_c), s		1.9	0.0	17.5		4.2	0.0	22.4				

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	1994	4	0	1605	0	1	0	12	0	0	3
Future Vol, veh/h	9	1994	4	0	1605	0	1	0	12	0	0	3
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	3	25	0	3	0	0	0	0	0	0	33
Mvmt Flow	10	2191	4	0	1764	0	1	0	13	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1764	0	0	2197	0	0	2921	3979	1100	2660	3981	882
Stage 1	-	-	-	-	-	-	2215	2215	-	1764	1764	-
Stage 2	-	-	-	-	-	-	706	1764	-	896	2217	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.76
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.23
Pot Cap-1 Maneuver	168	-	-	102	-	-	17	3	180	25	3	204
Stage 1	-	-	-	-	-	-	27	82	-	58	139	-
Stage 2	-	-	-	-	-	-	361	139	-	276	82	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	168	-	-	102	-	-	16	3	180	22	3	204
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	3	-	22	3	-
Stage 1	-	-	-	-	-	-	25	77	-	55	139	-
Stage 2	-	-	-	-	-	-	355	139	-	241	77	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	46.4	22.9
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	101	168	-	-	102	-	-	204
HCM Lane V/C Ratio	0.141	0.059	-	-	-	-	-	0.016
HCM Control Delay (s)	46.4	27.8	-	-	0	-	-	22.9
HCM Lane LOS	E	D	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	1620	239	128	1241	164	236	355	85	210	471	128
Future Volume (veh/h)	147	1620	239	128	1241	164	236	355	85	210	471	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1826	1856	1826	1856	1796	1826	1841	1856	1841
Adj Flow Rate, veh/h	169	1862	275	147	1426	189	271	408	98	241	541	147
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	2	3	5	3	5	3	7	5	4	3	4
Cap, veh/h	284	2099	646	277	2079	631	342	953	297	315	949	279
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.10	0.19	0.19	0.09	0.19	0.19
Sat Flow, veh/h	3428	5106	1570	3374	5066	1538	3428	4904	1526	3401	5066	1491
Grp Volume(v), veh/h	169	1862	275	147	1426	189	271	408	98	241	541	147
Grp Sat Flow(s),veh/h/ln	1714	1702	1570	1687	1689	1538	1714	1635	1526	1700	1689	1491
Q Serve(g_s), s	4.5	32.3	11.9	4.0	22.1	7.9	7.4	7.0	5.3	6.6	9.3	8.5
Cycle Q Clear(g_c), s	4.5	32.3	11.9	4.0	22.1	7.9	7.4	7.0	5.3	6.6	9.3	8.5
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	284	2099	646	277	2079	631	342	953	297	315	949	279
V/C Ratio(X)	0.60	0.89	0.43	0.53	0.69	0.30	0.79	0.43	0.33	0.77	0.57	0.53
Avail Cap(c_a), veh/h	431	2138	657	424	2121	644	431	1283	399	427	1326	390
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	42.3	26.1	20.1	42.1	23.1	18.9	42.0	33.8	33.1	42.3	35.3	35.0
Incr Delay (d2), s/veh	2.0	4.9	0.4	1.6	0.9	0.3	6.0	0.3	0.6	5.6	0.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	13.0	4.2	1.7	8.3	2.7	3.3	2.7	1.9	2.9	3.7	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	31.0	20.5	43.7	24.0	19.2	48.1	34.1	33.8	47.9	35.9	36.5
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	D	D
Approach Vol, veh/h		2306			1762			777			929	
Approach Delay, s/veh		30.7			25.1			38.9			39.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	22.8	13.5	44.1	14.4	23.5	13.4	44.2
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	12.0	25.0	12.0	40.0	12.0	25.0	12.0	40.0
Max Q Clear Time (g_c+I1), s	9.4	11.3	6.5	24.1	8.6	9.0	6.0	34.3
Green Ext Time (p_c), s	0.1	3.3	0.2	9.2	0.3	2.6	0.2	4.9

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

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

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	15	1879	21	62	1508	25	0	0	44	0	0	25
Future Vol, veh/h	15	1879	21	62	1508	25	0	0	44	0	0	25
Conflicting Peds, #/hr	4	0	2	2	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	0
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	3	10	2	3	0	0	0	0	0	0	0
Mvmt Flow	17	2088	23	69	1676	28	0	0	49	0	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1708	0	0	2113	0	0	-	-	1058	-	-	842
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.3	-	-	5.34	-	-	-	-	7.1	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	3.12	-	-	-	-	3.9	-	-	3.9
Pot Cap-1 Maneuver	179	-	-	110	-	-	0	0	192	0	0	267
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	178	-	-	110	-	-	-	-	192	-	-	266
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.2	30	20.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	192	178	-	-	110	-	-	266
HCM Lane V/C Ratio	0.255	0.094	-	-	0.626	-	-	0.104
HCM Control Delay (s)	30	27.3	-	-	81.3	-	-	20.1
HCM Lane LOS	D	D	-	-	F	-	-	C
HCM 95th %tile Q(veh)	1	0.3	-	-	3.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1202	721	0	1238	484	0	0	0	280	0	357
Future Volume (veh/h)	0	1202	721	0	1238	484	0	0	0	280	0	357
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1336	0	0	1376	0				311	0	397
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2181		0	3109					491	0	434
Arrive On Green	0.00	0.62	0.00	0.00	1.00	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1336	0	0	1376	0				311	0	397
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	30.2	0.0	0.0	0.0	0.0				19.8	0.0	31.6
Cycle Q Clear(g_c), s	0.0	30.2	0.0	0.0	0.0	0.0				19.8	0.0	31.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2181		0	3109					491	0	434
V/C Ratio(X)	0.00	0.61		0.00	0.44					0.63	0.00	0.92
Avail Cap(c_a), veh/h	0	2181		0	3109					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.2	0.0	0.0	0.0	0.0				41.5	0.0	45.8
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	0.4	0.0				1.4	0.0	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.6	0.0	0.0	0.1	0.0				9.0	0.0	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.5	0.0	0.0	0.4	0.0				42.8	0.0	63.2
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1336	A		1376	A					708	
Approach Delay, s/veh		16.5			0.4						54.3	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	87.4	42.6	87.4
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	71.0	45.0	71.0
Max Q Clear Time (g_c+I1), s	32.2	33.6	2.0
Green Ext Time (p_c), s	20.7	2.0	26.0

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1188	294	0	1200	329	522	0	522	0	0	0
Future Volume (veh/h)	0	1188	294	0	1200	329	522	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1350	0	0	1364	0	567	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2841		0	2773		1153	0	923			
Arrive On Green	0.00	1.00	0.00	0.00	0.18	0.00	0.33	0.00	0.33			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1350	0	0	1364	0	567	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	31.9	0.0	17.0	0.0	23.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	31.9	0.0	17.0	0.0	23.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2841		0	2773		1153	0	923			
V/C Ratio(X)	0.00	0.48		0.00	0.49		0.49	0.00	0.64			
Avail Cap(c_a), veh/h	0	2841		0	2773		1587	0	1271			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.75	0.00	0.00	0.73	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	36.6	0.0	34.5	0.0	36.7			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	1.4	0.0	3.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	14.3	0.0	7.4	0.0	8.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	37.0	0.0	35.9	0.0	39.9			
LnGrp LOS	A	A		A	D		D	A	D			
Approach Vol, veh/h		1350	A		1364	A		1160				
Approach Delay, s/veh		0.4			37.0			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.3				79.3		50.7				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		56.0				56.0		59.7				
Max Q Clear Time (g_c+I1), s		2.0				33.9		25.6				
Green Ext Time (p_c), s		28.0				15.9		17.8				

Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1384	52	53	1085	90	138	390	73	110	333	306
Future Volume (veh/h)	274	1384	52	53	1085	90	138	390	73	110	333	306
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	326	1648	62	63	1292	107	164	464	87	131	396	364
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	388	2436	92	141	2048	641	215	824	358	157	918	397
Arrive On Green	0.04	0.16	0.16	0.04	0.41	0.41	0.07	0.23	0.23	0.09	0.26	0.26
Sat Flow, veh/h	3428	5048	190	3401	4985	1561	3291	3526	1531	1739	3554	1536
Grp Volume(v), veh/h	326	1111	599	63	1292	107	164	464	87	131	396	364
Grp Sat Flow(s),veh/h/ln	1714	1702	1834	1700	1662	1561	1646	1763	1531	1739	1777	1536
Q Serve(g_s), s	12.3	40.0	40.0	2.4	26.8	5.6	6.4	15.1	6.0	9.6	12.1	29.9
Cycle Q Clear(g_c), s	12.3	40.0	40.0	2.4	26.8	5.6	6.4	15.1	6.0	9.6	12.1	29.9
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	1643	885	141	2048	641	215	824	358	157	918	397
V/C Ratio(X)	0.84	0.68	0.68	0.45	0.63	0.17	0.76	0.56	0.24	0.84	0.43	0.92
Avail Cap(c_a), veh/h	607	1643	885	235	2048	641	354	925	402	227	1014	438
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	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	61.4	45.1	45.1	60.9	30.5	24.2	59.8	44.0	40.5	58.2	40.2	46.8
Incr Delay (d2), s/veh	2.9	1.9	3.5	0.8	1.5	0.6	2.1	1.4	0.8	11.2	0.1	21.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	18.7	20.5	1.0	10.7	2.2	2.7	6.8	2.3	4.7	5.2	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	47.0	48.6	61.7	31.9	24.8	61.9	45.4	41.3	69.5	40.3	68.6
LnGrp LOS	E	D	D	E	C	C	E	D	D	E	D	E
Approach Vol, veh/h		2036			1462			715			891	
Approach Delay, s/veh		50.2			32.7			48.7			56.2	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	38.5	19.7	58.3	16.7	35.3	10.4	67.6
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	14.0	37.1	23.0	36.1	17.0	34.1	9.0	50.1
Max Q Clear Time (g_c+I1), s	8.4	31.9	14.3	28.8	11.6	17.1	4.4	42.0
Green Ext Time (p_c), s	0.1	1.2	0.4	6.2	0.1	5.7	0.0	7.4

Intersection Summary	
HCM 6th Ctrl Delay	46.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	480	99	161	640	63
Future Volume (veh/h)	87	552	113	131	395	131	79	480	99	161	640	63
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		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1826	1885	1841	1841
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	578	119	194	771	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	5	1	4	4
Cap, veh/h	129	876	179	183	1167	499	118	1025	207	221	1408	138
Arrive On Green	0.07	0.30	0.30	0.10	0.33	0.33	0.07	0.25	0.25	0.12	0.30	0.30
Sat Flow, veh/h	1781	2931	599	1795	3554	1519	1767	4156	840	1795	4645	455
Grp Volume(v), veh/h	105	403	398	158	476	158	95	460	237	194	555	292
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1795	1777	1519	1767	1662	1672	1795	1675	1750
Q Serve(g_s), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	15.7	16.2	13.8	18.0	18.2
Cycle Q Clear(g_c), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	15.7	16.2	13.8	18.0	18.2
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.50	1.00		0.26
Lane Grp Cap(c), veh/h	129	531	524	183	1167	499	118	820	413	221	1015	530
V/C Ratio(X)	0.81	0.76	0.76	0.86	0.41	0.32	0.81	0.56	0.57	0.88	0.55	0.55
Avail Cap(c_a), veh/h	274	589	581	193	1167	499	209	820	413	351	1015	530
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	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	41.3	41.3	57.5	33.8	32.7	59.9	42.8	43.0	56.1	37.8	37.9
Incr Delay (d2), s/veh	4.6	9.7	9.9	28.4	0.5	0.8	4.8	2.7	5.7	9.1	2.1	4.1
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	3.5	12.9	12.8	6.5	5.8	3.8	3.2	6.7	7.2	6.7	7.5	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	51.1	51.3	85.9	34.3	33.5	64.7	45.5	48.6	65.1	39.9	42.0
LnGrp LOS	E	D	D	F	C	C	E	D	D	E	D	D
Approach Vol, veh/h		906			792			792			1041	
Approach Delay, s/veh		52.7			44.5			48.8			45.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	44.3	13.4	47.6	20.6	37.0	17.2	43.8
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.4	* 39	20.0	37.1	25.4	29.1	14.0	43.1
Max Q Clear Time (g_c+I1), s	8.9	20.2	9.6	15.5	15.8	18.2	13.3	28.8
Green Ext Time (p_c), s	0.0	7.2	0.1	6.6	0.2	5.3	0.0	10.1

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	3	5	1	18	23	635	8	67	811	6
Future Volume (veh/h)	5	2	3	5	1	18	23	635	8	67	811	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1159	1159	1900	1900	1900	1900	1811	1811	1900	1841	1841
Adj Flow Rate, veh/h	6	2	3	6	1	21	27	738	9	78	943	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	50	50	0	0	0	0	6	6	0	4	4
Cap, veh/h	102	19	29	115	3	72	69	3940	48	105	4127	31
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.78	0.78	0.06	0.80	0.80
Sat Flow, veh/h	1412	418	628	1434	74	1548	1810	5035	61	1810	5145	38
Grp Volume(v), veh/h	6	0	5	6	0	22	27	483	264	78	614	336
Grp Sat Flow(s),veh/h/ln	1412	0	1046	1434	0	1621	1810	1648	1800	1810	1675	1833
Q Serve(g_s), s	0.5	0.0	0.6	0.5	0.0	1.7	1.9	4.9	4.9	5.5	5.8	5.8
Cycle Q Clear(g_c), s	2.2	0.0	0.6	1.1	0.0	1.7	1.9	4.9	4.9	5.5	5.8	5.8
Prop In Lane	1.00		0.60	1.00		0.95	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	102	0	49	115	0	75	69	2579	1409	105	2687	1470
V/C Ratio(X)	0.06	0.00	0.10	0.05	0.00	0.29	0.39	0.19	0.19	0.75	0.23	0.23
Avail Cap(c_a), veh/h	447	0	304	466	0	471	312	2579	1409	340	2687	1470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	61.0	0.0	59.4	59.9	0.0	59.9	61.0	3.6	3.6	60.3	3.1	3.1
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.2	0.0	2.1	3.5	0.2	0.3	8.3	0.2	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	0.2	0.0	0.2	0.2	0.0	0.7	0.9	1.3	1.5	2.7	1.5	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	0.0	60.3	60.1	0.0	62.0	64.6	3.8	3.9	68.6	3.3	3.4
LnGrp LOS	E	A	E	E	A	E	E	A	A	E	A	A
Approach Vol, veh/h		11			28			774			1028	
Approach Delay, s/veh		60.8			61.6			5.9			8.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	109.2		11.2	12.1	106.6		11.2
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	22.4	55.1		* 38	24.4	53.1		* 38
Max Q Clear Time (g_c+I1), s	3.9	7.8		3.7	7.5	6.9		4.2
Green Ext Time (p_c), s	0.0	15.8		0.1	0.1	11.5		0.0

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

Notes

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	18	1	0	3	26	691	2	10	793	2
Future Vol, veh/h	7	0	18	1	0	3	26	691	2	10	793	2
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	4	4	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	8	6	0	0	4	50
Mvmt Flow	9	0	22	1	0	4	32	843	2	12	967	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1910	491	1324	1910	427	974	0	0	849	0	0
Stage 1	997	997	-	912	912	-	-	-	-	-	-	-
Stage 2	401	913	-	412	998	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.46	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.18	-	-	3.1	-	-
Pot Cap-1 Maneuver	151	69	452	167	69	497	385	-	-	469	-	-
Stage 1	203	325	-	232	355	-	-	-	-	-	-	-
Stage 2	551	355	-	543	324	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	137	61	449	145	61	495	383	-	-	467	-	-
Mov Cap-2 Maneuver	137	61	-	145	61	-	-	-	-	-	-	-
Stage 1	185	315	-	212	324	-	-	-	-	-	-	-
Stage 2	501	324	-	503	314	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.8	16.8	0.6	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	383	-	-	274	309	467	-	-
HCM Lane V/C Ratio	0.083	-	-	0.111	0.016	0.026	-	-
HCM Control Delay (s)	15.2	-	-	19.8	16.8	12.9	-	-
HCM Lane LOS	C	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	666	801	18
Future Vol, veh/h	0	8	0	666	801	18
Conflicting Peds, #/hr	0	1	4	0	0	4
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	4	0
Mvmt Flow	0	9	0	757	910	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	470	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	466	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	464	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	464	-	-
HCM Lane V/C Ratio	-	0.02	-	-
HCM Control Delay (s)	-	12.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1765	70	43	1701	127	103	313	37	91	304	172
Future Volume (veh/h)	164	1765	70	43	1701	127	103	313	37	91	304	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	174	1878	74	46	1810	135	110	333	39	97	323	183
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	202	2912	115	68	2445	182	167	519	400	178	515	425
Arrive On Green	0.11	0.57	0.57	0.04	0.50	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	5075	200	1781	4886	363	899	1900	1464	1017	1885	1555
Grp Volume(v), veh/h	174	1269	683	46	1270	675	110	333	39	97	323	183
Grp Sat Flow(s),veh/h/ln	1810	1716	1844	1781	1716	1818	899	1900	1464	1017	1885	1555
Q Serve(g_s), s	11.9	31.5	31.6	3.2	37.0	37.2	15.4	19.5	2.5	11.7	18.9	12.2
Cycle Q Clear(g_c), s	11.9	31.5	31.6	3.2	37.0	37.2	34.3	19.5	2.5	31.2	18.9	12.2
Prop In Lane	1.00		0.11	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1969	1058	68	1717	910	167	519	400	178	515	425
V/C Ratio(X)	0.86	0.64	0.65	0.68	0.74	0.74	0.66	0.64	0.10	0.55	0.63	0.43
Avail Cap(c_a), veh/h	359	1969	1058	184	1717	910	167	519	400	178	515	425
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	55.0	18.2	18.2	59.8	25.0	25.0	55.2	40.4	34.2	54.1	40.2	37.7
Incr Delay (d2), s/veh	4.2	1.6	3.0	4.3	2.9	5.4	14.1	4.4	0.3	7.8	4.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	12.1	13.5	1.5	15.0	16.6	4.1	9.7	0.9	3.4	9.4	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	19.8	21.2	64.2	27.9	30.5	69.3	44.8	34.5	61.9	44.3	39.7
LnGrp LOS	E	B	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		2126			1991			482			603	
Approach Delay, s/veh		23.5			29.6			49.6			45.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.0	18.0	68.0		40.0	8.8	77.2				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		34.4	25.0	52.1		34.4	13.0	64.1				
Max Q Clear Time (g_c+I1), s		33.2	13.9	39.2		36.3	5.2	33.6				
Green Ext Time (p_c), s		0.7	0.2	11.9		0.0	0.0	26.2				

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1830	12	10	1955	0	0	0	8	0	0	10
Future Vol, veh/h	14	1830	12	10	1955	0	0	0	8	0	0	10
Conflicting Peds, #/hr	1	0	5	5	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	8	0	1	0	0	0	0	0	0	20
Mvmt Flow	15	1989	13	11	2125	0	0	0	9	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2126	0	0	2007	0	0	2903	4179	1006	2974	4185	1064
Stage 1	-	-	-	-	-	-	2031	2031	-	2148	2148	-
Stage 2	-	-	-	-	-	-	872	2148	-	826	2037	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.5
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.1
Pot Cap-1 Maneuver	111	-	-	127	-	-	17	2	208	16	2	165
Stage 1	-	-	-	-	-	-	37	102	-	31	89	-
Stage 2	-	-	-	-	-	-	286	89	-	305	101	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	111	-	-	126	-	-	13	2	207	13	2	165
Mov Cap-2 Maneuver	-	-	-	-	-	-	13	2	-	13	2	-
Stage 1	-	-	-	-	-	-	32	88	-	27	81	-
Stage 2	-	-	-	-	-	-	244	81	-	253	87	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	23.2	28.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	207	111	-	-	126	-	-	165
HCM Lane V/C Ratio	0.042	0.137	-	-	0.086	-	-	0.066
HCM Control Delay (s)	23.2	42.5	-	-	36.3	-	-	28.4
HCM Lane LOS	C	E	-	-	E	-	-	D
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0.3	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1433	222	207	1418	289	319	710	217	398	724	228
Future Volume (veh/h)	183	1433	222	207	1418	289	319	710	217	398	724	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1885	1900	1870	1885	1885	1870	1870	1885	1870	1885
Adj Flow Rate, veh/h	206	1610	249	233	1593	325	358	798	244	447	813	256
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
Percent Heavy Veh, %	0	2	1	0	2	1	1	2	2	1	2	1
Cap, veh/h	277	1855	579	306	1897	585	420	1122	338	532	1285	393
Arrive On Green	0.08	0.36	0.36	0.09	0.37	0.37	0.12	0.22	0.22	0.15	0.25	0.25
Sat Flow, veh/h	3510	5106	1594	3510	5106	1574	3483	5106	1539	3483	5106	1561
Grp Volume(v), veh/h	206	1610	249	233	1593	325	358	798	244	447	813	256
Grp Sat Flow(s),veh/h/ln	1755	1702	1594	1755	1702	1574	1742	1702	1539	1742	1702	1561
Q Serve(g_s), s	6.8	34.7	14.0	7.7	33.8	19.4	11.9	17.1	17.4	14.8	16.8	17.4
Cycle Q Clear(g_c), s	6.8	34.7	14.0	7.7	33.8	19.4	11.9	17.1	17.4	14.8	16.8	17.4
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	277	1855	579	306	1897	585	420	1122	338	532	1285	393
V/C Ratio(X)	0.74	0.87	0.43	0.76	0.84	0.56	0.85	0.71	0.72	0.84	0.63	0.65
Avail Cap(c_a), veh/h	723	1944	607	723	1944	599	570	1297	391	864	1728	528
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	53.4	35.1	28.5	52.9	34.0	29.5	51.1	42.7	42.9	48.8	39.5	39.7
Incr Delay (d2), s/veh	3.9	4.3	0.5	3.9	3.4	1.1	7.0	1.5	5.4	4.1	0.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	14.6	5.3	3.5	14.0	7.3	5.5	7.2	7.0	6.6	6.9	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	39.4	29.0	56.8	37.4	30.6	58.1	44.3	48.3	52.9	40.0	41.5
LnGrp LOS	E	D	C	E	D	C	E	D	D	D	D	D
Approach Vol, veh/h		2065			2151			1400			1516	
Approach Delay, s/veh		39.9			38.5			48.5			44.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	34.7	14.9	48.9	23.7	30.9	15.9	48.0
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	13.9	19.4	8.8	35.8	16.8	19.4	9.7	36.7
Green Ext Time (p_c), s	0.4	6.3	0.6	7.0	1.3	4.5	0.6	6.3

Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1977	22	79	1879	27	0	0	123	0	0	35
Future Vol, veh/h	49	1977	22	79	1879	27	0	0	123	0	0	35
Conflicting Peds, #/hr	13	0	5	5	0	13	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	0
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	2	5	0	1	0	0	0	1	0	0	0
Mvmt Flow	54	2197	24	88	2088	30	0	0	137	0	0	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2131	0	0	2226	0	0	-	-	1116	-	-	1057
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.3	-	-	5.3	-	-	-	-	7.12	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	-	-	3.91	-	-	3.9
Pot Cap-1 Maneuver	110	-	-	98	-	-	0	0	175	0	0	193
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	109	-	-	98	-	-	-	-	174	-	-	191
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	5.7	75.6	28.6
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	174	109	-	-	98	-	-	191
HCM Lane V/C Ratio	0.785	0.499	-	-	0.896	-	-	0.204
HCM Control Delay (s)	75.6	67.2	-	-	142.2	-	-	28.6
HCM Lane LOS	F	F	-	-	F	-	-	D
HCM 95th %tile Q(veh)	5.2	2.3	-	-	5.1	-	-	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1334	766	0	1637	597	0	0	0	342	0	348
Future Volume (veh/h)	0	1334	766	0	1637	597	0	0	0	342	0	348
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1434	0	0	1760	0				380	0	374
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2261		0	3249					469	0	414
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1434	0	0	1760	0				380	0	374
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	32.0	0.0	0.0	0.0	0.0				25.8	0.0	29.7
Cycle Q Clear(g_c), s	0.0	32.0	0.0	0.0	0.0	0.0				25.8	0.0	29.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2261		0	3249					469	0	414
V/C Ratio(X)	0.00	0.63		0.00	0.54					0.81	0.00	0.90
Avail Cap(c_a), veh/h	0	2261		0	3249					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.7	0.0	0.0	0.0	0.0				45.0	0.0	46.4
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.5	0.0				6.0	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.4	0.0	0.0	0.2	0.0				12.3	0.0	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.1	0.0	0.0	0.5	0.0				51.0	0.0	61.6
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1434	A		1760	A					754	
Approach Delay, s/veh		16.1			0.5						56.3	
Approach LOS		B			A						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	89.1	40.9	89.1
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	71.0	45.0	71.0
Max Q Clear Time (g_c+I1), s	34.0	31.7	2.0
Green Ext Time (p_c), s	22.0	2.3	38.8

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1354	322	0	1696	505	538	0	477	0	0	0
Future Volume (veh/h)	0	1354	322	0	1696	505	538	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1456	0	0	1824	0	585	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	3179		0	3179		949	0	778			
Arrive On Green	0.00	1.00	0.00	0.00	0.82	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1456	0	0	1824	0	585	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	15.5	0.0	19.2	0.0	20.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	15.5	0.0	19.2	0.0	20.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3179		0	3179		949	0	778			
V/C Ratio(X)	0.00	0.46		0.00	0.57		0.62	0.00	0.66			
Avail Cap(c_a), veh/h	0	3179		0	3179		1595	0	1308			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.68	0.00	0.00	0.40	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	5.8	0.0	41.2	0.0	41.8			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	1.5	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	3.6	0.0	8.4	0.0	7.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	6.1	0.0	42.7	0.0	44.0			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1456	A		1824	A		1098				
Approach Delay, s/veh		0.3			6.1			43.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		87.3				87.3		42.7				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				17.5		22.8				
Green Ext Time (p_c), s		31.0				30.9		12.8				

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	1383	133	117	1502	62	309	547	96	164	532	390
Future Volume (veh/h)	315	1383	133	117	1502	62	309	547	96	164	532	390
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	342	1503	145	127	1633	67	336	595	104	178	578	424
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	397	2009	194	178	1841	561	393	936	407	204	940	416
Arrive On Green	0.15	0.56	0.56	0.05	0.36	0.36	0.11	0.26	0.26	0.11	0.26	0.26
Sat Flow, veh/h	3456	4763	459	3510	5147	1568	3483	3582	1558	1795	3582	1586
Grp Volume(v), veh/h	342	1082	566	127	1633	67	336	595	104	178	578	424
Grp Sat Flow(s),veh/h/ln	1728	1716	1791	1755	1716	1568	1742	1791	1558	1795	1791	1586
Q Serve(g_s), s	12.6	31.0	31.1	4.6	38.8	3.7	12.3	19.1	6.9	12.7	18.5	34.1
Cycle Q Clear(g_c), s	12.6	31.0	31.1	4.6	38.8	3.7	12.3	19.1	6.9	12.7	18.5	34.1
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	397	1447	755	178	1841	561	393	936	407	204	940	416
V/C Ratio(X)	0.86	0.75	0.75	0.71	0.89	0.12	0.85	0.64	0.26	0.87	0.62	1.02
Avail Cap(c_a), veh/h	558	1447	755	243	1841	561	536	940	409	276	940	416
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)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	23.3	23.3	60.8	39.3	28.0	56.6	42.5	38.0	56.7	42.2	48.0
Incr Delay (d2), s/veh	6.3	3.1	5.7	3.0	6.8	0.4	7.6	2.1	0.8	16.2	0.9	49.0
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	5.5	11.2	12.3	2.1	17.0	1.5	5.8	8.8	0.1	6.6	8.1	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	26.4	29.1	63.7	46.1	28.4	64.2	44.6	38.8	72.9	43.1	97.0
LnGrp LOS	E	C	C	E	D	C	E	D	D	E	D	F
Approach Vol, veh/h		1990			1827			1035			1180	
Approach Delay, s/veh		33.0			46.6			50.4			66.9	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	39.0	19.9	51.4	19.8	38.9	11.6	59.7
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	20.0	34.1	21.0	35.1	20.0	34.1	9.0	47.1
Max Q Clear Time (g_c+I1), s	14.3	36.1	14.6	40.8	14.7	21.1	6.6	33.1
Green Ext Time (p_c), s	0.4	0.0	0.4	0.0	0.1	6.1	0.0	12.1

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	633	142	176	696	209	157	791	139	296	1037	123
Future Volume (veh/h)	143	633	142	176	696	209	157	791	139	296	1037	123
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	157	696	156	193	765	230	173	869	153	325	1140	135
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, %	1	1	1	1	1	1	1	2	2	0	2	2
Cap, veh/h	181	742	166	216	989	432	197	1302	228	349	1763	209
Arrive On Green	0.10	0.26	0.26	0.12	0.28	0.28	0.11	0.30	0.30	0.19	0.38	0.38
Sat Flow, veh/h	1795	2890	647	1795	3582	1565	1795	4355	762	1810	4618	547
Grp Volume(v), veh/h	157	431	421	193	765	230	173	678	344	325	840	435
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1795	1791	1565	1795	1702	1713	1810	1702	1761
Q Serve(g_s), s	12.1	33.0	33.0	14.8	27.5	17.5	13.3	24.4	24.6	24.7	28.4	28.4
Cycle Q Clear(g_c), s	12.1	33.0	33.0	14.8	27.5	17.5	13.3	24.4	24.6	24.7	28.4	28.4
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.44	1.00		0.31
Lane Grp Cap(c), veh/h	181	460	448	216	989	432	197	1018	512	349	1299	672
V/C Ratio(X)	0.87	0.94	0.94	0.89	0.77	0.53	0.88	0.67	0.67	0.93	0.65	0.65
Avail Cap(c_a), veh/h	231	462	450	218	989	432	287	1018	512	406	1299	672
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	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	50.9	50.9	60.7	46.6	43.0	61.4	43.0	43.0	55.6	35.5	35.5
Incr Delay (d2), s/veh	20.1	29.0	29.7	32.9	4.5	2.3	13.5	3.4	6.7	24.8	2.5	4.8
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	6.5	18.2	17.9	8.6	12.7	7.0	6.7	10.6	11.2	13.5	12.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	79.9	80.6	93.6	51.1	45.3	74.9	46.3	49.7	80.4	38.0	40.3
LnGrp LOS	F	E	F	F	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1009			1188			1195			1600	
Approach Delay, s/veh		80.6			56.9			51.4			47.3	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	58.3	18.1	43.6	31.6	46.8	20.8	40.8
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	22.4	* 46	18.0	35.1	31.4	37.1	17.0	36.1
Max Q Clear Time (g_c+I1), s	15.3	30.4	14.1	29.5	26.7	26.6	16.8	35.0
Green Ext Time (p_c), s	0.1	9.7	0.1	3.8	0.2	7.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	57.3
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1	55	34	1	37	162	1014	6	77	1265	13
Future Volume (veh/h)	36	1	55	34	1	37	162	1014	6	77	1265	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1900	1900	1885	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	40	1	60	37	1	41	178	1114	7	85	1390	14
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, %	0	0	0	3	0	0	1	2	2	1	1	1
Cap, veh/h	155	3	157	136	4	156	206	3853	24	106	3576	36
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.74	0.74	0.12	1.00	1.00
Sat Flow, veh/h	1376	26	1574	1322	38	1564	1795	5236	33	1795	5253	53
Grp Volume(v), veh/h	40	0	61	37	0	42	178	724	397	85	908	496
Grp Sat Flow(s),veh/h/ln	1376	0	1600	1322	0	1602	1795	1702	1864	1795	1716	1875
Q Serve(g_s), s	3.9	0.0	5.0	3.8	0.0	3.4	13.6	10.0	10.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	5.0	8.8	0.0	3.4	13.6	10.0	10.0	6.5	0.0	0.0
Prop In Lane	1.00		0.98	1.00		0.98	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	155	0	160	136	0	160	206	2505	1372	106	2335	1276
V/C Ratio(X)	0.26	0.00	0.38	0.27	0.00	0.26	0.87	0.29	0.29	0.80	0.39	0.39
Avail Cap(c_a), veh/h	390	0	432	361	0	432	428	2505	1372	313	2335	1276
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62
Uniform Delay (d), s/veh	61.6	0.0	59.0	63.1	0.0	58.3	60.9	6.2	6.2	60.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.5	1.1	0.0	0.9	10.4	0.3	0.5	8.3	0.3	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	1.4	0.0	2.1	1.3	0.0	1.4	6.7	3.3	3.7	3.0	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	0.0	60.5	64.1	0.0	59.1	71.3	6.5	6.7	69.2	0.3	0.6
LnGrp LOS	E	A	E	E	A	E	E	A	A	E	A	A
Approach Vol, veh/h		101			79			1299			1489	
Approach Delay, s/veh		61.3			61.5			15.4			4.3	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	100.2		19.2	12.9	107.9		19.2
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	23.4	54.1		* 38	24.4	63.1		* 38
Max Q Clear Time (g_c+I1), s	15.6	2.0		10.8	8.5	12.0		9.3
Green Ext Time (p_c), s	0.4	28.1		0.3	0.1	20.4		0.4

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	20	1	0	2	43	1222	0	28	1149	4
Future Vol, veh/h	3	0	20	1	0	2	43	1222	0	28	1149	4
Conflicting Peds, #/hr	1	0	0	0	0	1	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	22	1	0	2	47	1343	0	31	1263	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1962	2770	637	2007	2772	676	1270	0	0	1346	0	0
Stage 1	1330	1330	-	1440	1440	-	-	-	-	-	-	-
Stage 2	632	1440	-	567	1332	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	69	20	364	64	19	343	294	-	-	270	-	-
Stage 1	119	226	-	99	200	-	-	-	-	-	-	-
Stage 2	400	200	-	438	225	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	15	363	48	14	342	293	-	-	269	-	-
Mov Cap-2 Maneuver	55	15	-	48	14	-	-	-	-	-	-	-
Stage 1	100	199	-	83	167	-	-	-	-	-	-	-
Stage 2	333	167	-	364	198	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.5	38.1	0.7	0.5
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	293	-	-	210	112	269	-	-
HCM Lane V/C Ratio	0.161	-	-	0.12	0.029	0.114	-	-
HCM Control Delay (s)	19.6	-	-	24.5	38.1	20.1	-	-
HCM Lane LOS	C	-	-	C	E	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑↑	↑↑↑↳	
Traffic Vol, veh/h	0	17	0	1182	1333	21
Future Vol, veh/h	0	17	0	1182	1333	21
Conflicting Peds, #/hr	0	0	4	0	0	4
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	91	91	91	91	91	91
Heavy Vehicles, %	0	6	0	1	1	0
Mvmt Flow	0	19	0	1299	1465	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	748	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.96	-	-	-	-
Pot Cap-1 Maneuver	0	298	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	297	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	297	-	-
HCM Lane V/C Ratio	-	0.063	-	-
HCM Control Delay (s)	-	17.9	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1280	40	28	1325	69	87	155	33	65	97	115
Future Volume (veh/h)	97	1280	40	28	1325	69	87	155	33	65	97	115
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	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	100	1320	41	29	1366	71	90	160	34	67	100	119
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	125	3471	108	55	3173	165	208	334	281	169	329	281
Arrive On Green	0.07	0.68	0.68	0.03	0.64	0.64	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	5124	159	1810	4966	258	1161	1885	1588	1114	1856	1588
Grp Volume(v), veh/h	100	884	477	29	936	501	90	160	34	67	100	119
Grp Sat Flow(s),veh/h/ln	1810	1716	1852	1810	1702	1820	1161	1885	1588	1114	1856	1588
Q Serve(g_s), s	6.9	14.1	14.1	2.0	17.3	17.3	9.2	9.6	2.3	7.3	5.9	8.4
Cycle Q Clear(g_c), s	6.9	14.1	14.1	2.0	17.3	17.3	15.1	9.6	2.3	16.9	5.9	8.4
Prop In Lane	1.00		0.09	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	2324	1255	55	2175	1163	208	334	281	169	329	281
V/C Ratio(X)	0.80	0.38	0.38	0.53	0.43	0.43	0.43	0.48	0.12	0.40	0.30	0.42
Avail Cap(c_a), veh/h	373	2324	1255	144	2175	1163	274	440	371	232	433	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	8.8	8.8	60.2	11.3	11.3	51.7	46.6	43.6	54.2	45.1	46.1
Incr Delay (d2), s/veh	4.5	0.5	0.9	2.9	0.6	1.2	4.1	3.1	0.6	4.3	1.5	2.9
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	3.3	4.9	5.4	0.9	6.2	6.8	2.9	4.8	0.9	2.2	2.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	9.3	9.7	63.1	12.0	12.5	55.7	49.7	44.1	58.5	46.6	49.0
LnGrp LOS	E	A	A	E	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1461			1466			284			286	
Approach Delay, s/veh		13.1			13.2			50.9			50.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		27.9	12.7	85.4		27.9	7.8	90.3
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9
Max Green Setting (Gmax), s		29.4	26.0	56.1		29.4	10.0	72.1
Max Q Clear Time (g_c+I1), s		18.9	8.9	19.3		17.1	4.0	16.1
Green Ext Time (p_c), s		1.9	0.1	23.6		2.2	0.0	28.0

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	1371	15	32	1381	0	6	0	11	0	0	10
Future Vol, veh/h	13	1371	15	32	1381	0	6	0	11	0	0	10
Conflicting Peds, #/hr	7	0	2	2	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	14	1490	16	35	1501	0	7	0	12	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1508	0	0	1508	0	0	2198	3106	755	2202	3114	758
Stage 1	-	-	-	-	-	-	1528	1528	-	1578	1578	-
Stage 2	-	-	-	-	-	-	670	1578	-	624	1536	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	225	-	-	225	-	-	49	12	305	49	12	304
Stage 1	-	-	-	-	-	-	86	181	-	79	171	-
Stage 2	-	-	-	-	-	-	380	171	-	405	180	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	224	-	-	225	-	-	40	9	304	39	9	302
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	9	-	39	9	-
Stage 1	-	-	-	-	-	-	80	169	-	74	143	-
Stage 2	-	-	-	-	-	-	309	143	-	365	168	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	54.4	17.4
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	224	-	-	225	-	-	302
HCM Lane V/C Ratio	0.203	0.063	-	-	0.155	-	-	0.036
HCM Control Delay (s)	54.4	22.2	-	-	23.9	-	-	17.4
HCM Lane LOS	F	C	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.5	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	1005	159	236	974	403	225	562	247	450	541	214
Future Volume (veh/h)	218	1005	159	236	974	403	225	562	247	450	541	214
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1856	1870	1870	1900	1885	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	227	1047	166	246	1015	420	234	585	257	469	564	223
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	2	3	2	2	0	1	2	2	2	2	0
Cap, veh/h	298	1605	483	317	1640	507	296	1324	397	552	1705	524
Arrive On Green	0.08	0.31	0.31	0.09	0.32	0.32	0.08	0.26	0.26	0.16	0.33	0.33
Sat Flow, veh/h	3510	5106	1536	3456	5106	1579	3483	5106	1532	3456	5106	1570
Grp Volume(v), veh/h	227	1047	166	246	1015	420	234	585	257	469	564	223
Grp Sat Flow(s),veh/h/ln	1755	1702	1536	1728	1702	1579	1742	1702	1532	1728	1702	1570
Q Serve(g_s), s	7.6	21.2	10.0	8.4	20.2	29.5	7.9	11.5	17.9	15.8	9.9	13.2
Cycle Q Clear(g_c), s	7.6	21.2	10.0	8.4	20.2	29.5	7.9	11.5	17.9	15.8	9.9	13.2
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	298	1605	483	317	1640	507	296	1324	397	552	1705	524
V/C Ratio(X)	0.76	0.65	0.34	0.78	0.62	0.83	0.79	0.44	0.65	0.85	0.33	0.43
Avail Cap(c_a), veh/h	713	1918	577	702	1918	593	563	1324	397	846	1705	524
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	53.7	35.5	31.6	53.3	34.5	37.7	53.9	37.2	39.6	49.0	29.9	31.0
Incr Delay (d2), s/veh	4.0	0.6	0.4	4.1	0.5	8.4	1.8	1.1	7.9	5.2	0.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	8.7	3.7	3.7	8.2	12.2	3.5	4.8	7.5	7.1	4.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	36.1	32.1	57.4	35.0	46.0	55.7	38.3	47.5	54.2	30.5	33.5
LnGrp LOS	E	D	C	E	C	D	E	D	D	D	C	C
Approach Vol, veh/h		1440			1681			1076			1256	
Approach Delay, s/veh		39.0			41.0			44.3			39.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	45.0	15.8	43.5	24.8	36.0	16.6	42.6
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	9.9	15.2	9.6	31.5	17.8	19.9	10.4	23.2
Green Ext Time (p_c), s	0.3	4.6	0.6	6.9	1.3	3.4	0.7	7.9

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	1640	14	111	1593	22	0	0	99	0	0	20
Future Vol, veh/h	48	1640	14	111	1593	22	0	0	99	0	0	20
Conflicting Peds, #/hr	7	0	11	11	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	4	2	0	0	0	1	0	0	0
Mvmt Flow	52	1763	15	119	1713	24	0	0	106	0	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1744	0	0	1789	0	0	-	-	900	-	-	864
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.3	-	-	5.38	-	-	-	-	7.12	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	3.14	-	-	-	-	3.91	-	-	3.9
Pot Cap-1 Maneuver	172	-	-	156	-	-	0	0	243	0	0	259
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	171	-	-	154	-	-	-	-	240	-	-	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	5.2	31.4	20.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	240	171	-	-	154	-	-	257
HCM Lane V/C Ratio	0.444	0.302	-	-	0.775	-	-	0.084
HCM Control Delay (s)	31.4	34.9	-	-	81.3	-	-	20.3
HCM Lane LOS	D	D	-	-	F	-	-	C
HCM 95th %tile Q(veh)	2.1	1.2	-	-	4.9	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1145	594	0	1421	461	0	0	0	350	0	305
Future Volume (veh/h)	0	1145	594	0	1421	461	0	0	0	350	0	305
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1193	0	0	1480	0				389	0	318
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2311		0	3347					435	0	381
Arrive On Green	0.00	0.65	0.00	0.00	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1193	0	0	1480	0				389	0	318
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	23.0	0.0	0.0	0.0	0.0				27.3	0.0	25.0
Cycle Q Clear(g_c), s	0.0	23.0	0.0	0.0	0.0	0.0				27.3	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2311		0	3347					435	0	381
V/C Ratio(X)	0.00	0.52		0.00	0.44					0.90	0.00	0.84
Avail Cap(c_a), veh/h	0	2311		0	3347					621	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.0	0.0	0.0	0.0	0.0				47.7	0.0	46.8
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.4	0.0				11.7	0.0	7.6
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	0.0	8.6	0.0	0.0	0.1	0.0				13.6	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.8	0.0	0.0	0.4	0.0				59.4	0.0	54.4
LnGrp LOS	A	B		A	A					E	A	D
Approach Vol, veh/h		1193	A		1480	A					707	
Approach Delay, s/veh		12.8			0.4						57.1	
Approach LOS		B			A						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	91.5	38.5	91.5
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	71.0	45.0	71.0
Max Q Clear Time (g_c+I1), s	25.0	29.3	2.0
Green Ext Time (p_c), s	19.2	2.2	29.3

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1278	217	0	1355	420	527	0	711	0	0	0
Future Volume (veh/h)	0	1278	217	0	1355	420	527	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1331	0	0	1411	0	573	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2763		0	2741		1229	0	1000			
Arrive On Green	0.00	1.00	0.00	0.00	0.54	0.00	0.36	0.00	0.36			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1331	0	0	1411	0	573	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	23.0	0.0	16.7	0.0	30.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	23.0	0.0	16.7	0.0	30.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2763		0	2741		1229	0	1000			
V/C Ratio(X)	0.00	0.48		0.00	0.51		0.47	0.00	0.74			
Avail Cap(c_a), veh/h	0	2763		0	2741		1595	0	1298			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.76	0.00	0.00	0.77	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	19.3	0.0	32.4	0.0	36.7			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0	0.7	0.0	2.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	8.8	0.0	7.1	0.0	10.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	19.8	0.0	33.0	0.0	39.6			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		1331	A		1411	A		1314				
Approach Delay, s/veh		0.5			19.8			36.7				
Approach LOS		A			B			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		76.8				76.8		53.2				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				25.0		32.0				
Green Ext Time (p_c), s		27.5				21.0		14.2				

Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1536	179	108	1235	72	369	293	116	145	282	171
Future Volume (veh/h)	274	1536	179	108	1235	72	369	293	116	145	282	171
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		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	285	1600	186	112	1286	75	384	305	121	151	294	178
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	338	2189	254	161	2137	663	435	825	362	177	738	316
Arrive On Green	0.10	0.47	0.47	0.05	0.42	0.42	0.13	0.23	0.23	0.10	0.21	0.21
Sat Flow, veh/h	3456	4663	541	3456	5106	1584	3483	3526	1544	1795	3554	1523
Grp Volume(v), veh/h	285	1176	610	112	1286	75	384	305	121	151	294	178
Grp Sat Flow(s),veh/h/ln	1728	1716	1772	1728	1702	1584	1742	1763	1544	1795	1777	1523
Q Serve(g_s), s	10.6	36.3	36.4	4.2	25.6	3.8	14.2	9.5	8.5	10.8	9.4	13.7
Cycle Q Clear(g_c), s	10.6	36.3	36.4	4.2	25.6	3.8	14.2	9.5	8.5	10.8	9.4	13.7
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	338	1611	832	161	2137	663	435	825	362	177	738	316
V/C Ratio(X)	0.84	0.73	0.73	0.69	0.60	0.11	0.88	0.37	0.33	0.85	0.40	0.56
Avail Cap(c_a), veh/h	422	1611	832	237	2137	663	479	969	424	219	922	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)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	28.0	28.1	61.5	29.6	23.3	56.4	42.1	41.7	58.1	44.8	46.6
Incr Delay (d2), s/veh	8.3	2.4	4.6	2.0	1.3	0.3	15.3	0.7	1.3	19.6	0.1	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	5.0	14.8	15.9	1.9	10.5	1.5	7.2	4.2	3.3	5.8	4.1	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.4	30.4	32.7	63.5	30.9	23.6	71.6	42.7	43.0	77.7	45.0	47.2
LnGrp LOS	E	C	C	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		2071			1473			810			623	
Approach Delay, s/veh		36.0			33.0			56.4			53.5	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	32.1	17.8	59.7	17.9	35.6	11.1	66.4
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	18.6	34.0	16.0	43.1	16.0	36.0	9.0	50.1
Max Q Clear Time (g_c+I1), s	16.3	15.7	12.6	27.6	12.8	11.5	6.2	38.4
Green Ext Time (p_c), s	0.2	1.4	0.2	11.7	0.1	4.9	0.0	10.6

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	321	129	128	289	163	118	771	110	289	908	100
Future Volume (veh/h)	151	321	129	128	289	163	118	771	110	289	908	100
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1870	1870
Adj Flow Rate, veh/h	161	341	137	136	307	173	126	820	117	307	966	106
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	1	1	0	1	1	1	0	2	2
Cap, veh/h	184	502	197	159	674	299	149	1836	260	330	2349	257
Arrive On Green	0.10	0.20	0.20	0.09	0.19	0.19	0.08	0.40	0.40	0.18	0.50	0.50
Sat Flow, veh/h	1795	2483	976	1795	3582	1592	1795	4541	644	1810	4662	510
Grp Volume(v), veh/h	161	244	234	136	307	173	126	618	319	307	705	367
Grp Sat Flow(s),veh/h/ln	1795	1791	1669	1795	1791	1592	1795	1716	1754	1810	1702	1768
Q Serve(g_s), s	13.3	18.9	19.5	11.2	11.4	14.8	10.4	19.6	19.9	25.1	19.4	19.5
Cycle Q Clear(g_c), s	13.3	18.9	19.5	11.2	11.4	14.8	10.4	19.6	19.9	25.1	19.4	19.5
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.37	1.00		0.29
Lane Grp Cap(c), veh/h	184	362	337	159	674	299	149	1387	709	330	1715	891
V/C Ratio(X)	0.87	0.67	0.69	0.86	0.46	0.58	0.85	0.45	0.45	0.93	0.41	0.41
Avail Cap(c_a), veh/h	311	418	389	311	836	372	304	1387	709	427	1715	891
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	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.4	55.3	55.6	67.4	54.1	55.5	67.8	32.5	32.5	60.4	23.3	23.3
Incr Delay (d2), s/veh	6.8	9.6	11.2	5.0	1.0	3.7	4.9	1.0	2.0	21.0	0.7	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	9.4	9.2	5.3	5.2	6.2	4.9	8.3	8.8	13.3	7.9	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	64.9	66.8	72.4	55.1	59.2	72.7	33.5	34.5	81.4	24.0	24.7
LnGrp LOS	E	E	E	E	E	E	E	C	C	F	C	C
Approach Vol, veh/h		639			616			1063			1379	
Approach Delay, s/veh		67.7			60.1			38.4			37.0	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	80.5	19.4	33.1	32.0	65.6	17.3	35.2
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	25.4	* 45	26.0	35.0	35.4	35.1	26.0	35.0
Max Q Clear Time (g_c+I1), s	12.4	21.5	15.3	16.8	27.1	21.9	13.2	21.5
Green Ext Time (p_c), s	0.1	10.4	0.1	4.3	0.3	7.9	0.1	6.3

Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	0	108	18	1	25	226	945	12	99	1037	29
Future Volume (veh/h)	29	0	108	18	1	25	226	945	12	99	1037	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1885	1870	1885	1885
Adj Flow Rate, veh/h	30	0	112	19	1	26	235	984	12	103	1080	30
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	0	0	0	0	1	1	2	1	1
Cap, veh/h	194	0	173	117	6	167	249	3607	44	129	3208	89
Arrive On Green	0.11	0.00	0.11	0.11	0.11	0.11	0.14	0.69	0.69	0.07	0.62	0.62
Sat Flow, veh/h	1402	0	1606	1299	60	1555	1810	5239	64	1781	5143	143
Grp Volume(v), veh/h	30	0	112	19	0	27	235	644	352	103	720	390
Grp Sat Flow(s),veh/h/ln	1402	0	1606	1299	0	1615	1810	1716	1872	1781	1716	1855
Q Serve(g_s), s	2.2	0.0	7.5	1.6	0.0	1.7	14.4	8.1	8.1	6.4	11.2	11.2
Cycle Q Clear(g_c), s	3.9	0.0	7.5	9.1	0.0	1.7	14.4	8.1	8.1	6.4	11.2	11.2
Prop In Lane	1.00		1.00	1.00		0.96	1.00		0.03	1.00		0.08
Lane Grp Cap(c), veh/h	194	0	173	117	0	174	249	2362	1289	129	2140	1157
V/C Ratio(X)	0.15	0.00	0.65	0.16	0.00	0.16	0.94	0.27	0.27	0.80	0.34	0.34
Avail Cap(c_a), veh/h	691	0	743	578	0	747	249	2362	1289	245	2140	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	47.1	0.0	47.9	52.3	0.0	45.4	47.9	6.7	6.7	51.1	10.0	10.0
Incr Delay (d2), s/veh	0.4	0.0	4.0	0.6	0.0	0.4	41.9	0.3	0.5	9.1	0.4	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	0.8	0.0	3.2	0.5	0.0	0.7	9.2	2.6	2.9	3.1	3.9	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	0.0	52.0	52.9	0.0	45.8	89.8	7.0	7.2	60.2	10.4	10.7
LnGrp LOS	D	A	D	D	A	D	F	A	A	E	B	B
Approach Vol, veh/h		142			46			1231			1213	
Approach Delay, s/veh		51.0			48.7			22.9			14.7	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.0	74.8		17.2	12.7	82.0		17.2
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	15.4	30.1		* 52	15.4	30.1		* 52
Max Q Clear Time (g_c+I1), s	16.4	13.2		11.1	8.4	10.1		9.5
Green Ext Time (p_c), s	0.0	10.8		0.2	0.1	11.0		0.8

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	22	3	0	7	53	939	6	25	810	13
Future Vol, veh/h	5	0	22	3	0	7	53	939	6	25	810	13
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	7	7	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	33	0	0	0	1	0	0	2	0
Mvmt Flow	5	0	23	3	0	7	56	988	6	26	853	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1421	2027	436	1503	2031	504	869	0	0	1001	0	0
Stage 1	914	914	-	1110	1110	-	-	-	-	-	-	-
Stage 2	507	1113	-	393	921	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.2	7.06	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.96	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	7.36	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.95	4.13	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	146	58	479	96	58	443	459	-	-	397	-	-
Stage 1	231	355	-	132	287	-	-	-	-	-	-	-
Stage 2	476	286	-	485	352	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	123	47	478	78	47	440	458	-	-	394	-	-
Mov Cap-2 Maneuver	123	47	-	78	47	-	-	-	-	-	-	-
Stage 1	202	331	-	115	250	-	-	-	-	-	-	-
Stage 2	411	249	-	431	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	25.7	0.7	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	458	-	-	312	184	394	-	-
HCM Lane V/C Ratio	0.122	-	-	0.091	0.057	0.067	-	-
HCM Control Delay (s)	13.9	-	-	17.7	25.7	14.8	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.3	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	67	0	1183	1138	25
Future Vol, veh/h	0	67	0	1183	1138	25
Conflicting Peds, #/hr	1	0	11	0	0	11
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	96	96	96	96	96	96
Heavy Vehicles, %	0	3	0	1	1	0
Mvmt Flow	0	70	0	1232	1185	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	617	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	369	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	365	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	365	-	-
HCM Lane V/C Ratio	-	0.191	-	-
HCM Control Delay (s)	-	17.2	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.2	0.0	0.0	0.0	2.0	0.4	1.9	1.8	0.2	0.2
Total Del/Veh (s)	68.6	19.8	16.9	66.9	24.6	25.6	43.4	37.3	18.6	74.5	40.6	13.3

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.2

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.1	0.0
Total Del/Veh (s)	14.0	1.8	1.4	4.0		18.0	11.9	2.9

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.0
Total Del/Veh (s)	52.6	44.4	20.7	50.3	33.9	9.4	58.2	29.5	17.2	55.9	30.9	14.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	37.6

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	21.8	8.5	7.3	20.9	1.3	1.0	22.3	9.8	5.9

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Del/Veh (s)	9.9	2.1	10.6	8.3	46.2	15.1	11.5

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.5
Total Del/Veh (s)	19.8	6.1	22.4	3.5	25.7	27.9	20.1

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.1	3.2	0.2	3.1	3.0	0.3	3.0
Total Del/Veh (s)	52.9	36.9	34.4	63.7	33.0	20.2	61.3	39.5	12.6	63.5	39.0	12.4

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	36.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.9	0.2	0.3	3.1	0.2	3.1	0.1	0.0	0.0	2.8	0.2	0.2
Total Del/Veh (s)	67.3	34.9	24.4	71.7	29.3	6.0	66.6	31.4	24.0	58.9	29.7	15.8

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	34.9

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	65.2	75.1	6.5	61.5	94.0	6.1	63.5	3.4	1.8	47.7	4.4	3.6

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.3

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	2.9	0.2	0.1	0.0	0.0	0.5	0.1
Total Del/Veh (s)	27.9	6.2		4.2	4.9	0.4	0.2	4.3	0.6	0.5	0.8

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	1.5	1.1	0.9	1.3

Total Zone Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	1391.0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	374	370	352	134	374	416	450	120	326	140	157
Average Queue (ft)	140	211	223	217	31	183	216	241	54	172	32	104
95th Queue (ft)	216	335	333	312	89	347	389	421	121	296	109	172
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	6	7			0	15			5	41	0	12
Queuing Penalty (veh)	37	12			0	4			16	39	0	22

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	383	159
Average Queue (ft)	138	62
95th Queue (ft)	293	120
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	9	
Queuing Penalty (veh)	11	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	34	45	110	159	52	54
Average Queue (ft)	6	4	9	17	13	4
95th Queue (ft)	25	48	82	114	40	27
Link Distance (ft)		615	615	615	587	433
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	80					
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	104	286	510	540	573	255	104	163	337	386	407	300
Average Queue (ft)	47	87	290	339	371	162	36	62	184	216	234	84
95th Queue (ft)	91	216	485	534	588	332	84	119	305	342	365	246
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			0	1	2							
Queuing Penalty (veh)			2	4	16							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)			14		26	0			8		17	
Queuing Penalty (veh)			21		61	1			11		27	

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	175	199	177	140	110	89	159	191	150	166	179	153
Average Queue (ft)	86	110	91	70	37	32	58	104	66	83	90	47
95th Queue (ft)	152	171	147	125	87	73	121	171	127	143	151	106
Link Distance (ft)			545	545	545				508	508	508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	0	0	0		0	0	0	1	0		11	2
Queuing Penalty (veh)	0	1	0		0	1	0	1	0		14	3

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	NB	SB
Directions Served	L	T	T	TR	L	R	R
Maximum Queue (ft)	49	196	199	16	87	65	46
Average Queue (ft)	10	29	35	1	34	28	17
95th Queue (ft)	34	118	135	11	74	54	44
Link Distance (ft)		695	695	695		701	726
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				100		
Storage Blk Time (%)		0			0		
Queuing Penalty (veh)		0			1		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	245	246	180	182	252	66	371	245
Average Queue (ft)	107	116	80	81	65	2	198	111
95th Queue (ft)	267	280	158	154	169	39	320	198
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	3	4			0			
Queuing Penalty (veh)	18	23			0			
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	306	294	325	225	268	342	381	190	251	371	258	243
Average Queue (ft)	148	141	142	34	115	156	203	7	130	159	193	144
95th Queue (ft)	271	267	277	167	247	320	389	83	216	291	275	262
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			3	0						0	3	0
Queuing Penalty (veh)			9	0						2	8	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	191	339	424	443	462	58	169	306	376	428	130	166
Average Queue (ft)	100	136	251	277	293	12	51	158	195	262	61	40
95th Queue (ft)	162	251	384	407	418	41	125	250	314	378	154	116
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	3				0	0		39	0	
Queuing Penalty (veh)		0	7				0	0		35	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	199	253	231	130	214	225	219	181
Average Queue (ft)	100	148	124	53	96	135	94	83
95th Queue (ft)	173	221	207	123	172	207	188	148
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)		0	11	0	0	0	1	1
Queuing Penalty (veh)		0	8	0	0	0	2	2

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	352	314	174	295	237	88	181	163	196	231	240
Average Queue (ft)	97	201	179	116	145	102	39	75	75	100	126	122
95th Queue (ft)	176	300	275	187	254	196	73	139	142	170	211	203
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	2	24		8	4	0						0
Queuing Penalty (veh)	5	20		15	5	0						0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	264	230	183
Average Queue (ft)	159	118	90
95th Queue (ft)	236	205	162
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	0		
Queuing Penalty (veh)	1		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	35	42	37	54	71	119	124	129	136	80	59	81
Average Queue (ft)	6	6	6	15	22	23	25	40	63	22	16	23
95th Queue (ft)	26	28	25	44	58	77	81	101	117	63	47	65
Link Distance (ft)	524	524	630	630		654	654	654		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	L	T	T	TR
Maximum Queue (ft)	51	33	43	12	35	3	3	10
Average Queue (ft)	20	4	10	0	5	0	0	0
95th Queue (ft)	48	22	35	6	23	3	3	5
Link Distance (ft)	596	558		629		598	598	598
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		100			
Storage Blk Time (%)			0					
Queuing Penalty (veh)			0					

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	R	T	T	T	T	T
Maximum Queue (ft)	33	3	5	13	16	3
Average Queue (ft)	6	0	0	1	1	0
95th Queue (ft)	25	3	5	13	10	3
Link Distance (ft)	391	508	508	508	654	654
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 466

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.2	0.0	0.0	0.0	6.3	7.2	7.6	1.7	0.3	0.2
Total Del/Veh (s)	61.2	19.8	18.2	70.8	29.4	32.6	161.1	117.6	93.2	109.8	57.1	15.9

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	39.0

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0
Total Del/Veh (s)	20.8	3.3	2.4	27.9	4.8	21.0	24.2	4.3

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	64.6	52.8	25.9	63.5	50.5	21.8	66.2	46.4	26.1	58.3	42.8	25.9

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	48.0

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	32.7	7.7	5.0	34.2	1.9	0.9	34.7	14.4	6.7

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.3	0.1
Total Del/Veh (s)	12.1	1.9	11.5	8.9	44.9	23.2	13.1

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.8	2.9	0.4
Total Del/Veh (s)	23.4	7.3	21.4	3.5	30.1	31.6	21.2

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	1.2	0.2	1.1	2.8	0.3	2.7	2.7	0.4	2.7
Total Del/Veh (s)	62.4	37.1	37.0	109.8	134.8	170.7	58.1	37.7	14.3	63.7	41.7	20.0

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	69.4

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.7	0.2	0.3	2.7	0.4	2.6	0.0	0.0	0.0	2.3	0.4	0.3
Total Del/Veh (s)	97.1	56.9	47.7	100.8	49.3	12.2	67.0	44.5	44.9	70.4	35.5	25.8

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	49.4

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	64.8	48.3	11.2	61.4	27.0	8.0	58.6	7.2	5.4	65.2	8.6	7.7

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	14.1

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	2.3	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	108.0	15.6		8.0	8.7	0.6	9.5	1.1	1.4	1.3

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.5	2.2	1.8	1.7	2.0

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	1861.0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	330	332	349	149	489	515	538	120	974	140	158
Average Queue (ft)	128	191	204	214	56	249	286	310	97	491	46	110
95th Queue (ft)	209	283	294	309	128	457	498	522	149	1113	139	189
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										3		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	3	7			1	20			41	56	1	9
Queuing Penalty (veh)	18	12			4	9			145	79	2	28

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	542	217
Average Queue (ft)	259	71
95th Queue (ft)	543	154
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	29	
Queuing Penalty (veh)	27	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	TR	LTR	LTR
Maximum Queue (ft)	42	65	111	162	43	4	42	54
Average Queue (ft)	11	5	8	15	7	0	9	10
95th Queue (ft)	35	56	72	103	30	3	33	36
Link Distance (ft)		615	615	615		546	587	433
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	80				150			
Storage Blk Time (%)		0						
Queuing Penalty (veh)		0						

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	193	379	520	549	568	255	143	344	500	518	545	300
Average Queue (ft)	75	128	314	352	378	176	77	140	308	331	351	205
95th Queue (ft)	142	309	491	534	581	344	133	308	473	492	521	393
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			0	1	2						0	
Queuing Penalty (veh)			3	5	12						0	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	21		31	0		0	27		35	0
Queuing Penalty (veh)		0	38		68	1		0	55		101	1

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	226	270	314	286	268	195	296	331	268	261	274	204
Average Queue (ft)	127	154	195	170	143	98	133	196	141	153	162	119
95th Queue (ft)	199	235	275	249	231	185	251	302	247	251	269	233
Link Distance (ft)			545	545	545				508	508	508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	1	3	10		16	10	1	14	3		33	13
Queuing Penalty (veh)	2	6	31		36	24	2	34	12		75	31

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	R	R
Maximum Queue (ft)	90	227	312	16	114	54	18	5	11	155	56
Average Queue (ft)	31	39	55	1	51	3	1	0	0	74	20
95th Queue (ft)	68	155	204	8	101	44	18	5	5	130	43
Link Distance (ft)		695	695	695		225	225	225		702	719
Upstream Blk Time (%)			0			0					
Queuing Penalty (veh)			0			0					
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		0			3						
Queuing Penalty (veh)		0			20						

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	245	252	232	224	298	156	405	303
Average Queue (ft)	128	143	106	98	97	13	230	145
95th Queue (ft)	273	283	201	199	228	101	361	255
Link Distance (ft)	225	225	730	730	730		573	573
Upstream Blk Time (%)	4	5						
Queuing Penalty (veh)	27	35						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					1	0		
Queuing Penalty (veh)					4	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	359	359	399	225	314	378	468	231	372	477	258	243
Average Queue (ft)	182	175	179	60	76	116	165	12	146	174	184	137
95th Queue (ft)	317	310	330	224	203	258	331	127	263	343	264	243
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)					0	0	0	0		0		
Queuing Penalty (veh)					0	0	0	0		0		
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			8	0						2	2	0
Queuing Penalty (veh)			24	0						9	5	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	213	315	395	408	426	95	265	1049	1092	1132	130	234
Average Queue (ft)	118	144	221	246	264	36	140	684	739	775	50	112
95th Queue (ft)	188	246	344	362	377	78	306	1177	1204	1228	146	215
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)			0		0							
Queuing Penalty (veh)			0		0							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	1				0	39		69	0	0
Queuing Penalty (veh)		0	4				0	45		43	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	268	305	316	130	244	328	354	190
Average Queue (ft)	169	179	171	67	141	193	179	139
95th Queue (ft)	244	265	267	147	229	281	299	223
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	0	0	23	0	1	3	5	6
Queuing Penalty (veh)	1	0	22	1	4	5	20	15

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	482	453	174	502	476	265	249	310	332	350	275
Average Queue (ft)	140	322	292	160	316	275	113	142	150	180	206	228
95th Queue (ft)	198	472	438	206	463	423	270	226	287	316	343	316
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	23	40		28	27	9	0		0			10
Queuing Penalty (veh)	73	57		98	47	18	0		0			35

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	518	453	303
Average Queue (ft)	284	233	187
95th Queue (ft)	452	382	278
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	5		
Queuing Penalty (veh)	15		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	93	75	84	52	253	170	182	217	138	123	219	130
Average Queue (ft)	39	32	32	22	135	53	59	81	68	49	40	67
95th Queue (ft)	82	63	72	48	225	152	168	193	125	102	166	116
Link Distance (ft)	524	524	630	630		654	654	654		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	61	29	57	18	6	11	56	8	9	23
Average Queue (ft)	20	2	17	1	0	0	17	0	0	1
95th Queue (ft)	55	16	45	10	4	7	46	8	7	13
Link Distance (ft)	596	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB
Directions Served	R	T
Maximum Queue (ft)	55	5
Average Queue (ft)	16	0
95th Queue (ft)	46	5
Link Distance (ft)	391	508
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 1492

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.2	0.2	0.0	0.0	0.0	2.3	0.4	2.4	1.9	0.2	0.1
Total Del/Veh (s)	58.7	11.6	8.6	64.0	18.0	19.0	52.1	42.9	10.6	54.3	39.6	12.4

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.1

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	10.6	1.3	0.7	16.2	3.8	31.5	10.8	10.4	2.8

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	60.5	42.1	12.6	55.1	46.5	23.5	63.3	44.4	21.1	59.6	36.2	17.5

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	42.0

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	24.5	5.5	3.3	23.3	2.4	1.4	22.9	11.8	5.4

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.4	0.4	0.1
Total Del/Veh (s)	10.2	1.3	19.6	10.9	46.5	19.1	15.9

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.1	3.0	0.6
Total Del/Veh (s)	27.6	7.9	16.6	3.5	25.8	30.5	21.4

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.2	0.2	3.0	0.3	3.0	3.2	0.2	3.2
Total Del/Veh (s)	65.4	47.5	48.6	63.0	41.0	31.9	85.7	37.7	12.9	63.2	40.0	11.0

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	47.4

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.1	0.2	0.2	3.2	0.2	3.2	0.0	0.0	0.0	2.4	0.4	0.4
Total Del/Veh (s)	73.8	45.1	27.7	68.9	41.7	7.6	73.5	42.2	39.5	70.7	33.0	23.1

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	43.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	51.1	10.5	53.0	44.0	8.3	48.2	6.1	5.5	59.3	14.4	9.7	16.4

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.6	0.3	0.2	0.0	0.0	0.0	0.2
Total Del/Veh (s)	42.8	6.5	25.2	6.1	5.3	0.5	0.2	7.0	0.7	0.6	1.0

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.0	1.7	2.8	2.3	2.5

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1729.8

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	180	204	191	202	140	335	378	412	120	248	122	145
Average Queue (ft)	81	107	109	105	31	125	163	186	71	120	26	62
95th Queue (ft)	149	175	178	181	86	291	336	363	127	215	82	124
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	1	0			0	8			18	30	0	1
Queuing Penalty (veh)	3	0			0	2			34	36	0	1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	171	108
Average Queue (ft)	74	48
95th Queue (ft)	143	85
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	1	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	33	62	44	32
Average Queue (ft)	6	18	13	9
95th Queue (ft)	25	49	38	31
Link Distance (ft)			587	433
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	80	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	161	177	326	362	386	255	176	281	370	376	453	300
Average Queue (ft)	85	96	193	219	216	90	90	120	214	232	243	170
95th Queue (ft)	141	154	294	320	338	241	153	211	318	331	366	311
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	5		8	0	0	0	13		19	6
Queuing Penalty (veh)		0	10		13	0	0	2	31		75	20

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	171	229	277	244	217	186	295	357	280	234	252	208
Average Queue (ft)	88	112	162	134	101	87	160	213	92	107	124	79
95th Queue (ft)	146	177	240	208	184	161	273	327	222	194	213	172
Link Distance (ft)			545	545	545				508	508	508	
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	0	0	4		7	9	4	17	0		24	7
Queuing Penalty (veh)	0	1	10		17	17	6	31	0		52	13

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	R	R	R
Maximum Queue (ft)	80	179	206	8	117	136	46	8	113	44
Average Queue (ft)	30	14	22	0	61	7	2	0	50	16
95th Queue (ft)	68	83	109	4	109	62	31	4	94	40
Link Distance (ft)		695	695	695		226	226		701	726
Upstream Blk Time (%)						0	0			
Queuing Penalty (veh)						1	0			
Storage Bay Dist (ft)	200				100			151		
Storage Blk Time (%)		0			3	0				
Queuing Penalty (veh)		0			15	0				

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	243	252	396	403	538	225	432	275
Average Queue (ft)	105	121	171	162	202	83	245	116
95th Queue (ft)	245	264	323	312	411	261	381	215
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	2	2						
Queuing Penalty (veh)	9	14						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					6	0		
Queuing Penalty (veh)					30	1		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	351	354	397	225	264	294	371	62	347	536	258	245
Average Queue (ft)	207	207	217	74	87	108	151	2	131	221	229	199
95th Queue (ft)	323	326	358	247	211	256	329	45	251	444	285	287
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			9	0						1	8	1
Queuing Penalty (veh)			20	0						4	20	3

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	196	339	531	559	573	140	257	394	463	491	130	292
Average Queue (ft)	106	178	321	353	379	32	92	207	257	326	48	187
95th Queue (ft)	168	346	481	517	533	84	199	334	414	465	142	320
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	9				0	2		49	0	0
Queuing Penalty (veh)		0	25				0	3		35	0	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	304	508	395	130	205	203	174	115
Average Queue (ft)	234	163	117	59	114	119	79	54
95th Queue (ft)	328	389	263	123	188	186	157	96
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	9	0	6	1	0	0	0	0
Queuing Penalty (veh)	13	0	7	1	0	0	0	0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	344	289	174	254	191	97	231	296	315	356	274
Average Queue (ft)	131	172	151	113	124	86	43	118	152	191	220	229
95th Queue (ft)	187	286	247	186	210	166	79	200	264	304	337	312
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	17	12		6	3	0						11
Queuing Penalty (veh)	26	19		8	4	0						32

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	561	482	269
Average Queue (ft)	263	195	151
95th Queue (ft)	460	361	243
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	3		
Queuing Penalty (veh)	8		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	71	89	65	60	292	153	177	189	220	321	260	272
Average Queue (ft)	25	43	20	20	164	40	54	77	79	115	78	104
95th Queue (ft)	62	75	54	49	265	113	135	162	157	259	199	230
Link Distance (ft)	524	524	630	630		654	654	654		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)									0	1		
Queuing Penalty (veh)									0	1		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	L	T	TR
Maximum Queue (ft)	52	48	48	48	2	7
Average Queue (ft)	20	9	17	14	0	0
95th Queue (ft)	47	33	43	41	2	4
Link Distance (ft)	596	558			598	598
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100	100		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (ft)	80	5	12	16
Average Queue (ft)	35	0	0	1
95th Queue (ft)	66	5	7	11
Link Distance (ft)	391	508	654	654
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 677

Appendix 3 Freeway Analysis HCS Worksheets

HCS7 Freeway Facilities Report

Project Information

Analyst	FLG	Agency	KAI
Jurisdiction	Caltrans	Time Period Analyzed	AM
Analysis Year	2018	Date	11/29/2018
Project Description			

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15

Segment Geometric Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Diverge	Diverge		1500	3
2	Basic	Basic		1300	3
3	Merge	Merge		980	3
4	Merge	Merge		1500	3

Facility Segment Data

Segment 1: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.88	0.88	0.980	0.980	6747	1211	6750	2000	1.00	0.61	50.2	48.0	44.8	37.9	E

Segment 2: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.88	0.980	5537	6696	0.83	53.2	34.7	D

Segment 3: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.88	0.88	0.980	0.980	5878	341	7200	2000	0.82	0.17	63.7	60.8	30.8	31.0	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.88	0.88	0.980	0.980	6254	376	6750	2000	0.93	0.19	48.5	48.9	43.0	32.3	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.4	39.2	38.4	1.1	E

Facility Overall Results			
Space Mean Speed, mi/h	52.4	Density, veh/mi/ln	38.4
Average Travel Time, min	1.1	Density, pc/mi/ln	39.2

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HCS7 Freeway Facilities Report

Project Information

Analyst	FLG	Agency	KAI
Jurisdiction	Caltrans	Time Period Analyzed	PM
Analysis Year	2018	Date	11/29/2018
Project Description	SR41 NB PM Existing Conditions		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15

Segment Geometric Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Diverge	Diverge		1500	3
2	Basic	Basic		1300	3
3	Merge	Merge		980	3
4	Merge	Merge		1500	3

Facility Segment Data

Segment 1: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	6565	1114	6750	2000	0.97	0.56	50.4	48.1	43.4	37.1	E

Segment 2: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.93	0.980	5451	6696	0.81	53.2	34.2	D

Segment 3: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	5804	353	7200	2000	0.81	0.18	63.9	61.0	30.3	30.7	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	6358	554	6750	2000	0.94	0.28	48.4	48.5	43.8	33.3	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.4	38.8	38.0	1.1	E

Facility Overall Results			
Space Mean Speed, mi/h	52.4	Density, veh/mi/ln	38.0
Average Travel Time, min	1.1	Density, pc/mi/ln	38.8

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HCS7 Freeway Facilities Report

Project Information

Analyst	FLG	Agency	KAI
Jurisdiction	Caltrans	Time Period Analyzed	AM
Analysis Year	2018	Date	11/29/2018
Project Description			

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15

Segment Geometric Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Diverge	Diverge		1500	3
2	Basic	Basic		1500	3
3	Merge	Merge		1010	3
4	Merge	Merge		1500	3

Facility Segment Data

Segment 1: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.90	0.90	0.980	0.980	6365	1184	6750	2000	0.94	0.59	50.4	48.0	42.1	37.0	E

Segment 2: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.88	0.980	5299	6696	0.79	53.2	33.2	D

Segment 3: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.90	0.90	0.980	0.980	5730	549	7200	2000	0.80	0.27	63.6	60.6	30.0	31.7	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.90	0.90	0.980	0.980	6547	817	6750	2000	0.97	0.41	47.9	47.8	45.6	35.4	E

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.2	38.4	37.7	1.2	E

Facility Overall Results			
Space Mean Speed, mi/h	52.2	Density, veh/mi/ln	37.7
Average Travel Time, min	1.2	Density, pc/mi/ln	38.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	FLG	Agency	KAI
Jurisdiction	Caltrans	Time Period Analyzed	AM
Analysis Year	2018	Date	11/29/2018
Project Description	SR41 SB PM Existing Conditions		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15

Segment Geometric Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Diverge	Diverge		1500	3
2	Basic	Basic		1500	3
3	Merge	Merge		1010	3
4	Merge	Merge		1500	3

Facility Segment Data

Segment 1: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	5589	757	6750	2000	0.83	0.38	51.1	48.6	36.5	33.3	D

Segment 2: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.93	0.980	4832	6696	0.72	53.2	30.3	D

Segment 3: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	5487	655	7200	2000	0.76	0.33	64.0	61.0	28.6	30.9	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.93	0.980	0.980	6327	840	6750	2000	0.94	0.42	48.4	48.2	43.6	34.4	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.7	35.3	34.6	1.2	E

Facility Overall Results			
Space Mean Speed, mi/h	52.7	Density, veh/mi/ln	34.6
Average Travel Time, min	1.2	Density, pc/mi/ln	35.3

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Appendix 4 Existing Plus Project Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1784	34	25	1449	97	63	267	32	121	189	167
Future Volume (veh/h)	166	1784	34	25	1449	97	63	267	32	121	189	167
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	182	1960	37	27	1592	107	69	293	35	133	208	184
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	322	2944	56	49	2017	136	248	532	434	216	532	442
Arrive On Green	0.18	0.58	0.58	0.01	0.14	0.14	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5118	97	1697	4848	326	990	1870	1527	1059	1870	1555
Grp Volume(v), veh/h	182	1293	704	27	1109	590	69	293	35	133	208	184
Grp Sat Flow(s),veh/h/ln	1781	1689	1838	1697	1689	1796	990	1870	1527	1059	1870	1555
Q Serve(g_s), s	12.1	34.2	34.3	2.1	41.3	41.3	7.8	17.3	2.2	15.8	11.6	12.5
Cycle Q Clear(g_c), s	12.1	34.2	34.3	2.1	41.3	41.3	19.5	17.3	2.2	33.1	11.6	12.5
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	1943	1057	49	1405	748	248	532	434	216	532	442
V/C Ratio(X)	0.56	0.67	0.67	0.55	0.79	0.79	0.28	0.55	0.08	0.62	0.39	0.42
Avail Cap(c_a), veh/h	322	1943	1057	89	1405	748	267	567	463	236	567	471
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	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	19.0	19.0	63.6	50.5	50.6	45.3	39.5	34.1	53.5	37.4	37.7
Incr Delay (d2), s/veh	1.4	1.8	3.3	3.6	4.6	8.3	1.7	2.6	0.2	8.6	1.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	13.1	14.7	0.9	19.6	21.6	2.1	8.4	0.8	4.7	5.6	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	20.8	22.3	67.2	55.1	58.9	47.0	42.1	34.3	62.1	38.8	39.6
LnGrp LOS	D	C	C	E	E	E	D	D	C	E	D	D
Approach Vol, veh/h		2179			1726			397			525	
Approach Delay, s/veh		23.8			56.6			42.3			45.0	
Approach LOS		C			E			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		42.6	28.4	59.0		42.6	7.7	79.7				
Change Period (Y+Rc), s		5.6	4.9	* 4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		39.4	22.0	* 54		39.4	6.8	69.3				
Max Q Clear Time (g_c+I1), s		35.1	14.1	43.3		21.5	4.1	36.3				
Green Ext Time (p_c), s		1.9	0.1	9.6		4.3	0.0	28.5				

Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	1994	4	0	1605	0	0	0	0	0	0	0
Future Volume (vph)	9	1994	4	0	1605	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9							
Lane Util. Factor	1.00	0.91			0.91							
Frpb, ped/bikes	1.00	1.00			1.00							
Flpb, ped/bikes	1.00	1.00			1.00							
Frt	1.00	1.00			1.00							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1805	5032			5036							
Flt Permitted	0.12	1.00			1.00							
Satd. Flow (perm)	220	5032			5036							
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	10	2191	4	0	1764	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	10	2195	0	0	1764	0	0	0	0	0	0	0
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	3%	25%	0%	3%	0%	0%	0%	0%	0%	0%	33%
Turn Type	Perm	NA		Perm	NA							
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	111.1	111.1			111.1							
Effective Green, g (s)	111.1	111.1			111.1							
Actuated g/C Ratio	0.85	0.85			0.85							
Clearance Time (s)	4.9	4.9			4.9							
Vehicle Extension (s)	3.0	3.0			3.0							
Lane Grp Cap (vph)	188	4300			4303							
v/s Ratio Prot		c0.44			0.35							
v/s Ratio Perm	0.05											
v/c Ratio	0.05	0.51			0.41							
Uniform Delay, d1	1.4	2.4			2.1							
Progression Factor	0.40	1.18			0.11							
Incremental Delay, d2	0.4	0.3			0.2							
Delay (s)	1.0	3.2			0.4							
Level of Service	A	A			A							
Approach Delay (s)		3.2			0.4			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	1620	239	128	1241	164	236	355	85	210	471	128
Future Volume (vph)	147	1620	239	128	1241	164	236	355	85	210	471	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5085	1546	3335	5036	1508	3400	3374	1506	3367	3505	1504
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5085	1546	3335	5036	1508	3400	3374	1506	3367	3505	1504
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	169	1862	275	147	1426	189	271	408	98	241	541	147
RTOR Reduction (vph)	0	0	97	0	0	94	0	0	78	0	0	111
Lane Group Flow (vph)	169	1862	178	147	1426	95	271	408	20	241	541	36
Confl. Peds. (#/hr)			2			8			9			19
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	2%	3%	5%	3%	5%	3%	7%	5%	4%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.9	54.4	54.4	9.3	53.8	53.8	8.4	26.7	26.7	13.4	31.7	31.7
Effective Green, g (s)	9.9	54.4	54.4	9.3	53.8	53.8	8.4	26.7	26.7	13.4	31.7	31.7
Actuated g/C Ratio	0.08	0.42	0.42	0.07	0.41	0.41	0.06	0.21	0.21	0.10	0.24	0.24
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	2127	646	238	2084	624	219	692	309	347	854	366
v/s Ratio Prot	c0.05	c0.37		0.04	0.28		c0.08	0.12		c0.07	c0.15	
v/s Ratio Perm			0.12			0.06			0.01			0.02
v/c Ratio	0.66	0.88	0.28	0.62	0.68	0.15	1.24	0.59	0.07	0.69	0.63	0.10
Uniform Delay, d1	58.4	34.7	24.8	58.6	31.2	23.8	60.8	46.7	41.6	56.3	44.0	38.1
Progression Factor	1.25	0.55	0.27	1.18	0.66	0.61	1.15	0.84	0.71	0.65	0.79	2.96
Incremental Delay, d2	5.3	4.9	0.9	4.4	1.7	0.5	138.9	1.3	0.1	5.7	1.5	0.1
Delay (s)	78.4	23.8	7.6	73.9	22.4	15.0	208.6	40.3	29.7	42.4	36.4	112.7
Level of Service	E	C	A	E	C	B	F	D	C	D	D	F
Approach Delay (s)		25.9			25.9			97.7			50.0	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1879	21	62	1508	25	0	0	44	0	0	25
Future Volume (vph)	15	1879	21	62	1508	25	0	0	44	0	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1805	4691		1770	5036	1555		1644			1644	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1805	4691		1770	5036	1555		1644			1644	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	2088	23	69	1676	28	0	0	49	0	0	28
RTOR Reduction (vph)	0	1	0	0	0	6	0	45	0	0	26	0
Lane Group Flow (vph)	17	2110	0	69	1676	22	0	4	0	0	2	0
Confl. Peds. (#/hr)	4		2	2		4						
Confl. Bikes (#/hr)			4			2						
Heavy Vehicles (%)	0%	3%	10%	2%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	2.2	96.1		8.1	102.0	102.0		10.7			10.7	
Effective Green, g (s)	2.2	96.1		8.1	102.0	102.0		10.7			10.7	
Actuated g/C Ratio	0.02	0.74		0.06	0.78	0.78		0.08			0.08	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	30	3467		110	3951	1220		135			135	
v/s Ratio Prot	0.01	c0.45		c0.04	0.33			c0.00			0.00	
v/s Ratio Perm						0.01						
v/c Ratio	0.57	0.61		0.63	0.42	0.02		0.03			0.02	
Uniform Delay, d1	63.4	8.0		59.5	4.5	3.1		54.9			54.8	
Progression Factor	0.66	0.34		1.18	0.58	2.17		1.00			1.00	
Incremental Delay, d2	13.8	0.5		9.4	0.3	0.0		0.1			0.1	
Delay (s)	55.9	3.2		79.7	2.9	6.7		55.0			54.9	
Level of Service	E	A		E	A	A		D			D	
Approach Delay (s)		3.6			6.0			55.0			54.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1202	721	0	1238	484	0	0	0	280	0	357
Future Volume (veh/h)	0	1202	721	0	1238	484	0	0	0	280	0	357
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1336	0	0	1376	0				311	0	397
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2179		0	3105					493	0	435
Arrive On Green	0.00	0.62	0.00	0.00	1.00	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1336	0	0	1376	0				311	0	397
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	30.3	0.0	0.0	0.0	0.0				19.8	0.0	31.5
Cycle Q Clear(g_c), s	0.0	30.3	0.0	0.0	0.0	0.0				19.8	0.0	31.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2179		0	3105					493	0	435
V/C Ratio(X)	0.00	0.61		0.00	0.44					0.63	0.00	0.91
Avail Cap(c_a), veh/h	0	2179		0	3105					649	0	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.78	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.3	0.0	0.0	0.0	0.0				41.4	0.0	45.7
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	0.4	0.0				1.3	0.0	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.6	0.0	0.0	0.1	0.0				9.0	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.3	0.0	0.0	0.4	0.0				42.7	0.0	61.6
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1336	A		1376	A					708	
Approach Delay, s/veh		16.3			0.4						53.3	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		87.3		42.7		87.3
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		69.0		47.0		69.0
Max Q Clear Time (g_c+I1), s		32.3		33.5		2.0
Green Ext Time (p_c), s		20.1		2.1		25.8

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1188	294	0	1200	329	522	0	522	0	0	0
Future Volume (veh/h)	0	1188	294	0	1200	329	522	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1350	0	0	1364	0	567	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2415		0	2358		1061	0	850			
Arrive On Green	0.00	0.32	0.00	0.00	0.63	0.00	0.31	0.00	0.31			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1350	0	0	1364	0	567	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	14.3	0.0	0.0	10.4	0.0	8.8	0.0	12.3			
Cycle Q Clear(g_c), s	0.0	14.3	0.0	0.0	10.4	0.0	8.8	0.0	12.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2415		0	2358		1061	0	850			
V/C Ratio(X)	0.00	0.56		0.00	0.58		0.53	0.00	0.70			
Avail Cap(c_a), veh/h	0	2415		0	2358		1154	0	924			
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.75	0.00	0.00	0.71	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	16.6	0.0	0.0	8.3	0.0	18.7	0.0	19.9			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.7	0.0	1.8	0.0	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			
%ile BackOfQ(50%),veh/ln	0.0	5.6	0.0	0.0	2.6	0.0	3.5	0.0	4.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.3	0.0	0.0	9.0	0.0	20.5	0.0	24.4			
LnGrp LOS	A	B		A	A		C	A	C			
Approach Vol, veh/h		1350	A		1364	A		1160				
Approach Delay, s/veh		17.3			9.0			22.5				
Approach LOS		B			A			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		37.7				37.7		27.3				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		29.0				29.0		21.7				
Max Q Clear Time (g_c+I1), s		16.3				12.4		14.3				
Green Ext Time (p_c), s		10.0				12.7		5.7				

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1384	52	53	1085	90	138	390	73	110	333	306
Future Volume (veh/h)	274	1384	52	53	1085	90	138	390	73	110	333	306
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	326	1648	62	63	1292	107	164	464	87	131	396	364
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	370	2500	94	141	2136	669	244	776	336	157	842	363
Arrive On Green	0.22	0.99	0.99	0.04	0.43	0.43	0.07	0.22	0.22	0.09	0.24	0.24
Sat Flow, veh/h	3428	5048	190	3401	4985	1561	3291	3526	1528	1739	3554	1533
Grp Volume(v), veh/h	326	1111	599	63	1292	107	164	464	87	131	396	364
Grp Sat Flow(s),veh/h/ln	1714	1702	1834	1700	1662	1561	1646	1763	1528	1739	1777	1533
Q Serve(g_s), s	12.0	1.2	1.2	2.4	26.0	5.5	6.3	15.4	6.1	9.6	12.4	23.4
Cycle Q Clear(g_c), s	12.0	1.2	1.2	2.4	26.0	5.5	6.3	15.4	6.1	9.6	12.4	23.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	1686	908	141	2136	669	244	776	336	157	842	363
V/C Ratio(X)	0.88	0.66	0.66	0.45	0.60	0.16	0.67	0.60	0.26	0.84	0.47	1.00
Avail Cap(c_a), veh/h	396	1686	908	157	2136	669	279	922	400	241	1121	484
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)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.3	0.3	60.9	28.7	22.8	58.6	45.5	41.9	58.2	42.6	28.5
Incr Delay (d2), s/veh	14.6	1.6	2.9	0.8	1.3	0.5	3.6	1.8	0.9	8.5	0.2	35.3
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	0.5	0.9	1.0	10.3	2.1	2.8	6.9	2.4	4.5	5.4	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.8	1.9	3.2	61.7	29.9	23.3	62.2	47.3	42.9	66.7	42.7	63.9
LnGrp LOS	E	A	A	E	C	C	E	D	D	E	D	F
Approach Vol, veh/h		2036			1462			715			891	
Approach Delay, s/veh		12.3			30.8			50.2			54.9	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	35.7	19.0	60.6	16.7	33.6	10.4	69.3
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	* 5	5.0	4.9
Max Green Setting (Gmax), s	11.0	41.0	15.0	43.2	18.0	* 34	6.0	52.2
Max Q Clear Time (g_c+I1), s	8.3	25.4	14.0	28.0	11.6	17.4	4.4	3.2
Green Ext Time (p_c), s	0.1	2.1	0.1	11.7	0.1	5.6	0.0	34.5

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	480	99	161	640	63
Future Volume (veh/h)	87	552	113	131	395	131	79	480	99	161	640	63
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		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1841	1885	1841	1826
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	578	119	194	771	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	4	1	4	5
Cap, veh/h	129	812	166	184	1117	477	117	963	432	220	1168	508
Arrive On Green	0.07	0.28	0.28	0.10	0.31	0.31	0.07	0.28	0.28	0.12	0.33	0.33
Sat Flow, veh/h	1781	2931	599	1795	3554	1518	1767	3469	1557	1795	3497	1522
Grp Volume(v), veh/h	105	403	398	158	476	158	95	578	119	194	771	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1795	1777	1518	1767	1735	1557	1795	1749	1522
Q Serve(g_s), s	7.6	27.5	27.6	11.3	13.8	10.4	6.9	18.8	5.1	13.8	24.5	3.1
Cycle Q Clear(g_c), s	7.6	27.5	27.6	11.3	13.8	10.4	6.9	18.8	5.1	13.8	24.5	3.1
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	129	493	486	184	1117	477	117	963	432	220	1168	508
V/C Ratio(X)	0.82	0.82	0.82	0.86	0.43	0.33	0.81	0.60	0.28	0.88	0.66	0.15
Avail Cap(c_a), veh/h	206	521	514	249	1124	480	169	963	432	309	1168	508
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	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	43.9	43.9	57.4	35.3	34.1	59.9	40.7	15.7	56.1	37.0	14.2
Incr Delay (d2), s/veh	5.8	14.0	14.3	15.9	0.6	0.9	10.9	2.7	1.5	14.9	2.9	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	3.6	13.8	13.7	5.8	6.0	3.9	3.4	8.2	3.0	7.1	10.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.3	57.9	58.2	73.3	35.9	35.0	70.8	43.4	17.3	71.0	39.9	14.8
LnGrp LOS	E	E	E	E	D	C	E	D	B	E	D	B
Approach Vol, veh/h		906			792			792			1041	
Approach Delay, s/veh		58.9			43.2			42.7			43.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	48.0	13.4	45.7	20.5	41.0	18.2	40.9
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	12.4	* 43	15.0	41.1	22.4	33.1	18.0	* 38
Max Q Clear Time (g_c+I1), s	8.9	26.5	9.6	15.8	15.8	20.8	13.3	29.6
Green Ext Time (p_c), s	0.0	6.8	0.0	7.0	0.1	5.6	0.1	6.4

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	3	5	1	18	23	635	8	67	811	6
Future Volume (vph)	5	2	3	5	1	18	23	635	8	67	811	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1441		1805	1540		1805	3406	1567	1805	3471	1576
Flt Permitted	0.74	1.00		0.75	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1412	1441		1434	1540		1805	3406	1567	1805	3471	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	6	2	3	6	1	21	27	738	9	78	943	7
RTOR Reduction (vph)	0	3	0	0	18	0	0	0	3	0	0	2
Lane Group Flow (vph)	6	2	0	6	4	0	27	738	6	78	943	5
Confl. Peds. (#/hr)									3			1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	50%	0%	0%	0%	6%	0%	6%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	16.4	16.4		16.4	16.4		5.1	84.1	84.1	9.6	88.6	88.6
Effective Green, g (s)	16.4	16.4		16.4	16.4		5.1	84.1	84.1	9.6	88.6	88.6
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.04	0.65	0.65	0.07	0.68	0.68
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	178	181		180	194		70	2203	1013	133	2365	1074
v/s Ratio Prot		0.00			0.00		0.01	0.22		c0.04	c0.27	
v/s Ratio Perm	c0.00			0.00					0.00			0.00
v/c Ratio	0.03	0.01		0.03	0.02		0.39	0.33	0.01	0.59	0.40	0.00
Uniform Delay, d1	49.8	49.7		49.8	49.8		60.9	10.3	8.1	58.3	9.1	6.6
Progression Factor	1.00	1.00		1.00	1.00		1.28	0.41	1.00	1.13	0.23	1.00
Incremental Delay, d2	0.1	0.0		0.1	0.0		3.4	0.4	0.0	5.0	0.4	0.0
Delay (s)	49.9	49.7		49.9	49.8		81.7	4.7	8.1	70.9	2.4	6.6
Level of Service	D	D		D	D		F	A	A	E	A	A
Approach Delay (s)		49.8			49.8			7.4			7.7	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	1	0	3	26	691	2	10	793	2
Future Volume (vph)	7	0	18	1	0	3	26	691	2	10	793	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.90			0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1678			1678		1671	3406	1554	1805	3471	1032
Flt Permitted		0.94			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1593			1642		1671	3406	1554	1805	3471	1032
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	9	0	22	1	0	4	32	843	2	12	967	2
RTOR Reduction (vph)	0	28	0	0	4	0	0	0	1	0	0	1
Lane Group Flow (vph)	0	3	0	0	1	0	32	843	1	12	967	1
Confl. Peds. (#/hr)			1	1			5		4	4		5
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	6%	0%	0%	4%	50%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		14.3			14.3		5.3	94.1	94.1	2.7	91.5	91.5
Effective Green, g (s)		14.3			14.3		5.3	94.1	94.1	2.7	91.5	91.5
Actuated g/C Ratio		0.11			0.11		0.04	0.72	0.72	0.02	0.70	0.70
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		175			180		68	2465	1124	37	2443	726
v/s Ratio Prot							c0.02	c0.25		0.01	c0.28	
v/s Ratio Perm		c0.00			0.00				0.00			0.00
v/c Ratio		0.02			0.00		0.47	0.34	0.00	0.32	0.40	0.00
Uniform Delay, d1		51.6			51.5		61.0	6.6	5.0	62.8	7.9	5.7
Progression Factor		1.00			1.00		1.00	1.00	1.00	0.91	0.91	1.00
Incremental Delay, d2		0.0			0.0		5.1	0.4	0.0	4.7	0.4	0.0
Delay (s)		51.6			51.5		66.0	7.0	5.0	61.9	7.6	5.7
Level of Service		D			D		E	A	A	E	A	A
Approach Delay (s)		51.6			51.5			9.1			8.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	0	666	801	18
Future Volume (vph)	0	8	0	666	801	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2		4.9	4.9	4.9
Lane Util. Factor		1.00		0.95	0.95	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00
Frt		0.85		1.00	1.00	0.85
Flt Protected		1.00		1.00	1.00	1.00
Satd. Flow (prot)		1594		3438	3471	1555
Flt Permitted		1.00		1.00	1.00	1.00
Satd. Flow (perm)		1594		3438	3471	1555
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	9	0	757	910	20
RTOR Reduction (vph)	0	8	0	0	0	4
Lane Group Flow (vph)	0	1	0	757	910	16
Confl. Peds. (#/hr)		1	4			4
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)		13.2		101.5	101.5	101.5
Effective Green, g (s)		13.2		101.5	101.5	101.5
Actuated g/C Ratio		0.10		0.78	0.78	0.78
Clearance Time (s)		4.2		4.9	4.9	4.9
Vehicle Extension (s)		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		161		2684	2710	1214
v/s Ratio Prot				0.22	c0.26	
v/s Ratio Perm		c0.00				0.01
v/c Ratio		0.01		0.28	0.34	0.01
Uniform Delay, d1		52.5		4.0	4.2	3.2
Progression Factor		1.00		0.95	0.63	0.69
Incremental Delay, d2		0.0		0.2	0.3	0.0
Delay (s)		52.5		4.1	3.0	2.2
Level of Service		D		A	A	A
Approach Delay (s)	52.5			4.1	2.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1765	70	43	1701	127	103	313	37	91	304	172
Future Volume (veh/h)	164	1765	70	43	1701	127	103	313	37	91	304	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	174	1878	74	46	1810	135	110	333	39	97	323	183
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	204	2672	105	102	2341	174	179	525	405	190	521	430
Arrive On Green	0.11	0.53	0.53	0.11	0.96	0.96	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	5075	200	1781	4886	363	899	1900	1464	1016	1885	1555
Grp Volume(v), veh/h	174	1269	683	46	1270	675	110	333	39	97	323	183
Grp Sat Flow(s),veh/h/ln	1810	1716	1844	1781	1716	1818	899	1900	1464	1016	1885	1555
Q Serve(g_s), s	10.4	30.6	30.7	2.7	6.5	6.6	13.4	16.9	2.2	10.2	16.5	10.6
Cycle Q Clear(g_c), s	10.4	30.6	30.7	2.7	6.5	6.6	29.9	16.9	2.2	27.1	16.5	10.6
Prop In Lane	1.00		0.11	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1806	971	102	1644	871	179	525	405	190	521	430
V/C Ratio(X)	0.85	0.70	0.70	0.45	0.77	0.78	0.61	0.63	0.10	0.51	0.62	0.43
Avail Cap(c_a), veh/h	263	1806	971	117	1644	871	179	525	405	190	521	430
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	19.6	19.6	47.1	1.3	1.3	47.8	34.9	29.6	46.8	34.8	32.6
Incr Delay (d2), s/veh	15.6	2.3	4.3	1.2	3.6	6.7	10.7	4.2	0.3	6.1	4.0	1.9
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	5.5	11.8	13.2	1.2	1.5	2.3	3.5	8.4	0.8	2.9	8.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	21.9	23.9	48.2	4.9	8.0	58.5	39.1	29.9	52.9	38.7	34.6
LnGrp LOS	E	C	C	D	A	A	E	D	C	D	D	C
Approach Vol, veh/h		2126			1991			482			603	
Approach Delay, s/veh		25.9			7.0			42.8			39.7	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.0	16.4	57.6		36.0	11.2	62.8				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.9	* 4.9				
Max Green Setting (Gmax), s		30.4	16.0	49.1		30.4	7.2	* 58				
Max Q Clear Time (g_c+I1), s		29.1	12.4	8.6		31.9	4.7	32.7				
Green Ext Time (p_c), s		0.7	0.1	33.4		0.0	0.0	22.2				

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1830	12	10	1955	0	0	0	0	0	0	0
Future Volume (vph)	14	1830	12	10	1955	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9							
Lane Util. Factor	1.00	0.91		1.00	0.91							
Frpb, ped/bikes	1.00	1.00		1.00	1.00							
Flpb, ped/bikes	1.00	1.00		1.00	1.00							
Frt	1.00	1.00		1.00	1.00							
Flt Protected	0.95	1.00		0.95	1.00							
Satd. Flow (prot)	1805	5078		1805	5136							
Flt Permitted	0.08	1.00		0.09	1.00							
Satd. Flow (perm)	149	5078		172	5136							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	1989	13	11	2125	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	15	2002	0	11	2125	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	1		5	5		1						
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	0%	2%	8%	0%	1%	0%	0%	0%	0%	0%	0%	20%
Turn Type	Perm	NA		Perm	NA							
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	97.1	97.1		97.1	97.1							
Effective Green, g (s)	97.1	97.1		97.1	97.1							
Actuated g/C Ratio	0.88	0.88		0.88	0.88							
Clearance Time (s)	4.9	4.9		4.9	4.9							
Vehicle Extension (s)	3.0	3.0		3.0	3.0							
Lane Grp Cap (vph)	131	4482		151	4533							
v/s Ratio Prot		0.39			c0.41							
v/s Ratio Perm	0.10			0.06								
v/c Ratio	0.11	0.45		0.07	0.47							
Uniform Delay, d1	0.8	1.2		0.8	1.3							
Progression Factor	0.64	0.51		1.00	1.00							
Incremental Delay, d2	1.4	0.2		0.9	0.3							
Delay (s)	1.9	0.9		1.7	1.6							
Level of Service	A	A		A	A							
Approach Delay (s)		0.9			1.6			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	1433	222	207	1418	289	319	710	217	398	724	228
Future Volume (vph)	183	1433	222	207	1418	289	319	710	217	398	724	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1575	3502	5085	1551	3467	3539	1544	3467	3539	1565
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1575	3502	5085	1551	3467	3539	1544	3467	3539	1565
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	206	1610	249	233	1593	325	358	798	244	447	813	256
RTOR Reduction (vph)	0	0	110	0	0	125	0	0	152	0	0	147
Lane Group Flow (vph)	206	1610	139	233	1593	200	358	798	92	447	813	109
Confl. Peds. (#/hr)			3			18			12			8
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	2%	1%	0%	2%	1%	1%	2%	2%	1%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	8.8	43.2	43.2	9.8	44.2	44.2	14.7	34.7	34.7	18.1	38.1	38.1
Effective Green, g (s)	8.8	43.2	43.2	9.8	44.2	44.2	14.7	34.7	34.7	18.1	38.1	38.1
Actuated g/C Ratio	0.07	0.33	0.33	0.07	0.33	0.33	0.11	0.26	0.26	0.14	0.29	0.29
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	1664	515	259	1702	519	386	930	405	475	1021	451
v/s Ratio Prot	c0.06	c0.32		c0.07	0.31		c0.10	c0.23		c0.13	c0.23	
v/s Ratio Perm			0.09			0.13			0.06			0.07
v/c Ratio	0.88	0.97	0.27	0.90	0.94	0.39	0.93	0.86	0.23	0.94	0.80	0.24
Uniform Delay, d1	61.1	43.7	32.8	60.6	42.5	33.5	58.1	46.3	38.1	56.4	43.4	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.2	14.9	0.3	30.6	10.2	0.5	27.6	7.9	0.3	27.1	4.4	0.3
Delay (s)	91.3	58.6	33.0	91.2	52.7	34.0	85.8	54.2	38.4	83.5	47.7	36.2
Level of Service	F	E	C	F	D	C	F	D	D	F	D	D
Approach Delay (s)		58.8			54.0			59.5			56.3	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	132.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1977	22	79	1879	27	0	0	123	0	0	35
Future Volume (vph)	49	1977	22	79	1879	27	0	0	123	0	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1805	4739		1805	5136	1507		1627			1644	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1805	4739		1805	5136	1507		1627			1644	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	2197	24	88	2088	30	0	0	137	0	0	39
RTOR Reduction (vph)	0	1	0	0	0	9	0	112	0	0	35	0
Lane Group Flow (vph)	54	2220	0	88	2088	21	0	25	0	0	4	0
Confl. Peds. (#/hr)	13		5	5		13						
Confl. Bikes (#/hr)			2			6						
Heavy Vehicles (%)	0%	2%	5%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	6.5	74.9		7.4	75.8	75.8		12.6			12.6	
Effective Green, g (s)	6.5	74.9		7.4	75.8	75.8		12.6			12.6	
Actuated g/C Ratio	0.06	0.68		0.07	0.69	0.69		0.11			0.11	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	106	3226		121	3539	1038		186			188	
v/s Ratio Prot	0.03	c0.47		0.05	c0.41			c0.02			0.00	
v/s Ratio Perm						0.01						
v/c Ratio	0.51	0.69		0.73	0.59	0.02		0.13			0.02	
Uniform Delay, d1	50.2	10.5		50.3	9.0	5.4		43.8			43.2	
Progression Factor	1.00	1.00		0.79	0.44	1.00		1.00			1.00	
Incremental Delay, d2	3.8	1.2		16.5	0.6	0.0		0.3			0.1	
Delay (s)	54.0	11.8		56.4	4.5	5.4		44.1			43.3	
Level of Service	D	B		E	A	A		D			D	
Approach Delay (s)		12.8			6.6			44.1			43.3	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1334	766	0	1637	597	0	0	0	342	0	348
Future Volume (veh/h)	0	1334	766	0	1637	597	0	0	0	342	0	348
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1434	0	0	1760	0				380	0	374
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2178		0	3130					475	0	419
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1434	0	0	1760	0				380	0	374
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				21.7	0.0	25.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				21.7	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2178		0	3130					475	0	419
V/C Ratio(X)	0.00	0.66		0.00	0.56					0.80	0.00	0.89
Avail Cap(c_a), veh/h	0	2178		0	3130					623	0	550
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.00	0.00	0.75	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				37.7	0.0	38.9
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.6	0.0				5.5	0.0	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.2	0.0				10.2	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.1	0.0	0.0	0.6	0.0				43.3	0.0	52.6
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		1434	A		1760	A					754	
Approach Delay, s/veh		1.1			0.6						47.9	
Approach LOS		A			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	73.9	36.1	73.9
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	57.8	38.2	57.8
Max Q Clear Time (g_c+I1), s	2.0	27.0	2.0
Green Ext Time (p_c), s	27.4	2.1	34.4

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1354	322	0	1696	505	538	0	477	0	0	0
Future Volume (veh/h)	0	1354	322	0	1696	505	538	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1456	0	0	1824	0	585	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	2970		0	2970		1012	0	830			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.29	0.00	0.29			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1456	0	0	1824	0	585	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	17.2			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	17.2			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2970		0	2970		1012	0	830			
V/C Ratio(X)	0.00	0.49		0.00	0.61		0.58	0.00	0.62			
Avail Cap(c_a), veh/h	0	2970		0	2970		1310	0	1074			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.66	0.00	0.00	0.42	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	33.1	0.0	33.6			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	2.2	0.0	3.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	6.9	0.0	6.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	0.4	0.0	35.3	0.0	36.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1456	A		1824	A		1098				
Approach Delay, s/veh		0.4			0.4			36.0				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		70.5				70.5		39.5				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		54.0				54.0		41.7				
Max Q Clear Time (g_c+I1), s		2.0				2.0		19.2				
Green Ext Time (p_c), s		30.3				39.1		13.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	1383	133	117	1502	62	309	547	96	164	532	390
Future Volume (veh/h)	315	1383	133	117	1502	62	309	547	96	164	532	390
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	342	1503	145	127	1633	67	336	595	104	178	578	424
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	400	1773	171	188	1600	486	348	1048	456	180	1051	466
Arrive On Green	0.23	0.74	0.74	0.05	0.31	0.31	0.10	0.29	0.29	0.10	0.29	0.29
Sat Flow, veh/h	3456	4763	459	3510	5147	1564	3483	3582	1560	1795	3582	1589
Grp Volume(v), veh/h	342	1083	565	127	1633	67	336	595	104	178	578	424
Grp Sat Flow(s),veh/h/ln	1728	1716	1791	1755	1716	1564	1742	1791	1560	1795	1791	1589
Q Serve(g_s), s	10.4	24.0	24.1	3.9	34.2	2.5	10.6	15.5	5.6	10.9	15.0	28.3
Cycle Q Clear(g_c), s	10.4	24.0	24.1	3.9	34.2	2.5	10.6	15.5	5.6	10.9	15.0	28.3
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1277	667	188	1600	486	348	1048	456	180	1051	466
V/C Ratio(X)	0.86	0.85	0.85	0.68	1.02	0.14	0.96	0.57	0.23	0.99	0.55	0.91
Avail Cap(c_a), veh/h	400	1277	667	191	1600	486	348	1107	482	180	1107	491
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)	0.84	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	41.4	11.9	11.9	51.1	37.9	14.3	49.3	33.0	29.5	49.5	32.7	37.5
Incr Delay (d2), s/veh	13.6	5.2	9.5	7.3	27.8	0.6	38.5	1.2	0.6	64.4	0.3	19.6
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	4.6	4.9	5.9	1.9	17.8	1.3	6.4	6.9	2.1	8.0	6.3	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	17.1	21.4	58.4	65.7	14.9	87.8	34.2	30.1	113.9	33.0	57.1
LnGrp LOS	D	B	C	E	F	B	F	C	C	F	C	E
Approach Vol, veh/h		1990			1827			1035			1180	
Approach Delay, s/veh		24.8			63.3			51.2			53.9	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	37.2	17.7	39.1	16.0	37.2	10.9	46.0
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	* 5	5.0	* 5
Max Green Setting (Gmax), s	11.0	34.0	11.0	34.2	11.0	* 34	6.0	* 39
Max Q Clear Time (g_c+I1), s	12.6	30.3	12.4	36.2	12.9	17.5	5.9	26.1
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.0	7.1	0.0	11.4

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	633	142	176	696	209	157	791	139	296	1037	123
Future Volume (veh/h)	143	633	142	176	696	209	157	791	139	296	1037	123
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1900	1900	1870	1885
Adj Flow Rate, veh/h	157	696	156	193	765	230	173	869	153	325	1140	135
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, %	1	1	1	1	1	1	1	2	0	0	2	1
Cap, veh/h	192	883	198	163	1007	440	180	898	397	309	1160	512
Arrive On Green	0.11	0.31	0.31	0.09	0.28	0.28	0.10	0.25	0.25	0.17	0.33	0.33
Sat Flow, veh/h	1795	2891	648	1795	3582	1565	1795	3554	1573	1810	3554	1569
Grp Volume(v), veh/h	157	431	421	193	765	230	173	869	153	325	1140	135
Grp Sat Flow(s),veh/h/ln	1795	1791	1748	1795	1791	1565	1795	1777	1573	1810	1777	1569
Q Serve(g_s), s	9.4	24.2	24.2	10.0	21.5	13.6	10.6	26.6	6.7	18.8	35.0	4.8
Cycle Q Clear(g_c), s	9.4	24.2	24.2	10.0	21.5	13.6	10.6	26.6	6.7	18.8	35.0	4.8
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	547	534	163	1007	440	180	898	397	309	1160	512
V/C Ratio(X)	0.82	0.79	0.79	1.18	0.76	0.52	0.96	0.97	0.38	1.05	0.98	0.26
Avail Cap(c_a), veh/h	192	570	556	163	1140	498	180	898	397	309	1160	512
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	35.0	35.0	50.0	36.1	33.3	49.3	40.7	19.3	45.6	36.7	13.1
Incr Delay (d2), s/veh	22.0	11.0	11.3	128.0	3.5	2.1	52.4	21.5	2.5	65.1	22.6	1.3
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	11.8	11.6	10.2	9.5	5.3	7.2	13.9	3.5	13.8	18.1	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	45.9	46.2	178.0	39.7	35.4	101.7	62.2	21.8	110.7	59.4	14.4
LnGrp LOS	E	D	D	F	D	D	F	E	C	F	E	B
Approach Vol, veh/h		1009			1188			1195			1600	
Approach Delay, s/veh		49.8			61.3			62.7			66.0	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	40.5	16.7	35.8	23.4	32.7	14.0	38.5
Change Period (Y+Rc), s	4.6	4.6	4.9	* 4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	35.9	10.0	* 35	18.8	27.8	10.0	35.0
Max Q Clear Time (g_c+I1), s	12.6	37.0	11.4	23.5	20.8	28.6	12.0	26.2
Green Ext Time (p_c), s	0.0	0.0	0.0	7.0	0.0	0.0	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	60.8
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	55	34	1	37	162	1014	6	77	1265	13
Future Volume (vph)	36	1	55	34	1	37	162	1014	6	77	1265	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1803	1565		1748	1601		1787	3539	1574	1787	3574	1550
Flt Permitted	0.73	1.00		0.72	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1385	1565		1320	1601		1787	3539	1574	1787	3574	1550
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	40	1	60	37	1	41	178	1114	7	85	1390	14
RTOR Reduction (vph)	0	53	0	0	36	0	0	0	3	0	0	6
Lane Group Flow (vph)	40	8	0	37	6	0	178	1114	4	85	1390	8
Confl. Peds. (#/hr)	1		3	3		1			2			8
Heavy Vehicles (%)	0%	0%	2%	3%	0%	0%	1%	2%	0%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	12.7	12.7		12.7	12.7		17.4	69.3	69.3	8.1	60.0	60.0
Effective Green, g (s)	12.7	12.7		12.7	12.7		17.4	69.3	69.3	8.1	60.0	60.0
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.16	0.63	0.63	0.07	0.55	0.55
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	159	180		152	184		282	2229	991	131	1949	845
v/s Ratio Prot		0.01			0.00		c0.10	c0.31		0.05	c0.39	
v/s Ratio Perm	c0.03			0.03					0.00			0.00
v/c Ratio	0.25	0.04		0.24	0.03		0.63	0.50	0.00	0.65	0.71	0.01
Uniform Delay, d1	44.3	43.3		44.3	43.2		43.3	11.0	7.6	49.6	18.6	11.4
Progression Factor	1.00	1.00		1.00	1.00		1.06	1.05	1.00	1.20	0.44	1.00
Incremental Delay, d2	0.8	0.1		0.8	0.1		4.2	0.7	0.0	2.7	0.6	0.0
Delay (s)	45.2	43.4		45.1	43.3		49.9	12.2	7.6	62.4	8.8	11.4
Level of Service	D	D		D	D		D	B	A	E	A	B
Approach Delay (s)		44.1			44.1			17.4			11.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	20	1	0	2	43	1222	0	28	1149	4
Future Volume (vph)	3	0	20	1	0	2	43	1222	0	28	1149	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1664			1686		1805	3539		1805	3539	1567
Flt Permitted		0.97			0.92		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1620			1575		1805	3539		1805	3539	1567
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	3	0	22	1	0	2	47	1343	0	31	1263	4
RTOR Reduction (vph)	0	23	0	0	3	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2	0	0	0	0	47	1343	0	31	1263	3
Confl. Peds. (#/hr)	1					1	3		3	3		3
Confl. Bikes (#/hr)									2			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		7.1			7.1		3.0	60.9		1.8	59.7	59.7
Effective Green, g (s)		7.1			7.1		3.0	60.9		1.8	59.7	59.7
Actuated g/C Ratio		0.08			0.08		0.03	0.69		0.02	0.68	0.68
Clearance Time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		130			126		61	2440		36	2392	1059
v/s Ratio Prot							c0.03	c0.38		0.02	0.36	
v/s Ratio Perm		c0.00			0.00							0.00
v/c Ratio		0.02			0.00		0.77	0.55		0.86	0.53	0.00
Uniform Delay, d1		37.4			37.3		42.3	6.9		43.1	7.2	4.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.0		44.2	0.9		95.3	0.8	0.0
Delay (s)		37.4			37.3		86.6	7.8		138.4	8.0	4.6
Level of Service		D			D		F	A		F	A	A
Approach Delay (s)		37.4			37.3			10.4			11.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	17.7
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	17	0	1182	1333	21
Future Volume (vph)	0	17	0	1182	1333	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2		4.9	4.9	4.9
Lane Util. Factor		1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00		1.00	1.00	1.00
Frt		0.85		1.00	1.00	0.85
Flt Protected		1.00		1.00	1.00	1.00
Satd. Flow (prot)		1524		3574	3574	1560
Flt Permitted		1.00		1.00	1.00	1.00
Satd. Flow (perm)		1524		3574	3574	1560
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	19	0	1299	1465	23
RTOR Reduction (vph)	0	17	0	0	0	4
Lane Group Flow (vph)	0	2	0	1299	1465	19
Confl. Peds. (#/hr)			4			4
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	6%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)		8.8		86.8	86.8	86.8
Effective Green, g (s)		8.8		86.8	86.8	86.8
Actuated g/C Ratio		0.08		0.79	0.79	0.79
Clearance Time (s)		4.2		4.9	4.9	4.9
Vehicle Extension (s)		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		121		2820	2820	1230
v/s Ratio Prot				0.36	c0.41	
v/s Ratio Perm		c0.00				0.01
v/c Ratio		0.01		0.46	0.52	0.02
Uniform Delay, d1		46.6		3.8	4.1	2.5
Progression Factor		1.00		1.00	0.30	0.01
Incremental Delay, d2		0.0		0.5	0.5	0.0
Delay (s)		46.6		4.4	1.8	0.0
Level of Service		D		A	A	A
Approach Delay (s)	46.6			4.4	1.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1280	40	28	1325	69	87	155	33	65	97	115
Future Volume (veh/h)	97	1280	40	28	1325	69	87	155	33	65	97	115
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		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	100	1320	41	29	1366	71	90	160	34	67	100	119
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	126	2660	83	278	3035	158	229	353	298	190	348	298
Arrive On Green	0.07	0.52	0.52	0.31	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	5124	159	1810	4966	258	1162	1885	1590	1114	1856	1590
Grp Volume(v), veh/h	100	884	477	29	936	501	90	160	34	67	100	119
Grp Sat Flow(s),veh/h/ln	1810	1716	1852	1810	1702	1820	1162	1885	1590	1114	1856	1590
Q Serve(g_s), s	6.0	18.4	18.4	1.3	0.0	0.0	7.9	8.3	2.0	6.2	5.1	7.2
Cycle Q Clear(g_c), s	6.0	18.4	18.4	1.3	0.0	0.0	13.0	8.3	2.0	14.5	5.1	7.2
Prop In Lane	1.00		0.09	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	1781	961	278	2080	1112	229	353	298	190	348	298
V/C Ratio(X)	0.79	0.50	0.50	0.10	0.45	0.45	0.39	0.45	0.11	0.35	0.29	0.40
Avail Cap(c_a), veh/h	247	1781	961	278	2080	1112	333	521	439	289	513	439
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	17.1	17.1	32.7	0.0	0.0	44.0	39.7	37.1	46.1	38.4	39.3
Incr Delay (d2), s/veh	4.2	1.0	1.8	0.1	0.7	1.3	3.2	2.6	0.5	3.2	1.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.0	7.8	0.5	0.2	0.4	2.5	4.1	0.8	1.9	2.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.6	18.1	19.0	32.8	0.7	1.3	47.1	42.3	37.6	49.3	39.7	41.8
LnGrp LOS	D	B	B	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1461			1466			284			286	
Approach Delay, s/veh		20.9			1.5			43.3			42.8	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.2	11.7	72.1		26.2	21.8	62.0				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.9	* 4.9				
Max Green Setting (Gmax), s		30.4	15.0	50.1		30.4	8.0	* 57				
Max Q Clear Time (g_c+I1), s		16.5	8.0	2.0		15.0	3.3	20.4				
Green Ext Time (p_c), s		2.3	0.1	27.8		2.5	0.0	22.2				

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1371	15	32	1381	0	0	0	0	0	0	0
Future Volume (vph)	13	1371	15	32	1381	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9							
Lane Util. Factor	1.00	0.91		1.00	0.91							
Frpb, ped/bikes	1.00	1.00		1.00	1.00							
Flpb, ped/bikes	1.00	1.00		1.00	1.00							
Frt	1.00	1.00		1.00	1.00							
Flt Protected	0.95	1.00		0.95	1.00							
Satd. Flow (prot)	1804	5077		1805	5085							
Flt Permitted	0.16	1.00		0.16	1.00							
Satd. Flow (perm)	305	5077		304	5085							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1490	16	35	1501	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	14	1506	0	35	1501	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	7		2	2		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA							
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	97.1	97.1		97.1	97.1							
Effective Green, g (s)	97.1	97.1		97.1	97.1							
Actuated g/C Ratio	0.88	0.88		0.88	0.88							
Clearance Time (s)	4.9	4.9		4.9	4.9							
Vehicle Extension (s)	3.0	3.0		3.0	3.0							
Lane Grp Cap (vph)	269	4481		268	4488							
v/s Ratio Prot		c0.30			0.30							
v/s Ratio Perm	0.05			0.12								
v/c Ratio	0.05	0.34		0.13	0.33							
Uniform Delay, d1	0.8	1.1		0.9	1.1							
Progression Factor	0.92	0.76		1.00	1.00							
Incremental Delay, d2	0.3	0.2		1.0	0.2							
Delay (s)	1.1	1.0		1.9	1.3							
Level of Service	A	A		A	A							
Approach Delay (s)		1.0			1.3			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	1005	159	236	974	403	225	562	247	450	541	214
Future Volume (vph)	218	1005	159	236	974	403	225	562	247	450	541	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1534	3433	5085	1584	3467	3539	1535	3433	3539	1575
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1534	3433	5085	1584	3467	3539	1535	3433	3539	1575
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	227	1047	166	246	1015	420	234	585	257	469	564	223
RTOR Reduction (vph)	0	0	114	0	0	235	0	0	191	0	0	158
Lane Group Flow (vph)	227	1047	52	246	1015	185	234	585	66	469	564	65
Confl. Peds. (#/hr)			11			7			16			14
Confl. Bikes (#/hr)			1			1			4			1
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	1%	2%	2%	2%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.4	33.9	33.9	10.7	33.2	33.2	12.0	26.5	26.5	19.6	34.1	34.1
Effective Green, g (s)	11.4	33.9	33.9	10.7	33.2	33.2	12.0	26.5	26.5	19.6	34.1	34.1
Actuated g/C Ratio	0.10	0.29	0.29	0.09	0.28	0.28	0.10	0.23	0.23	0.17	0.29	0.29
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	342	1477	445	314	1446	450	356	803	348	576	1034	460
v/s Ratio Prot	0.06	c0.21		c0.07	0.20		0.07	c0.17		c0.14	0.16	
v/s Ratio Perm			0.03			0.12			0.04			0.04
v/c Ratio	0.66	0.71	0.12	0.78	0.70	0.41	0.66	0.73	0.19	0.81	0.55	0.14
Uniform Delay, d1	50.8	37.0	30.4	51.9	37.3	33.8	50.4	41.8	36.4	46.8	34.8	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	1.6	0.1	12.0	1.6	0.6	3.3	3.3	0.3	8.6	0.6	0.1
Delay (s)	55.6	38.6	30.5	63.9	38.9	34.4	53.7	45.1	36.7	55.4	35.4	30.6
Level of Service	E	D	C	E	D	C	D	D	D	E	D	C
Approach Delay (s)		40.3			41.4			45.0			42.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	116.7	Sum of lost time (s)	25.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1640	14	111	1593	22	0	0	99	0	0	20
Future Volume (vph)	48	1640	14	111	1593	22	0	0	99	0	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1805	5077		1736	5085	1544		1627			1644	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1805	5077		1736	5085	1544		1627			1644	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	52	1763	15	119	1713	24	0	0	106	0	0	22
RTOR Reduction (vph)	0	0	0	0	0	7	0	95	0	0	20	0
Lane Group Flow (vph)	52	1778	0	119	1713	17	0	11	0	0	2	0
Confl. Peds. (#/hr)	7		11	11		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	4%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	6.8	69.8		13.3	76.3	76.3		11.8			11.8	
Effective Green, g (s)	6.8	69.8		13.3	76.3	76.3		11.8			11.8	
Actuated g/C Ratio	0.06	0.63		0.12	0.69	0.69		0.11			0.11	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	111	3221		209	3527	1070		174			176	
v/s Ratio Prot	0.03	c0.35		c0.07	0.34			c0.01			0.00	
v/s Ratio Perm						0.01						
v/c Ratio	0.47	0.55		0.57	0.49	0.02		0.07			0.01	
Uniform Delay, d1	49.9	11.3		45.6	7.8	5.2		44.1			43.9	
Progression Factor	1.00	1.00		0.77	0.45	1.00		1.00			1.00	
Incremental Delay, d2	3.1	0.7		3.2	0.4	0.0		0.2			0.0	
Delay (s)	53.0	12.0		38.2	3.9	5.2		44.3			43.9	
Level of Service	D	B		D	A	A		D			D	
Approach Delay (s)		13.2			6.1			44.3			43.9	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1145	594	0	1421	461	0	0	0	350	0	305
Future Volume (veh/h)	0	1145	594	0	1421	461	0	0	0	350	0	305
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1193	0	0	1480	0				389	0	318
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2225		0	3222					443	0	388
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1193	0	0	1480	0				389	0	318
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				22.9	0.0	21.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				22.9	0.0	21.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2225		0	3222					443	0	388
V/C Ratio(X)	0.00	0.54		0.00	0.46					0.88	0.00	0.82
Avail Cap(c_a), veh/h	0	2225		0	3222					669	0	586
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.82	0.00	0.00	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				39.8	0.0	39.1
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.4	0.0				8.7	0.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.1	0.0				11.1	0.0	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.8	0.0	0.0	0.4	0.0				48.5	0.0	44.7
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		1193	A		1480	A					707	
Approach Delay, s/veh		0.8			0.4						46.8	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		75.9		34.1		75.9
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		55.0		41.0		55.0
Max Q Clear Time (g_c+I1), s		2.0		24.9		2.0
Green Ext Time (p_c), s		20.2		2.2		26.3

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1278	217	0	1355	420	527	0	711	0	0	0
Future Volume (veh/h)	0	1278	217	0	1355	420	527	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1331	0	0	1411	0	573	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2508		0	2489		1322	0	1076			
Arrive On Green	0.00	0.97	0.00	0.00	0.97	0.00	0.38	0.00	0.38			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1331	0	0	1411	0	573	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	1.5	0.0	0.0	1.7	0.0	13.5	0.0	24.3			
Cycle Q Clear(g_c), s	0.0	1.5	0.0	0.0	1.7	0.0	13.5	0.0	24.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2508		0	2489		1322	0	1076			
V/C Ratio(X)	0.00	0.53		0.00	0.57		0.43	0.00	0.69			
Avail Cap(c_a), veh/h	0	2508		0	2489		1561	0	1270			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.75	0.00	0.00	0.77	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.7	0.0	0.0	0.7	0.0	25.1	0.0	28.5			
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.7	0.0	1.0	0.0	3.4			
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	0.0	0.4	0.0	0.0	0.5	0.0	5.7	0.0	8.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.3	0.0	0.0	1.5	0.0	26.1	0.0	31.9			
LnGrp LOS	A	A		A	A		C	A	C			
Approach Vol, veh/h		1331	A		1411	A		1314				
Approach Delay, s/veh		1.3			1.5			29.4				
Approach LOS		A			A			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.6				60.6		49.4				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		46.0				46.0		49.7				
Max Q Clear Time (g_c+I1), s		3.5				3.7		26.3				
Green Ext Time (p_c), s		24.2				25.8		15.8				

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1536	179	108	1235	72	369	293	116	145	282	171
Future Volume (veh/h)	274	1536	179	108	1235	72	369	293	116	145	282	171
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		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	285	1600	186	112	1286	75	384	305	121	151	294	178
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	629	1618	188	472	1541	475	380	829	363	180	806	347
Arrive On Green	0.36	0.69	0.69	0.14	0.30	0.30	0.11	0.24	0.24	0.10	0.23	0.23
Sat Flow, veh/h	3456	4660	541	3456	5106	1573	3483	3526	1545	1795	3554	1529
Grp Volume(v), veh/h	285	1177	609	112	1286	75	384	305	121	151	294	178
Grp Sat Flow(s),veh/h/ln	1728	1716	1770	1728	1702	1573	1742	1763	1545	1795	1777	1529
Q Serve(g_s), s	6.9	36.7	37.1	3.2	25.9	2.8	12.0	8.0	5.0	9.1	7.7	11.2
Cycle Q Clear(g_c), s	6.9	36.7	37.1	3.2	25.9	2.8	12.0	8.0	5.0	9.1	7.7	11.2
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	629	1192	615	472	1541	475	380	829	363	180	806	347
V/C Ratio(X)	0.45	0.99	0.99	0.24	0.83	0.16	1.01	0.37	0.33	0.84	0.36	0.51
Avail Cap(c_a), veh/h	629	1192	615	472	1541	475	380	1122	491	180	1098	473
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)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	16.6	16.6	42.4	35.8	14.9	49.0	35.2	17.2	48.6	35.8	37.2
Incr Delay (d2), s/veh	0.1	20.3	29.9	0.1	5.5	0.7	48.9	0.6	1.3	27.2	0.1	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	2.6	8.8	10.7	1.3	11.1	1.5	7.8	3.5	2.7	5.3	3.3	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	36.9	46.6	42.5	41.3	15.6	97.9	35.9	18.5	75.8	35.9	37.6
LnGrp LOS	C	D	D	D	D	B	F	D	B	E	D	D
Approach Vol, veh/h		2071			1473			810			623	
Approach Delay, s/veh		38.9			40.1			62.7			46.1	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	29.9	25.0	38.1	16.0	30.9	20.0	43.1
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	* 5	5.0	4.9
Max Green Setting (Gmax), s	12.0	34.0	11.0	33.2	11.0	* 35	6.0	38.2
Max Q Clear Time (g_c+I1), s	14.0	13.2	8.9	27.9	11.1	10.0	5.2	39.1
Green Ext Time (p_c), s	0.0	1.4	0.1	4.6	0.0	4.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	321	129	128	289	163	118	771	110	289	908	100
Future Volume (veh/h)	151	321	129	128	289	163	118	771	110	289	908	100
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1870	1900	1870	1900
Adj Flow Rate, veh/h	161	341	137	136	307	173	126	820	117	307	966	106
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	1	1	0	1	1	2	0	2	0
Cap, veh/h	163	607	239	147	843	375	154	886	382	319	1211	537
Arrive On Green	0.09	0.24	0.24	0.08	0.24	0.24	0.09	0.25	0.25	0.18	0.34	0.34
Sat Flow, veh/h	1795	2486	978	1795	3582	1596	1795	3582	1545	1810	3554	1577
Grp Volume(v), veh/h	161	244	234	136	307	173	126	820	117	307	966	106
Grp Sat Flow(s),veh/h/ln	1795	1791	1673	1795	1791	1596	1795	1791	1545	1810	1777	1577
Q Serve(g_s), s	9.9	13.1	13.5	8.3	7.9	5.6	7.6	24.6	4.6	18.5	27.1	5.2
Cycle Q Clear(g_c), s	9.9	13.1	13.5	8.3	7.9	5.6	7.6	24.6	4.6	18.5	27.1	5.2
Prop In Lane	1.00		0.58	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	438	409	147	843	375	154	886	382	319	1211	537
V/C Ratio(X)	0.99	0.56	0.57	0.93	0.36	0.46	0.82	0.93	0.31	0.96	0.80	0.20
Avail Cap(c_a), veh/h	163	586	548	147	1140	508	183	886	382	319	1211	537
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	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	36.3	36.5	50.2	35.2	10.8	49.5	40.4	15.3	44.9	32.8	25.6
Incr Delay (d2), s/veh	66.1	5.0	5.7	51.8	0.6	1.9	17.0	15.6	1.9	39.9	5.5	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	7.3	6.2	6.0	5.7	3.4	3.9	4.1	12.4	2.6	11.6	12.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.0	41.4	42.3	101.9	35.7	12.7	66.5	56.0	17.2	84.8	38.3	26.4
LnGrp LOS	F	D	D	F	D	B	E	E	B	F	D	C
Approach Vol, veh/h		639			616			1063			1379	
Approach Delay, s/veh		60.5			43.9			53.0			47.8	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.1	14.0	30.8	24.0	32.1	13.0	31.8
Change Period (Y+Rc), s	4.6	4.6	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.2	35.7	10.0	35.0	19.4	27.2	9.0	36.0
Max Q Clear Time (g_c+I1), s	9.6	29.1	11.9	9.9	20.5	26.6	10.3	15.5
Green Ext Time (p_c), s	0.0	4.3	0.0	4.9	0.0	0.5	0.0	8.4

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	108	18	1	25	226	945	12	99	1037	29
Future Volume (vph)	29	0	108	18	1	25	226	945	12	99	1037	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1563		1804	1565		1805	3574	1555	1770	3574	1557
Flt Permitted	0.74	1.00		0.62	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1405	1563		1185	1565		1805	3574	1555	1770	3574	1557
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	30	0	112	19	1	26	235	984	12	103	1080	30
RTOR Reduction (vph)	0	99	0	0	23	0	0	0	5	0	0	15
Lane Group Flow (vph)	30	14	0	19	4	0	235	984	8	103	1080	15
Confl. Peds. (#/hr)			1	1					6			6
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%	0%	1%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	14.0	14.0		14.0	14.0		20.0	65.3	65.3	10.8	56.1	56.1
Effective Green, g (s)	14.0	14.0		14.0	14.0		20.0	65.3	65.3	10.8	56.1	56.1
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.18	0.59	0.59	0.10	0.51	0.51
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	178	198		150	199		328	2121	923	173	1822	794
v/s Ratio Prot		0.01			0.00		c0.13	c0.28		0.06	c0.30	
v/s Ratio Perm	c0.02			0.02					0.00			0.01
v/c Ratio	0.17	0.07		0.13	0.02		0.72	0.46	0.01	0.60	0.59	0.02
Uniform Delay, d1	42.8	42.3		42.6	42.0		42.3	12.5	9.1	47.5	18.9	13.3
Progression Factor	1.00	1.00		1.00	1.00		1.05	0.84	1.00	1.32	0.71	1.00
Incremental Delay, d2	0.5	0.2		0.4	0.0		6.8	0.7	0.0	4.0	1.0	0.0
Delay (s)	43.3	42.4		43.0	42.1		51.4	11.2	9.1	66.8	14.5	13.4
Level of Service	D	D		D	D		D	B	A	E	B	B
Approach Delay (s)		42.6			42.4			18.9			18.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	22	3	0	7	53	939	6	25	810	13
Future Volume (vph)	5	0	22	3	0	7	53	939	6	25	810	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00	0.96	1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.89			0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1608			1542		1805	3574	1546	1805	3539	1573
Flt Permitted		0.95			0.92		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1538			1435		1805	3574	1546	1805	3539	1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	0	23	3	0	7	56	988	6	26	853	14
RTOR Reduction (vph)	0	26	0	0	9	0	0	0	2	0	0	5
Lane Group Flow (vph)	0	2	0	0	1	0	56	988	4	26	853	9
Confl. Peds. (#/hr)							2		7	7		2
Confl. Bikes (#/hr)									6			1
Heavy Vehicles (%)	0%	0%	5%	33%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		7.0			7.0		4.9	58.3	58.3	2.3	55.7	55.7
Effective Green, g (s)		7.0			7.0		4.9	58.3	58.3	2.3	55.7	55.7
Actuated g/C Ratio		0.08			0.08		0.06	0.68	0.68	0.03	0.65	0.65
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		125			116		102	2420	1046	48	2289	1017
v/s Ratio Prot							c0.03	c0.28		0.01	0.24	
v/s Ratio Perm		c0.00			0.00				0.00			0.01
v/c Ratio		0.02			0.01		0.55	0.41	0.00	0.54	0.37	0.01
Uniform Delay, d1		36.4			36.4		39.5	6.2	4.5	41.4	7.1	5.4
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1			0.0		5.9	0.5	0.0	11.9	0.5	0.0
Delay (s)		36.4			36.4		45.5	6.7	4.5	53.3	7.5	5.4
Level of Service		D			D		D	A	A	D	A	A
Approach Delay (s)		36.4			36.4			8.8			8.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	17.7
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	67	0	1183	1138	25
Future Volume (vph)	0	67	0	1183	1138	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2		4.9	4.9	4.9
Lane Util. Factor		1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00	0.94
Flpb, ped/bikes		1.00		1.00	1.00	1.00
Frt		0.85		1.00	1.00	0.85
Flt Protected		1.00		1.00	1.00	1.00
Satd. Flow (prot)		1568		3574	3574	1522
Flt Permitted		1.00		1.00	1.00	1.00
Satd. Flow (perm)		1568		3574	3574	1522
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	70	0	1232	1185	26
RTOR Reduction (vph)	0	64	0	0	0	6
Lane Group Flow (vph)	0	6	0	1232	1185	20
Confl. Peds. (#/hr)	1		11			11
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)		9.9		85.7	85.7	85.7
Effective Green, g (s)		9.9		85.7	85.7	85.7
Actuated g/C Ratio		0.09		0.78	0.78	0.78
Clearance Time (s)		4.2		4.9	4.9	4.9
Vehicle Extension (s)		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		141		2784	2784	1185
v/s Ratio Prot				c0.34	0.33	
v/s Ratio Perm		c0.00				0.01
v/c Ratio		0.04		0.44	0.43	0.02
Uniform Delay, d1		45.7		4.1	4.0	2.7
Progression Factor		1.00		1.00	0.31	0.00
Incremental Delay, d2		0.1		0.5	0.4	0.0
Delay (s)		45.9		4.6	1.6	0.0
Level of Service		D		A	A	A
Approach Delay (s)	45.9			4.6	1.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.3	0.0	0.0	0.0	2.2	0.4	2.4	1.8	0.2	0.2
Total Del/Veh (s)	52.2	20.6	16.4	86.5	17.0	18.7	48.7	39.3	20.8	71.8	40.2	12.9

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	24.6

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.0
Total Del/Veh (s)	18.7	4.1	2.1	4.7	4.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	3.0	4.3	5.7	0.0	0.0	0.0
Total Del/Veh (s)	80.0	18.5	9.1	61.5	26.1	10.0	173.5	35.9	14.4	49.7	32.1	13.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	33.3

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	63.4	8.9	7.5	67.8	7.6	2.6	22.7	8.1	9.7

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Del/Veh (s)	6.1	2.3	12.9	8.3	48.7	21.8	11.9

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.5
Total Del/Veh (s)	11.9	4.7	14.7	5.0	17.7	22.3	13.8

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.2	3.1	0.2	3.1	2.9	0.3	3.1
Total Del/Veh (s)	55.6	22.7	21.5	63.6	33.6	21.7	51.8	38.1	13.2	62.3	45.1	9.5

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	31.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.9	0.2	0.2	3.1	0.2	3.1	0.0	0.0	0.0	2.8	0.3	0.2
Total Del/Veh (s)	81.8	41.1	29.5	56.5	34.6	8.5	36.5	13.5	4.0	59.8	28.8	3.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	31.9

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	53.0	88.0	3.8	46.2	58.2	5.1	71.7	6.7	0.9	57.0	6.3	1.8

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.8

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	3.0	0.3	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	49.9	9.6		4.5	71.7	5.6	0.8	53.4	5.3	0.8	7.0

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.0	4.7	3.7	0.7	4.2

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	1276.0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	199	365	370	370	117	258	278	313	120	356	140	157
Average Queue (ft)	136	210	220	217	29	107	126	148	54	189	40	109
95th Queue (ft)	218	319	323	321	74	208	228	254	117	314	123	180
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	5	8			0	4			7	42	0	10
Queuing Penalty (veh)	29	14			0	1			21	40	0	19

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	350	143
Average Queue (ft)	149	61
95th Queue (ft)	284	111
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	10	
Queuing Penalty (veh)	13	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB
Directions Served	L	T	T	TR	T	T	TR
Maximum Queue (ft)	60	193	221	265	89	110	126
Average Queue (ft)	7	50	59	67	16	33	44
95th Queue (ft)	33	153	176	201	57	94	117
Link Distance (ft)		615	615	615	559	559	559
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	80						
Storage Blk Time (%)		3					
Queuing Penalty (veh)		0					

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	132	148	346	375	424	242	130	176	322	375	382	237
Average Queue (ft)	61	80	126	157	162	69	50	71	136	165	178	47
95th Queue (ft)	112	127	278	324	354	196	104	134	260	299	314	139
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	1							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)			1		3	0		0	4		8	
Queuing Penalty (veh)			2		8	0		0	5		13	

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	225	260	358	309	98	166	208	278	294	126
Average Queue (ft)	151	176	177	147	26	50	99	145	163	47
95th Queue (ft)	258	298	434	378	72	117	174	233	254	98
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			3	0						
Queuing Penalty (veh)			7	0						
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	15	27	0			0	0	1		
Queuing Penalty (veh)	26	48	1			0	1	3		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	63	168	240	214	121	226	243	246	89	75	39
Average Queue (ft)	17	27	44	48	54	56	71	89	7	26	15
95th Queue (ft)	48	98	144	142	105	180	199	220	51	58	39
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						3	3	4			
Queuing Penalty (veh)						17	17	20			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		0			4	5		6	0		
Queuing Penalty (veh)		0			18	3		2	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	239	235	389	438	559	179	442	346
Average Queue (ft)	55	71	92	95	95	12	202	131
95th Queue (ft)	181	200	239	254	305	95	352	254
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	1	1			0		0	0
Queuing Penalty (veh)	5	8			0		0	0
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					2	0		
Queuing Penalty (veh)					10	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	217	214	189	44	128	212	326	112	190	291	256	236
Average Queue (ft)	107	97	92	1	31	64	97	5	95	107	164	105
95th Queue (ft)	175	172	160	31	87	152	215	79	156	197	239	214
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							0	0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0						0	1	0
Queuing Penalty (veh)			0	0						0	2	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	180	241	340	361	397	75	206	311	356	404	130	150
Average Queue (ft)	86	110	180	211	242	12	54	168	205	271	61	33
95th Queue (ft)	152	185	309	333	370	46	135	262	322	392	155	102
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)			0				0	1		38	0	
Queuing Penalty (veh)			1				0	0		35	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	192	241	222	130	206	236	215	172
Average Queue (ft)	96	147	126	54	97	143	105	74
95th Queue (ft)	169	215	199	124	167	206	188	134
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)		0	11	0	0	0	1	0
Queuing Penalty (veh)		0	8	0	0	0	2	1

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	365	335	174	248	211	102	153	208	225	66	254
Average Queue (ft)	101	220	196	110	137	101	34	65	62	71	19	133
95th Queue (ft)	187	322	293	181	218	184	73	125	153	166	51	220
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	5	28		4	5	0	0					0
Queuing Penalty (veh)	13	25		9	7	0	0					1

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	282	235	64
Average Queue (ft)	171	148	16
95th Queue (ft)	252	229	43
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	1		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	37	42	30	49	76	201	211	18	142	129	127	16
Average Queue (ft)	4	5	5	14	24	48	65	1	60	32	37	1
95th Queue (ft)	21	25	22	40	59	147	172	10	117	89	95	7
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	48	30	83	250	176	7	64	198	202	16
Average Queue (ft)	14	3	25	69	39	0	11	52	66	1
95th Queue (ft)	36	17	63	185	121	4	42	145	160	12
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			0	5				3		
Queuing Penalty (veh)			0	1				0		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	SB	SB	SB
Directions Served	R	T	T	T	T	R
Maximum Queue (ft)	31	205	216	199	215	22
Average Queue (ft)	7	35	45	31	33	1
95th Queue (ft)	28	134	158	137	144	11
Link Distance (ft)	391	502	502	649	649	649
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)		1				
Queuing Penalty (veh)		0				

Zone Summary

Zone wide Queuing Penalty: 462

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.2	0.0	0.0	0.0	2.6	1.2	2.3	1.7	0.3	0.2
Total Del/Veh (s)	60.3	19.4	16.8	56.4	29.7	35.0	182.7	138.0	108.6	111.0	54.6	13.6

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	40.7

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	27.3	5.3	4.2	27.3	9.4	7.5

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	74.5	46.7	16.7	79.1	43.5	24.6	75.4	42.0	21.6	84.2	38.9	20.0

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	46.5

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	64.1	18.0	18.1	56.8	6.5	2.7	21.6	13.1	14.2

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.3	0.1
Total Del/Veh (s)	9.4	2.7	13.7	7.5	38.1	21.5	12.4

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.4
Total Del/Veh (s)	15.2	5.3	11.3	5.2	26.1	27.3	14.6

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.2	0.2	2.8	0.3	2.8	2.6	0.4	2.8
Total Del/Veh (s)	69.3	28.9	28.6	144.1	175.1	254.9	56.8	31.1	12.5	107.4	38.2	14.6

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	80.7

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.8	0.2	0.3	2.7	0.4	2.7	0.0	0.0	0.0	2.4	0.5	0.3
Total Del/Veh (s)	82.8	41.3	31.1	300.7	49.3	18.1	68.4	43.4	9.6	107.8	64.2	8.4

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	62.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	41.8	47.7	9.7	39.0	25.4	4.9	54.2	13.3	2.5	64.1	14.8	3.3

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	18.5

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.5	0.4	0.0	0.0	0.0	0.2
Total Del/Veh (s)	29.3	9.0	7.7	6.7	47.0	10.2	44.0	12.9	1.2	12.5

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.9	5.5	4.2	1.3	4.8

Total Zone Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	1882.2

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	290	308	315	149	450	482	504	120	977	140	158
Average Queue (ft)	126	178	191	202	46	239	274	299	101	557	43	106
95th Queue (ft)	208	266	276	291	115	403	440	466	149	1324	131	187
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										2		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	3	6			0	24			46	53	1	12
Queuing Penalty (veh)	18	9			0	10			160	75	4	37

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	553	197
Average Queue (ft)	247	68
95th Queue (ft)	551	149
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	24	
Queuing Penalty (veh)	22	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB
Directions Served	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	65	216	255	304	62	370	378	396
Average Queue (ft)	11	66	81	98	9	75	84	98
95th Queue (ft)	42	180	215	257	42	263	283	306
Link Distance (ft)		615	615	615		559	559	559
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	80				150			
Storage Blk Time (%)		7				3		
Queuing Penalty (veh)		1				0		

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	151	348	492	513	559	255	179	344	420	449	487	300
Average Queue (ft)	82	110	284	322	343	169	91	130	268	287	301	184
95th Queue (ft)	137	243	437	470	510	339	159	270	394	415	447	361
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)			0	0	1							
Queuing Penalty (veh)			1	1	3							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	17		25	0	0	0	21		28	1
Queuing Penalty (veh)		0	30		55	1	0	1	44		82	3

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	232	290	388	375	188	306	383	385	380	211
Average Queue (ft)	126	166	225	214	80	164	229	216	210	87
95th Queue (ft)	216	282	365	342	157	300	372	375	330	170
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			0	0				0	0	
Queuing Penalty (veh)			0	0				2	0	
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	3	6	14			6	26	10		
Queuing Penalty (veh)	9	21	44			20	95	41		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	190	558	572	594	124	243	244	247	144	132	54
Average Queue (ft)	52	130	154	175	65	73	81	109	8	59	18
95th Queue (ft)	127	359	388	441	118	202	214	241	58	108	42
Link Distance (ft)		707	707	707		225	225	225		702	719
Upstream Blk Time (%)		0	0	0		1	1	2			
Queuing Penalty (veh)		0	1	1		9	9	12			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		5			5	4		5	0		
Queuing Penalty (veh)		2			29	3		1	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	243	243	274	266	307	180	368	300
Average Queue (ft)	97	116	136	134	126	14	199	136
95th Queue (ft)	237	257	225	218	223	104	322	250
Link Distance (ft)	225	225	730	730	730		573	573
Upstream Blk Time (%)	1	2						
Queuing Penalty (veh)	8	13						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					1	0		
Queuing Penalty (veh)					5	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	249	242	230	112	94	153	327	226	229	292	254	232
Average Queue (ft)	129	122	122	4	14	38	75	8	125	140	170	116
95th Queue (ft)	211	203	199	56	71	110	210	111	203	234	249	231
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							0	0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0						1	1	0
Queuing Penalty (veh)			1	0						3	2	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	222	235	300	314	313	207	265	1267	1281	1308	130	242
Average Queue (ft)	113	134	145	174	190	46	191	878	923	951	64	108
95th Queue (ft)	203	222	243	267	279	117	339	1361	1371	1390	163	219
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)	0	0	0			0	1	46		72	0	0
Queuing Penalty (veh)	0	0	0			0	3	54		44	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	267	248	253	130	244	450	414	190
Average Queue (ft)	169	155	150	70	166	225	186	111
95th Queue (ft)	251	225	230	148	268	428	381	197
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	0	0	17	0	16	2	3	3
Queuing Penalty (veh)	1	0	16	0	41	2	14	7

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	422	391	175	783	744	254	321	433	415	118	275
Average Queue (ft)	125	244	222	167	509	460	100	142	242	250	50	246
95th Queue (ft)	197	390	358	202	949	892	244	266	387	388	94	332
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	17	26		72	7	7	0	0	2			22
Queuing Penalty (veh)	55	37		250	13	14	0	0	3			116

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	834	788	127
Average Queue (ft)	486	441	31
95th Queue (ft)	879	812	88
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)	23		
Queuing Penalty (veh)	68		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	80	64	87	48	262	382	380	28	141	275	297	27
Average Queue (ft)	31	28	28	20	125	122	135	2	63	104	120	3
95th Queue (ft)	69	58	71	45	214	290	301	14	119	241	262	16
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)						0				0		
Queuing Penalty (veh)						0				0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	L	T	T	R
Maximum Queue (ft)	33	29	115	375	339	107	463	472	20
Average Queue (ft)	11	2	40	154	109	26	156	174	1
95th Queue (ft)	29	15	89	324	261	71	371	389	9
Link Distance (ft)	594	558		629	629		598	598	598
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)			100			100			
Storage Blk Time (%)			1	13		0	11		
Queuing Penalty (veh)			3	6		0	3		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	SB	SB	SB
Directions Served	R	T	T	T	T	R
Maximum Queue (ft)	58	388	384	86	96	11
Average Queue (ft)	14	55	59	13	13	0
95th Queue (ft)	44	225	229	52	56	5
Link Distance (ft)	391	502	502	649	649	649
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)						
Storage Blk Time (%)		2				
Queuing Penalty (veh)		0				

Zone Summary

Zone wide Queuing Penalty: 1643

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.1	0.0	0.0	0.0	2.0	0.4	1.9	2.0	0.2	0.1
Total Del/Veh (s)	53.7	12.8	8.8	50.6	17.5	19.6	40.4	35.1	10.3	44.2	31.6	11.3

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	18.9

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	19.3	3.9	3.4	19.6	7.2	5.8

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	66.3	35.5	9.2	73.0	38.2	25.1	56.2	37.6	18.0	75.5	33.7	13.6

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	40.1

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	57.7	16.2	14.4	47.4	7.8	3.4	16.5	11.7	13.9

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Del/Veh (s)	9.6	2.3	16.9	7.7	40.1	18.9	14.0

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.1	2.9	0.6
Total Del/Veh (s)	19.1	5.5	12.9	4.7	21.2	25.0	16.5

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.2	3.0	0.3	3.0	3.2	0.2	3.1
Total Del/Veh (s)	50.8	42.8	46.8	56.1	52.4	54.5	58.3	28.1	10.3	64.5	36.0	8.9

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	44.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.2	0.2	0.2	3.2	0.2	3.2	0.0	0.0	0.0	2.5	0.4	0.3
Total Del/Veh (s)	83.3	31.6	19.6	85.1	29.9	9.6	51.9	33.0	6.1	69.6	36.4	3.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	38.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	40.5	10.5	44.5	37.8	5.2	55.2	12.5	1.8	64.9	16.9	5.0	20.5

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.5	0.3	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	27.3	5.9	23.2	4.5	37.5	7.4	0.5	39.6	9.5	1.3	9.5

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.9	6.0	6.0	1.8	6.1

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1693.6

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	184	220	215	206	132	291	324	349	120	216	139	123
Average Queue (ft)	70	112	110	106	31	118	153	176	62	105	26	50
95th Queue (ft)	134	185	185	186	89	257	298	319	116	192	79	102
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	0	1			0	8			12	24	0	1
Queuing Penalty (veh)	0	1			0	2			22	29	0	1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	143	107
Average Queue (ft)	64	46
95th Queue (ft)	125	85
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB
Directions Served	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	61	169	186	216	64	262	280	295
Average Queue (ft)	10	49	49	57	20	43	51	60
95th Queue (ft)	38	144	147	170	51	168	191	206
Link Distance (ft)		615	615	615		559	559	559
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	80				150			
Storage Blk Time (%)	0	4				1		
Queuing Penalty (veh)	0	1				0		

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	177	213	296	329	359	255	194	237	313	332	372	299
Average Queue (ft)	93	98	173	201	199	85	96	117	179	196	201	155
95th Queue (ft)	155	165	273	303	318	217	171	196	280	299	315	288
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	2		5	0	0	1	7		10	6
Queuing Penalty (veh)		0	5		8	0	1	4	16		42	19

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	158	222	296	278	216	294	381	367	316	158
Average Queue (ft)	78	103	161	150	87	176	232	158	152	64
95th Queue (ft)	139	176	250	234	175	299	361	335	258	133
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)								1	0	
Queuing Penalty (veh)								3	0	
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	0	0	4			6	25	2		
Queuing Penalty (veh)	0	0	10			17	67	9		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	163	419	458	471	124	251	247	247	145	114	41
Average Queue (ft)	45	118	145	152	80	96	83	109	9	42	15
95th Queue (ft)	104	305	346	368	133	246	229	252	65	84	39
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						2	2	3			
Queuing Penalty (veh)						14	10	17			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		4			9	6		6	0		
Queuing Penalty (veh)		2			49	6		1	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	239	246	297	277	398	202	406	262
Average Queue (ft)	89	99	146	135	154	36	210	117
95th Queue (ft)	225	239	248	232	285	170	348	213
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	1	1			0			
Queuing Penalty (veh)	5	8			0			
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					3	0		
Queuing Penalty (veh)					12	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	279	268	310	224	129	176	252	123	231	424	258	245
Average Queue (ft)	142	141	146	25	21	37	82	4	113	157	207	172
95th Queue (ft)	234	232	248	140	75	112	189	85	191	327	281	275
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			2	0						0	4	1
Queuing Penalty (veh)			4	0						1	10	2

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	158	297	454	484	474	116	253	488	562	604	130	291
Average Queue (ft)	81	129	248	279	297	34	101	239	316	386	63	135
95th Queue (ft)	139	266	418	444	449	82	217	430	536	594	157	261
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	1							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	5			0	0	3		60	0	0
Queuing Penalty (veh)		0	14			0	0	4		44	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	303	354	276	120	223	214	171	128
Average Queue (ft)	191	102	85	51	113	112	68	50
95th Queue (ft)	292	231	193	106	192	177	140	91
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	3		3	0	1	0	0	
Queuing Penalty (veh)	4		3	0	1	0	0	

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	164	333	303	171	283	246	111	221	332	336	87	275
Average Queue (ft)	124	150	128	108	108	69	40	89	193	208	36	210
95th Queue (ft)	185	295	254	178	226	179	79	171	311	322	73	318
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	22	4		12	1	0			0			10
Queuing Penalty (veh)	35	6		17	1	0			0			47

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	557	522	50
Average Queue (ft)	276	234	19
95th Queue (ft)	495	438	40
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)	5		
Queuing Penalty (veh)	16		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	82	95	65	56	308	301	321	30	280	351	355	46
Average Queue (ft)	24	42	16	18	163	101	120	4	87	142	144	8
95th Queue (ft)	61	79	48	46	272	241	262	20	178	326	328	31
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)					0	0			0	2		
Queuing Penalty (veh)					1	0			0	2		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	41	52	119	286	224	17	103	314	312	30
Average Queue (ft)	13	8	42	98	69	1	24	94	109	4
95th Queue (ft)	34	34	92	227	172	8	67	234	247	20
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			0	8			0	7		
Queuing Penalty (veh)			2	4			0	2		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	SB	SB	SB
Directions Served	R	T	T	T	T	R
Maximum Queue (ft)	95	320	304	257	239	27
Average Queue (ft)	35	72	77	42	39	2
95th Queue (ft)	73	226	225	160	152	13
Link Distance (ft)	391	502	502	649	649	649
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)		3				
Queuing Penalty (veh)		0				

Zone Summary

Zone wide Queuing Penalty: 602

Appendix 5 Near-Term Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1854	34	25	1495	97	63	267	32	121	189	167
Future Volume (veh/h)	166	1854	34	25	1495	97	63	267	32	121	189	167
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	182	2037	37	27	1643	107	69	293	35	133	208	184
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	208	2897	53	50	2322	151	254	535	437	222	535	445
Arrive On Green	0.12	0.57	0.57	0.03	0.48	0.48	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5123	93	1697	4859	316	990	1870	1527	1058	1870	1555
Grp Volume(v), veh/h	182	1342	732	27	1141	609	69	293	35	133	208	184
Grp Sat Flow(s),veh/h/ln	1781	1689	1839	1697	1689	1798	990	1870	1527	1058	1870	1555
Q Serve(g_s), s	12.3	35.0	35.1	1.9	32.5	32.6	7.3	16.2	2.0	14.8	10.9	11.7
Cycle Q Clear(g_c), s	12.3	35.0	35.1	1.9	32.5	32.6	18.2	16.2	2.0	31.0	10.9	11.7
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1910	1040	50	1614	859	254	535	437	222	535	445
V/C Ratio(X)	0.87	0.70	0.70	0.54	0.71	0.71	0.27	0.55	0.08	0.60	0.39	0.41
Avail Cap(c_a), veh/h	234	1910	1040	139	1614	859	274	573	468	243	573	477
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	19.1	19.1	58.4	25.1	25.1	42.3	36.9	31.8	50.0	35.0	35.3
Incr Delay (d2), s/veh	24.7	2.2	4.0	3.3	2.6	4.9	1.7	2.6	0.2	7.8	1.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	13.3	15.0	0.9	13.0	14.4	1.9	7.8	0.8	4.4	5.2	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	21.3	23.1	61.7	27.8	30.0	44.0	39.4	32.0	57.7	36.3	37.0
LnGrp LOS	E	C	C	E	C	C	D	D	C	E	D	D
Approach Vol, veh/h		2256			1777			397			525	
Approach Delay, s/veh		26.4			29.0			39.6			42.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.5	18.3	63.2		40.5	7.6	73.9				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		37.4	16.0	54.1		37.4	10.0	60.1				
Max Q Clear Time (g_c+I1), s		33.0	14.3	34.6		20.2	3.9	37.1				
Green Ext Time (p_c), s		1.9	0.0	16.7		4.2	0.0	21.0				

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	2018	4	0	1629	42	1	0	12	0	0	26
Future Vol, veh/h	55	2018	4	0	1629	42	1	0	12	0	0	26
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	3	25	0	3	0	0	0	0	0	0	33
Mvmt Flow	60	2218	4	0	1790	46	1	0	13	0	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1836	0	0	2224	0	0	3058	4178	1113	2820	4157	918
Stage 1	-	-	-	-	-	-	2342	2342	-	1813	1813	-
Stage 2	-	-	-	-	-	-	716	1836	-	1007	2344	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.76
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.23
Pot Cap-1 Maneuver	155	-	-	99	-	-	14	2	177	20	2	192
Stage 1	-	-	-	-	-	-	22	71	-	54	131	-
Stage 2	-	-	-	-	-	-	356	128	-	236	70	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	155	-	-	99	-	-	8	1	177	13	1	192
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	1	-	13	1	-
Stage 1	-	-	-	-	-	-	13	43	-	33	131	-
Stage 2	-	-	-	-	-	-	303	128	-	134	43	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	72.7	27
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	67	155	-	-	99	-	-	192
HCM Lane V/C Ratio	0.213	0.39	-	-	-	-	-	0.149
HCM Control Delay (s)	72.7	42.3	-	-	0	-	-	27
HCM Lane LOS	F	E	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.7	1.7	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	1630	239	138	1286	178	246	368	89	251	505	139
Future Volume (veh/h)	162	1630	239	138	1286	178	246	368	89	251	505	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1826	1856	1826	1856	1796	1826	1841	1856	1841
Adj Flow Rate, veh/h	186	1874	275	159	1478	205	283	423	102	289	580	160
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	2	3	5	3	5	3	7	5	4	3	4
Cap, veh/h	281	2079	639	275	2060	625	352	927	288	360	973	287
Arrive On Green	0.08	0.41	0.41	0.08	0.41	0.41	0.10	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	3428	5106	1570	3374	5066	1538	3428	4904	1525	3401	5066	1492
Grp Volume(v), veh/h	186	1874	275	159	1478	205	283	423	102	289	580	160
Grp Sat Flow(s),veh/h/ln	1714	1702	1570	1687	1689	1538	1714	1635	1525	1700	1689	1492
Q Serve(g_s), s	5.1	33.3	12.2	4.4	23.7	8.8	7.8	7.4	5.6	8.1	10.1	9.4
Cycle Q Clear(g_c), s	5.1	33.3	12.2	4.4	23.7	8.8	7.8	7.4	5.6	8.1	10.1	9.4
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	281	2079	639	275	2060	625	352	927	288	360	973	287
V/C Ratio(X)	0.66	0.90	0.43	0.58	0.72	0.33	0.80	0.46	0.35	0.80	0.60	0.56
Avail Cap(c_a), veh/h	424	2107	648	418	2090	635	424	1265	393	421	1307	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	43.2	26.9	20.6	42.9	24.1	19.7	42.5	34.9	34.2	42.4	35.7	35.4
Incr Delay (d2), s/veh	2.7	5.8	0.5	1.9	1.2	0.3	7.5	0.4	0.7	9.4	0.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	13.6	4.3	1.9	9.0	3.0	3.6	2.9	2.1	3.7	4.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	32.7	21.1	44.8	25.3	20.0	50.0	35.2	34.9	51.8	36.3	37.1
LnGrp LOS	D	C	C	D	C	B	D	D	C	D	D	D
Approach Vol, veh/h		2335			1842			808			1029	
Approach Delay, s/veh		32.4			26.4			40.4			40.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	23.5	13.5	44.3	15.8	23.2	13.5	44.4
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	12.0	25.0	12.0	40.0	12.0	25.0	12.0	40.0
Max Q Clear Time (g_c+I1), s	9.8	12.1	7.1	25.7	10.1	9.4	6.4	35.3
Green Ext Time (p_c), s	0.1	3.5	0.2	8.9	0.2	2.7	0.2	4.1

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	34.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1917	21	62	1549	39	0	0	44	20	0	53
Future Vol, veh/h	32	1917	21	62	1549	39	0	0	44	20	0	53
Conflicting Peds, #/hr	4	0	2	2	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
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	3	10	2	3	0	0	0	0	0	0	0
Mvmt Flow	36	2130	23	69	1721	43	0	0	49	22	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1768	0	0	2155	0	0	-	-	1079	2787	4090	865
Stage 1	-	-	-	-	-	-	-	-	-	1863	1863	-
Stage 2	-	-	-	-	-	-	-	-	-	924	2227	-
Critical Hdwy	5.3	-	-	5.34	-	-	-	-	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.12	-	-	-	-	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	167	-	-	104	-	-	0	0	186	~ 21	3	258
Stage 1	-	-	-	-	-	-	0	0	-	50	124	-
Stage 2	-	-	-	-	-	-	0	0	-	266	81	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	166	-	-	104	-	-	-	-	186	~ 6	1	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	~ 6	1	-
Stage 1	-	-	-	-	-	-	-	-	-	39	42	-
Stage 2	-	-	-	-	-	-	-	-	-	154	63	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	3.4	31.1	$ 1664.7
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	186	166	-	-	104	-	-	21
HCM Lane V/C Ratio	0.263	0.214	-	-	0.662	-	-	3.862
HCM Control Delay (s)	31.1	32.5	-	-	90.5	-	-	$ 1664.7
HCM Lane LOS	D	D	-	-	F	-	-	F
HCM 95th %tile Q(veh)	1	0.8	-	-	3.3	-	-	10.4

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)	0	1242	738	0	1282	484	0	0	0	280	0	367
Future Volume (veh/h)	0	1242	738	0	1282	484	0	0	0	280	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1380	0	0	1424	0				311	0	408
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2158		0	3076					503	0	444
Arrive On Green	0.00	0.61	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1380	0	0	1424	0				311	0	408
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	32.4	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Cycle Q Clear(g_c), s	0.0	32.4	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2158		0	3076					503	0	444
V/C Ratio(X)	0.00	0.64		0.00	0.46					0.62	0.00	0.92
Avail Cap(c_a), veh/h	0	2158		0	3076					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.1	0.0	0.0	0.0	0.0				40.7	0.0	45.4
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	0.4	0.0				1.2	0.0	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.6	0.0	0.0	0.1	0.0				8.9	0.0	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.5	0.0	0.0	0.4	0.0				42.0	0.0	63.6
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1380	A		1424	A					719	
Approach Delay, s/veh		17.5			0.4						54.3	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	86.6	43.4	86.6
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	71.0	45.0	71.0
Max Q Clear Time (g_c+I1), s	34.4	34.4	2.0
Green Ext Time (p_c), s	20.9	2.0	27.6

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1221	301	0	1230	329	536	0	522	0	0	0
Future Volume (veh/h)	0	1221	301	0	1230	329	536	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1388	0	0	1398	0	583	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2832		0	2765		1159	0	928			
Arrive On Green	0.00	1.00	0.00	0.00	0.18	0.00	0.34	0.00	0.34			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1388	0	0	1398	0	583	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	32.8	0.0	17.5	0.0	23.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	32.8	0.0	17.5	0.0	23.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2832		0	2765		1159	0	928			
V/C Ratio(X)	0.00	0.49		0.00	0.51		0.50	0.00	0.64			
Avail Cap(c_a), veh/h	0	2832		0	2765		1587	0	1271			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.73	0.00	0.00	0.72	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	37.1	0.0	34.5	0.0	36.5			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	1.5	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	14.7	0.0	7.6	0.0	8.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	37.5	0.0	36.0	0.0	39.7			
LnGrp LOS	A	A		A	D		D	A	D			
Approach Vol, veh/h		1388	A		1398	A		1176				
Approach Delay, s/veh		0.4			37.5			37.9				
Approach LOS		A			D			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		79.1				79.1		50.9				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		56.0				56.0		59.7				
Max Q Clear Time (g_c+I1), s		2.0				34.8		25.6				
Green Ext Time (p_c), s		29.1				15.7		18.0				

Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1417	52	53	1115	90	138	390	73	110	333	306
Future Volume (veh/h)	274	1417	52	53	1115	90	138	390	73	110	333	306
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	326	1687	62	63	1327	107	164	464	87	131	396	364
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	388	2438	90	141	2048	641	215	824	358	157	918	397
Arrive On Green	0.04	0.16	0.16	0.04	0.41	0.41	0.07	0.23	0.23	0.09	0.26	0.26
Sat Flow, veh/h	3428	5053	186	3401	4985	1561	3291	3526	1531	1739	3554	1536
Grp Volume(v), veh/h	326	1136	613	63	1327	107	164	464	87	131	396	364
Grp Sat Flow(s),veh/h/ln	1714	1702	1834	1700	1662	1561	1646	1763	1531	1739	1777	1536
Q Serve(g_s), s	12.3	41.0	41.0	2.4	27.8	5.6	6.4	15.1	6.0	9.6	12.1	29.9
Cycle Q Clear(g_c), s	12.3	41.0	41.0	2.4	27.8	5.6	6.4	15.1	6.0	9.6	12.1	29.9
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	1643	885	141	2048	641	215	824	358	157	918	397
V/C Ratio(X)	0.84	0.69	0.69	0.45	0.65	0.17	0.76	0.56	0.24	0.84	0.43	0.92
Avail Cap(c_a), veh/h	607	1643	885	235	2048	641	354	925	402	227	1014	438
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	45.5	45.5	60.9	30.7	24.2	59.8	44.0	40.5	58.2	40.2	46.8
Incr Delay (d2), s/veh	2.9	2.0	3.7	0.8	1.6	0.6	2.1	1.4	0.8	11.2	0.1	21.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	19.1	21.1	1.0	11.1	2.2	2.7	6.8	2.3	4.7	5.2	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	47.5	49.2	61.7	32.3	24.8	61.9	45.4	41.3	69.5	40.3	68.6
LnGrp LOS	E	D	D	E	C	C	E	D	D	E	D	E
Approach Vol, veh/h		2075			1497			715			891	
Approach Delay, s/veh		50.7			33.0			48.7			56.2	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	38.5	19.7	58.3	16.7	35.3	10.4	67.6
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	14.0	37.1	23.0	36.1	17.0	34.1	9.0	50.1
Max Q Clear Time (g_c+I1), s	8.4	31.9	14.3	29.8	11.6	17.1	4.4	43.0
Green Ext Time (p_c), s	0.1	1.2	0.4	5.4	0.1	5.7	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	500	99	161	690	63
Future Volume (veh/h)	87	552	113	131	395	131	79	500	99	161	690	63
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		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1826	1885	1841	1841
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	602	119	194	831	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	5	1	4	4
Cap, veh/h	129	876	179	183	1167	499	118	1033	201	221	1418	129
Arrive On Green	0.07	0.30	0.30	0.10	0.33	0.33	0.07	0.25	0.25	0.12	0.30	0.30
Sat Flow, veh/h	1781	2931	599	1795	3554	1519	1767	4186	814	1795	4680	426
Grp Volume(v), veh/h	105	403	398	158	476	158	95	476	245	194	594	313
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1795	1777	1519	1767	1662	1677	1795	1675	1756
Q Serve(g_s), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	16.4	16.8	13.8	19.5	19.7
Cycle Q Clear(g_c), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	16.4	16.8	13.8	19.5	19.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.49	1.00		0.24
Lane Grp Cap(c), veh/h	129	531	524	183	1167	499	118	820	414	221	1015	532
V/C Ratio(X)	0.81	0.76	0.76	0.86	0.41	0.32	0.81	0.58	0.59	0.88	0.58	0.59
Avail Cap(c_a), veh/h	274	589	581	193	1167	499	209	820	414	351	1015	532
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	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	41.3	41.3	57.5	33.8	32.7	59.9	43.0	43.2	56.1	38.4	38.4
Incr Delay (d2), s/veh	4.6	9.7	9.9	28.4	0.5	0.8	4.8	3.0	6.1	9.1	2.5	4.7
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	3.5	12.9	12.8	6.5	5.8	3.8	3.2	7.0	7.5	6.7	8.2	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	51.1	51.3	85.9	34.3	33.5	64.7	46.0	49.3	65.1	40.8	43.1
LnGrp LOS	E	D	D	F	C	C	E	D	D	E	D	D
Approach Vol, veh/h		906			792			816			1101	
Approach Delay, s/veh		52.7			44.5			49.2			45.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	44.3	13.4	47.6	20.6	37.0	17.2	43.8
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.4	* 39	20.0	37.1	25.4	29.1	14.0	43.1
Max Q Clear Time (g_c+I1), s	18.9	21.7	9.6	15.5	15.8	18.8	13.3	28.8
Green Ext Time (p_c), s	0.0	7.4	0.1	6.6	0.2	5.2	0.0	10.1

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	3	27	1	25	23	648	23	78	851	6
Future Volume (veh/h)	5	2	3	27	1	25	23	648	23	78	851	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1159	1159	1900	1900	1900	1900	1811	1811	1900	1841	1841
Adj Flow Rate, veh/h	6	2	3	31	1	29	27	753	27	91	990	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	50	50	0	0	0	0	6	6	0	4	4
Cap, veh/h	110	24	36	131	3	89	69	3754	134	115	4074	29
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.77	0.77	0.06	0.79	0.79
Sat Flow, veh/h	1401	418	628	1434	54	1564	1810	4900	175	1810	5147	36
Grp Volume(v), veh/h	6	0	5	31	0	30	27	506	274	91	644	353
Grp Sat Flow(s),veh/h/ln	1401	0	1046	1434	0	1618	1810	1648	1779	1810	1675	1833
Q Serve(g_s), s	0.5	0.0	0.6	2.7	0.0	2.3	1.9	5.5	5.5	6.4	6.5	6.5
Cycle Q Clear(g_c), s	2.9	0.0	0.6	3.3	0.0	2.3	1.9	5.5	5.5	6.4	6.5	6.5
Prop In Lane	1.00		0.60	1.00		0.97	1.00		0.10	1.00		0.02
Lane Grp Cap(c), veh/h	110	0	60	131	0	92	69	2526	1363	115	2652	1451
V/C Ratio(X)	0.05	0.00	0.08	0.24	0.00	0.33	0.39	0.20	0.20	0.79	0.24	0.24
Avail Cap(c_a), veh/h	438	0	304	466	0	471	312	2526	1363	340	2652	1451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	60.3	0.0	58.1	59.7	0.0	58.9	61.0	4.2	4.2	60.0	3.5	3.5
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.9	0.0	2.0	3.5	0.2	0.3	9.1	0.2	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	0.2	0.0	0.2	1.0	0.0	1.0	0.9	1.6	1.8	3.2	1.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	0.0	58.7	60.6	0.0	60.9	64.6	4.4	4.5	69.1	3.7	3.8
LnGrp LOS	E	A	E	E	A	E	E	A	A	E	A	A
Approach Vol, veh/h		11			61			807			1088	
Approach Delay, s/veh		59.7			60.7			6.4			9.2	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	107.8		12.6	12.9	104.5		12.6
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	22.4	55.1		* 38	24.4	53.1		* 38
Max Q Clear Time (g_c+I1), s	3.9	8.5		5.3	8.4	7.5		4.9
Green Ext Time (p_c), s	0.0	16.8		0.2	0.2	12.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	18	1	0	3	26	717	2	10	837	2
Future Vol, veh/h	7	0	18	1	0	3	26	717	2	10	837	2
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	4	4	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	8	6	0	0	4	50
Mvmt Flow	9	0	22	1	0	4	32	874	2	12	1021	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1465	1995	518	1376	1995	442	1028	0	0	880	0	0
Stage 1	1051	1051	-	943	943	-	-	-	-	-	-	-
Stage 2	414	944	-	433	1052	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.46	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.18	-	-	3.1	-	-
Pot Cap-1 Maneuver	138	61	434	156	61	486	362	-	-	453	-	-
Stage 1	186	306	-	221	344	-	-	-	-	-	-	-
Stage 2	541	344	-	527	306	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	124	54	432	135	54	484	360	-	-	451	-	-
Mov Cap-2 Maneuver	124	54	-	135	54	-	-	-	-	-	-	-
Stage 1	169	296	-	201	312	-	-	-	-	-	-	-
Stage 2	489	312	-	486	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21	17.5	0.6	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	360	-	-	255	294	451	-	-
HCM Lane V/C Ratio	0.088	-	-	0.12	0.017	0.027	-	-
HCM Control Delay (s)	16	-	-	21	17.5	13.2	-	-
HCM Lane LOS	C	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	66	24	683	830	50
Future Vol, veh/h	11	66	24	683	830	50
Conflicting Peds, #/hr	0	1	4	0	0	4
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	4	0
Mvmt Flow	13	75	27	776	943	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1340	505	1004	0	-	0
Stage 1	976	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	-	-
Pot Cap-1 Maneuver	212	443	396	-	-	-
Stage 1	254	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	441	394	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	223	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	394	-	368	-	-
HCM Lane V/C Ratio	0.069	-	0.238	-	-
HCM Control Delay (s)	14.8	-	17.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1901	70	43	1823	127	103	313	37	91	304	172
Future Volume (veh/h)	164	1901	70	43	1823	127	103	313	37	91	304	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	174	2022	74	46	1939	135	110	333	39	97	323	183
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	202	2922	107	68	2459	170	167	519	400	178	515	425
Arrive On Green	0.11	0.57	0.57	0.04	0.50	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	5092	186	1781	4913	341	899	1900	1464	1017	1885	1555
Grp Volume(v), veh/h	174	1361	735	46	1352	722	110	333	39	97	323	183
Grp Sat Flow(s),veh/h/ln	1810	1716	1847	1781	1716	1823	899	1900	1464	1017	1885	1555
Q Serve(g_s), s	11.9	35.3	35.5	3.2	40.9	41.3	15.4	19.5	2.5	11.7	18.9	12.2
Cycle Q Clear(g_c), s	11.9	35.3	35.5	3.2	40.9	41.3	34.3	19.5	2.5	31.2	18.9	12.2
Prop In Lane	1.00		0.10	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1969	1060	68	1717	912	167	519	400	178	515	425
V/C Ratio(X)	0.86	0.69	0.69	0.68	0.79	0.79	0.66	0.64	0.10	0.55	0.63	0.43
Avail Cap(c_a), veh/h	359	1969	1060	184	1717	912	167	519	400	178	515	425
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	55.0	19.0	19.0	59.8	25.9	26.0	55.2	40.4	34.2	54.1	40.2	37.7
Incr Delay (d2), s/veh	4.2	2.0	3.7	4.3	3.7	7.0	14.1	4.4	0.3	7.8	4.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	13.6	15.3	1.5	16.7	18.7	4.1	9.7	0.9	3.4	9.4	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	21.0	22.8	64.2	29.7	33.0	69.3	44.8	34.5	61.9	44.3	39.7
LnGrp LOS	E	C	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		2270			2120			482			603	
Approach Delay, s/veh		24.5			31.6			49.6			45.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.0	18.0	68.0		40.0	8.8	77.2				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		34.4	25.0	52.1		34.4	13.0	64.1				
Max Q Clear Time (g_c+I1), s		33.2	13.9	43.3		36.3	5.2	37.5				
Green Ext Time (p_c), s		0.7	0.2	8.4		0.0	0.0	24.1				

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

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	1895	12	10	2007	66	0	0	8	0	0	80
Future Vol, veh/h	85	1895	12	10	2007	66	0	0	8	0	0	80
Conflicting Peds, #/hr	1	0	5	5	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	8	0	1	0	0	0	0	0	0	20
Mvmt Flow	92	2060	13	11	2182	72	0	0	9	0	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2255	0	0	2078	0	0	3151	4533	1042	3249	4503	1128
Stage 1	-	-	-	-	-	-	2256	2256	-	2241	2241	-
Stage 2	-	-	-	-	-	-	895	2277	-	1008	2262	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.5
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.1
Pot Cap-1 Maneuver	95	-	-	117	-	-	12	1	197	10	1	149
Stage 1	-	-	-	-	-	-	26	78	-	26	80	-
Stage 2	-	-	-	-	-	-	277	76	-	236	78	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	95	-	-	116	-	-	1	0	196	1	0	149
Mov Cap-2 Maneuver	-	-	-	-	-	-	1	0	-	1	0	-
Stage 1	-	-	-	-	-	-	1	2	-	1	72	-
Stage 2	-	-	-	-	-	-	104	69	-	7	2	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.1	0.2	24.2	58.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	196	95	-	-	116	-	-	149
HCM Lane V/C Ratio	0.044	0.973	-	-	0.094	-	-	0.584
HCM Control Delay (s)	24.2	165.6	-	-	39.2	-	-	58.4
HCM Lane LOS	C	F	-	-	E	-	-	F
HCM 95th %tile Q(veh)	0.1	5.7	-	-	0.3	-	-	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	1462	222	227	1497	313	334	735	228	516	817	252
Future Volume (veh/h)	219	1462	222	227	1497	313	334	735	228	516	817	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1885	1900	1870	1885	1885	1870	1870	1885	1870	1885
Adj Flow Rate, veh/h	246	1643	249	255	1682	352	375	826	256	580	918	283
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
Percent Heavy Veh, %	0	2	1	0	2	1	1	2	2	1	2	1
Cap, veh/h	313	1767	551	322	1781	549	430	1081	326	653	1407	431
Arrive On Green	0.09	0.35	0.35	0.09	0.35	0.35	0.12	0.21	0.21	0.19	0.28	0.28
Sat Flow, veh/h	3510	5106	1593	3510	5106	1573	3483	5106	1538	3483	5106	1562
Grp Volume(v), veh/h	246	1643	249	255	1682	352	375	826	256	580	918	283
Grp Sat Flow(s),veh/h/ln	1755	1702	1593	1755	1702	1573	1742	1702	1538	1742	1702	1562
Q Serve(g_s), s	8.8	40.0	15.6	9.2	41.2	24.2	13.6	19.6	20.3	20.9	20.5	20.7
Cycle Q Clear(g_c), s	8.8	40.0	15.6	9.2	41.2	24.2	13.6	19.6	20.3	20.9	20.5	20.7
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	313	1767	551	322	1781	549	430	1081	326	653	1407	431
V/C Ratio(X)	0.79	0.93	0.45	0.79	0.94	0.64	0.87	0.76	0.79	0.89	0.65	0.66
Avail Cap(c_a), veh/h	664	1786	557	664	1786	550	524	1192	359	794	1588	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	40.6	32.7	57.3	40.8	35.2	55.5	47.8	48.1	51.1	41.2	41.3
Incr Delay (d2), s/veh	4.4	9.1	0.6	4.4	10.9	2.5	11.3	2.7	10.1	10.4	0.8	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	4.1	17.7	6.0	4.2	18.5	9.4	6.6	8.4	8.6	9.9	8.5	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	49.8	33.2	61.7	51.7	37.7	66.8	50.5	58.2	61.5	42.0	44.0
LnGrp LOS	E	D	C	E	D	D	E	D	E	E	D	D
Approach Vol, veh/h		2138			2289			1457			1781	
Approach Delay, s/veh		49.2			50.6			56.1			48.7	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.4	17.1	49.9	29.8	32.2	17.4	49.5
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	15.6	22.7	10.8	43.2	22.9	22.3	11.2	42.0
Green Ext Time (p_c), s	0.3	6.7	0.7	1.6	1.2	3.8	0.7	2.6

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	98	2085	22	79	1944	67	0	0	123	39	0	93
Future Vol, veh/h	98	2085	22	79	1944	67	0	0	123	39	0	93
Conflicting Peds, #/hr	13	0	5	5	0	13	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
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	2	5	0	1	0	0	0	1	0	0	0
Mvmt Flow	109	2317	24	88	2160	74	0	0	137	43	0	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2247	0	0	2346	0	0	-	-	1176	3494	4913	1093
Stage 1	-	-	-	-	-	-	-	-	-	2349	2349	-
Stage 2	-	-	-	-	-	-	-	-	-	1145	2564	-
Critical Hdwy	5.3	-	-	5.3	-	-	-	-	7.12	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	-	-	3.91	3.8	4	3.9
Pot Cap-1 Maneuver	~ 96	-	-	~ 86	-	-	0	0	159	~ 7	1	182
Stage 1	-	-	-	-	-	-	0	0	-	~ 22	70	-
Stage 2	-	-	-	-	-	-	0	0	-	194	54	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 95	-	-	~ 86	-	-	-	-	158	-	0	180
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	-	-	~ 22	0	-
Stage 2	-	-	-	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	7.2	96.4	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	158	~ 95	-	-	~ 86	-	-	-
HCM Lane V/C Ratio	0.865	1.146	-	-	1.021	-	-	-
HCM Control Delay (s)	96.4	219.4	-	-	190.2	-	-	-
HCM Lane LOS	F	F	-	-	F	-	-	-
HCM 95th %tile Q(veh)	5.9	7.3	-	-	5.8	-	-	-

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)	0	1438	809	0	1723	597	0	0	0	342	0	367
Future Volume (veh/h)	0	1438	809	0	1723	597	0	0	0	342	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1546	0	0	1853	0				380	0	395
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2216		0	3184					491	0	434
Arrive On Green	0.00	0.62	0.00	0.00	1.00	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1546	0	0	1853	0				380	0	395
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	37.7	0.0	0.0	0.0	0.0				25.3	0.0	31.3
Cycle Q Clear(g_c), s	0.0	37.7	0.0	0.0	0.0	0.0				25.3	0.0	31.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2216		0	3184					491	0	434
V/C Ratio(X)	0.00	0.70		0.00	0.58					0.77	0.00	0.91
Avail Cap(c_a), veh/h	0	2216		0	3184					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	0.0	0.0	0.0	0.0				43.5	0.0	45.7
Incr Delay (d2), s/veh	0.0	1.8	0.0	0.0	0.6	0.0				4.7	0.0	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.8	0.0	0.0	0.2	0.0				11.9	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.5	0.0	0.0	0.6	0.0				48.2	0.0	62.4
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1546	A		1853	A					775	
Approach Delay, s/veh		18.5			0.6						55.4	
Approach LOS		B			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		87.4		42.6		87.4						
Change Period (Y+Rc), s		7.0		7.0		7.0						
Max Green Setting (Gmax), s		71.0		45.0		71.0						
Max Q Clear Time (g_c+I1), s		39.7		33.3		2.0						
Green Ext Time (p_c), s		21.4		2.2		41.9						

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1441	340	0	1755	505	565	0	477	0	0	0
Future Volume (veh/h)	0	1441	340	0	1755	505	565	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1549	0	0	1887	0	614	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	3165		0	3165		958	0	786			
Arrive On Green	0.00	1.00	0.00	0.00	0.82	0.00	0.28	0.00	0.28			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1549	0	0	1887	0	614	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	16.9	0.0	20.3	0.0	20.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	16.9	0.0	20.3	0.0	20.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3165		0	3165		958	0	786			
V/C Ratio(X)	0.00	0.49		0.00	0.60		0.64	0.00	0.65			
Avail Cap(c_a), veh/h	0	3165		0	3165		1595	0	1308			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.63	0.00	0.00	0.35	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.1	0.0	41.3	0.0	41.5			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	1.7	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	3.9	0.0	8.9	0.0	7.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	6.4	0.0	43.0	0.0	43.6			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1549	A		1887	A		1127				
Approach Delay, s/veh		0.3			6.4			43.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		87.0				87.0		43.0				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				18.9		22.8				
Green Ext Time (p_c), s		33.5				30.7		13.3				

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	1470	133	117	1561	62	309	547	96	164	532	390
Future Volume (veh/h)	315	1470	133	117	1561	62	309	547	96	164	532	390
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	342	1598	145	127	1697	67	336	595	104	178	578	424
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	397	2021	183	178	1841	561	393	936	407	204	940	416
Arrive On Green	0.15	0.56	0.56	0.05	0.36	0.36	0.11	0.26	0.26	0.11	0.26	0.26
Sat Flow, veh/h	3456	4793	434	3510	5147	1568	3483	3582	1558	1795	3582	1586
Grp Volume(v), veh/h	342	1143	600	127	1697	67	336	595	104	178	578	424
Grp Sat Flow(s),veh/h/ln	1728	1716	1796	1755	1716	1568	1742	1791	1558	1795	1791	1586
Q Serve(g_s), s	12.6	34.2	34.3	4.6	41.1	3.7	12.3	19.1	6.9	12.7	18.5	34.1
Cycle Q Clear(g_c), s	12.6	34.2	34.3	4.6	41.1	3.7	12.3	19.1	6.9	12.7	18.5	34.1
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	397	1447	758	178	1841	561	393	936	407	204	940	416
V/C Ratio(X)	0.86	0.79	0.79	0.71	0.92	0.12	0.85	0.64	0.26	0.87	0.62	1.02
Avail Cap(c_a), veh/h	558	1447	758	243	1841	561	536	940	409	276	940	416
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	54.1	24.0	24.0	60.8	40.0	28.0	56.6	42.5	38.0	56.7	42.2	48.0
Incr Delay (d2), s/veh	6.2	3.8	7.0	3.0	9.1	0.4	7.6	2.1	0.8	16.2	0.9	49.0
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	5.5	12.5	13.8	2.1	18.3	1.5	5.8	8.8	0.1	6.6	8.1	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	27.8	31.1	63.7	49.2	28.4	64.2	44.6	38.8	72.9	43.1	97.0
LnGrp LOS	E	C	C	E	D	C	E	D	D	E	D	F
Approach Vol, veh/h		2085			1891			1035			1180	
Approach Delay, s/veh		34.1			49.4			50.4			66.9	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	39.0	19.9	51.4	19.8	38.9	11.6	59.7
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	20.0	34.1	21.0	35.1	20.0	34.1	9.0	47.1
Max Q Clear Time (g_c+I1), s	14.3	36.1	14.6	43.1	14.7	21.1	6.6	36.3
Green Ext Time (p_c), s	0.4	0.0	0.4	0.0	0.1	6.1	0.0	9.7

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	633	142	176	696	209	157	843	139	296	1134	123
Future Volume (veh/h)	143	633	142	176	696	209	157	843	139	296	1134	123
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	157	696	156	193	765	230	173	926	153	325	1246	135
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, %	1	1	1	1	1	1	1	2	2	0	2	2
Cap, veh/h	181	742	166	216	989	432	197	1316	216	349	1781	193
Arrive On Green	0.10	0.26	0.26	0.12	0.28	0.28	0.11	0.30	0.30	0.19	0.38	0.38
Sat Flow, veh/h	1795	2890	647	1795	3582	1565	1795	4401	724	1810	4667	506
Grp Volume(v), veh/h	157	431	421	193	765	230	173	715	364	325	909	472
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1795	1791	1565	1795	1702	1721	1810	1702	1769
Q Serve(g_s), s	12.1	33.0	33.0	14.8	27.5	17.5	13.3	26.1	26.3	24.7	31.5	31.5
Cycle Q Clear(g_c), s	12.1	33.0	33.0	14.8	27.5	17.5	13.3	26.1	26.3	24.7	31.5	31.5
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.42	1.00		0.29
Lane Grp Cap(c), veh/h	181	460	448	216	989	432	197	1018	515	349	1299	675
V/C Ratio(X)	0.87	0.94	0.94	0.89	0.77	0.53	0.88	0.70	0.71	0.93	0.70	0.70
Avail Cap(c_a), veh/h	231	462	450	218	989	432	287	1018	515	406	1299	675
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	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	50.9	50.9	60.7	46.6	43.0	61.4	43.6	43.6	55.6	36.5	36.5
Incr Delay (d2), s/veh	20.1	29.0	29.7	32.9	4.5	2.3	13.3	3.9	7.6	24.8	3.2	5.9
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	6.5	18.2	17.9	8.6	12.7	7.0	6.7	11.4	12.1	13.5	13.4	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	79.9	80.6	93.6	51.1	45.3	74.7	47.4	51.2	80.4	39.7	42.5
LnGrp LOS	F	E	F	F	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1009			1188			1252			1706	
Approach Delay, s/veh		80.6			56.9			52.3			48.2	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	58.3	18.1	43.6	31.6	46.8	20.8	40.8
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	22.4	* 46	18.0	35.1	31.4	37.1	17.0	36.1
Max Q Clear Time (g_c+I1), s	15.3	33.5	14.1	29.5	26.7	28.3	16.8	35.0
Green Ext Time (p_c), s	0.1	8.8	0.1	3.8	0.2	6.3	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1	55	78	1	51	162	1053	49	108	1331	13
Future Volume (veh/h)	36	1	55	78	1	51	162	1053	49	108	1331	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1900	1900	1885	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	40	1	60	86	1	56	178	1157	54	119	1463	14
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, %	0	0	0	3	0	0	1	2	2	1	1	1
Cap, veh/h	187	3	208	180	4	208	206	3418	159	142	3409	33
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.11	0.68	0.68	0.16	1.00	1.00
Sat Flow, veh/h	1360	26	1577	1324	28	1575	1795	4999	233	1795	5256	50
Grp Volume(v), veh/h	40	0	61	86	0	57	178	788	423	119	955	522
Grp Sat Flow(s),veh/h/ln	1360	0	1603	1324	0	1604	1795	1702	1828	1795	1716	1876
Q Serve(g_s), s	3.8	0.0	4.8	8.8	0.0	4.5	13.6	13.3	13.3	9.0	0.0	0.0
Cycle Q Clear(g_c), s	8.3	0.0	4.8	13.6	0.0	4.5	13.6	13.3	13.3	9.0	0.0	0.0
Prop In Lane	1.00		0.98	1.00		0.98	1.00		0.13	1.00		0.03
Lane Grp Cap(c), veh/h	187	0	211	180	0	211	206	2328	1250	142	2225	1217
V/C Ratio(X)	0.21	0.00	0.29	0.48	0.00	0.27	0.87	0.34	0.34	0.84	0.43	0.43
Avail Cap(c_a), veh/h	375	0	433	363	0	433	428	2328	1250	313	2225	1217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	58.4	0.0	54.8	61.0	0.0	54.7	60.9	9.1	9.1	58.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.7	1.9	0.0	0.7	10.4	0.4	0.7	7.0	0.3	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	1.4	0.0	2.0	3.1	0.0	1.9	6.7	4.7	5.2	4.0	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	0.0	55.6	62.9	0.0	55.4	71.3	9.5	9.8	65.0	0.3	0.6
LnGrp LOS	E	A	E	E	A	E	E	A	A	E	A	A
Approach Vol, veh/h		101			143			1389			1596	
Approach Delay, s/veh		56.9			59.9			17.5			5.2	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	95.7		23.7	15.7	100.6		23.7
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	23.4	54.1		* 38	24.4	63.1		* 38
Max Q Clear Time (g_c+I1), s	15.6	2.0		15.6	11.0	15.3		10.3
Green Ext Time (p_c), s	0.4	30.0		0.5	0.2	22.1		0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	20	1	0	2	43	1272	0	28	1262	4
Future Vol, veh/h	3	0	20	1	0	2	43	1272	0	28	1262	4
Conflicting Peds, #/hr	1	0	0	0	0	1	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	22	1	0	2	47	1398	0	31	1387	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2108	2949	699	2112	2951	703	1394	0	0	1401	0	0
Stage 1	1454	1454	-	1495	1495	-	-	-	-	-	-	-
Stage 2	654	1495	-	617	1456	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	56	15	332	55	15	330	256	-	-	254	-	-
Stage 1	97	197	-	91	188	-	-	-	-	-	-	-
Stage 2	388	188	-	409	196	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	11	331	40	11	329	255	-	-	253	-	-
Mov Cap-2 Maneuver	43	11	-	40	11	-	-	-	-	-	-	-
Stage 1	79	172	-	74	153	-	-	-	-	-	-	-
Stage 2	314	153	-	335	171	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.7	43.4	0.7	0.5
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	255	-	-	177	97	253	-	-
HCM Lane V/C Ratio	0.185	-	-	0.143	0.034	0.122	-	-
HCM Control Delay (s)	22.3	-	-	28.7	43.4	21.2	-	-
HCM Lane LOS	C	-	-	D	E	C	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.5	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	120.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	193	38	1230	1393	71
Future Vol, veh/h	34	193	38	1230	1393	71
Conflicting Peds, #/hr	0	0	4	0	0	4
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	91	91	91	91	91	91
Heavy Vehicles, %	0	6	0	1	1	0
Mvmt Flow	37	212	42	1352	1531	78

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2199	809	1613	0	-	0
Stage 1	1574	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Critical Hdwy	5.7	7.22	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.96	3.1	-	-	-
Pot Cap-1 Maneuver	75	271	200	-	-	-
Stage 1	108	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	270	199	-	-	-
Mov Cap-2 Maneuver	~ 11	-	-	-	-	-
Stage 1	~ 16	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1560.9	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	199	-	60	-	-
HCM Lane V/C Ratio	0.21	-	4.158	-	-
HCM Control Delay (s)	27.8		$ 1560.9	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	27.1	-	-

Notes

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

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1439	40	28	1444	69	87	155	33	65	97	115
Future Volume (veh/h)	97	1439	40	28	1444	69	87	155	33	65	97	115
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	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	100	1484	41	29	1489	71	90	160	34	67	100	119
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	125	3485	96	55	3188	152	208	334	281	169	329	281
Arrive On Green	0.07	0.68	0.68	0.03	0.64	0.64	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	5144	142	1810	4990	238	1161	1885	1588	1114	1856	1588
Grp Volume(v), veh/h	100	990	535	29	1016	544	90	160	34	67	100	119
Grp Sat Flow(s),veh/h/ln	1810	1716	1855	1810	1702	1824	1161	1885	1588	1114	1856	1588
Q Serve(g_s), s	6.9	16.5	16.5	2.0	19.4	19.4	9.2	9.6	2.3	7.3	5.9	8.4
Cycle Q Clear(g_c), s	6.9	16.5	16.5	2.0	19.4	19.4	15.1	9.6	2.3	16.9	5.9	8.4
Prop In Lane	1.00		0.08	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	2324	1257	55	2175	1165	208	334	281	169	329	281
V/C Ratio(X)	0.80	0.43	0.43	0.53	0.47	0.47	0.43	0.48	0.12	0.40	0.30	0.42
Avail Cap(c_a), veh/h	373	2324	1257	144	2175	1165	274	440	371	232	433	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	9.2	9.2	60.2	11.7	11.7	51.7	46.6	43.6	54.2	45.1	46.1
Incr Delay (d2), s/veh	4.5	0.6	1.1	2.9	0.7	1.3	4.1	3.1	0.6	4.3	1.5	2.9
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	3.3	5.7	6.3	0.9	6.9	7.6	2.9	4.8	0.9	2.2	2.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	9.8	10.3	63.1	12.4	13.1	55.7	49.7	44.1	58.5	46.6	49.0
LnGrp LOS	E	A	B	E	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1625			1589			284			286	
Approach Delay, s/veh		13.2			13.6			50.9			50.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		27.9	12.7	85.4		27.9	7.8	90.3
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9
Max Green Setting (Gmax), s		29.4	26.0	56.1		29.4	10.0	72.1
Max Q Clear Time (g_c+I1), s		18.9	8.9	21.4		17.1	4.0	18.5
Green Ext Time (p_c), s		1.9	0.1	24.6		2.2	0.0	31.9

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	1445	15	32	1436	80	6	0	11	0	0	74
Future Vol, veh/h	99	1445	15	32	1436	80	6	0	11	0	0	74
Conflicting Peds, #/hr	7	0	2	2	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	108	1571	16	35	1561	87	7	0	12	0	0	80

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1655	0	0	1589	0	0	2491	3522	796	2526	3487	831
Stage 1	-	-	-	-	-	-	1797	1797	-	1682	1682	-
Stage 2	-	-	-	-	-	-	694	1725	-	844	1805	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	191	-	-	205	-	-	32	6	287	30	7	272
Stage 1	-	-	-	-	-	-	55	134	-	67	152	-
Stage 2	-	-	-	-	-	-	367	145	-	298	132	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	190	-	-	205	-	-	11	2	286	14	2	270
Mov Cap-2 Maneuver	-	-	-	-	-	-	11	2	-	14	2	-
Stage 1	-	-	-	-	-	-	24	58	-	29	125	-
Stage 2	-	-	-	-	-	-	214	119	-	123	57	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.9	0.5	253.1	23.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	29	190	-	-	205	-	-	270
HCM Lane V/C Ratio	0.637	0.566	-	-	0.17	-	-	0.298
HCM Control Delay (s)	253.1	46.2	-	-	26.1	-	-	23.9
HCM Lane LOS	F	E	-	-	D	-	-	C
HCM 95th %tile Q(veh)	2.1	3	-	-	0.6	-	-	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1037	159	259	1066	432	243	592	259	562	629	240
Future Volume (veh/h)	260	1037	159	259	1066	432	243	592	259	562	629	240
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		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1856	1870	1870	1900	1885	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	271	1080	166	270	1110	450	253	617	270	585	655	250
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	2	3	2	2	0	1	2	2	2	2	0
Cap, veh/h	338	1647	496	336	1652	511	309	1175	352	655	1689	519
Arrive On Green	0.10	0.32	0.32	0.10	0.32	0.32	0.09	0.23	0.23	0.19	0.33	0.33
Sat Flow, veh/h	3510	5106	1537	3456	5106	1580	3483	5106	1528	3456	5106	1570
Grp Volume(v), veh/h	271	1080	166	270	1110	450	253	617	270	585	655	250
Grp Sat Flow(s),veh/h/ln	1755	1702	1537	1728	1702	1580	1742	1702	1528	1728	1702	1570
Q Serve(g_s), s	9.9	23.8	10.7	10.0	24.6	35.2	9.3	13.8	21.6	21.6	12.9	16.6
Cycle Q Clear(g_c), s	9.9	23.8	10.7	10.0	24.6	35.2	9.3	13.8	21.6	21.6	12.9	16.6
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	338	1647	496	336	1652	511	309	1175	352	655	1689	519
V/C Ratio(X)	0.80	0.66	0.33	0.80	0.67	0.88	0.82	0.52	0.77	0.89	0.39	0.48
Avail Cap(c_a), veh/h	655	1761	530	645	1761	545	517	1175	352	777	1689	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	38.1	33.6	57.8	38.2	41.8	58.5	44.1	47.1	51.7	33.6	34.8
Incr Delay (d2), s/veh	4.4	0.8	0.4	4.5	0.9	14.8	2.0	1.7	14.8	11.4	0.7	3.2
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	4.5	9.8	4.0	4.5	10.2	15.5	4.1	5.9	9.5	10.2	5.4	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	38.9	34.0	62.3	39.2	56.7	60.6	45.8	61.9	63.1	34.3	38.0
LnGrp LOS	E	D	C	E	D	E	E	D	E	E	C	D
Approach Vol, veh/h		1517			1830			1140			1490	
Approach Delay, s/veh		42.5			46.9			52.9			46.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	48.2	18.2	47.2	30.4	35.0	18.3	47.1
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	11.3	18.6	11.9	37.2	23.6	23.6	12.0	25.8
Green Ext Time (p_c), s	0.3	5.2	0.7	5.1	1.2	2.7	0.7	7.8

Intersection Summary	
HCM 6th Ctrl Delay	46.8
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	750.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	1740	14	111	1672	67	0	0	99	45	0	84
Future Vol, veh/h	104	1740	14	111	1672	67	0	0	99	45	0	84
Conflicting Peds, #/hr	7	0	11	11	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	4	2	0	0	0	1	0	0	0
Mvmt Flow	112	1871	15	119	1798	72	0	0	106	48	0	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1877	0	0	1897	0	0	-	-	954	3015	4164	906
Stage 1	-	-	-	-	-	-	-	-	-	2043	2043	-
Stage 2	-	-	-	-	-	-	-	-	-	972	2121	-
Critical Hdwy	5.3	-	-	5.38	-	-	-	-	7.12	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.14	-	-	-	-	3.91	3.8	4	3.9
Pot Cap-1 Maneuver	148	-	-	138	-	-	0	0	224	~ 15	2	243
Stage 1	-	-	-	-	-	-	0	0	-	~ 37	100	-
Stage 2	-	-	-	-	-	-	0	0	-	248	92	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	147	-	-	137	-	-	-	-	222	~ 1	0	241
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	~ 1	0	-
Stage 1	-	-	-	-	-	-	-	-	-	~ 9	13	-
Stage 2	-	-	-	-	-	-	-	-	-	~ 31	22	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	6.5	35.3	$ 22721.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	222	147	-	-	137	-	-	3
HCM Lane V/C Ratio	0.48	0.761	-	-	0.871	-	-	46.237
HCM Control Delay (s)	35.3	81.9	-	-	107.9	-	$	22721.8
HCM Lane LOS	E	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	2.4	4.6	-	-	5.7	-	-	19.6

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)	0	1247	637	0	1522	461	0	0	0	350	0	328
Future Volume (veh/h)	0	1247	637	0	1522	461	0	0	0	350	0	328
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1299	0	0	1585	0				389	0	342
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2306		0	3340					437	0	383
Arrive On Green	0.00	0.65	0.00	0.00	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1299	0	0	1585	0				389	0	342
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	26.3	0.0	0.0	0.0	0.0				27.2	0.0	27.3
Cycle Q Clear(g_c), s	0.0	26.3	0.0	0.0	0.0	0.0				27.2	0.0	27.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2306		0	3340					437	0	383
V/C Ratio(X)	0.00	0.56		0.00	0.47					0.89	0.00	0.89
Avail Cap(c_a), veh/h	0	2306		0	3340					621	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.6	0.0	0.0	0.0	0.0				47.5	0.0	47.6
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	0.4	0.0				11.2	0.0	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.9	0.0	0.0	0.1	0.0				13.5	0.0	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.6	0.0	0.0	0.4	0.0				58.7	0.0	60.5
LnGrp LOS	A	B		A	A					E	A	E
Approach Vol, veh/h		1299	A		1585	A					731	
Approach Delay, s/veh		13.6			0.4						59.6	
Approach LOS		B			A						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	91.4	38.6	91.4
Change Period (Y+Rc), s	7.0	7.0	7.0
Max Green Setting (Gmax), s	71.0	45.0	71.0
Max Q Clear Time (g_c+I1), s	28.3	29.3	2.0
Green Ext Time (p_c), s	20.9	2.3	32.8

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1363	234	0	1424	420	559	0	711	0	0	0
Future Volume (veh/h)	0	1363	234	0	1424	420	559	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1420	0	0	1483	0	608	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2750		0	2728		1237	0	1007			
Arrive On Green	0.00	1.00	0.00	0.00	0.53	0.00	0.36	0.00	0.36			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1420	0	0	1483	0	608	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	24.8	0.0	17.8	0.0	29.9			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	24.8	0.0	17.8	0.0	29.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2750		0	2728		1237	0	1007			
V/C Ratio(X)	0.00	0.52		0.00	0.54		0.49	0.00	0.74			
Avail Cap(c_a), veh/h	0	2750		0	2728		1595	0	1298			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.72	0.00	0.00	0.75	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	19.9	0.0	32.5	0.0	36.4			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.6	0.0	0.7	0.0	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	9.5	0.0	7.6	0.0	10.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	20.5	0.0	33.2	0.0	39.2			
LnGrp LOS	A	A		A	C		C	A	D			
Approach Vol, veh/h		1420	A		1483	A		1349				
Approach Delay, s/veh		0.5			20.5			36.5				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		76.5				76.5		53.5				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				26.8		31.9				
Green Ext Time (p_c), s		30.0				21.0		14.7				

Intersection Summary			
HCM 6th Ctrl Delay			18.9
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1621	179	108	1304	72	369	293	116	145	282	171
Future Volume (veh/h)	274	1621	179	108	1304	72	369	293	116	145	282	171
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		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	285	1689	186	112	1358	75	384	305	121	151	294	178
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	338	2204	242	161	2137	663	435	825	362	177	738	316
Arrive On Green	0.10	0.47	0.47	0.05	0.42	0.42	0.13	0.23	0.23	0.10	0.21	0.21
Sat Flow, veh/h	3456	4694	515	3456	5106	1584	3483	3526	1544	1795	3554	1523
Grp Volume(v), veh/h	285	1233	642	112	1358	75	384	305	121	151	294	178
Grp Sat Flow(s),veh/h/ln	1728	1716	1778	1728	1702	1584	1742	1763	1544	1795	1777	1523
Q Serve(g_s), s	10.6	39.0	39.3	4.2	27.6	3.8	14.2	9.5	8.5	10.8	9.4	13.7
Cycle Q Clear(g_c), s	10.6	39.0	39.3	4.2	27.6	3.8	14.2	9.5	8.5	10.8	9.4	13.7
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	338	1611	835	161	2137	663	435	825	362	177	738	316
V/C Ratio(X)	0.84	0.77	0.77	0.69	0.64	0.11	0.88	0.37	0.33	0.85	0.40	0.56
Avail Cap(c_a), veh/h	422	1611	835	237	2137	663	479	969	424	219	922	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)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	28.8	28.8	61.5	30.2	23.3	56.4	42.1	41.7	58.1	44.8	46.6
Incr Delay (d2), s/veh	8.1	2.8	5.3	2.0	1.5	0.3	15.3	0.7	1.3	19.6	0.1	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	5.0	16.0	17.3	1.9	11.3	1.5	7.2	4.2	3.3	5.8	4.1	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	31.5	34.2	63.5	31.6	23.6	71.6	42.7	43.0	77.7	45.0	47.2
LnGrp LOS	E	C	C	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		2160			1545			810			623	
Approach Delay, s/veh		36.9			33.6			56.4			53.5	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	32.1	17.8	59.7	17.9	35.6	11.1	66.4
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	18.6	34.0	16.0	43.1	16.0	36.0	9.0	50.1
Max Q Clear Time (g_c+I1), s	16.3	15.7	12.6	29.6	12.8	11.5	6.2	41.3
Green Ext Time (p_c), s	0.2	1.4	0.2	10.8	0.1	4.9	0.0	8.2

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	321	129	128	289	163	118	822	110	289	1022	100
Future Volume (veh/h)	151	321	129	128	289	163	118	822	110	289	1022	100
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1870	1870
Adj Flow Rate, veh/h	161	341	137	136	307	173	126	874	117	307	1087	106
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	1	1	0	1	1	1	0	2	2
Cap, veh/h	184	502	197	159	674	299	149	1853	247	330	2379	232
Arrive On Green	0.10	0.20	0.20	0.09	0.19	0.19	0.08	0.40	0.40	0.18	0.50	0.50
Sat Flow, veh/h	1795	2483	976	1795	3582	1592	1795	4581	610	1810	4722	460
Grp Volume(v), veh/h	161	244	234	136	307	173	126	653	338	307	783	410
Grp Sat Flow(s),veh/h/ln	1795	1791	1669	1795	1791	1592	1795	1716	1761	1810	1702	1778
Q Serve(g_s), s	13.3	18.9	19.5	11.2	11.4	14.8	10.4	21.0	21.2	25.1	22.2	22.3
Cycle Q Clear(g_c), s	13.3	18.9	19.5	11.2	11.4	14.8	10.4	21.0	21.2	25.1	22.2	22.3
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.35	1.00		0.26
Lane Grp Cap(c), veh/h	184	362	337	159	674	299	149	1387	712	330	1715	896
V/C Ratio(X)	0.87	0.67	0.69	0.86	0.46	0.58	0.85	0.47	0.47	0.93	0.46	0.46
Avail Cap(c_a), veh/h	311	418	389	311	836	372	304	1387	712	427	1715	896
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	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.4	55.3	55.6	67.4	54.1	55.5	67.8	32.9	32.9	60.4	24.0	24.0
Incr Delay (d2), s/veh	6.8	9.6	11.2	5.0	1.0	3.7	4.8	1.1	2.1	21.0	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	9.4	9.2	5.3	5.2	6.2	4.9	8.9	9.4	13.3	9.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	64.9	66.8	72.4	55.1	59.2	72.6	34.0	35.1	81.4	24.9	25.7
LnGrp LOS	E	E	E	E	E	E	E	C	D	F	C	C
Approach Vol, veh/h		639			616			1117			1500	
Approach Delay, s/veh		67.7			60.1			38.7			36.7	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	80.5	19.4	33.1	32.0	65.6	17.3	35.2
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	25.4	* 45	26.0	35.0	35.4	35.1	26.0	35.0
Max Q Clear Time (g_c+I1), s	12.4	24.3	15.3	16.8	27.1	23.2	13.2	21.5
Green Ext Time (p_c), s	0.1	10.9	0.1	4.3	0.3	7.6	0.1	6.3

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	0	108	68	1	41	226	980	61	134	1117	29
Future Volume (veh/h)	29	0	108	68	1	41	226	980	61	134	1117	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1885	1870	1885	1885
Adj Flow Rate, veh/h	30	0	112	71	1	43	235	1021	64	140	1164	30
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	0	0	0	0	1	1	2	1	1
Cap, veh/h	232	0	233	170	5	229	249	3106	194	169	3021	78
Arrive On Green	0.15	0.00	0.15	0.15	0.15	0.15	0.14	0.63	0.63	0.09	0.59	0.59
Sat Flow, veh/h	1381	0	1607	1299	37	1576	1810	4942	309	1781	5155	133
Grp Volume(v), veh/h	30	0	112	71	0	44	235	708	377	140	775	419
Grp Sat Flow(s),veh/h/ln	1381	0	1607	1299	0	1612	1810	1716	1820	1781	1716	1857
Q Serve(g_s), s	2.2	0.0	7.2	5.9	0.0	2.7	14.4	10.8	10.9	8.6	13.5	13.5
Cycle Q Clear(g_c), s	4.9	0.0	7.2	13.1	0.0	2.7	14.4	10.8	10.9	8.6	13.5	13.5
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.17	1.00		0.07
Lane Grp Cap(c), veh/h	232	0	233	170	0	234	249	2157	1144	169	2011	1088
V/C Ratio(X)	0.13	0.00	0.48	0.42	0.00	0.19	0.94	0.33	0.33	0.83	0.39	0.39
Avail Cap(c_a), veh/h	670	0	743	582	0	746	249	2157	1144	245	2011	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	44.2	0.0	44.0	50.0	0.0	42.1	47.9	9.7	9.7	49.8	12.4	12.4
Incr Delay (d2), s/veh	0.2	0.0	1.5	1.6	0.0	0.4	41.9	0.4	0.8	12.0	0.5	0.9
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	0.8	0.0	3.0	2.0	0.0	1.1	9.2	3.8	4.1	4.3	4.9	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	45.5	51.7	0.0	42.5	89.8	10.1	10.5	61.8	12.9	13.3
LnGrp LOS	D	A	D	D	A	D	F	B	B	E	B	B
Approach Vol, veh/h		142			115			1320			1334	
Approach Delay, s/veh		45.3			48.1			24.4			18.1	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	80.0	70.5		21.5	15.2	75.3		21.5
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	75.4	30.1		* 52	15.4	30.1		* 52
Max Q Clear Time (g_c+I1), s	16.4	15.5		15.1	10.6	12.9		9.2
Green Ext Time (p_c), s	0.0	10.2		0.5	0.1	10.7		0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	22	3	0	7	53	998	6	25	921	13
Future Vol, veh/h	5	0	22	3	0	7	53	998	6	25	921	13
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	7	7	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	33	0	0	0	1	0	0	2	0
Mvmt Flow	5	0	23	3	0	7	56	1051	6	26	969	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1562	2206	494	1613	2210	536	985	0	0	1064	0	0
Stage 1	1030	1030	-	1173	1173	-	-	-	-	-	-	-
Stage 2	532	1176	-	440	1037	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.2	7.06	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.96	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	7.36	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.95	4.13	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	120	45	440	81	45	423	404	-	-	370	-	-
Stage 1	192	313	-	119	268	-	-	-	-	-	-	-
Stage 2	460	267	-	452	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	100	36	439	64	36	420	403	-	-	368	-	-
Mov Cap-2 Maneuver	100	36	-	64	36	-	-	-	-	-	-	-
Stage 1	165	290	-	102	229	-	-	-	-	-	-	-
Stage 2	389	228	-	398	288	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	29.6	0.8	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	403	-	-	270	157	368	-	-
HCM Lane V/C Ratio	0.138	-	-	0.105	0.067	0.072	-	-
HCM Control Delay (s)	15.4	-	-	19.9	29.6	15.5	-	-
HCM Lane LOS	C	-	-	C	D	C	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	29.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	224	46	1237	1206	86
Future Vol, veh/h	30	224	46	1237	1206	86
Conflicting Peds, #/hr	1	0	11	0	0	11
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	96	96	96	96	96	96
Heavy Vehicles, %	0	3	0	1	1	0
Mvmt Flow	31	233	48	1289	1256	90

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1925	684	1357	0	-	0
Stage 1	1312	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	5.7	7.16	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.93	3.1	-	-	-
Pot Cap-1 Maneuver	105	334	267	-	-	-
Stage 1	158	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	37	331	264	-	-	-
Mov Cap-2 Maneuver	37	-	-	-	-	-
Stage 1	56	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s$	321.9	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	264	-	171	-	-
HCM Lane V/C Ratio	0.182	-	1.547	-	-
HCM Control Delay (s)	21.6	-	$ 321.9	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	17.4	-	-

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

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.3	0.1	0.0	0.0	1.9	0.4	2.1	1.8	0.3	0.2
Total Del/Veh (s)	69.4	20.4	17.6	74.7	24.2	26.2	46.2	38.3	19.2	71.3	39.1	12.6

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.2

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	17.9	3.3	0.6	4.6	4.7	55.2	16.1	12.6	4.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.3	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	56.6	48.5	24.2	49.8	35.3	10.1	59.0	30.7	16.6	65.3	32.9	15.9

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	40.4

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.0
Total Del/Veh (s)	20.6	8.4	6.6	24.4	1.5	0.9	23.8	225.7	136.6	8.9

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Del/Veh (s)	9.7	2.1	11.1	8.5	46.8	17.6	11.7

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.5
Total Del/Veh (s)	19.5	6.1	23.0	5.3	25.3	27.7	20.2

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.1	3.2	0.2	3.1	3.0	0.3	3.0
Total Del/Veh (s)	52.3	38.0	34.2	64.6	35.2	24.4	62.4	38.8	13.9	63.0	37.9	9.0

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	37.2

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.2	0.3	3.1	0.2	3.0	0.0	0.0	0.0	2.7	0.3	0.2
Total Del/Veh (s)	68.4	35.4	26.0	68.1	30.8	6.2	68.0	30.9	23.6	59.7	29.4	17.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	34.9

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	57.8	64.7	7.0	64.6	29.1	5.0	61.0	4.6	3.2	50.7	5.3	4.0

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.1

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1		0.1	3.0	0.2	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	24.7	6.0		4.0	5.4	0.4	0.0	4.6	0.6	0.7	0.8

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.4	6.4	9.8	1.7	1.5	1.2	2.0

Total Zone Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	1406.0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	365	362	351	149	378	434	447	120	355	140	157
Average Queue (ft)	142	223	228	226	34	188	216	238	55	174	28	111
95th Queue (ft)	224	337	330	322	101	357	396	418	121	301	103	179
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	7	9			0	16			6	42	0	12
Queuing Penalty (veh)	43	14			0	4			18	40	0	22

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	321	149
Average Queue (ft)	138	57
95th Queue (ft)	269	104
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	9	
Queuing Penalty (veh)	11	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	T	TR	LTR	LTR
Maximum Queue (ft)	78	100	150	196	8	19	44	77
Average Queue (ft)	28	15	25	36	0	1	12	25
95th Queue (ft)	66	129	176	205	6	9	37	63
Link Distance (ft)		615	615	615	546	546	587	433
Upstream Blk Time (%)			0	0				
Queuing Penalty (veh)			0	0				
Storage Bay Dist (ft)	80							
Storage Blk Time (%)	1	1						
Queuing Penalty (veh)	3	1						

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	122	324	518	559	564	255	95	228	369	405	427	300
Average Queue (ft)	54	117	311	353	388	175	40	69	200	232	248	93
95th Queue (ft)	103	298	528	570	613	343	85	141	327	361	389	266
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			2	2	4							
Queuing Penalty (veh)			11	15	30							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	17		29	0			10		20	0
Queuing Penalty (veh)		0	28		69	1			14		36	0

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	167	184	183	149	120	101	211	245	181	173	188	155
Average Queue (ft)	87	112	99	76	43	30	87	143	77	96	102	52
95th Queue (ft)	157	174	158	133	98	75	168	224	143	158	167	112
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	0	1	0		1	0	0	3	0		15	2
Queuing Penalty (veh)	0	1	0		1	1	0	6	0		21	4

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	R	R	LTR
Maximum Queue (ft)	60	189	195	20	97	25	21	9	64	260
Average Queue (ft)	19	23	33	1	38	1	1	1	26	102
95th Queue (ft)	48	103	130	11	80	25	19	6	56	245
Link Distance (ft)		695	695	695		226	226		701	726
Upstream Blk Time (%)						0				
Queuing Penalty (veh)						0				
Storage Bay Dist (ft)	200				100			151		
Storage Blk Time (%)		0			1					
Queuing Penalty (veh)		0			4					

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	250	246	197	181	175	43	360	273
Average Queue (ft)	106	118	86	85	75	1	194	126
95th Queue (ft)	266	280	163	157	148	31	310	223
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	3	4						
Queuing Penalty (veh)	19	26						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	327	325	360	225	284	355	447	277	314	397	258	245
Average Queue (ft)	145	140	137	31	131	171	222	16	136	159	194	145
95th Queue (ft)	269	265	276	159	266	332	417	137	235	300	274	263
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							0	0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			3	0						1	3	0
Queuing Penalty (veh)			10	0						3	7	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	188	327	437	466	481	62	220	366	420	467	130	156
Average Queue (ft)	102	136	261	287	305	12	57	181	221	288	55	42
95th Queue (ft)	165	250	383	408	426	41	148	299	369	437	148	113
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	3				0	2		41	0	
Queuing Penalty (veh)		0	7				0	1		37	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	199	232	222	130	203	218	216	173
Average Queue (ft)	101	151	124	53	98	134	92	71
95th Queue (ft)	175	215	202	122	171	201	180	134
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)		0	10	0	0	0	0	0
Queuing Penalty (veh)		0	7	0	0	0	1	1

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	318	306	174	271	235	98	162	164	198	231	249
Average Queue (ft)	92	204	182	118	144	108	40	69	70	94	120	125
95th Queue (ft)	173	296	275	189	235	195	74	130	140	171	200	211
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	3	24		6	5	0						0
Queuing Penalty (veh)	9	21		13	6	0						0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	270	234	194
Average Queue (ft)	163	124	92
95th Queue (ft)	242	205	169
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	1		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	37	52	84	63	75	118	121	145	140	87	72	98
Average Queue (ft)	5	8	31	19	23	28	32	52	64	30	23	37
95th Queue (ft)	23	33	70	50	58	85	92	117	125	71	59	86
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	58	31	51	6	3	3	35	6	13
Average Queue (ft)	16	4	12	0	0	0	5	0	0
95th Queue (ft)	44	19	39	4	3	3	24	5	7
Link Distance (ft)	596	558		629	629	629		598	598
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100				100		
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB	SB
Directions Served	LR	LT	T	T	T	T	TR
Maximum Queue (ft)	76	88	14	16	6	20	12
Average Queue (ft)	34	17	1	1	0	1	0
95th Queue (ft)	60	59	12	17	5	12	7
Link Distance (ft)	391	514	514	514	649	649	649
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 571

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.3	0.1	0.0	0.0	7.6	7.2	6.5	1.7	0.3	0.2
Total Del/Veh (s)	62.6	21.0	18.2	72.2	29.3	32.7	191.4	142.1	111.4	132.6	69.1	16.5

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	42.2

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	30.4	3.9	3.8	30.0	5.5	5.6	19.2	17.1	5.6

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	65.6	57.7	30.4	67.4	53.4	23.5	68.4	50.8	30.6	67.1	40.1	25.3

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	51.2

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1514.4	1453.9	45.4
Total Del/Veh (s)	45.7	8.2	4.9	39.7	2.1	1.1	57.0	1861.3	1803.4	35.3

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.1
Total Del/Veh (s)	13.2	1.9	12.1	9.3	42.9	24.4	13.5

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.8	0.4
Total Del/Veh (s)	25.8	8.3	22.1	5.0	29.2	30.1	22.1

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	0.3	1.2	2.8	0.3	2.9	2.7	0.4	2.8
Total Del/Veh (s)	63.2	38.6	38.7	178.8	244.6	390.2	59.7	38.2	15.6	63.7	42.1	15.6

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	104.6

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.8	0.2	0.3	2.7	0.4	2.7	0.0	0.0	0.0	2.3	0.4	0.4
Total Del/Veh (s)	99.1	55.5	48.5	97.6	48.4	12.1	74.3	40.9	40.1	73.8	37.2	27.0

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	48.8

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	60.8	56.7	13.8	64.3	59.4	9.1	66.8	11.0	9.7	66.3	9.2	6.5

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	17.6

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.4	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	51.2	10.7	20.3	8.5	11.1	0.7	10.9	1.1	1.4	1.3

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	16.5	17.5	0.0	0.0	0.0	0.0	1.4
Total Del/Veh (s)	99.1	71.0	20.7	3.8	2.3	2.0	8.9

Total Zone Performance

Denied Del/Veh (s)	15.3
Total Del/Veh (s)	1993.0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	361	368	370	150	482	512	519	120	1038	140	158
Average Queue (ft)	139	218	225	228	56	255	291	315	94	565	39	111
95th Queue (ft)	223	324	322	324	132	473	503	525	150	1371	127	196
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										8		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	4	10			0	20			37	55	0	16
Queuing Penalty (veh)	27	17			0	9			128	77	2	48

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	701	273
Average Queue (ft)	303	76
95th Queue (ft)	626	190
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	32	
Queuing Penalty (veh)	29	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	98	159	128	178	46	5	58	83	33	121
Average Queue (ft)	48	15	12	21	7	0	2	3	8	51
95th Queue (ft)	93	92	75	113	30	5	53	55	30	99
Link Distance (ft)		615	615	615		546	546	546	587	433
Upstream Blk Time (%)							0			
Queuing Penalty (veh)							0			
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	6	0								
Queuing Penalty (veh)	36	0								

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	160	380	558	557	573	255	148	344	504	535	570	300
Average Queue (ft)	85	156	353	386	410	186	84	150	316	342	363	213
95th Queue (ft)	144	352	549	567	600	344	141	319	491	516	548	398
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			1	1	3				0	0	0	
Queuing Penalty (veh)			5	7	17				0	0	0	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	26		34	0		0	28		36	0
Queuing Penalty (veh)		0	56		74	1		0	63		113	1

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	226	284	354	303	293	195	304	396	398	313	363	210
Average Queue (ft)	132	168	208	178	156	113	195	256	159	174	195	124
95th Queue (ft)	212	259	306	262	247	201	318	375	301	273	315	241
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									1			
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	1	4	12		21	15	7	30	3		36	13
Queuing Penalty (veh)	3	10	41		49	36	18	83	15		90	35

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	R	LTR
Maximum Queue (ft)	183	275	290	54	115	88	47	13	21	214	734
Average Queue (ft)	65	50	68	2	52	6	2	1	2	94	722
95th Queue (ft)	129	186	220	36	101	60	32	16	11	176	755
Link Distance (ft)		695	695	695		225	225	225		702	719
Upstream Blk Time (%)						0	0				98
Queuing Penalty (veh)						1	0				0
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)	0	1			3						
Queuing Penalty (veh)	1	1			22						

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	249	251	246	268	312	199	419	316
Average Queue (ft)	149	166	109	102	109	14	219	154
95th Queue (ft)	288	293	199	204	235	103	348	270
Link Distance (ft)	225	225	730	730	730		573	573
Upstream Blk Time (%)	5	6			0			
Queuing Penalty (veh)	35	46			0			
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					1	0		
Queuing Penalty (veh)					5	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	380	364	424	225	306	408	479	380	260	404	258	235
Average Queue (ft)	206	200	206	82	78	125	171	22	146	170	180	128
95th Queue (ft)	343	338	363	259	203	287	339	168	231	297	266	236
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)					0	0	0	0				
Queuing Penalty (veh)					0	0	0	0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			10	0						2	2	0
Queuing Penalty (veh)			33	0						8	4	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	206	303	436	479	488	104	265	1741	1755	1764	130	253
Average Queue (ft)	117	144	233	262	276	39	142	1214	1256	1285	50	118
95th Queue (ft)	187	245	362	391	400	80	312	1850	1844	1859	145	226
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)				0				0	0	0		
Queuing Penalty (veh)				0				0	0	0		
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	2				0	51		71	0	0
Queuing Penalty (veh)		0	5				0	59		44	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	288	343	316	130	244	349	339	190
Average Queue (ft)	181	183	174	69	146	203	181	124
95th Queue (ft)	267	282	270	148	242	301	294	219
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	1	1	23	0	2	4	6	4
Queuing Penalty (veh)	1	2	22	1	5	7	25	10

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	480	450	174	488	453	265	250	280	307	341	275
Average Queue (ft)	143	316	283	161	312	269	110	139	134	160	186	244
95th Queue (ft)	197	447	410	207	458	408	267	229	250	274	307	321
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	23	39		27	27	8	0		0			13
Queuing Penalty (veh)	74	56		94	48	16	0		0			50

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	562	513	337
Average Queue (ft)	331	261	204
95th Queue (ft)	508	416	304
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	9		
Queuing Penalty (veh)	27		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	97	93	158	63	286	246	285	293	192	123	110	150
Average Queue (ft)	37	32	77	27	136	77	91	115	100	55	38	67
95th Queue (ft)	83	70	138	57	241	188	223	251	173	108	87	123
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)									0			
Queuing Penalty (veh)									0			

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	53	27	61	26	3	6	56	20	17	25
Average Queue (ft)	16	3	21	1	0	0	16	1	1	1
95th Queue (ft)	45	17	49	15	3	4	45	9	9	12
Link Distance (ft)	596	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)				0			0			
Queuing Penalty (veh)				0			0			

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	LT	T	T	T	TR
Maximum Queue (ft)	378	243	172	46	14	11
Average Queue (ft)	188	64	11	2	0	1
95th Queue (ft)	380	188	86	29	8	6
Link Distance (ft)	391	514	514	514	649	649
Upstream Blk Time (%)	12					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 1799

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.2	0.2	0.2	0.0	0.0	0.0	2.4	0.4	2.2	2.0	0.2	0.1
Total Del/Veh (s)	61.2	12.6	8.3	63.6	17.9	17.6	50.4	42.5	12.5	56.6	39.0	12.9

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.1

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	20.9	1.7	0.7	17.2	4.6	4.7	72.6	21.7	9.0	4.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	61.3	43.6	13.4	60.7	47.5	24.4	63.8	47.9	26.8	84.0	39.0	19.8

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	46.7

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	815.9	793.1	27.6
Total Del/Veh (s)	29.3	5.5	3.4	29.6	2.4	1.4	30.9	1217.0	1116.0	35.5

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.4	0.4	0.1
Total Del/Veh (s)	10.8	1.3	19.2	11.5	46.4	20.1	15.9

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.2	2.9	0.6
Total Del/Veh (s)	26.8	8.5	17.0	4.7	25.8	30.0	21.4

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.3	0.2	0.2	3.0	0.3	2.9	3.2	0.2	3.2
Total Del/Veh (s)	65.6	52.0	53.9	66.9	44.3	37.2	76.5	36.0	12.7	62.1	40.8	8.9

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	49.0

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.1	0.2	0.3	3.2	0.2	3.2	0.0	0.0	0.0	2.4	0.4	0.3
Total Del/Veh (s)	75.2	44.0	28.0	72.3	43.6	8.6	73.4	45.2	43.6	71.1	33.9	24.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	44.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	46.9	11.1	50.9	49.3	6.9	50.5	9.2	7.5	57.9	16.5	13.1	19.5

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.7	0.3	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	34.6	7.2	28.2	6.0	6.9	0.6	0.2	7.5	0.8	0.9	1.1

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	9.0	11.1	0.0	0.0	0.0	0.0	1.0
Total Del/Veh (s)	98.4	70.3	21.2	3.7	4.4	3.6	10.5

Total Zone Performance

Denied Del/Veh (s)	10.6
Total Del/Veh (s)	1874.8

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	196	255	227	212	132	360	390	407	120	273	130	149
Average Queue (ft)	79	135	124	112	33	139	172	199	71	125	26	65
95th Queue (ft)	146	214	200	192	90	316	344	370	129	230	87	125
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	1	2			0	9			17	30	0	2
Queuing Penalty (veh)	2	2			0	3			32	36	0	2

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	167	118
Average Queue (ft)	70	49
95th Queue (ft)	134	93
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	100	100	6	70	11	18	29	62	70
Average Queue (ft)	47	6	0	19	0	1	2	17	32
95th Queue (ft)	92	52	4	51	11	12	15	50	58
Link Distance (ft)		615	615		546	546	546	587	433
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	80			150					
Storage Blk Time (%)	5								
Queuing Penalty (veh)	23								

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	176	275	356	360	372	255	211	301	371	396	444	299
Average Queue (ft)	98	112	208	231	220	94	97	126	220	243	258	179
95th Queue (ft)	160	196	311	333	341	249	169	213	318	343	374	321
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	0	0	6		9	0	0	1	14		21	5
Queuing Penalty (veh)	0	0	16		15	0	1	2	36		91	19

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	168	232	276	268	296	191	306	413	521	319	276	210
Average Queue (ft)	96	123	169	147	123	104	246	318	207	137	155	96
95th Queue (ft)	155	191	244	224	222	190	362	459	491	238	246	202
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)									3	0		
Queuing Penalty (veh)									15	0		
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	0	0	5		12	14	19	45	0		32	9
Queuing Penalty (veh)	0	1	12		31	28	39	94	1		77	18

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	R	LTR
Maximum Queue (ft)	160	174	211	14	123	176	86	27	17	140	741
Average Queue (ft)	57	15	23	1	64	15	3	1	1	56	717
95th Queue (ft)	115	88	110	10	118	100	44	23	9	109	812
Link Distance (ft)		695	695	695		226	226	226		701	726
Upstream Blk Time (%)						0	0	0			89
Queuing Penalty (veh)						3	0	0			0
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		0			6						
Queuing Penalty (veh)		0			35						

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	247	245	338	447	563	225	420	244
Average Queue (ft)	120	140	163	162	235	93	239	123
95th Queue (ft)	256	271	294	318	460	275	383	208
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	2	3			0			
Queuing Penalty (veh)	11	16			0			
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					8	0		
Queuing Penalty (veh)					37	1		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	368	386	432	225	275	323	400	96	356	571	258	245
Average Queue (ft)	209	210	223	76	84	104	156	3	137	221	220	188
95th Queue (ft)	336	342	386	251	210	256	350	54	254	447	284	275
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)									0	0		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			10	0						1	6	1
Queuing Penalty (veh)			23	0						4	18	2

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	184	340	572	592	598	135	258	453	529	559	130	291
Average Queue (ft)	104	218	366	398	423	38	109	233	282	351	50	168
95th Queue (ft)	168	405	529	555	569	92	219	383	457	517	144	294
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	1	2							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	14				0	4		51	0	0
Queuing Penalty (veh)		0	39				0	4		37	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	302	369	319	130	210	206	182	118
Average Queue (ft)	219	125	101	57	119	121	81	48
95th Queue (ft)	307	280	209	117	194	188	159	89
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	4	0	5	1	0	0	0	0
Queuing Penalty (veh)	6	0	6	1	1	0	1	0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	352	312	174	256	210	102	222	302	329	359	274
Average Queue (ft)	132	174	148	118	135	92	47	108	169	205	232	234
95th Queue (ft)	189	295	253	185	225	173	82	193	283	322	347	318
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	19	11		7	4	0			0			12
Queuing Penalty (veh)	31	17		10	5	0			0			39

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	558	491	311
Average Queue (ft)	294	227	165
95th Queue (ft)	476	390	265
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	6		
Queuing Penalty (veh)	17		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	74	95	122	64	310	173	207	239	277	379	400	295
Average Queue (ft)	26	44	58	24	163	57	74	101	121	131	94	111
95th Queue (ft)	61	76	108	53	269	143	173	205	226	302	272	241
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)					0					2		
Queuing Penalty (veh)					0					2		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	56	45	57	3	46	3	6
Average Queue (ft)	21	8	20	0	14	0	0
95th Queue (ft)	50	33	49	3	41	3	4
Link Distance (ft)	596	558		629		598	598
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100		100		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB	SB
Directions Served	LR	LT	T	T	T	T	TR
Maximum Queue (ft)	401	299	154	8	130	16	49
Average Queue (ft)	200	81	11	0	16	1	3
95th Queue (ft)	401	230	87	6	109	14	23
Link Distance (ft)	391	514	514	514	649	649	649
Upstream Blk Time (%)	9						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 967

Appendix 6 Near-Term Plus Project Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1854	34	25	1495	97	63	267	32	121	189	167
Future Volume (veh/h)	166	1854	34	25	1495	97	63	267	32	121	189	167
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	182	2037	37	27	1643	107	69	293	35	133	208	184
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	299	2959	54	49	2097	136	246	527	431	213	527	439
Arrive On Green	0.17	0.58	0.58	0.02	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5123	93	1697	4859	316	990	1870	1527	1059	1870	1555
Grp Volume(v), veh/h	182	1342	732	27	1141	609	69	293	35	133	208	184
Grp Sat Flow(s),veh/h/ln	1781	1689	1839	1697	1689	1798	990	1870	1527	1059	1870	1555
Q Serve(g_s), s	12.3	36.2	36.3	2.1	40.4	40.4	7.9	17.3	2.2	15.9	11.7	12.5
Cycle Q Clear(g_c), s	12.3	36.2	36.3	2.1	40.4	40.4	19.5	17.3	2.2	33.2	11.7	12.5
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	1951	1062	49	1457	776	246	527	431	213	527	439
V/C Ratio(X)	0.61	0.69	0.69	0.55	0.78	0.78	0.28	0.56	0.08	0.63	0.39	0.42
Avail Cap(c_a), veh/h	299	1951	1062	89	1457	776	259	552	451	227	552	459
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	19.2	19.3	62.9	40.6	40.6	45.6	39.7	34.3	53.9	37.7	38.0
Incr Delay (d2), s/veh	2.6	2.0	3.7	3.6	4.3	7.8	1.8	2.7	0.2	9.3	1.4	1.9
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	5.6	13.8	15.6	0.9	18.2	20.1	2.1	8.4	0.8	4.8	5.6	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	21.2	22.9	66.5	44.9	48.4	47.4	42.5	34.5	63.2	39.1	39.9
LnGrp LOS	D	C	C	E	D	D	D	D	C	E	D	D
Approach Vol, veh/h		2256			1777			397			525	
Approach Delay, s/veh		24.3			46.4			42.6			45.5	
Approach LOS		C			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		42.3	26.7	61.0		42.3	7.7	80.0				
Change Period (Y+Rc), s		5.6	4.9	* 4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		38.4	21.0	* 56		38.4	6.8	70.3				
Max Q Clear Time (g_c+I1), s		35.2	14.3	42.4		21.5	4.1	38.3				
Green Ext Time (p_c), s		1.4	0.1	12.1		4.2	0.0	28.3				

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	2018	4	0	1629	42	1	0	12	0	0	26
Future Volume (vph)	55	2018	4	0	1629	42	1	0	12	0	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91			0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			1.00			0.87			0.86	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1805	5032			5018			1656			1236	
Flt Permitted	0.11	1.00			1.00			0.99			1.00	
Satd. Flow (perm)	201	5032			5018			1650			1236	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	60	2218	4	0	1790	46	1	0	13	0	0	29
RTOR Reduction (vph)	0	0	0	0	1	0	0	13	0	0	26	0
Lane Group Flow (vph)	60	2222	0	0	1835	0	0	1	0	0	3	0
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	3%	25%	0%	3%	0%	0%	0%	0%	0%	0%	33%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	110.0	110.0			110.0			13.1			13.1	
Effective Green, g (s)	110.0	110.0			110.0			13.1			13.1	
Actuated g/C Ratio	0.85	0.85			0.85			0.10			0.10	
Clearance Time (s)	4.9	4.9			4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	170	4257			4246			166			124	
v/s Ratio Prot		c0.44			0.37						c0.00	
v/s Ratio Perm	0.30							0.00				
v/c Ratio	0.35	0.52			0.43			0.01			0.02	
Uniform Delay, d1	2.2	2.8			2.4			52.6			52.7	
Progression Factor	1.20	1.15			0.14			1.00			1.00	
Incremental Delay, d2	4.4	0.4			0.2			0.0			0.1	
Delay (s)	7.1	3.5			0.5			52.6			52.8	
Level of Service	A	A			A			D			D	
Approach Delay (s)		3.6			0.5			52.6			52.8	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	1630	239	138	1286	178	246	368	89	251	505	139
Future Volume (vph)	162	1630	239	138	1286	178	246	368	89	251	505	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5085	1546	3335	5036	1508	3400	3374	1506	3367	3505	1504
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5085	1546	3335	5036	1508	3400	3374	1506	3367	3505	1504
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	186	1874	275	159	1478	205	283	423	102	289	580	160
RTOR Reduction (vph)	0	0	106	0	0	108	0	0	81	0	0	119
Lane Group Flow (vph)	186	1874	169	159	1478	97	283	423	21	289	580	41
Confl. Peds. (#/hr)			2			8			9			19
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	2%	3%	5%	3%	5%	3%	7%	5%	4%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.4	52.5	52.5	9.5	50.6	50.6	8.4	26.8	26.8	15.0	33.4	33.4
Effective Green, g (s)	11.4	52.5	52.5	9.5	50.6	50.6	8.4	26.8	26.8	15.0	33.4	33.4
Actuated g/C Ratio	0.09	0.40	0.40	0.07	0.39	0.39	0.06	0.21	0.21	0.12	0.26	0.26
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	2053	624	243	1960	586	219	695	310	388	900	386
v/s Ratio Prot	c0.05	c0.37		c0.05	0.29		c0.08	0.13		c0.09	c0.17	
v/s Ratio Perm			0.11			0.06			0.01			0.03
v/c Ratio	0.62	0.91	0.27	0.65	0.75	0.17	1.29	0.61	0.07	0.74	0.64	0.11
Uniform Delay, d1	57.2	36.6	25.9	58.7	34.3	25.9	60.8	46.8	41.5	55.6	43.0	36.9
Progression Factor	1.20	0.56	0.30	1.19	0.69	0.77	1.14	0.84	1.00	0.84	1.14	4.38
Incremental Delay, d2	3.6	6.9	1.0	5.8	2.5	0.6	160.4	1.5	0.1	7.3	1.5	0.1
Delay (s)	72.2	27.3	8.7	75.7	26.1	20.4	229.5	40.7	41.6	54.2	50.4	161.9
Level of Service	E	C	A	E	C	C	F	D	D	D	D	F
Approach Delay (s)		28.7			29.7			106.9			68.8	
Approach LOS		C			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1917	21	62	1549	39	0	0	44	20	0	53
Future Volume (vph)	32	1917	21	62	1549	39	0	0	44	20	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1805	4691		1770	5036	1555		1644			1690	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.89	
Satd. Flow (perm)	1805	4691		1770	5036	1555		1644			1528	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	2130	23	69	1721	43	0	0	49	22	0	59
RTOR Reduction (vph)	0	1	0	0	0	10	0	44	0	0	74	0
Lane Group Flow (vph)	36	2152	0	69	1721	33	0	5	0	0	7	0
Confl. Peds. (#/hr)	4		2	2		4						
Confl. Bikes (#/hr)			4			2						
Heavy Vehicles (%)	0%	3%	10%	2%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	4.1	94.9		8.0	98.8	98.8		12.0			12.0	
Effective Green, g (s)	4.1	94.9		8.0	98.8	98.8		12.0			12.0	
Actuated g/C Ratio	0.03	0.73		0.06	0.76	0.76		0.09			0.09	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	56	3424		108	3827	1181		151			141	
v/s Ratio Prot	0.02	c0.46		c0.04	0.34			0.00				
v/s Ratio Perm						0.02					c0.00	
v/c Ratio	0.64	0.63		0.64	0.45	0.03		0.03			0.05	
Uniform Delay, d1	62.2	8.8		59.6	5.7	3.8		53.7			53.8	
Progression Factor	0.71	0.27		1.23	0.34	0.01		1.00			1.00	
Incremental Delay, d2	13.1	0.5		10.3	0.3	0.0		0.1			0.2	
Delay (s)	57.4	2.8		83.5	2.3	0.1		53.8			54.0	
Level of Service	E	A		F	A	A		D			D	
Approach Delay (s)		3.7			5.3			53.8			54.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1242	738	0	1282	484	0	0	0	280	0	367
Future Volume (veh/h)	0	1242	738	0	1282	484	0	0	0	280	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1380	0	0	1424	0				311	0	408
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2155		0	3072					505	0	445
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1380	0	0	1424	0				311	0	408
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2155		0	3072					505	0	445
V/C Ratio(X)	0.00	0.64		0.00	0.46					0.62	0.00	0.92
Avail Cap(c_a), veh/h	0	2155		0	3072					649	0	573
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.00	0.00	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				40.6	0.0	45.2
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.4	0.0				1.2	0.0	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.1	0.0				8.9	0.0	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.1	0.0	0.0	0.4	0.0				41.9	0.0	62.0
LnGrp LOS	A	A		A	A					D	A	E
Approach Vol, veh/h		1380	A		1424	A					719	
Approach Delay, s/veh		1.1			0.4						53.3	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		86.5		43.5		86.5
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		69.0		47.0		69.0
Max Q Clear Time (g_c+I1), s		2.0		34.4		2.0
Green Ext Time (p_c), s		27.8		2.1		27.3

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1221	301	0	1230	329	536	0	522	0	0	0
Future Volume (veh/h)	0	1221	301	0	1230	329	536	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1388	0	0	1398	0	583	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2442		0	2384		1043	0	835			
Arrive On Green	0.00	0.64	0.00	0.00	0.32	0.00	0.30	0.00	0.30			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1388	0	0	1398	0	583	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	10.1	0.0	0.0	15.3	0.0	9.2	0.0	12.4			
Cycle Q Clear(g_c), s	0.0	10.1	0.0	0.0	15.3	0.0	9.2	0.0	12.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2442		0	2384		1043	0	835			
V/C Ratio(X)	0.00	0.57		0.00	0.59		0.56	0.00	0.71			
Avail Cap(c_a), veh/h	0	2442		0	2384		1122	0	898			
HCM Platoon Ratio	1.00	1.33	1.33	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.72	0.00	0.00	0.70	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.0	0.0	0.0	16.7	0.0	19.1	0.0	20.2			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.7	0.0	2.0	0.0	4.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.0	0.0	5.9	0.0	3.7	0.0	4.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.7	0.0	0.0	17.5	0.0	21.1	0.0	25.0			
LnGrp LOS	A	A		A	B		C	A	C			
Approach Vol, veh/h		1388	A		1398	A		1176				
Approach Delay, s/veh		8.7			17.5			23.1				
Approach LOS		A			B			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		38.1				38.1		26.9				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		29.6				29.6		21.1				
Max Q Clear Time (g_c+I1), s		12.1				17.3		14.4				
Green Ext Time (p_c), s		13.4				10.0		5.2				

Intersection Summary		
HCM 6th Ctrl Delay		16.1
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1417	52	53	1115	90	138	390	73	110	333	306
Future Volume (veh/h)	274	1417	52	53	1115	90	138	390	73	110	333	306
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	326	1687	62	63	1327	107	164	464	87	131	396	364
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	373	2435	89	141	2066	647	213	776	336	181	920	398
Arrive On Green	0.22	0.96	0.96	0.04	0.41	0.41	0.06	0.22	0.22	0.10	0.26	0.26
Sat Flow, veh/h	3428	5053	186	3401	4985	1561	3291	3526	1528	1739	3554	1536
Grp Volume(v), veh/h	326	1136	613	63	1327	107	164	464	87	131	396	364
Grp Sat Flow(s),veh/h/ln	1714	1702	1834	1700	1662	1561	1646	1763	1528	1739	1777	1536
Q Serve(g_s), s	11.9	4.7	4.8	2.4	27.6	3.9	6.4	15.4	5.2	9.5	12.1	29.9
Cycle Q Clear(g_c), s	11.9	4.7	4.8	2.4	27.6	3.9	6.4	15.4	5.2	9.5	12.1	29.9
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	1640	884	141	2066	647	213	776	336	181	920	398
V/C Ratio(X)	0.87	0.69	0.69	0.45	0.64	0.17	0.77	0.60	0.26	0.72	0.43	0.92
Avail Cap(c_a), veh/h	448	1640	884	157	2066	647	279	922	400	201	1039	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)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	1.3	1.3	60.9	30.4	11.5	59.8	45.5	30.2	56.4	40.2	46.8
Incr Delay (d2), s/veh	10.6	1.9	3.4	0.8	1.6	0.6	6.4	1.8	0.9	8.7	0.1	20.7
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	5.1	1.0	1.5	1.0	11.0	2.1	2.9	6.9	2.4	4.6	5.2	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	3.2	4.7	61.7	31.9	12.0	66.3	47.3	31.2	65.1	40.3	67.5
LnGrp LOS	E	A	A	E	C	B	E	D	C	E	D	E
Approach Vol, veh/h		2075			1497			715			891	
Approach Delay, s/veh		12.7			31.8			49.7			55.1	
Approach LOS		B			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	38.7	19.1	58.8	18.6	33.5	10.4	67.5
Change Period (Y+Rc), s	5.0	* 5	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	11.0	* 38	17.0	44.2	15.0	34.0	6.0	55.2
Max Q Clear Time (g_c+I1), s	8.4	31.9	13.9	29.6	11.5	17.4	4.4	6.8
Green Ext Time (p_c), s	0.1	1.4	0.2	11.5	0.0	5.6	0.0	35.0

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	500	99	161	690	63
Future Volume (veh/h)	87	552	113	131	395	131	79	500	99	161	690	63
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		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1841	1885	1841	1826
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	602	119	194	831	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	4	1	4	5
Cap, veh/h	129	812	166	184	1117	477	117	963	432	220	1168	508
Arrive On Green	0.07	0.28	0.28	0.10	0.31	0.31	0.07	0.28	0.28	0.12	0.33	0.33
Sat Flow, veh/h	1781	2931	599	1795	3554	1518	1767	3469	1557	1795	3497	1522
Grp Volume(v), veh/h	105	403	398	158	476	158	95	602	119	194	831	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1795	1777	1518	1767	1735	1557	1795	1749	1522
Q Serve(g_s), s	7.6	27.5	27.6	11.3	13.8	10.4	6.9	19.7	5.1	13.8	27.0	3.1
Cycle Q Clear(g_c), s	7.6	27.5	27.6	11.3	13.8	10.4	6.9	19.7	5.1	13.8	27.0	3.1
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	129	493	486	184	1117	477	117	963	432	220	1168	508
V/C Ratio(X)	0.82	0.82	0.82	0.86	0.43	0.33	0.81	0.62	0.28	0.88	0.71	0.15
Avail Cap(c_a), veh/h	206	521	514	249	1124	480	169	963	432	309	1168	508
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	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	43.9	43.9	57.4	35.3	34.1	59.9	41.0	15.7	56.1	37.8	14.2
Incr Delay (d2), s/veh	5.8	14.0	14.3	15.9	0.6	0.9	10.8	2.9	1.5	14.9	3.7	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	3.6	13.8	13.7	5.8	6.0	3.9	3.4	8.7	3.0	7.1	11.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.3	57.9	58.2	73.3	35.9	35.0	70.7	43.9	17.2	71.0	41.5	14.8
LnGrp LOS	E	E	E	E	D	C	E	D	B	E	D	B
Approach Vol, veh/h		906			792			816			1101	
Approach Delay, s/veh		58.9			43.2			43.2			44.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	48.0	13.4	45.7	20.5	41.0	18.2	40.9
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	12.4	* 43	15.0	41.1	22.4	33.1	18.0	* 38
Max Q Clear Time (g_c+I1), s	8.9	29.0	9.6	15.8	15.8	21.7	13.3	29.6
Green Ext Time (p_c), s	0.0	6.6	0.0	7.0	0.1	5.5	0.1	6.4

Intersection Summary	
HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	3	27	1	25	23	648	23	78	851	6
Future Volume (vph)	5	2	3	27	1	25	23	648	23	78	851	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1441		1805	1535		1805	3406	1567	1805	3471	1576
Flt Permitted	0.74	1.00		0.75	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1401	1441		1434	1535		1805	3406	1567	1805	3471	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	6	2	3	31	1	29	27	753	27	91	990	7
RTOR Reduction (vph)	0	3	0	0	25	0	0	0	10	0	0	2
Lane Group Flow (vph)	6	2	0	31	5	0	27	753	17	91	990	5
Confl. Peds. (#/hr)									3			1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	50%	0%	0%	0%	6%	0%	6%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	18.0	18.0		18.0	18.0		5.1	80.8	80.8	11.3	87.0	87.0
Effective Green, g (s)	18.0	18.0		18.0	18.0		5.1	80.8	80.8	11.3	87.0	87.0
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.04	0.62	0.62	0.09	0.67	0.67
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	193	199		198	212		70	2116	973	156	2322	1054
v/s Ratio Prot		0.00			0.00		c0.01	0.22		c0.05	c0.29	
v/s Ratio Perm	0.00			c0.02					0.01			0.00
v/c Ratio	0.03	0.01		0.16	0.02		0.39	0.36	0.02	0.58	0.43	0.00
Uniform Delay, d1	48.5	48.3		49.3	48.4		60.9	12.0	9.4	57.1	10.0	7.1
Progression Factor	1.00	1.00		1.00	1.00		1.27	0.25	1.00	1.21	0.18	1.00
Incremental Delay, d2	0.1	0.0		0.4	0.0		3.4	0.5	0.0	4.0	0.4	0.0
Delay (s)	48.5	48.4		49.7	48.4		81.1	3.5	9.4	72.8	2.2	7.1
Level of Service	D	D		D	D		F	A	A	E	A	A
Approach Delay (s)		48.4			49.1			6.3			8.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	1	0	3	26	717	2	10	837	2
Future Volume (vph)	7	0	18	1	0	3	26	717	2	10	837	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.90			0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1678			1678		1671	3406	1554	1805	3471	1032
Flt Permitted		0.94			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1593			1642		1671	3406	1554	1805	3471	1032
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	9	0	22	1	0	4	32	874	2	12	1021	2
RTOR Reduction (vph)	0	28	0	0	4	0	0	0	1	0	0	1
Lane Group Flow (vph)	0	3	0	0	1	0	32	874	1	12	1021	1
Confl. Peds. (#/hr)			1	1			5		4	4		5
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	6%	0%	0%	4%	50%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		14.3			14.3		5.3	94.1	94.1	2.7	91.5	91.5
Effective Green, g (s)		14.3			14.3		5.3	94.1	94.1	2.7	91.5	91.5
Actuated g/C Ratio		0.11			0.11		0.04	0.72	0.72	0.02	0.70	0.70
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		175			180		68	2465	1124	37	2443	726
v/s Ratio Prot							c0.02	c0.26		0.01	c0.29	
v/s Ratio Perm		c0.00			0.00				0.00			0.00
v/c Ratio		0.02			0.00		0.47	0.35	0.00	0.32	0.42	0.00
Uniform Delay, d1		51.6			51.5		61.0	6.7	5.0	62.8	8.1	5.7
Progression Factor		1.00			1.00		1.00	1.00	1.00	0.92	0.72	1.00
Incremental Delay, d2		0.0			0.0		5.1	0.4	0.0	4.6	0.5	0.0
Delay (s)		51.6			51.5		66.0	7.1	5.0	62.1	6.3	5.7
Level of Service		D			D		E	A	A	E	A	A
Approach Delay (s)		51.6			51.5			9.1			6.9	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	66	24	683	830	50
Future Volume (vph)	11	66	24	683	830	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1594	1805	3438	3471	1555
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1594	1805	3438	3471	1555
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	12	75	27	776	943	57
RTOR Reduction (vph)	0	66	0	0	0	18
Lane Group Flow (vph)	13	9	27	776	943	39
Confl. Peds. (#/hr)		1	4			4
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	15.6	15.6	5.1	99.1	89.4	89.4
Effective Green, g (s)	15.6	15.6	5.1	99.1	89.4	89.4
Actuated g/C Ratio	0.12	0.12	0.04	0.76	0.69	0.69
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	191	70	2620	2386	1069
v/s Ratio Prot			c0.01	c0.23	c0.27	
v/s Ratio Perm	c0.01	0.01				0.03
v/c Ratio	0.06	0.05	0.39	0.30	0.40	0.04
Uniform Delay, d1	50.7	50.6	60.9	4.7	8.7	6.5
Progression Factor	1.00	1.00	1.13	0.53	0.66	0.79
Incremental Delay, d2	0.1	0.1	3.2	0.3	0.5	0.1
Delay (s)	50.8	50.7	72.2	2.8	6.2	5.2
Level of Service	D	D	E	A	A	A
Approach Delay (s)	50.7			5.1	6.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1901	70	43	1823	127	103	313	37	91	304	172
Future Volume (veh/h)	164	1901	70	43	1823	127	103	313	37	91	304	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	174	2022	74	46	1939	135	110	333	39	97	323	183
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	202	2728	100	117	2445	170	167	513	395	177	509	420
Arrive On Green	0.11	0.54	0.54	0.13	1.00	1.00	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	5092	186	1781	4913	341	899	1900	1464	1017	1885	1555
Grp Volume(v), veh/h	174	1361	735	46	1352	722	110	333	39	97	323	183
Grp Sat Flow(s),veh/h/ln	1810	1716	1847	1781	1716	1823	899	1900	1464	1017	1885	1555
Q Serve(g_s), s	11.3	36.6	36.8	2.8	1.0	1.1	14.3	18.6	2.4	11.2	18.1	11.7
Cycle Q Clear(g_c), s	11.3	36.6	36.8	2.8	1.0	1.1	32.4	18.6	2.4	29.8	18.1	11.7
Prop In Lane	1.00		0.10	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1838	990	117	1708	907	167	513	395	177	509	420
V/C Ratio(X)	0.86	0.74	0.74	0.39	0.79	0.80	0.66	0.65	0.10	0.55	0.63	0.44
Avail Cap(c_a), veh/h	256	1838	990	131	1708	907	167	513	395	177	509	420
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	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	52.4	21.4	21.5	49.9	0.1	0.1	53.0	38.8	32.8	52.0	38.6	36.2
Incr Delay (d2), s/veh	17.8	2.7	5.0	0.8	3.8	7.2	14.2	4.7	0.3	7.9	4.4	2.1
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	14.4	16.2	1.2	1.0	1.9	4.0	9.3	0.9	3.2	9.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	24.1	26.5	50.7	4.0	7.3	67.3	43.4	33.2	59.9	42.9	38.3
LnGrp LOS	E	C	C	D	A	A	E	D	C	E	D	D
Approach Vol, veh/h		2270			2120			482			603	
Approach Delay, s/veh		28.4			6.1			48.0			44.3	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		38.0	17.4	64.6		38.0	12.8	69.2				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.9	* 4.9				
Max Green Setting (Gmax), s		32.4	17.0	56.1		32.4	8.8	* 64				
Max Q Clear Time (g_c+I1), s		31.8	13.3	3.1		34.4	4.8	38.8				
Green Ext Time (p_c), s		0.3	0.1	44.0		0.0	0.0	23.1				

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1895	12	10	2007	66	0	0	8	0	0	80
Future Volume (vph)	85	1895	12	10	2007	66	0	0	8	0	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.86			0.86	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1805	5078		1805	5109			1644			1370	
Flt Permitted	0.06	1.00		0.08	1.00			1.00			1.00	
Satd. Flow (perm)	119	5078		149	5109			1644			1370	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2060	13	11	2182	72	0	0	9	0	0	87
RTOR Reduction (vph)	0	0	0	0	2	0	0	8	0	0	15	0
Lane Group Flow (vph)	92	2073	0	11	2252	0	0	1	0	0	72	0
Confl. Peds. (#/hr)	1		5	5		1						
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	0%	2%	8%	0%	1%	0%	0%	0%	0%	0%	0%	20%
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	99.0	99.0		99.0	99.0			14.1			14.1	
Effective Green, g (s)	99.0	99.0		99.0	99.0			14.1			14.1	
Actuated g/C Ratio	0.82	0.82		0.82	0.82			0.12			0.12	
Clearance Time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	98	4189		122	4214			193			160	
v/s Ratio Prot		0.41			0.44			0.00			c0.05	
v/s Ratio Perm	c0.78			0.07								
v/c Ratio	0.94	0.49		0.09	0.53			0.01			0.45	
Uniform Delay, d1	8.1	3.1		2.0	3.3			46.8			49.3	
Progression Factor	2.11	0.37		1.00	1.00			1.00			1.00	
Incremental Delay, d2	62.7	0.3		1.5	0.5			0.0			2.0	
Delay (s)	79.9	1.4		3.4	3.8			46.8			51.3	
Level of Service	E	A		A	A			D			D	
Approach Delay (s)		4.8			3.8			46.8			51.3	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	1462	222	227	1497	313	334	735	228	516	817	252
Future Volume (vph)	219	1462	222	227	1497	313	334	735	228	516	817	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1575	3502	5085	1547	3467	3539	1541	3467	3539	1564
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1575	3502	5085	1547	3467	3539	1541	3467	3539	1564
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	246	1643	249	255	1682	352	375	826	256	580	918	283
RTOR Reduction (vph)	0	0	134	0	0	130	0	0	155	0	0	148
Lane Group Flow (vph)	246	1643	115	255	1682	222	375	826	101	580	918	135
Confl. Peds. (#/hr)			3			18			12			8
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	2%	1%	0%	2%	1%	1%	2%	2%	1%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.0	46.1	46.1	14.0	49.1	49.1	17.2	37.5	37.5	25.0	45.3	45.3
Effective Green, g (s)	11.0	46.1	46.1	14.0	49.1	49.1	17.2	37.5	37.5	25.0	45.3	45.3
Actuated g/C Ratio	0.07	0.31	0.31	0.09	0.33	0.33	0.11	0.25	0.25	0.17	0.30	0.30
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	1562	484	326	1664	506	397	884	385	577	1068	472
v/s Ratio Prot	c0.07	0.32		c0.07	c0.33		c0.11	c0.23		c0.17	0.26	
v/s Ratio Perm			0.07			0.14			0.07			0.09
v/c Ratio	0.96	1.05	0.24	0.78	1.01	0.44	0.94	0.93	0.26	1.01	0.86	0.29
Uniform Delay, d1	69.3	52.0	38.8	66.5	50.5	39.6	65.9	55.0	45.1	62.5	49.4	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.3	37.8	0.3	11.6	24.7	0.6	30.8	16.5	0.4	38.8	7.1	0.3
Delay (s)	114.6	89.7	39.1	78.1	75.2	40.2	96.8	71.6	45.5	101.3	56.4	40.3
Level of Service	F	F	D	E	E	D	F	E	D	F	E	D
Approach Delay (s)		86.7			70.1			73.5			68.5	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	75.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	2085	22	79	1944	67	0	0	123	39	0	93
Future Volume (vph)	98	2085	22	79	1944	67	0	0	123	39	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1805	4739		1805	5136	1500		1627			1694	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.66	
Satd. Flow (perm)	1805	4739		1805	5136	1500		1627			1134	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	2317	24	88	2160	74	0	0	137	43	0	103
RTOR Reduction (vph)	0	1	0	0	0	22	0	107	0	0	92	0
Lane Group Flow (vph)	109	2340	0	88	2160	52	0	30	0	0	54	0
Confl. Peds. (#/hr)	13		5	5		13						
Confl. Bikes (#/hr)			2			6						
Heavy Vehicles (%)	0%	2%	5%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	11.5	83.8		7.2	79.5	79.5		13.9			13.9	
Effective Green, g (s)	11.5	83.8		7.2	79.5	79.5		13.9			13.9	
Actuated g/C Ratio	0.10	0.70		0.06	0.66	0.66		0.12			0.12	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	172	3309		108	3402	993		188			131	
v/s Ratio Prot	0.06	c0.49		0.05	c0.42			0.02				
v/s Ratio Perm						0.03					c0.05	
v/c Ratio	0.63	0.71		0.81	0.63	0.05		0.16			0.41	
Uniform Delay, d1	52.2	10.8		55.7	11.8	7.1		47.8			49.3	
Progression Factor	1.00	1.00		0.80	0.45	0.08		1.00			1.00	
Incremental Delay, d2	7.4	1.3		30.2	0.7	0.1		0.4			2.1	
Delay (s)	59.6	12.1		74.8	6.0	0.7		48.2			51.4	
Level of Service	E	B		E	A	A		D			D	
Approach Delay (s)		14.2			8.4			48.2			51.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1438	809	0	1723	597	0	0	0	342	0	367
Future Volume (veh/h)	0	1438	809	0	1723	597	0	0	0	342	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1546	0	0	1853	0				380	0	395
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2182		0	3135					492	0	435
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1546	0	0	1853	0				380	0	395
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				23.4	0.0	28.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				23.4	0.0	28.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2182		0	3135					492	0	435
V/C Ratio(X)	0.00	0.71		0.00	0.59					0.77	0.00	0.91
Avail Cap(c_a), veh/h	0	2182		0	3135					598	0	528
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.64	0.00	0.00	0.75	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				40.1	0.0	42.1
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	0.6	0.0				5.0	0.0	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.2	0.0				10.9	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.3	0.0	0.0	0.6	0.0				45.1	0.0	59.6
LnGrp LOS	A	A		A	A					D	A	E
Approach Vol, veh/h		1546	A		1853	A					775	
Approach Delay, s/veh		1.3			0.6						52.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		80.1		39.9		80.1
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		66.0		40.0		66.0
Max Q Clear Time (g_c+I1), s		2.0		30.9		2.0
Green Ext Time (p_c), s		32.9		2.0		40.1

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1441	340	0	1755	505	565	0	477	0	0	0
Future Volume (veh/h)	0	1441	340	0	1755	505	565	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1549	0	0	1887	0	614	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	3159		0	3159		923	0	757			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1549	0	0	1887	0	614	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	19.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	19.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3159		0	3159		923	0	757			
V/C Ratio(X)	0.00	0.49		0.00	0.60		0.67	0.00	0.68			
Avail Cap(c_a), veh/h	0	3159		0	3159		1086	0	890			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.62	0.00	0.00	0.44	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	39.2	0.0	39.4			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.4	0.0	3.6	0.0	4.6			
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	0.0	0.1	0.0	0.0	0.1	0.0	8.5	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	0.4	0.0	42.8	0.0	43.9			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1549	A		1887	A		1127				
Approach Delay, s/veh		0.3			0.4			43.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		80.7				80.7		39.3				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		68.0				68.0		37.7				
Max Q Clear Time (g_c+I1), s		2.0				2.0		21.4				
Green Ext Time (p_c), s		37.6				48.4		10.6				

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	1470	133	117	1561	62	309	547	96	164	532	390
Future Volume (veh/h)	315	1470	133	117	1561	62	309	547	96	164	532	390
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	342	1598	145	127	1697	67	336	595	104	178	578	424
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	352	1930	175	176	1810	551	348	1005	437	180	1008	447
Arrive On Green	0.20	0.81	0.81	0.05	0.35	0.35	0.10	0.28	0.28	0.10	0.28	0.28
Sat Flow, veh/h	3456	4793	434	3510	5147	1567	3483	3582	1559	1795	3582	1588
Grp Volume(v), veh/h	342	1143	600	127	1697	67	336	595	104	178	578	424
Grp Sat Flow(s),veh/h/ln	1728	1716	1796	1755	1716	1567	1742	1791	1559	1795	1791	1588
Q Serve(g_s), s	11.8	23.3	23.4	4.3	38.3	2.5	11.5	17.2	6.2	11.9	16.6	31.4
Cycle Q Clear(g_c), s	11.8	23.3	23.4	4.3	38.3	2.5	11.5	17.2	6.2	11.9	16.6	31.4
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	1382	723	176	1810	551	348	1005	437	180	1008	447
V/C Ratio(X)	0.97	0.83	0.83	0.72	0.94	0.12	0.96	0.59	0.24	0.99	0.57	0.95
Avail Cap(c_a), veh/h	352	1382	723	176	1810	551	348	1015	442	180	1015	450
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)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	9.2	9.2	56.2	37.6	13.6	53.8	37.2	33.3	53.9	36.9	42.3
Incr Delay (d2), s/veh	35.9	4.1	7.6	12.0	10.8	0.5	38.5	1.5	0.7	64.4	0.5	29.4
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	6.2	4.2	5.1	2.2	17.2	1.3	6.9	7.7	2.4	8.5	7.2	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.5	13.3	16.8	68.2	48.4	14.1	92.3	38.8	33.9	118.4	37.4	71.6
LnGrp LOS	F	B	B	E	D	B	F	D	C	F	D	E
Approach Vol, veh/h		2085			1891			1035			1180	
Approach Delay, s/veh		25.8			48.5			55.7			61.9	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	38.7	17.2	47.1	17.0	38.7	11.0	53.3
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	* 5	5.0	* 5
Max Green Setting (Gmax), s	12.0	34.0	12.0	42.2	12.0	* 34	6.0	* 48
Max Q Clear Time (g_c+I1), s	13.5	33.4	13.8	40.3	13.9	19.2	6.3	25.4
Green Ext Time (p_c), s	0.0	0.3	0.0	1.8	0.0	6.6	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	633	142	176	696	209	157	843	139	296	1134	123
Future Volume (veh/h)	143	633	142	176	696	209	157	843	139	296	1134	123
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1900	1900	1870	1885
Adj Flow Rate, veh/h	157	696	156	193	765	230	173	926	153	325	1246	135
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, %	1	1	1	1	1	1	1	2	0	0	2	1
Cap, veh/h	165	824	185	195	1107	484	180	959	425	324	1241	548
Arrive On Green	0.09	0.29	0.29	0.11	0.31	0.31	0.10	0.27	0.27	0.18	0.35	0.35
Sat Flow, veh/h	1795	2891	647	1795	3582	1567	1795	3554	1574	1810	3554	1570
Grp Volume(v), veh/h	157	431	421	193	765	230	173	926	153	325	1246	135
Grp Sat Flow(s),veh/h/ln	1795	1791	1747	1795	1791	1567	1795	1777	1574	1810	1777	1570
Q Serve(g_s), s	10.4	27.2	27.2	12.9	22.5	14.3	11.5	30.9	7.0	21.5	41.9	5.5
Cycle Q Clear(g_c), s	10.4	27.2	27.2	12.9	22.5	14.3	11.5	30.9	7.0	21.5	41.9	5.5
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	510	498	195	1107	484	180	959	425	324	1241	548
V/C Ratio(X)	0.95	0.84	0.85	0.99	0.69	0.47	0.96	0.97	0.36	1.00	1.00	0.25
Avail Cap(c_a), veh/h	165	522	510	195	1107	484	180	959	425	324	1241	548
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	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	40.4	40.4	53.4	36.4	33.6	53.8	43.2	19.6	49.2	39.0	15.8
Incr Delay (d2), s/veh	56.0	15.6	16.1	62.1	2.4	1.5	50.1	19.2	1.9	50.6	26.6	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	7.2	13.8	13.6	9.1	9.9	5.5	7.6	15.7	3.7	14.0	22.1	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.3	56.0	56.5	115.6	38.8	35.1	103.8	62.4	21.6	99.8	65.6	16.9
LnGrp LOS	F	E	E	F	D	D	F	E	C	F	F	B
Approach Vol, veh/h		1009			1188			1252			1706	
Approach Delay, s/veh		64.6			50.5			63.1			68.3	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	46.5	15.0	42.0	26.1	37.3	17.9	39.1
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	12.0	* 42	11.0	37.0	21.5	32.1	13.0	* 35
Max Q Clear Time (g_c+I1), s	13.5	43.9	12.4	24.5	23.5	32.9	14.9	29.2
Green Ext Time (p_c), s	0.0	0.0	0.0	7.4	0.0	0.0	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	55	78	1	51	162	1053	49	108	1331	13
Future Volume (vph)	36	1	55	78	1	51	162	1053	49	108	1331	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1803	1565		1747	1599		1787	3539	1573	1787	3574	1547
Flt Permitted	0.72	1.00		0.72	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1366	1565		1319	1599		1787	3539	1573	1787	3574	1547
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	40	1	60	86	1	56	178	1157	54	119	1463	14
RTOR Reduction (vph)	0	49	0	0	46	0	0	0	24	0	0	7
Lane Group Flow (vph)	40	12	0	86	11	0	178	1157	30	119	1463	7
Confl. Peds. (#/hr)	1		3	3		1			2			8
Heavy Vehicles (%)	0%	0%	2%	3%	0%	0%	1%	2%	0%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	21.2	21.2		21.2	21.2		17.2	66.7	66.7	12.2	61.7	61.7
Effective Green, g (s)	21.2	21.2		21.2	21.2		17.2	66.7	66.7	12.2	61.7	61.7
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.14	0.56	0.56	0.10	0.51	0.51
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	241	276		233	282		256	1967	874	181	1837	795
v/s Ratio Prot		0.01			0.01		c0.10	c0.33		0.07	c0.41	
v/s Ratio Perm	0.03			c0.07					0.02			0.00
v/c Ratio	0.17	0.04		0.37	0.04		0.70	0.59	0.03	0.66	0.80	0.01
Uniform Delay, d1	41.9	41.0		43.5	41.0		48.9	17.6	12.1	51.9	24.0	14.2
Progression Factor	1.00	1.00		1.00	1.00		1.19	0.68	0.84	1.22	0.16	1.00
Incremental Delay, d2	0.3	0.1		1.0	0.1		7.1	1.2	0.1	2.1	0.9	0.0
Delay (s)	42.2	41.0		44.5	41.0		65.3	13.1	10.2	65.6	4.7	14.2
Level of Service	D	D		D	D		E	B	B	E	A	B
Approach Delay (s)		41.5			43.1			19.6			9.3	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	20	1	0	2	43	1272	0	28	1262	4
Future Volume (vph)	3	0	20	1	0	2	43	1272	0	28	1262	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1664			1686		1805	3539		1805	3539	1566
Flt Permitted		0.97			0.92		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1620			1576		1805	3539		1805	3539	1566
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	3	0	22	1	0	2	47	1398	0	31	1387	4
RTOR Reduction (vph)	0	23	0	0	3	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2	0	0	0	0	47	1398	0	31	1387	3
Confl. Peds. (#/hr)	1					1	3		3	3		3
Confl. Bikes (#/hr)									2			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		7.2			7.2		3.6	68.7		3.0	68.1	68.1
Effective Green, g (s)		7.2			7.2		3.6	68.7		3.0	68.1	68.1
Actuated g/C Ratio		0.07			0.07		0.04	0.70		0.03	0.70	0.70
Clearance Time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		119			116		66	2491		55	2469	1092
v/s Ratio Prot							c0.03	c0.40		0.02	0.39	
v/s Ratio Perm		c0.00			0.00							0.00
v/c Ratio		0.02			0.00		0.71	0.56		0.56	0.56	0.00
Uniform Delay, d1		41.9			41.9		46.5	7.1		46.7	7.3	4.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			0.0		30.3	0.9		12.6	0.9	0.0
Delay (s)		42.0			41.9		76.8	8.0		59.2	8.3	4.5
Level of Service		D			D		E	A		E	A	A
Approach Delay (s)		42.0			41.9			10.2			9.4	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	17.7
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	193	38	1230	1393	71
Future Volume (vph)	34	193	38	1230	1393	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1524	1805	3574	3574	1558
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1524	1805	3574	3574	1558
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	37	212	42	1352	1531	78
RTOR Reduction (vph)	0	159	0	0	0	22
Lane Group Flow (vph)	37	53	42	1352	1531	56
Confl. Peds. (#/hr)			4			4
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	6%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	17.2	17.2	6.0	88.4	77.8	77.8
Effective Green, g (s)	17.2	17.2	6.0	88.4	77.8	77.8
Actuated g/C Ratio	0.14	0.14	0.05	0.74	0.65	0.65
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	218	90	2632	2317	1010
v/s Ratio Prot			0.02	c0.38	c0.43	
v/s Ratio Perm	0.02	c0.03				0.04
v/c Ratio	0.14	0.24	0.47	0.51	0.66	0.06
Uniform Delay, d1	45.0	45.6	55.4	6.7	13.0	7.7
Progression Factor	1.00	1.00	1.00	1.00	0.58	0.24
Incremental Delay, d2	0.3	0.6	3.8	0.7	1.0	0.1
Delay (s)	45.2	46.2	59.2	7.4	8.5	1.9
Level of Service	D	D	E	A	A	A
Approach Delay (s)	46.0			9.0	8.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1439	40	28	1444	69	87	155	33	65	97	115
Future Volume (veh/h)	97	1439	40	28	1444	69	87	155	33	65	97	115
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	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	100	1484	41	29	1489	71	90	160	34	67	100	119
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	379	3053	84	237	2570	123	196	324	273	157	319	273
Arrive On Green	0.21	0.59	0.59	0.26	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	5144	142	1810	4990	238	1161	1885	1588	1114	1856	1588
Grp Volume(v), veh/h	100	990	535	29	1016	544	90	160	34	67	100	119
Grp Sat Flow(s),veh/h/ln	1810	1716	1855	1810	1702	1824	1161	1885	1588	1114	1856	1588
Q Serve(g_s), s	6.5	23.1	23.1	1.7	0.0	0.0	10.3	10.8	2.5	8.1	6.6	9.4
Cycle Q Clear(g_c), s	6.5	23.1	23.1	1.7	0.0	0.0	16.9	10.8	2.5	18.9	6.6	9.4
Prop In Lane	1.00		0.08	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	2037	1101	237	1753	939	196	324	273	157	319	273
V/C Ratio(X)	0.26	0.49	0.49	0.12	0.58	0.58	0.46	0.49	0.12	0.43	0.31	0.44
Avail Cap(c_a), veh/h	379	2037	1101	237	1753	939	274	450	379	232	443	379
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	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	16.3	16.3	45.5	0.0	0.0	58.1	52.4	49.0	61.0	50.7	51.9
Incr Delay (d2), s/veh	0.1	0.8	1.5	0.1	1.4	2.6	4.8	3.4	0.6	5.2	1.6	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.9	9.9	0.8	0.3	0.7	3.3	5.4	1.0	2.5	3.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	17.1	17.8	45.6	1.4	2.6	62.9	55.8	49.6	66.2	52.3	55.0
LnGrp LOS	D	B	B	D	A	A	E	E	D	E	D	E
Approach Vol, veh/h		1625			1589			284			286	
Approach Delay, s/veh		19.1			2.6			57.3			56.7	
Approach LOS		B			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.7	33.3	77.0		29.7	22.3	88.0
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9
Max Green Setting (Gmax), s		33.4	20.0	72.1		33.4	9.0	83.1
Max Q Clear Time (g_c+I1), s		20.9	8.5	2.0		18.9	3.7	25.1
Green Ext Time (p_c), s		2.1	0.1	38.2		2.4	0.0	33.4

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1445	15	32	1436	80	6	0	11	0	0	74
Future Volume (vph)	99	1445	15	32	1436	80	6	0	11	0	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.91			0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1804	5077		1805	5044			1707			1644	
Flt Permitted	0.13	1.00		0.14	1.00			0.93			1.00	
Satd. Flow (perm)	249	5077		267	5044			1618			1644	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	1571	16	35	1561	87	7	0	12	0	0	80
RTOR Reduction (vph)	0	0	0	0	3	0	0	13	0	0	55	0
Lane Group Flow (vph)	108	1587	0	35	1645	0	0	6	0	0	25	0
Confl. Peds. (#/hr)	7		2	2		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	117.5	117.5		117.5	117.5			15.6			15.6	
Effective Green, g (s)	117.5	117.5		117.5	117.5			15.6			15.6	
Actuated g/C Ratio	0.84	0.84		0.84	0.84			0.11			0.11	
Clearance Time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	208	4261		224	4233			180			183	
v/s Ratio Prot		0.31			0.33						c0.02	
v/s Ratio Perm	c0.43			0.13				0.00				
v/c Ratio	0.52	0.37		0.16	0.39			0.03			0.14	
Uniform Delay, d1	3.2	2.6		2.1	2.7			55.5			56.1	
Progression Factor	1.97	0.94		0.08	0.12			1.00			1.00	
Incremental Delay, d2	8.5	0.2		1.1	0.2			0.1			0.3	
Delay (s)	14.8	2.7		1.3	0.5			55.5			56.5	
Level of Service	B	A		A	A			E			E	
Approach Delay (s)		3.5			0.5			55.5			56.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	1037	159	259	1066	432	243	592	259	562	629	240
Future Volume (vph)	260	1037	159	259	1066	432	243	592	259	562	629	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1531	3433	5085	1582	3467	3539	1531	3433	3539	1572
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1531	3433	5085	1582	3467	3539	1531	3433	3539	1572
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	1080	166	270	1110	450	253	617	270	585	655	250
RTOR Reduction (vph)	0	0	118	0	0	249	0	0	177	0	0	161
Lane Group Flow (vph)	271	1080	48	270	1110	201	253	617	93	585	655	89
Confl. Peds. (#/hr)			11			7			16			14
Confl. Bikes (#/hr)			1			1			4			1
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	1%	2%	2%	2%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	15.8	40.2	40.2	15.8	40.2	40.2	12.8	31.5	31.5	26.3	45.0	45.0
Effective Green, g (s)	15.8	40.2	40.2	15.8	40.2	40.2	12.8	31.5	31.5	26.3	45.0	45.0
Actuated g/C Ratio	0.11	0.29	0.29	0.11	0.29	0.29	0.09	0.22	0.22	0.19	0.32	0.32
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	395	1460	439	387	1460	454	316	796	344	644	1137	505
v/s Ratio Prot	0.08	0.21		c0.08	c0.22		c0.07	c0.17		c0.17	0.19	
v/s Ratio Perm			0.03			0.13			0.06			0.06
v/c Ratio	0.69	0.74	0.11	0.70	0.76	0.44	0.80	0.78	0.27	0.91	0.58	0.18
Uniform Delay, d1	59.7	45.2	36.7	59.8	45.5	40.8	62.3	50.9	44.8	55.7	39.6	34.2
Progression Factor	0.98	0.81	4.12	1.02	0.60	0.88	1.20	0.82	0.42	0.77	0.75	1.13
Incremental Delay, d2	4.6	1.9	0.1	4.7	2.1	0.6	12.4	4.6	0.4	17.4	0.6	0.1
Delay (s)	62.9	38.4	151.4	65.9	29.3	36.3	87.0	46.4	19.0	60.0	30.3	38.6
Level of Service	E	D	F	E	C	D	F	D	B	E	C	D
Approach Delay (s)		55.1			36.4			48.9			43.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1740	14	111	1672	67	0	0	99	45	0	84
Future Volume (vph)	104	1740	14	111	1672	67	0	0	99	45	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1805	5077		1736	5085	1533		1627			1703	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.73	
Satd. Flow (perm)	1805	5077		1736	5085	1533		1627			1262	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	112	1871	15	119	1798	72	0	0	106	48	0	90
RTOR Reduction (vph)	0	0	0	0	0	18	0	94	0	0	58	0
Lane Group Flow (vph)	112	1886	0	119	1798	54	0	12	0	0	80	0
Confl. Peds. (#/hr)	7		11	11		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	4%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	13.5	93.7		15.2	95.4	95.4		16.0			16.0	
Effective Green, g (s)	13.5	93.7		15.2	95.4	95.4		16.0			16.0	
Actuated g/C Ratio	0.10	0.67		0.11	0.68	0.68		0.11			0.11	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	174	3397		188	3465	1044		185			144	
v/s Ratio Prot	0.06	c0.37		c0.07	0.35			0.01				
v/s Ratio Perm						0.04					c0.06	
v/c Ratio	0.64	0.56		0.63	0.52	0.05		0.07			0.55	
Uniform Delay, d1	60.9	12.2		59.7	11.0	7.4		55.3			58.6	
Progression Factor	0.86	1.05		1.03	0.59	0.16		1.00			1.00	
Incremental Delay, d2	5.8	0.5		6.1	0.5	0.1		0.1			4.5	
Delay (s)	58.0	13.3		67.4	7.0	1.2		55.5			63.1	
Level of Service	E	B		E	A	A		E			E	
Approach Delay (s)		15.8			10.4			55.5			63.1	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1247	637	0	1522	461	0	0	0	350	0	328
Future Volume (veh/h)	0	1247	637	0	1522	461	0	0	0	350	0	328
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1299	0	0	1585	0				389	0	342
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2337		0	3385					435	0	381
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1299	0	0	1585	0				389	0	342
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				29.3	0.0	29.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				29.3	0.0	29.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2337		0	3385					435	0	381
V/C Ratio(X)	0.00	0.56		0.00	0.47					0.89	0.00	0.90
Avail Cap(c_a), veh/h	0	2337		0	3385					654	0	573
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.81	0.00	0.00	0.74	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				51.3	0.0	51.4
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.3	0.0				10.5	0.0	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.1	0.0				14.5	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.8	0.0	0.0	0.3	0.0				61.8	0.0	63.5
LnGrp LOS	A	A		A	A					E	A	E
Approach Vol, veh/h		1299	A		1585	A					731	
Approach Delay, s/veh		0.8			0.3						62.6	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		99.1		40.9		99.1
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		75.0		51.0		75.0
Max Q Clear Time (g_c+I1), s		2.0		31.5		2.0
Green Ext Time (p_c), s		25.6		2.4		33.6

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1363	234	0	1424	420	559	0	711	0	0	0
Future Volume (veh/h)	0	1363	234	0	1424	420	559	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1420	0	0	1483	0	608	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2269		0	2251		1226	0	998			
Arrive On Green	0.00	0.88	0.00	0.00	0.44	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1420	0	0	1483	0	608	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	5.1	0.0	0.0	16.0	0.0	9.6	0.0	16.2			
Cycle Q Clear(g_c), s	0.0	5.1	0.0	0.0	16.0	0.0	9.6	0.0	16.2			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2269		0	2251		1226	0	998			
V/C Ratio(X)	0.00	0.63		0.00	0.66		0.50	0.00	0.74			
Avail Cap(c_a), veh/h	0	2269		0	2251		1298	0	1056			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.73	0.00	0.00	0.78	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	2.6	0.0	0.0	15.4	0.0	17.7	0.0	19.8			
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	1.2	0.0	1.3	0.0	4.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.0	0.0	5.5	0.0	3.8	0.0	5.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.6	0.0	0.0	16.6	0.0	19.0	0.0	24.6			
LnGrp LOS	A	A		A	B		B	A	C			
Approach Vol, veh/h		1420	A		1483	A		1349				
Approach Delay, s/veh		3.6			16.6			22.1				
Approach LOS		A			B			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		37.9				37.9		32.1				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		29.4				29.4		26.3				
Max Q Clear Time (g_c+I1), s		7.1				18.0		18.2				
Green Ext Time (p_c), s		16.5				9.6		6.7				

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1621	179	108	1304	72	369	293	116	145	282	171
Future Volume (veh/h)	274	1621	179	108	1304	72	369	293	116	145	282	171
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		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	285	1689	186	112	1358	75	384	305	121	151	294	178
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	330	2018	221	387	2276	707	432	770	336	175	684	292
Arrive On Green	0.19	0.86	0.86	0.11	0.45	0.45	0.12	0.22	0.22	0.10	0.19	0.19
Sat Flow, veh/h	3456	4693	515	3456	5106	1585	3483	3526	1541	1795	3554	1518
Grp Volume(v), veh/h	285	1233	642	112	1358	75	384	305	121	151	294	178
Grp Sat Flow(s),veh/h/ln	1728	1716	1777	1728	1702	1585	1742	1763	1541	1795	1777	1518
Q Serve(g_s), s	11.2	25.1	25.5	4.2	28.1	3.9	15.2	10.4	7.1	11.6	10.2	11.9
Cycle Q Clear(g_c), s	11.2	25.1	25.5	4.2	28.1	3.9	15.2	10.4	7.1	11.6	10.2	11.9
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	330	1475	764	387	2276	707	432	770	336	175	684	292
V/C Ratio(X)	0.86	0.84	0.84	0.29	0.60	0.11	0.89	0.40	0.36	0.86	0.43	0.61
Avail Cap(c_a), veh/h	420	1475	764	387	2276	707	473	932	407	205	863	369
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)	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	7.3	7.4	57.0	29.3	22.6	60.4	46.8	27.2	62.3	49.8	32.6
Incr Delay (d2), s/veh	8.6	4.1	7.8	0.2	1.2	0.3	16.4	0.8	1.5	24.0	0.2	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	4.8	4.0	4.9	1.8	11.5	1.5	7.7	4.7	2.8	6.4	4.5	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	11.5	15.2	57.2	30.5	22.9	76.8	47.6	28.7	86.2	49.9	33.4
LnGrp LOS	E	B	B	E	C	C	E	D	C	F	D	C
Approach Vol, veh/h		2160			1545			810			623	
Approach Delay, s/veh		19.5			32.0			58.6			54.0	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	31.8	18.4	67.4	18.6	35.6	20.7	65.1
Change Period (Y+Rc), s	5.0	4.9	5.0	* 5	5.0	* 5	5.0	4.9
Max Green Setting (Gmax), s	19.0	34.0	17.0	* 50	16.0	* 37	7.0	60.2
Max Q Clear Time (g_c+I1), s	17.2	13.9	13.2	30.1	13.6	12.4	6.2	27.5
Green Ext Time (p_c), s	0.2	1.4	0.2	15.1	0.0	4.9	0.0	27.3

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	321	129	128	289	163	118	822	110	289	1022	100
Future Volume (veh/h)	151	321	129	128	289	163	118	822	110	289	1022	100
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1870	1900	1870	1900
Adj Flow Rate, veh/h	161	341	137	136	307	173	126	874	117	307	1087	106
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	1	1	0	1	1	2	0	2	0
Cap, veh/h	184	530	208	159	737	328	149	1112	481	330	1457	647
Arrive On Green	0.10	0.21	0.21	0.09	0.21	0.21	0.08	0.31	0.31	0.18	0.41	0.41
Sat Flow, veh/h	1795	2484	977	1795	3582	1594	1795	3582	1549	1810	3554	1579
Grp Volume(v), veh/h	161	244	234	136	307	173	126	874	117	307	1087	106
Grp Sat Flow(s),veh/h/ln	1795	1791	1670	1795	1791	1594	1795	1791	1549	1810	1777	1579
Q Serve(g_s), s	12.4	17.3	18.0	10.5	10.4	13.5	9.7	31.2	5.3	23.4	36.4	3.6
Cycle Q Clear(g_c), s	12.4	17.3	18.0	10.5	10.4	13.5	9.7	31.2	5.3	23.4	36.4	3.6
Prop In Lane	1.00		0.58	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	382	356	159	737	328	149	1112	481	330	1457	647
V/C Ratio(X)	0.87	0.64	0.66	0.85	0.42	0.53	0.85	0.79	0.24	0.93	0.75	0.16
Avail Cap(c_a), veh/h	205	473	441	180	895	398	173	1112	481	380	1457	647
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	50.1	50.4	62.9	48.3	49.5	63.3	44.0	16.3	56.3	35.1	9.7
Incr Delay (d2), s/veh	27.4	7.9	9.1	26.2	0.8	2.8	22.2	5.0	1.1	25.6	3.5	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	7.0	8.5	8.3	5.9	4.7	5.6	5.3	14.4	3.0	12.9	16.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.3	58.0	59.5	89.1	49.1	52.3	85.5	49.1	17.4	81.9	38.6	10.2
LnGrp LOS	F	E	E	F	D	D	F	D	B	F	D	B
Approach Vol, veh/h		639			616			1117			1500	
Approach Delay, s/veh		66.5			58.8			49.9			45.5	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	62.0	18.4	33.7	30.2	48.4	17.3	34.8
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	13.5	* 57	16.0	35.0	29.4	41.2	14.0	* 37
Max Q Clear Time (g_c+I1), s	11.7	38.4	14.4	15.5	25.4	33.2	12.5	20.0
Green Ext Time (p_c), s	0.0	10.4	0.0	4.4	0.2	5.5	0.0	7.4

Intersection Summary	
HCM 6th Ctrl Delay	52.3
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	108	68	1	41	226	980	61	134	1117	29
Future Volume (vph)	29	0	108	68	1	41	226	980	61	134	1117	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1562		1803	1560		1805	3574	1547	1770	3574	1550
Flt Permitted	0.73	1.00		0.60	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1384	1562		1131	1560		1805	3574	1547	1770	3574	1550
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	30	0	112	71	1	43	235	1021	64	140	1164	30
RTOR Reduction (vph)	0	96	0	0	36	0	0	0	26	0	0	14
Lane Group Flow (vph)	30	17	0	71	8	0	235	1021	38	140	1164	16
Confl. Peds. (#/hr)			1	1					6			6
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%	0%	1%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	21.3	21.3		21.3	21.3		22.3	83.1	83.1	15.7	76.5	76.5
Effective Green, g (s)	21.3	21.3		21.3	21.3		22.3	83.1	83.1	15.7	76.5	76.5
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.16	0.59	0.59	0.11	0.55	0.55
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	210	237		172	237		287	2121	918	198	1952	846
v/s Ratio Prot		0.01			0.00		c0.13	c0.29		0.08	c0.33	
v/s Ratio Perm	0.02			c0.06					0.02			0.01
v/c Ratio	0.14	0.07		0.41	0.03		0.82	0.48	0.04	0.71	0.60	0.02
Uniform Delay, d1	51.4	50.9		53.7	50.6		56.9	16.2	11.9	59.9	21.4	14.6
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.65	1.06	1.28	0.27	1.00
Incremental Delay, d2	0.3	0.1		1.6	0.1		15.2	0.7	0.1	8.3	1.0	0.0
Delay (s)	51.8	51.0		55.3	50.6		75.5	11.2	12.7	84.8	6.7	14.6
Level of Service	D	D		E	D		E	B	B	F	A	B
Approach Delay (s)		51.2			53.5			22.7			15.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	22	3	0	7	53	998	6	25	921	13
Future Volume (vph)	5	0	22	3	0	7	53	998	6	25	921	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.89			0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1608			1542		1805	3574	1526	1805	3539	1567
Flt Permitted		0.96			0.95		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1564			1480		1805	3574	1526	1805	3539	1567
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	0	23	3	0	7	56	1051	6	26	969	14
RTOR Reduction (vph)	0	25	0	0	9	0	0	0	2	0	0	4
Lane Group Flow (vph)	0	3	0	0	1	0	56	1051	4	26	969	10
Confl. Peds. (#/hr)							2		7	7		2
Confl. Bikes (#/hr)									6			1
Heavy Vehicles (%)	0%	0%	5%	33%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		14.3			14.3		8.5	101.7	101.7	5.1	98.3	98.3
Effective Green, g (s)		14.3			14.3		8.5	101.7	101.7	5.1	98.3	98.3
Actuated g/C Ratio		0.10			0.10		0.06	0.73	0.73	0.04	0.70	0.70
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		159			151		109	2596	1108	65	2484	1100
v/s Ratio Prot							c0.03	c0.29		c0.01	0.27	
v/s Ratio Perm		c0.00			0.00				0.00			0.01
v/c Ratio		0.02			0.01		0.51	0.40	0.00	0.40	0.39	0.01
Uniform Delay, d1		56.5			56.5		63.7	7.4	5.3	66.0	8.6	6.2
Progression Factor		1.00			1.00		1.00	1.00	1.00	0.84	0.94	1.00
Incremental Delay, d2		0.0			0.0		4.0	0.5	0.0	3.5	0.4	0.0
Delay (s)		56.6			56.5		67.8	7.9	5.3	58.6	8.4	6.3
Level of Service		E			E		E	A	A	E	A	A
Approach Delay (s)		56.6			56.5			10.9			9.7	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	224	46	1237	1206	86
Future Volume (vph)	30	224	46	1237	1206	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1803	1568	1805	3574	3574	1506
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1803	1568	1805	3574	3574	1506
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	233	48	1289	1256	90
RTOR Reduction (vph)	0	204	0	0	0	25
Lane Group Flow (vph)	31	29	48	1289	1256	65
Confl. Peds. (#/hr)	1		11			11
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	17.2	17.2	7.5	107.9	95.8	95.8
Effective Green, g (s)	17.2	17.2	7.5	107.9	95.8	95.8
Actuated g/C Ratio	0.12	0.12	0.05	0.77	0.68	0.68
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	192	96	2754	2445	1030
v/s Ratio Prot			0.03	c0.36	c0.35	
v/s Ratio Perm	0.02	c0.02				0.04
v/c Ratio	0.14	0.15	0.50	0.47	0.51	0.06
Uniform Delay, d1	54.8	54.9	64.4	5.8	10.8	7.3
Progression Factor	1.00	1.00	1.09	1.29	0.40	0.17
Incremental Delay, d2	0.3	0.4	3.1	0.4	0.7	0.1
Delay (s)	55.1	55.2	73.0	7.9	5.0	1.4
Level of Service	E	E	E	A	A	A
Approach Delay (s)	55.2			10.2	4.7	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.2	0.1	0.0	0.0	2.4	0.4	2.3	1.7	0.3	0.2
Total Del/Veh (s)	53.2	19.5	15.9	86.2	16.1	19.9	50.0	39.4	21.4	74.1	39.5	12.5

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	23.6

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	24.3	4.5	1.7	5.9	5.9	40.6	15.4	11.4	5.5

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	6.4	12.3	7.2	0.0	0.0	0.0
Total Del/Veh (s)	78.7	19.9	8.6	69.7	30.5	11.8	278.0	39.9	14.6	49.6	41.7	20.1

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	1.3
Total Del/Veh (s)	42.7

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	53.2	10.9	7.6	71.2	8.0	3.1	22.9	49.6	20.0	11.4

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.4	0.1
Total Del/Veh (s)	11.0	2.4	13.7	7.9	47.8	22.3	13.5

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.5
Total Del/Veh (s)	11.8	5.1	14.0	4.8	18.2	22.7	13.6

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.1	0.1	3.2	0.2	3.1	3.0	0.3	3.1
Total Del/Veh (s)	53.8	22.5	21.6	63.5	33.2	21.7	65.7	42.2	14.9	57.5	38.8	8.9

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	31.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.9	0.2	0.2	3.1	0.2	3.1	0.1	0.0	0.0	2.8	0.3	0.2
Total Del/Veh (s)	79.2	40.3	26.2	57.1	32.8	8.7	47.5	21.1	4.3	61.5	29.8	3.7

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	32.8

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	45.2	32.2	6.5	54.2	33.4	4.8	66.5	4.7	0.8	62.0	6.0	2.0

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.7

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	2.8	0.3	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	52.4	9.9		4.7	70.9	5.5	0.7	62.5	4.6	0.2	6.6

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	44.8	8.1	59.5	2.8	6.2	1.3	5.7

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	1328.1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	342	348	352	102	249	285	298	120	388	140	158
Average Queue (ft)	130	207	215	218	29	108	130	154	59	191	34	112
95th Queue (ft)	216	309	312	318	72	202	226	254	130	327	111	180
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	3	9				4			6	41	0	11
Queuing Penalty (veh)	18	15				1			18	39	1	20

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	281	132
Average Queue (ft)	129	58
95th Queue (ft)	233	107
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	8	
Queuing Penalty (veh)	10	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LTR	LTR
Maximum Queue (ft)	94	215	230	262	94	153	133	46	76
Average Queue (ft)	29	59	69	74	21	42	52	12	24
95th Queue (ft)	70	172	194	208	67	114	124	37	65
Link Distance (ft)		615	615	615	559	559	559	587	433
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	80								
Storage Blk Time (%)	1	3							
Queuing Penalty (veh)	6	2							

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	131	241	398	423	458	255	127	208	381	420	438	261
Average Queue (ft)	66	87	137	172	168	72	54	79	151	184	201	61
95th Queue (ft)	114	170	303	345	353	205	113	152	298	333	349	184
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	2		3	0			5		11	
Queuing Penalty (veh)		0	3		7	0			6		20	

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	242	290	517	487	93	214	263	291	296	151
Average Queue (ft)	218	256	340	229	27	81	133	170	187	66
95th Queue (ft)	289	346	668	523	66	169	229	265	280	128
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			19	0						
Queuing Penalty (veh)			45	0						
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	46	72	0			0	3	5		
Queuing Penalty (veh)	85	133	1			0	7	12		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	97	262	303	203	124	245	251	242	133	75	114
Average Queue (ft)	31	52	70	49	59	68	89	110	12	25	44
95th Queue (ft)	76	183	216	139	114	203	222	231	67	57	88
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						2	2	2			
Queuing Penalty (veh)						10	12	14			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		2			4	5		6	0		
Queuing Penalty (veh)		0			22	3		2	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	245	249	345	368	388	157	411	322
Average Queue (ft)	110	125	110	109	107	16	206	142
95th Queue (ft)	261	272	251	250	271	109	348	261
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	4	5						
Queuing Penalty (veh)	25	32						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					2	0		
Queuing Penalty (veh)					8	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	203	202	194	112	139	195	275	91	186	292	254	226
Average Queue (ft)	108	98	93	6	42	66	117	3	91	109	162	101
95th Queue (ft)	183	174	163	65	105	148	228	64	152	199	241	208
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0						0	1	0
Queuing Penalty (veh)			1	0						0	2	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	190	221	326	356	374	70	201	328	380	432	130	150
Average Queue (ft)	91	115	179	209	232	14	61	174	213	272	59	40
95th Queue (ft)	160	188	293	319	348	45	146	282	342	402	153	116
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)			0				0	1		38	0	
Queuing Penalty (veh)			0				0	0		35	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	205	274	255	130	203	244	211	173
Average Queue (ft)	105	155	130	54	95	135	97	71
95th Queue (ft)	178	230	214	127	170	208	182	131
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	0	0	12	0	0	0	0	0
Queuing Penalty (veh)	0	0	9	0	0	0	1	1

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	348	327	173	251	208	98	146	170	179	69	264
Average Queue (ft)	100	214	192	105	133	101	35	63	71	85	24	131
95th Queue (ft)	185	311	287	174	214	183	73	122	140	153	57	230
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	4	27		3	4	0						0
Queuing Penalty (veh)	11	23		7	6	0						1

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	313	293	54
Average Queue (ft)	188	166	16
95th Queue (ft)	286	262	39
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	2		
Queuing Penalty (veh)	3		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	40	44	73	61	76	109	147	24	154	103	122	11
Average Queue (ft)	4	6	27	19	24	30	48	2	70	26	31	0
95th Queue (ft)	23	30	64	50	61	84	114	15	129	75	86	6
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	48	28	91	222	184	10	66	167	183	5
Average Queue (ft)	13	3	30	72	42	0	11	50	64	0
95th Queue (ft)	36	19	73	189	131	6	41	134	153	5
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			1	5				3		
Queuing Penalty (veh)			2	1				0		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	46	75	66	112	134	273	256	38
Average Queue (ft)	12	32	23	12	27	66	66	7
95th Queue (ft)	38	59	57	58	86	190	192	28
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150					
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Zone Summary

Zone wide Queuing Penalty: 685

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.3	0.0	0.0	0.0	9.6	7.0	8.1	1.7	0.3	0.2
Total Del/Veh (s)	70.0	20.9	18.2	60.5	31.4	35.5	226.0	170.6	134.5	150.8	75.6	16.7

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	46.0

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	43.1	6.2	5.1	33.7	11.9	12.4	14.0	14.9	10.1

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	171.9	60.9	24.6	79.8	58.3	35.0	88.0	63.3	31.1	75.5	46.4	25.6

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	60.9

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0
Total Del/Veh (s)	74.3	23.1	20.5	66.1	9.9	4.2	23.6	46.7	28.8	19.4

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.1
Total Del/Veh (s)	8.1	3.0	14.4	8.3	41.4	30.1	13.1

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.4
Total Del/Veh (s)	10.1	5.0	9.0	5.4	34.7	36.5	14.1

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.2	0.2	2.8	0.3	2.7	2.6	0.4	2.8
Total Del/Veh (s)	87.1	27.4	27.8	100.0	98.0	135.3	63.3	36.7	14.3	84.7	41.8	14.8

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	57.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.8	0.2	0.3	2.5	0.3	2.6	0.0	0.0	0.0	2.4	0.7	0.5
Total Del/Veh (s)	109.7	46.7	37.3	74.3	41.0	15.3	68.5	51.3	10.2	128.3	68.3	7.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	57.2

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	48.2	30.1	12.3	49.0	38.5	5.7	61.8	14.9	2.7	57.3	15.4	2.4

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	20.2

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	2.5	0.4	0.0	0.0	0.0	0.3
Total Del/Veh (s)	37.9	11.2		7.3	47.4	9.2	49.6	11.7	2.0	11.4

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.3	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	51.6	24.6	70.3	7.4	12.6	2.3	12.1

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	1917.1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	375	365	346	149	470	495	532	120	1222	140	158
Average Queue (ft)	150	244	244	245	49	292	323	348	94	639	40	110
95th Queue (ft)	229	353	344	334	118	438	469	493	148	1502	124	196
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										5		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	5	10			0	25			46	55	1	20
Queuing Penalty (veh)	34	16			0	11			162	76	4	62

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	690	309
Average Queue (ft)	309	76
95th Queue (ft)	676	199
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	32	
Queuing Penalty (veh)	29	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	104	279	237	282	65	415	441	459	35	129
Average Queue (ft)	57	99	102	113	10	133	151	168	5	47
95th Queue (ft)	104	230	223	245	44	355	379	396	25	96
Link Distance (ft)		615	615	615		559	559	559	587	433
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	11	8				4				
Queuing Penalty (veh)	69	6				0				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	252	374	553	572	582	255	182	344	584	614	650	300
Average Queue (ft)	162	212	379	410	432	180	98	189	370	394	417	239
95th Queue (ft)	286	396	559	578	609	344	163	378	546	574	611	397
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)			2	1	3				0	0	0	
Queuing Penalty (veh)			11	9	18				0	1	2	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	12	15	28		35	0	0	0	33		40	2
Queuing Penalty (veh)	61	71	61		77	1	1	2	76		126	10

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	242	290	522	494	266	306	407	473	441	242
Average Queue (ft)	164	230	317	295	115	216	283	285	269	107
95th Queue (ft)	248	334	509	466	221	344	425	461	397	206
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			1	0				2	0	
Queuing Penalty (veh)			5	2				11	0	
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	6	13	31			9	35	19		
Queuing Penalty (veh)	21	46	102			36	141	99		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	224	584	616	652	123	258	252	248	176	149	183
Average Queue (ft)	103	248	286	304	67	127	147	175	36	61	72
95th Queue (ft)	204	540	584	625	125	267	270	276	137	116	143
Link Distance (ft)		707	707	707		225	225	225		702	719
Upstream Blk Time (%)		0	0	0		2	2	3			
Queuing Penalty (veh)		0	0	0		17	15	24			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)	0	8			7	6		9	0		
Queuing Penalty (veh)	3	8			48	5		6	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	241	240	261	259	331	224	388	383
Average Queue (ft)	98	116	145	149	157	29	195	170
95th Queue (ft)	240	255	230	232	265	151	320	302
Link Distance (ft)	225	225	730	730	730		573	573
Upstream Blk Time (%)	1	1						0
Queuing Penalty (veh)	5	8						0
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					2	0		
Queuing Penalty (veh)					9	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	198	193	183	44	68	188	332	202	322	400	258	244
Average Queue (ft)	112	105	105	2	11	29	57	7	149	176	196	147
95th Queue (ft)	167	160	159	39	42	116	191	108	251	303	270	250
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)						0	0	0				
Queuing Penalty (veh)						0	0	0				
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0						2	2	0
Queuing Penalty (veh)			0	0						9	6	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	247	252	327	320	312	218	265	834	893	917	130	260
Average Queue (ft)	143	159	177	204	225	58	173	572	640	679	59	113
95th Queue (ft)	246	258	272	283	297	139	315	931	988	1019	158	231
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)	0	0	0			0	1	28		67	0	0
Queuing Penalty (veh)	1	2	0			0	4	33		42	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	283	292	284	130	244	374	352	190
Average Queue (ft)	170	171	159	71	150	198	164	114
95th Queue (ft)	262	259	252	151	250	317	286	202
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	1	0	22	0	6	3	4	3
Queuing Penalty (veh)	1	1	21	0	16	6	17	9

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	473	438	175	403	382	238	321	418	424	133	275
Average Queue (ft)	142	281	252	142	243	205	75	135	248	261	47	268
95th Queue (ft)	195	443	405	216	369	332	178	263	387	397	98	307
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	30	28		14	25	2	0	0	2			33
Queuing Penalty (veh)	93	40		50	43	5	0	0	3			186

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	914	863	225
Average Queue (ft)	600	535	42
95th Queue (ft)	959	895	231
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)	2	0	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)	25		
Queuing Penalty (veh)	75		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	99	82	158	58	298	396	405	46	170	210	224	16
Average Queue (ft)	31	30	65	26	129	149	163	12	81	108	110	1
95th Queue (ft)	75	63	123	50	232	341	361	37	145	191	196	9
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)						0				0		
Queuing Penalty (veh)						0				0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	L	T	T	R
Maximum Queue (ft)	41	27	117	362	323	103	521	523	30
Average Queue (ft)	12	2	37	145	106	27	154	175	2
95th Queue (ft)	33	15	84	330	268	72	403	426	12
Link Distance (ft)	594	558		629	629		598	598	598
Upstream Blk Time (%)							0	0	
Queuing Penalty (veh)							0	0	
Storage Bay Dist (ft)			100			100			
Storage Blk Time (%)			1	12		0	9		
Queuing Penalty (veh)			5	5		1	3		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	89	229	150	396	403	432	435	57
Average Queue (ft)	32	94	39	85	100	148	143	12
95th Queue (ft)	73	184	97	268	293	352	336	40
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)		0		0	0			
Queuing Penalty (veh)		0		0	0			
Storage Bay Dist (ft)			150					
Storage Blk Time (%)			0	3				
Queuing Penalty (veh)			0	1				

Zone Summary

Zone wide Queuing Penalty: 2290

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.2	0.2	0.2	0.0	0.0	0.0	2.3	0.4	2.4	1.9	0.2	0.1
Total Del/Veh (s)	60.4	13.7	10.3	60.2	8.1	8.3	55.6	47.1	14.8	59.3	41.5	14.4

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.0

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	33.0	5.8	3.6	12.3	4.7	4.9	51.7	13.8	10.2	6.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	65.5	25.9	7.7	230.9	33.1	22.7	76.6	40.7	19.7	95.3	25.1	9.7

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	47.2

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.0
Total Del/Veh (s)	59.5	21.6	14.7	63.3	13.6	4.5	17.7	63.6	42.3	20.9

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.4	0.4	0.1
Total Del/Veh (s)	11.7	2.3	21.7	10.5	48.4	36.4	18.4

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.1	2.9	0.6
Total Del/Veh (s)	15.0	5.3	24.8	4.6	17.7	23.9	18.2

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.2	0.2	3.0	0.3	2.9	3.2	0.2	3.2
Total Del/Veh (s)	68.9	34.0	37.7	68.6	41.9	31.4	68.5	40.4	13.0	72.0	45.1	10.3

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	42.3

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.2	0.2	0.3	3.2	0.2	3.2	0.0	0.0	0.0	2.4	0.5	0.3
Total Del/Veh (s)	74.7	45.0	30.3	62.1	44.5	16.4	52.6	25.7	5.1	73.7	33.6	3.7

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	37.5

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	51.6	15.8	56.5	16.4	5.0	74.0	11.5	2.7	72.3	11.5	2.8	21.1

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.5	0.4	0.2	0.0	0.0	0.0	0.2
Total Del/Veh (s)	70.8	10.5	59.2	8.5	73.2	6.9	0.7	64.4	8.2	1.4	10.2

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.3	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	56.7	29.7	80.9	12.2	9.2	1.6	13.5

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1815.1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	180	254	240	222	84	110	132	168	120	331	132	142
Average Queue (ft)	79	145	135	126	30	32	60	83	72	140	30	64
95th Queue (ft)	150	231	217	211	69	84	115	141	133	271	99	126
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	0	3			0	0			17	33	0	1
Queuing Penalty (veh)	2	3			0	0			33	40	0	1

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	200	104
Average Queue (ft)	74	49
95th Queue (ft)	150	91
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	1	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	104	305	258	240	61	32	50	72	60	80
Average Queue (ft)	49	86	71	75	16	2	5	18	15	32
95th Queue (ft)	97	236	196	202	46	17	28	56	47	62
Link Distance (ft)		615	615	615		559	559	559	587	433
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	7	7								
Queuing Penalty (veh)	33	7								

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	190	194	294	319	311	253	264	315	469	476	524	300
Average Queue (ft)	109	110	176	199	185	60	191	228	311	267	224	155
95th Queue (ft)	174	176	261	282	277	155	311	380	689	575	442	306
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)									5	0	0	
Queuing Penalty (veh)									29	1	0	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	0	0	2		3	0	33	42	3		7	5
Queuing Penalty (veh)	0	0	5		4	0	116	147	9		31	17

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	189	263	304	296	244	306	412	492	445	132
Average Queue (ft)	102	131	178	164	92	250	318	248	166	53
95th Queue (ft)	170	216	273	256	189	361	466	535	316	107
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)								5	0	
Queuing Penalty (veh)								24	0	
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	0	1	7			22	53	2		
Queuing Penalty (veh)	0	2	16			69	166	9		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	216	367	383	421	124	255	255	261	175	113	220
Average Queue (ft)	105	207	230	218	95	164	151	169	36	45	91
95th Queue (ft)	205	357	372	389	148	305	292	293	140	87	181
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						9	4	6			
Queuing Penalty (veh)						56	27	39			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)	1	10			17	16		12	0		
Queuing Penalty (veh)	3	10			96	17		8	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	242	242	354	322	492	225	456	444
Average Queue (ft)	113	130	178	165	223	91	253	190
95th Queue (ft)	250	267	303	283	406	271	404	346
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	2	3					0	0
Queuing Penalty (veh)	10	16					0	0
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					8	0		
Queuing Penalty (veh)					37	1		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	237	242	259	222	215	279	352	70	174	356	255	244
Average Queue (ft)	124	121	131	18	102	137	220	3	91	128	189	145
95th Queue (ft)	202	205	220	117	186	240	322	45	148	261	262	252
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			1	0						0	2	0
Queuing Penalty (veh)			3	0						0	6	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	189	311	422	445	464	133	259	462	516	532	130	287
Average Queue (ft)	108	144	270	299	328	37	105	234	284	356	46	157
95th Queue (ft)	168	261	391	420	446	88	223	370	433	495	137	290
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	3				0	4		49	0	0
Queuing Penalty (veh)		0	8				0	4		35	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	302	383	326	130	219	257	209	152
Average Queue (ft)	211	138	120	59	128	133	91	54
95th Queue (ft)	307	308	262	125	208	218	175	106
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	4	0	9	0	2	0	0	0
Queuing Penalty (veh)	6	0	10	1	3	0	1	0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	294	258	172	221	188	133	218	293	308	86	275
Average Queue (ft)	125	163	147	100	121	86	55	96	128	140	27	241
95th Queue (ft)	189	267	238	165	191	166	111	176	245	262	64	324
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	14	11		3	4	0			0			13
Queuing Penalty (veh)	23	17		4	5	0			0			67

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	673	573	48
Average Queue (ft)	344	290	18
95th Queue (ft)	557	479	40
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	9		
Queuing Penalty (veh)	27		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	80	126	123	54	340	288	306	50	221	217	182	32
Average Queue (ft)	27	49	59	22	201	94	113	11	122	72	66	4
95th Queue (ft)	64	95	109	50	313	223	244	37	199	157	142	19
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)					0				0	0		
Queuing Penalty (veh)					1				1	0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	55	57	124	289	247	20	92	230	247	35
Average Queue (ft)	15	10	52	103	74	1	29	87	107	3
95th Queue (ft)	42	40	108	249	195	8	73	210	231	18
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			5	8			1	8		
Queuing Penalty (veh)			23	4			2	2		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	89	263	174	437	440	360	322	48
Average Queue (ft)	28	113	58	185	189	105	77	9
95th Queue (ft)	70	227	134	381	383	280	216	34
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)		1			0			
Queuing Penalty (veh)		0			0			
Storage Bay Dist (ft)			150					
Storage Blk Time (%)			0	10				
Queuing Penalty (veh)			0	4				

Zone Summary

Zone wide Queuing Penalty: 1348

Appendix 7 Cumulative Plus Project Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	1899	34	25	1537	100	63	267	32	126	197	174
Future Volume (veh/h)	171	1899	34	25	1537	100	63	267	32	126	197	174
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	188	2087	37	27	1689	110	69	293	35	138	216	191
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	214	2882	51	50	2292	149	251	541	442	225	541	450
Arrive On Green	0.12	0.56	0.56	0.03	0.47	0.47	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5125	91	1697	4859	316	976	1870	1527	1058	1870	1556
Grp Volume(v), veh/h	188	1374	750	27	1173	626	69	293	35	138	216	191
Grp Sat Flow(s),veh/h/ln	1781	1689	1839	1697	1689	1798	976	1870	1527	1058	1870	1556
Q Serve(g_s), s	12.7	36.6	36.7	1.9	34.3	34.4	7.5	16.1	2.0	15.4	11.3	12.1
Cycle Q Clear(g_c), s	12.7	36.6	36.7	1.9	34.3	34.4	18.8	16.1	2.0	31.5	11.3	12.1
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	1899	1034	50	1593	848	251	541	442	225	541	450
V/C Ratio(X)	0.88	0.72	0.72	0.54	0.74	0.74	0.28	0.54	0.08	0.61	0.40	0.42
Avail Cap(c_a), veh/h	234	1899	1034	139	1593	848	268	573	468	244	573	477
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	52.8	19.7	19.7	58.4	26.1	26.1	42.4	36.5	31.5	49.8	34.8	35.1
Incr Delay (d2), s/veh	26.1	2.4	4.4	3.3	3.1	5.7	1.7	2.5	0.2	8.2	1.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	13.9	15.8	0.9	13.8	15.3	1.9	7.7	0.8	4.6	5.4	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.9	22.1	24.1	61.7	29.2	31.8	44.1	39.0	31.8	58.0	36.2	37.0
LnGrp LOS	E	C	C	E	C	C	D	D	C	E	D	D
Approach Vol, veh/h		2312			1826			397			545	
Approach Delay, s/veh		27.4			30.6			39.3			42.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.9	18.7	62.4		40.9	7.6	73.5				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		37.4	16.0	54.1		37.4	10.0	60.1				
Max Q Clear Time (g_c+I1), s		33.5	14.7	36.4		20.8	3.9	38.7				
Green Ext Time (p_c), s		1.8	0.0	15.5		4.2	0.0	19.7				

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	2066	4	0	1673	42	1	0	13	0	0	27
Future Vol, veh/h	57	2066	4	0	1673	42	1	0	13	0	0	27
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	3	25	0	3	0	0	0	0	0	0	33
Mvmt Flow	63	2270	4	0	1838	46	1	0	14	0	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1884	0	0	2276	0	0	3135	4284	1139	2895	4263	942
Stage 1	-	-	-	-	-	-	2400	2400	-	1861	1861	-
Stage 2	-	-	-	-	-	-	735	1884	-	1034	2402	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.76
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.23
Pot Cap-1 Maneuver	147	-	-	93	-	-	12	2	170	18	2	185
Stage 1	-	-	-	-	-	-	20	66	-	50	124	-
Stage 2	-	-	-	-	-	-	347	121	-	227	66	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	147	-	-	93	-	-	7	1	170	11	1	185
Mov Cap-2 Maneuver	-	-	-	-	-	-	7	1	-	11	1	-
Stage 1	-	-	-	-	-	-	11	38	-	29	124	-
Stage 2	-	-	-	-	-	-	291	121	-	119	38	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	78.2	28.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	64	147	-	-	93	-	-	185
HCM Lane V/C Ratio	0.24	0.426	-	-	-	-	-	0.16
HCM Control Delay (s)	78.2	46.5	-	-	0	-	-	28.1
HCM Lane LOS	F	E	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.8	1.9	-	-	0	-	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	1620	331	209	1273	190	264	430	106	345	1003	178
Future Volume (veh/h)	155	1620	331	209	1273	190	264	430	106	345	1003	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1826	1856	1826	1856	1796	1826	1841	1856	1841
Adj Flow Rate, veh/h	178	1862	380	240	1463	218	303	494	122	397	1153	205
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	2	3	5	3	5	3	7	5	4	3	4
Cap, veh/h	255	1909	587	304	1974	599	363	1115	348	382	1184	351
Arrive On Green	0.07	0.37	0.37	0.09	0.39	0.39	0.11	0.23	0.23	0.11	0.23	0.23
Sat Flow, veh/h	3428	5106	1570	3374	5066	1538	3428	4904	1529	3401	5066	1501
Grp Volume(v), veh/h	178	1862	380	240	1463	218	303	494	122	397	1153	205
Grp Sat Flow(s),veh/h/ln	1714	1702	1570	1687	1689	1538	1714	1635	1529	1700	1689	1501
Q Serve(g_s), s	5.4	38.4	21.4	7.5	26.5	10.8	9.3	9.3	7.2	12.0	24.2	13.0
Cycle Q Clear(g_c), s	5.4	38.4	21.4	7.5	26.5	10.8	9.3	9.3	7.2	12.0	24.2	13.0
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	255	1909	587	304	1974	599	363	1115	348	382	1184	351
V/C Ratio(X)	0.70	0.98	0.65	0.79	0.74	0.36	0.83	0.44	0.35	1.04	0.97	0.58
Avail Cap(c_a), veh/h	385	1909	587	378	1974	599	385	1146	357	382	1184	351
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	33.0	27.7	47.7	28.0	23.2	46.9	35.5	34.7	47.5	40.7	36.4
Incr Delay (d2), s/veh	3.4	15.1	2.5	8.7	1.5	0.4	13.0	0.3	0.6	57.0	20.1	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	17.6	8.1	3.4	10.4	3.8	4.5	3.6	2.7	8.0	11.9	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	48.1	30.1	56.3	29.5	23.6	59.9	35.8	35.3	104.5	60.7	38.9
LnGrp LOS	D	D	C	E	C	C	E	D	D	F	E	D
Approach Vol, veh/h		2420			1921			919			1755	
Approach Delay, s/veh		45.6			32.2			43.7			68.1	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	29.9	13.6	46.6	17.6	29.2	15.2	44.9
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	12.0	25.0	12.0	40.0	12.0	25.0	12.0	40.0
Max Q Clear Time (g_c+I1), s	11.3	26.2	7.4	28.5	14.0	11.3	9.5	40.4
Green Ext Time (p_c), s	0.1	0.0	0.2	7.6	0.0	3.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	53.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1991	22	64	1619	39	0	0	46	20	0	53
Future Vol, veh/h	32	1991	22	64	1619	39	0	0	46	20	0	53
Conflicting Peds, #/hr	4	0	2	2	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
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	3	10	2	3	0	0	0	0	0	0	0
Mvmt Flow	36	2212	24	71	1799	43	0	0	51	22	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1846	0	0	2238	0	0	-	-	1120	2902	4255	904
Stage 1	-	-	-	-	-	-	-	-	-	1945	1945	-
Stage 2	-	-	-	-	-	-	-	-	-	957	2310	-
Critical Hdwy	5.3	-	-	5.34	-	-	-	-	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.12	-	-	-	-	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	153	-	-	95	-	-	0	0	175	~ 17	2	243
Stage 1	-	-	-	-	-	-	0	0	-	43	113	-
Stage 2	-	-	-	-	-	-	0	0	-	254	73	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	152	-	-	95	-	-	-	-	175	~ 4	0	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	~ 4	0	-
Stage 1	-	-	-	-	-	-	-	-	-	33	28	-
Stage 2	-	-	-	-	-	-	-	-	-	137	56	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	4.2	33.8	$ 2694.9
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	175	152	-	-	95	-	-	14
HCM Lane V/C Ratio	0.292	0.234	-	-	0.749	-	-	5.794
HCM Control Delay (s)	33.8	35.8	-	-	112.7	-		$ 2694.9
HCM Lane LOS	D	E	-	-	F	-	-	F
HCM 95th %tile Q(veh)	1.2	0.9	-	-	3.9	-	-	11.1

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1318	738	0	1354	484	0	0	0	280	0	367
Future Volume (veh/h)	0	1318	738	0	1354	484	0	0	0	280	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1464	0	0	1504	0				311	0	408
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2158		0	3076					503	0	444
Arrive On Green	0.00	0.61	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1464	0	0	1504	0				311	0	408
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	35.8	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Cycle Q Clear(g_c), s	0.0	35.8	0.0	0.0	0.0	0.0				19.6	0.0	32.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2158		0	3076					503	0	444
V/C Ratio(X)	0.00	0.68		0.00	0.49					0.62	0.00	0.92
Avail Cap(c_a), veh/h	0	2158		0	3076					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.7	0.0	0.0	0.0	0.0				40.7	0.0	45.4
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.0	0.5	0.0				1.2	0.0	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.9	0.0	0.0	0.1	0.0				8.9	0.0	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.5	0.0	0.0	0.5	0.0				42.0	0.0	63.6
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1464	A		1504	A					719	
Approach Delay, s/veh		18.5			0.5						54.3	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		86.6		43.4		86.6						
Change Period (Y+Rc), s		7.0		7.0		7.0						
Max Green Setting (Gmax), s		71.0		45.0		71.0						
Max Q Clear Time (g_c+I1), s		37.8		34.4		2.0						
Green Ext Time (p_c), s		21.1		2.0		30.2						

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1297	302	0	1302	330	536	0	522	0	0	0
Future Volume (veh/h)	0	1297	302	0	1302	330	536	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1474	0	0	1480	0	583	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2832		0	2765		1159	0	928			
Arrive On Green	0.00	1.00	0.00	0.00	0.18	0.00	0.34	0.00	0.34			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1474	0	0	1480	0	583	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	35.0	0.0	17.5	0.0	23.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	35.0	0.0	17.5	0.0	23.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2832		0	2765		1159	0	928			
V/C Ratio(X)	0.00	0.52		0.00	0.54		0.50	0.00	0.64			
Avail Cap(c_a), veh/h	0	2832		0	2765		1587	0	1271			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.69	0.00	0.00	0.62	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	37.9	0.0	34.5	0.0	36.5			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0	1.5	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	15.6	0.0	7.6	0.0	8.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	38.4	0.0	36.0	0.0	39.7			
LnGrp LOS	A	A		A	D		D	A	D			
Approach Vol, veh/h		1474	A		1480	A		1176				
Approach Delay, s/veh		0.5			38.4			37.9				
Approach LOS		A			D			D				

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	79.1	79.1	50.9
Change Period (Y+Rc), s	7.0	7.0	7.3
Max Green Setting (Gmax), s	56.0	56.0	59.7
Max Q Clear Time (g_c+I1), s	2.0	37.0	25.6
Green Ext Time (p_c), s	31.5	15.0	18.0

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	1437	81	83	1085	99	165	467	87	140	425	390
Future Volume (veh/h)	301	1437	81	83	1085	99	165	467	87	140	425	390
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	358	1711	96	99	1292	118	196	556	104	167	506	464
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	420	2187	123	153	1818	569	247	882	384	192	1014	439
Arrive On Green	0.04	0.15	0.15	0.04	0.36	0.36	0.07	0.25	0.25	0.11	0.29	0.29
Sat Flow, veh/h	3428	4943	277	3401	4985	1559	3291	3526	1534	1739	3554	1539
Grp Volume(v), veh/h	358	1178	629	99	1292	118	196	556	104	167	506	464
Grp Sat Flow(s),veh/h/ln	1714	1702	1816	1700	1662	1559	1646	1763	1534	1739	1777	1539
Q Serve(g_s), s	13.5	43.4	43.4	3.7	28.9	6.8	7.6	18.3	7.1	12.3	15.4	37.1
Cycle Q Clear(g_c), s	13.5	43.4	43.4	3.7	28.9	6.8	7.6	18.3	7.1	12.3	15.4	37.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	1506	804	153	1818	569	247	882	384	192	1014	439
V/C Ratio(X)	0.85	0.78	0.78	0.65	0.71	0.21	0.79	0.63	0.27	0.87	0.50	1.06
Avail Cap(c_a), veh/h	607	1506	804	235	1818	569	354	925	402	227	1014	439
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	49.5	49.5	61.1	35.4	28.4	59.1	43.4	39.2	56.9	38.7	46.4
Incr Delay (d2), s/veh	4.6	3.4	6.2	1.7	2.4	0.8	4.8	2.1	0.9	23.1	0.1	58.7
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	6.5	20.5	22.5	1.6	11.8	2.6	3.3	8.2	2.7	6.5	6.6	21.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	52.8	55.7	62.8	37.8	29.2	63.9	45.5	40.1	80.0	38.8	105.1
LnGrp LOS	E	D	E	E	D	C	E	D	D	E	D	F
Approach Vol, veh/h		2165			1509			856			1137	
Approach Delay, s/veh		55.8			38.8			49.1			71.9	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	42.0	20.9	52.3	19.3	37.4	10.8	62.4
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	14.0	37.1	23.0	36.1	17.0	34.1	9.0	50.1
Max Q Clear Time (g_c+I1), s	9.6	39.1	15.5	30.9	14.3	20.3	5.7	45.4
Green Ext Time (p_c), s	0.1	0.0	0.4	4.5	0.1	6.0	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	567	99	161	1321	63
Future Volume (veh/h)	87	552	113	131	395	131	79	567	99	161	1321	63
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		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1826	1885	1841	1841
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	683	119	194	1592	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	5	1	4	4
Cap, veh/h	129	876	179	183	1167	499	118	1056	182	221	1488	71
Arrive On Green	0.07	0.30	0.30	0.10	0.33	0.33	0.07	0.25	0.25	0.12	0.30	0.30
Sat Flow, veh/h	1781	2931	599	1795	3554	1519	1767	4278	737	1795	4910	234
Grp Volume(v), veh/h	105	403	398	158	476	158	95	529	273	194	1086	582
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1795	1777	1519	1767	1662	1691	1795	1675	1794
Q Serve(g_s), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	18.5	18.9	13.8	39.4	39.4
Cycle Q Clear(g_c), s	7.6	26.7	26.8	11.3	13.5	10.1	6.9	18.5	18.9	13.8	39.4	39.4
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.44	1.00		0.13
Lane Grp Cap(c), veh/h	129	531	524	183	1167	499	118	820	417	221	1015	544
V/C Ratio(X)	0.81	0.76	0.76	0.86	0.41	0.32	0.81	0.64	0.65	0.88	1.07	1.07
Avail Cap(c_a), veh/h	274	589	581	193	1167	499	209	820	417	351	1015	544
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	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	41.3	41.3	57.5	33.8	32.7	59.9	43.9	44.0	56.1	45.3	45.3
Incr Delay (d2), s/veh	4.6	9.7	9.9	28.4	0.5	0.8	4.8	3.8	7.6	9.1	48.8	58.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	12.9	12.8	6.5	5.8	3.8	3.2	7.9	8.7	6.7	22.8	25.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	51.1	51.3	85.9	34.3	33.5	64.6	47.7	51.6	65.1	94.1	104.1
LnGrp LOS	E	D	D	F	C	C	E	D	D	E	F	F
Approach Vol, veh/h		906			792			897			1862	
Approach Delay, s/veh		52.7			44.5			50.7			94.2	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	44.3	13.4	47.6	20.6	37.0	17.2	43.8
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.4	* 39	20.0	37.1	25.4	29.1	14.0	43.1
Max Q Clear Time (g_c+I1), s	8.9	41.4	9.6	15.5	15.8	20.9	13.3	28.8
Green Ext Time (p_c), s	0.0	0.0	0.1	6.6	0.2	4.8	0.0	10.1

Intersection Summary	
HCM 6th Ctrl Delay	68.2
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	3	27	1	25	23	715	23	78	1482	6
Future Volume (veh/h)	5	2	3	27	1	25	23	715	23	78	1482	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1159	1159	1900	1900	1900	1900	1811	1811	1900	1841	1841
Adj Flow Rate, veh/h	6	2	3	31	1	29	27	831	27	91	1723	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	50	50	0	0	0	0	6	6	0	4	4
Cap, veh/h	110	24	36	131	3	89	69	3769	122	115	4089	17
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.77	0.77	0.06	0.79	0.79
Sat Flow, veh/h	1401	418	628	1434	54	1564	1810	4919	160	1810	5166	21
Grp Volume(v), veh/h	6	0	5	31	0	30	27	556	302	91	1117	613
Grp Sat Flow(s),veh/h/ln	1401	0	1046	1434	0	1618	1810	1648	1782	1810	1675	1836
Q Serve(g_s), s	0.5	0.0	0.6	2.7	0.0	2.3	1.9	6.2	6.2	6.4	13.6	13.6
Cycle Q Clear(g_c), s	2.9	0.0	0.6	3.3	0.0	2.3	1.9	6.2	6.2	6.4	13.6	13.6
Prop In Lane	1.00		0.60	1.00		0.97	1.00		0.09	1.00		0.01
Lane Grp Cap(c), veh/h	110	0	60	131	0	92	69	2526	1365	115	2652	1454
V/C Ratio(X)	0.05	0.00	0.08	0.24	0.00	0.33	0.39	0.22	0.22	0.79	0.42	0.42
Avail Cap(c_a), veh/h	438	0	304	466	0	471	312	2526	1365	340	2652	1454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.19	0.19	0.19
Uniform Delay (d), s/veh	60.3	0.0	58.1	59.7	0.0	58.9	61.0	4.3	4.3	60.0	4.2	4.2
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.9	0.0	2.0	3.5	0.2	0.4	2.3	0.1	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	0.2	0.0	0.2	1.0	0.0	1.0	0.9	1.8	2.0	3.0	3.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	0.0	58.7	60.6	0.0	60.9	64.6	4.5	4.6	62.3	4.3	4.4
LnGrp LOS	E	A	E	E	A	E	E	A	A	E	A	A
Approach Vol, veh/h		11			61			885			1821	
Approach Delay, s/veh		59.7			60.7			6.4			7.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	107.8		12.6	12.9	104.5		12.6
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	22.4	55.1		* 38	24.4	53.1		* 38
Max Q Clear Time (g_c+I1), s	3.9	15.6		5.3	8.4	8.2		4.9
Green Ext Time (p_c), s	0.0	29.8		0.2	0.2	13.7		0.0

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

Notes

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	19	1	0	3	27	814	2	10	1498	2
Future Vol, veh/h	7	0	19	1	0	3	27	814	2	10	1498	2
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	4	4	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	8	6	0	0	4	50
Mvmt Flow	9	0	23	1	0	4	33	993	2	12	1827	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2320	2922	921	1820	2922	502	1834	0	0	999	0	0
Stage 1	1857	1857	-	1064	1064	-	-	-	-	-	-	-
Stage 2	463	1065	-	756	1858	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.46	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.18	-	-	3.1	-	-
Pot Cap-1 Maneuver	41	16	237	84	16	445	142	-	-	398	-	-
Stage 1	50	125	-	182	302	-	-	-	-	-	-	-
Stage 2	506	302	-	337	125	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	12	236	60	12	443	141	-	-	396	-	-
Mov Cap-2 Maneuver	32	12	-	60	12	-	-	-	-	-	-	-
Stage 1	38	121	-	139	230	-	-	-	-	-	-	-
Stage 2	384	230	-	294	121	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	68.4	26.7	1.2	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	141	-	-	87	171	396	-	-
HCM Lane V/C Ratio	0.234	-	-	0.364	0.029	0.031	-	-
HCM Control Delay (s)	38.1	-	-	68.4	26.7	14.4	-	-
HCM Lane LOS	E	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1.4	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	66	24	750	1461	50
Future Vol, veh/h	11	66	24	750	1461	50
Conflicting Peds, #/hr	0	1	4	0	0	4
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	4	0
Mvmt Flow	13	75	27	852	1660	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2088	864	1721	0	-	0
Stage 1	1693	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	5.7	7.1	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	3.1	-	-	-
Pot Cap-1 Maneuver	86	259	177	-	-	-
Stage 1	91	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	60	258	176	-	-	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	64	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.5	0.9	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	176	-	175	-	-
HCM Lane V/C Ratio	0.155	-	0.5	-	-
HCM Control Delay (s)	29.2	-	44.5	-	-
HCM Lane LOS	D	-	E	-	-
HCM 95th %tile Q(veh)	0.5	-	2.5	-	-

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	1781	89	55	1792	132	140	426	50	96	322	182
Future Volume (veh/h)	170	1781	89	55	1792	132	140	426	50	96	322	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	181	1895	95	59	1906	140	149	453	53	102	343	194
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	209	2854	143	76	2430	178	154	519	400	98	515	425
Arrive On Green	0.12	0.57	0.57	0.04	0.50	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	5014	251	1781	4893	358	874	1900	1464	900	1885	1555
Grp Volume(v), veh/h	181	1295	695	59	1334	712	149	453	53	102	343	194
Grp Sat Flow(s),veh/h/ln	1810	1716	1834	1781	1716	1819	874	1900	1464	900	1885	1555
Q Serve(g_s), s	12.4	32.9	33.1	4.1	40.4	40.7	14.0	28.7	3.4	5.7	20.4	13.1
Cycle Q Clear(g_c), s	12.4	32.9	33.1	4.1	40.4	40.7	34.4	28.7	3.4	34.4	20.4	13.1
Prop In Lane	1.00		0.14	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	1953	1044	76	1704	904	154	519	400	98	515	425
V/C Ratio(X)	0.87	0.66	0.67	0.78	0.78	0.79	0.96	0.87	0.13	1.04	0.67	0.46
Avail Cap(c_a), veh/h	359	1953	1044	184	1704	904	154	519	400	98	515	425
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	54.8	18.8	18.8	59.7	26.1	26.2	58.4	43.7	34.5	61.8	40.7	38.0
Incr Delay (d2), s/veh	4.6	1.8	3.4	6.2	3.7	6.9	62.7	16.8	0.4	102.3	5.1	2.2
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	5.8	12.7	14.1	2.0	16.5	18.4	7.5	15.8	1.3	5.9	10.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	20.6	22.2	65.9	29.8	33.1	121.2	60.5	35.0	164.1	45.8	40.3
LnGrp LOS	E	C	C	E	C	C	F	E	C	F	D	D
Approach Vol, veh/h		2171			2105			655			639	
Approach Delay, s/veh		24.3			31.9			72.2			63.0	
Approach LOS		C			C			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.0	18.5	67.5		40.0	9.4	76.6				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		34.4	25.0	52.1		34.4	13.0	64.1				
Max Q Clear Time (g_c+I1), s		36.4	14.4	42.7		36.4	6.1	35.1				
Green Ext Time (p_c), s		0.0	0.2	8.9		0.0	0.0	25.4				

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

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	1830	12	10	1991	66	0	0	8	0	0	82
Future Vol, veh/h	87	1830	12	10	1991	66	0	0	8	0	0	82
Conflicting Peds, #/hr	1	0	5	5	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	8	0	1	0	0	0	0	0	0	20
Mvmt Flow	95	1989	13	11	2164	72	0	0	9	0	0	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2237	0	0	2007	0	0	3079	4450	1006	3209	4420	1119
Stage 1	-	-	-	-	-	-	2191	2191	-	2223	2223	-
Stage 2	-	-	-	-	-	-	888	2259	-	986	2197	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.5
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	4.1
Pot Cap-1 Maneuver	97	-	-	127	-	-	13	1	208	11	2	151
Stage 1	-	-	-	-	-	-	29	84	-	27	81	-
Stage 2	-	-	-	-	-	-	280	78	-	243	84	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	97	-	-	126	-	-	0	0	207	1	0	151
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	0	-	1	0	-
Stage 1	-	-	-	-	-	-	1	2	-	1	74	-
Stage 2	-	-	-	-	-	-	105	71	-	5	2	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.4	0.2	23.2	58.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	207	97	-	-	126	-	-	151
HCM Lane V/C Ratio	0.042	0.975	-	-	0.086	-	-	0.59
HCM Control Delay (s)	23.2	164.2	-	-	36.3	-	-	58.4
HCM Lane LOS	C	F	-	-	E	-	-	F
HCM 95th %tile Q(veh)	0.1	5.8	-	-	0.3	-	-	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	1433	222	261	1508	414	319	885	223	557	945	256
Future Volume (veh/h)	242	1433	222	261	1508	414	319	885	223	557	945	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1885	1900	1870	1885	1885	1870	1870	1885	1870	1885
Adj Flow Rate, veh/h	272	1610	249	293	1694	465	358	994	251	626	1062	288
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
Percent Heavy Veh, %	0	2	1	0	2	1	1	2	2	1	2	1
Cap, veh/h	336	1685	526	358	1716	528	410	1108	334	686	1513	463
Arrive On Green	0.10	0.33	0.33	0.10	0.34	0.34	0.12	0.22	0.22	0.20	0.30	0.30
Sat Flow, veh/h	3510	5106	1593	3510	5106	1572	3483	5106	1539	3483	5106	1563
Grp Volume(v), veh/h	272	1610	249	293	1694	465	358	994	251	626	1062	288
Grp Sat Flow(s),veh/h/ln	1755	1702	1593	1755	1702	1572	1742	1702	1539	1742	1702	1563
Q Serve(g_s), s	10.3	42.0	16.9	11.1	44.9	38.0	13.8	25.8	20.8	24.0	25.2	21.7
Cycle Q Clear(g_c), s	10.3	42.0	16.9	11.1	44.9	38.0	13.8	25.8	20.8	24.0	25.2	21.7
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	336	1685	526	358	1716	528	410	1108	334	686	1513	463
V/C Ratio(X)	0.81	0.96	0.47	0.82	0.99	0.88	0.87	0.90	0.75	0.91	0.70	0.62
Avail Cap(c_a), veh/h	629	1690	527	629	1716	528	496	1128	340	752	1513	463
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	60.4	44.7	36.3	60.0	44.9	42.6	59.1	51.9	49.9	53.6	42.6	41.4
Incr Delay (d2), s/veh	4.7	12.9	0.7	4.7	18.6	15.7	12.2	9.5	8.9	14.7	1.5	2.6
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	4.8	19.3	6.6	5.1	21.4	16.7	6.7	11.8	8.7	11.7	10.6	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	57.6	36.9	64.6	63.6	58.4	71.3	61.4	58.8	68.3	44.1	43.9
LnGrp LOS	E	E	D	E	E	E	E	E	E	E	D	D
Approach Vol, veh/h		2131			2452			1603			1976	
Approach Delay, s/veh		56.1			62.7			63.2			51.7	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	45.3	18.6	50.7	32.4	34.5	19.5	49.9
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	15.8	27.2	12.3	46.9	26.0	27.8	13.1	44.0
Green Ext Time (p_c), s	0.3	6.5	0.7	0.0	0.9	1.5	0.7	0.9

Intersection Summary	
HCM 6th Ctrl Delay	58.4
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	98	1999	23	81	2090	67	0	0	123	39	0	93
Future Vol, veh/h	98	1999	23	81	2090	67	0	0	123	39	0	93
Conflicting Peds, #/hr	13	0	5	5	0	13	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
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	2	5	0	1	0	0	0	1	0	0	0
Mvmt Flow	109	2221	26	90	2322	74	0	0	137	43	0	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2409	0	0	2252	0	0	-	-	1129	3621	4985	1174
Stage 1	-	-	-	-	-	-	-	-	-	2515	2515	-
Stage 2	-	-	-	-	-	-	-	-	-	1106	2470	-
Critical Hdwy	5.3	-	-	5.3	-	-	-	-	7.12	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	-	-	3.91	3.8	4	3.9
Pot Cap-1 Maneuver	~ 79	-	-	96	-	-	0	0	171	~ 6	1	161
Stage 1	-	-	-	-	-	-	0	0	-	~ 16	57	-
Stage 2	-	-	-	-	-	-	0	0	-	205	61	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 78	-	-	96	-	-	-	-	170	-	0	159
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	-	-	~ 16	4	-
Stage 2	-	-	-	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	5.6	80.1	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	170	~ 78	-	-	96	-	-	-
HCM Lane V/C Ratio	0.804	1.396	-	-	0.938	-	-	-
HCM Control Delay (s)	80.1$	332.4	-	-	155	-	-	-
HCM Lane LOS	F	F	-	-	F	-	-	-
HCM 95th %tile Q(veh)	5.4	8.6	-	-	5.4	-	-	-

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)	0	1352	809	0	1863	597	0	0	0	350	0	375
Future Volume (veh/h)	0	1352	809	0	1863	597	0	0	0	350	0	375
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1454	0	0	2003	0				389	0	403
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2198		0	3158					500	0	442
Arrive On Green	0.00	0.61	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1454	0	0	2003	0				389	0	403
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	34.3	0.0	0.0	0.0	0.0				25.9	0.0	32.0
Cycle Q Clear(g_c), s	0.0	34.3	0.0	0.0	0.0	0.0				25.9	0.0	32.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2198		0	3158					500	0	442
V/C Ratio(X)	0.00	0.66		0.00	0.63					0.78	0.00	0.91
Avail Cap(c_a), veh/h	0	2198		0	3158					621	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.72	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.3	0.0	0.0	0.0	0.0				43.2	0.0	45.4
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.0	0.7	0.0				5.0	0.0	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.5	0.0	0.0	0.2	0.0				12.2	0.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.9	0.0	0.0	0.7	0.0				48.1	0.0	62.6
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		1454	A		2003	A					792	
Approach Delay, s/veh		17.9			0.7						55.5	
Approach LOS		B			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		86.8		43.2		86.8						
Change Period (Y+Rc), s		7.0		7.0		7.0						
Max Green Setting (Gmax), s		71.0		45.0		71.0						
Max Q Clear Time (g_c+I1), s		36.3		34.0		2.0						
Green Ext Time (p_c), s		21.5		2.2		46.8						

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1363	340	0	1895	505	565	0	477	0	0	0
Future Volume (veh/h)	0	1363	340	0	1895	505	565	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1466	0	0	2038	0	614	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	3165		0	3165		958	0	786			
Arrive On Green	0.00	1.00	0.00	0.00	0.82	0.00	0.28	0.00	0.28			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1466	0	0	2038	0	614	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	19.8	0.0	20.3	0.0	20.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	19.8	0.0	20.3	0.0	20.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3165		0	3165		958	0	786			
V/C Ratio(X)	0.00	0.46		0.00	0.64		0.64	0.00	0.65			
Avail Cap(c_a), veh/h	0	3165		0	3165		1595	0	1308			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.66	0.00	0.00	0.13	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.4	0.0	41.3	0.0	41.5			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.1	0.0	1.7	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	4.2	0.0	8.9	0.0	7.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	6.5	0.0	43.0	0.0	43.6			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1466	A		2038	A		1127				
Approach Delay, s/veh		0.3			6.5			43.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		87.0				87.0		43.0				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				21.8		22.8				
Green Ext Time (p_c), s		31.2				30.0		13.3				

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	1383	150	132	1663	72	346	613	108	164	533	391
Future Volume (veh/h)	365	1383	150	132	1663	72	346	613	108	164	533	391
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	397	1503	163	143	1808	78	376	666	117	178	579	425
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	450	1909	207	195	1704	519	432	976	425	204	940	416
Arrive On Green	0.17	0.54	0.54	0.06	0.33	0.33	0.12	0.27	0.27	0.11	0.26	0.26
Sat Flow, veh/h	3456	4702	510	3510	5147	1566	3483	3582	1559	1795	3582	1586
Grp Volume(v), veh/h	397	1096	570	143	1808	78	376	666	117	178	579	425
Grp Sat Flow(s),veh/h/ln	1728	1716	1781	1755	1716	1566	1742	1791	1559	1795	1791	1586
Q Serve(g_s), s	14.6	33.2	33.3	5.2	43.0	4.6	13.8	21.6	7.7	12.7	18.5	34.1
Cycle Q Clear(g_c), s	14.6	33.2	33.3	5.2	43.0	4.6	13.8	21.6	7.7	12.7	18.5	34.1
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	450	1393	723	195	1704	519	432	976	425	204	940	416
V/C Ratio(X)	0.88	0.79	0.79	0.73	1.06	0.15	0.87	0.68	0.28	0.87	0.62	1.02
Avail Cap(c_a), veh/h	558	1393	723	243	1704	519	536	976	425	276	940	416
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)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	25.4	25.4	60.5	43.5	30.6	55.9	42.3	37.2	56.7	42.2	48.0
Incr Delay (d2), s/veh	10.0	3.9	7.3	5.9	40.0	0.6	10.7	2.7	0.8	16.2	0.9	49.7
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	6.6	12.4	13.5	2.5	24.0	1.8	6.7	9.9	3.0	6.6	8.2	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.8	29.3	32.7	66.4	83.5	31.2	66.6	44.9	38.0	72.9	43.1	97.6
LnGrp LOS	E	C	C	E	F	C	E	D	D	E	D	F
Approach Vol, veh/h		2063			2029			1159			1182	
Approach Delay, s/veh		36.7			80.3			51.3			67.2	
Approach LOS		D			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	39.0	21.9	47.9	19.8	40.3	12.2	57.7
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	20.0	34.1	21.0	35.1	20.0	34.1	9.0	47.1
Max Q Clear Time (g_c+I1), s	15.8	36.1	16.6	45.0	14.7	23.6	7.2	35.3
Green Ext Time (p_c), s	0.3	0.0	0.4	0.0	0.1	5.8	0.0	10.4

Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	706	158	176	696	209	182	1092	139	296	1291	143
Future Volume (veh/h)	160	706	158	176	696	209	182	1092	139	296	1291	143
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	176	776	174	193	765	230	200	1200	153	325	1419	157
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, %	1	1	1	1	1	1	1	2	2	0	2	2
Cap, veh/h	200	745	167	216	956	418	224	1362	174	349	1703	188
Arrive On Green	0.11	0.26	0.26	0.12	0.27	0.27	0.12	0.30	0.30	0.19	0.37	0.37
Sat Flow, veh/h	1795	2889	648	1795	3582	1565	1795	4572	583	1810	4656	515
Grp Volume(v), veh/h	176	481	469	193	765	230	200	893	460	325	1037	539
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1795	1791	1565	1795	1702	1750	1810	1702	1767
Q Serve(g_s), s	13.5	36.1	36.1	14.8	27.9	17.7	15.4	35.0	35.0	24.7	38.9	38.9
Cycle Q Clear(g_c), s	13.5	36.1	36.1	14.8	27.9	17.7	15.4	35.0	35.0	24.7	38.9	38.9
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.33	1.00		0.29
Lane Grp Cap(c), veh/h	200	462	450	216	956	418	224	1014	521	349	1245	646
V/C Ratio(X)	0.88	1.04	1.04	0.89	0.80	0.55	0.89	0.88	0.88	0.93	0.83	0.83
Avail Cap(c_a), veh/h	231	462	450	218	956	418	287	1014	521	406	1245	646
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	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	52.0	52.0	60.7	47.8	44.1	60.3	46.8	46.8	55.6	40.5	40.5
Incr Delay (d2), s/veh	25.6	53.1	53.7	32.9	5.6	2.7	19.0	10.0	17.4	24.8	6.6	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	7.5	22.7	22.2	8.6	13.0	7.1	8.1	15.9	17.5	13.5	17.1	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.9	105.1	105.6	93.6	53.4	46.8	79.4	56.8	64.2	80.4	47.1	52.5
LnGrp LOS	F	F	F	F	D	D	E	E	E	F	D	D
Approach Vol, veh/h		1126			1188			1553			1901	
Approach Delay, s/veh		102.5			58.7			61.9			54.4	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	56.1	19.6	42.3	31.6	46.6	20.8	41.0
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	22.4	* 46	18.0	35.1	31.4	37.1	17.0	36.1
Max Q Clear Time (g_c+I1), s	17.4	40.9	15.5	29.9	26.7	37.0	16.8	38.1
Green Ext Time (p_c), s	0.1	4.6	0.1	3.6	0.2	0.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.7
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1	55	78	1	51	162	1327	49	108	1504	13
Future Volume (veh/h)	36	1	55	78	1	51	162	1327	49	108	1504	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1900	1900	1885	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	40	1	60	86	1	56	178	1458	54	119	1653	14
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, %	0	0	0	3	0	0	1	2	2	1	1	1
Cap, veh/h	187	3	208	180	4	208	206	3456	128	142	3414	29
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.11	0.68	0.68	0.16	1.00	1.00
Sat Flow, veh/h	1360	26	1577	1324	28	1575	1795	5053	187	1795	5263	45
Grp Volume(v), veh/h	40	0	61	86	0	57	178	982	530	119	1078	589
Grp Sat Flow(s),veh/h/ln	1360	0	1603	1324	0	1604	1795	1702	1836	1795	1716	1877
Q Serve(g_s), s	3.8	0.0	4.8	8.8	0.0	4.5	13.6	17.9	17.9	9.0	0.0	0.0
Cycle Q Clear(g_c), s	8.3	0.0	4.8	13.6	0.0	4.5	13.6	17.9	17.9	9.0	0.0	0.0
Prop In Lane	1.00		0.98	1.00		0.98	1.00		0.10	1.00		0.02
Lane Grp Cap(c), veh/h	187	0	211	180	0	211	206	2328	1256	142	2225	1217
V/C Ratio(X)	0.21	0.00	0.29	0.48	0.00	0.27	0.87	0.42	0.42	0.84	0.48	0.48
Avail Cap(c_a), veh/h	375	0	433	363	0	433	428	2328	1256	313	2225	1217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.34	0.34	0.34
Uniform Delay (d), s/veh	58.4	0.0	54.8	61.0	0.0	54.7	60.9	9.8	9.8	58.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.7	1.9	0.0	0.7	10.4	0.6	1.0	4.5	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	2.0	3.1	0.0	1.9	6.7	6.4	7.0	3.9	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	0.0	55.6	62.9	0.0	55.4	71.3	10.4	10.9	62.5	0.3	0.5
LnGrp LOS	E	A	E	E	A	E	E	B	B	E	A	A
Approach Vol, veh/h		101			143			1690			1786	
Approach Delay, s/veh		56.9			59.9			17.0			4.5	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	95.7		23.7	15.7	100.6		23.7
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	33.4	54.1		* 38	24.4	63.1		* 38
Max Q Clear Time (g_c+I1), s	15.6	2.0		15.6	11.0	19.9		10.3
Green Ext Time (p_c), s	0.4	34.9		0.5	0.2	27.6		0.4

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	20	1	0	2	43	1386	0	29	1417	4
Future Vol, veh/h	3	0	20	1	0	2	43	1386	0	29	1417	4
Conflicting Peds, #/hr	1	0	0	0	0	1	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	22	1	0	2	47	1523	0	32	1557	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2330	3246	784	2307	3248	766	1564	0	0	1526	0	0
Stage 1	1626	1626	-	1620	1620	-	-	-	-	-	-	-
Stage 2	704	1620	-	687	1628	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	40	10	292	42	9	300	211	-	-	221	-	-
Stage 1	73	162	-	74	163	-	-	-	-	-	-	-
Stage 2	362	163	-	371	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	29	7	291	29	6	299	210	-	-	220	-	-
Mov Cap-2 Maneuver	29	7	-	29	6	-	-	-	-	-	-	-
Stage 1	57	138	-	57	126	-	-	-	-	-	-	-
Stage 2	279	126	-	293	138	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38	56.6	0.8	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	210	-	-	134	73	220	-	-
HCM Lane V/C Ratio	0.225	-	-	0.189	0.045	0.145	-	-
HCM Control Delay (s)	27.1	-	-	38	56.6	24.1	-	-
HCM Lane LOS	D	-	-	E	F	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.7	0.1	0.5	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	193	38	1504	1566	71
Future Vol, veh/h	34	193	38	1504	1566	71
Conflicting Peds, #/hr	0	0	4	0	0	4
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	91	91	91	91	91	91
Heavy Vehicles, %	0	6	0	1	1	0
Mvmt Flow	37	212	42	1653	1721	78

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2509	904	1803	0	-	0
Stage 1	1764	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Critical Hdwy	5.7	7.22	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.96	3.1	-	-	-
Pot Cap-1 Maneuver	51	234	161	-	-	-
Stage 1	82	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	233	160	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	393	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	124.1	0.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	160	-	233	-	-
HCM Lane V/C Ratio	0.261	-	1.071	-	-
HCM Control Delay (s)	35.3	-	124.1	-	-
HCM Lane LOS	E	-	F	-	-
HCM 95th %tile Q(veh)	1	-	10.8	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	1308	68	48	1404	74	139	247	53	73	109	129
Future Volume (veh/h)	104	1308	68	48	1404	74	139	247	53	73	109	129
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	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	107	1348	70	49	1447	76	143	255	55	75	112	133
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	132	3144	163	71	2950	155	247	410	346	152	403	346
Arrive On Green	0.07	0.63	0.63	0.04	0.59	0.59	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	5002	260	1810	4963	261	1136	1885	1592	1005	1856	1592
Grp Volume(v), veh/h	107	925	493	49	992	531	143	255	55	75	112	133
Grp Sat Flow(s),veh/h/ln	1810	1716	1831	1810	1702	1819	1136	1885	1592	1005	1856	1592
Q Serve(g_s), s	7.3	17.3	17.3	3.4	21.0	21.0	15.1	15.4	3.5	9.2	6.3	9.0
Cycle Q Clear(g_c), s	7.3	17.3	17.3	3.4	21.0	21.0	21.5	15.4	3.5	24.6	6.3	9.0
Prop In Lane	1.00		0.14	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	2157	1151	71	2024	1082	247	410	346	152	403	346
V/C Ratio(X)	0.81	0.43	0.43	0.69	0.49	0.49	0.58	0.62	0.16	0.49	0.28	0.38
Avail Cap(c_a), veh/h	373	2157	1151	144	2024	1082	265	440	372	169	433	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	11.9	11.9	59.8	14.6	14.6	50.0	44.6	40.0	55.8	41.1	42.1
Incr Delay (d2), s/veh	4.4	0.6	1.2	4.5	0.9	1.6	6.4	4.9	0.6	7.0	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	6.3	6.9	1.6	7.8	8.6	4.7	7.8	1.4	2.6	3.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	12.5	13.1	64.3	15.5	16.2	56.4	49.5	40.6	62.8	42.2	44.2
LnGrp LOS	E	B	B	E	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1525			1572			453			320	
Approach Delay, s/veh		16.2			17.2			50.6			47.8	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.0	13.2	79.8		33.0	8.9	84.1				
Change Period (Y+Rc), s		5.6	4.0	4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		29.4	26.0	56.1		29.4	10.0	72.1				
Max Q Clear Time (g_c+I1), s		26.6	9.3	23.0		23.5	5.4	19.3				
Green Ext Time (p_c), s		0.7	0.1	23.2		2.2	0.0	28.8				

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	1371	16	33	1419	80	6	0	12	0	0	76
Future Vol, veh/h	101	1371	16	33	1419	80	6	0	12	0	0	76
Conflicting Peds, #/hr	7	0	2	2	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	150	-	-	-	-	-	-	-	-
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, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	110	1490	17	36	1542	87	7	0	13	0	0	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1636	0	0	1509	0	0	2410	3429	756	2481	3394	822
Stage 1	-	-	-	-	-	-	1721	1721	-	1665	1665	-
Stage 2	-	-	-	-	-	-	689	1708	-	816	1729	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	195	-	-	225	-	-	36	7	304	33	8	276
Stage 1	-	-	-	-	-	-	63	146	-	69	155	-
Stage 2	-	-	-	-	-	-	370	148	-	310	144	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	194	-	-	225	-	-	12	3	303	15	3	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	3	-	15	3	-
Stage 1	-	-	-	-	-	-	27	63	-	30	129	-
Stage 2	-	-	-	-	-	-	217	123	-	128	62	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.5	216.1	23.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	33	194	-	-	225	-	-	274
HCM Lane V/C Ratio	0.593	0.566	-	-	0.159	-	-	0.301
HCM Control Delay (s)	216.1	45.3	-	-	24	-	-	23.7
HCM Lane LOS	F	E	-	-	C	-	-	C
HCM 95th %tile Q(veh)	2	3	-	-	0.6	-	-	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	1005	159	298	1056	553	229	724	256	604	750	248
Future Volume (veh/h)	281	1005	159	298	1056	553	229	724	256	604	750	248
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		0.96	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1856	1870	1870	1900	1885	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	293	1047	166	310	1100	576	239	754	267	629	781	258
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	2	3	2	2	0	1	2	2	2	2	0
Cap, veh/h	357	1643	495	373	1675	518	293	1118	334	686	1702	523
Arrive On Green	0.10	0.32	0.32	0.11	0.33	0.33	0.08	0.22	0.22	0.20	0.33	0.33
Sat Flow, veh/h	3510	5106	1537	3456	5106	1580	3483	5106	1526	3456	5106	1570
Grp Volume(v), veh/h	293	1047	166	310	1100	576	239	754	267	629	781	258
Grp Sat Flow(s),veh/h/ln	1755	1702	1537	1728	1702	1580	1742	1702	1526	1728	1702	1570
Q Serve(g_s), s	11.2	24.0	11.3	12.1	25.4	45.1	9.3	18.6	22.8	24.5	16.5	18.0
Cycle Q Clear(g_c), s	11.2	24.0	11.3	12.1	25.4	45.1	9.3	18.6	22.8	24.5	16.5	18.0
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	357	1643	495	373	1675	518	293	1118	334	686	1702	523
V/C Ratio(X)	0.82	0.64	0.34	0.83	0.66	1.11	0.82	0.67	0.80	0.92	0.46	0.49
Avail Cap(c_a), veh/h	623	1675	504	613	1675	518	492	1118	334	739	1702	523
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	60.5	39.8	35.4	60.1	39.5	46.2	61.9	49.2	50.8	54.0	36.1	36.5
Incr Delay (d2), s/veh	4.7	0.8	0.4	5.0	0.9	73.7	2.1	3.3	17.9	15.7	0.9	3.3
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	5.2	10.0	4.2	5.5	10.6	27.8	4.1	8.1	10.2	12.0	6.9	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.2	40.6	35.8	65.1	40.5	119.8	64.1	52.4	68.7	69.7	36.9	39.8
LnGrp LOS	E	D	D	E	D	F	E	D	E	E	D	D
Approach Vol, veh/h		1506			1986			1260			1668	
Approach Delay, s/veh		44.8			67.3			58.1			49.7	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	50.7	19.6	50.0	32.9	35.0	20.4	49.1
Change Period (Y+Rc), s	5.6	4.9	5.6	4.9	5.6	4.9	5.6	4.9
Max Green Setting (Gmax), s	19.4	40.1	24.4	45.1	29.4	30.1	24.4	45.1
Max Q Clear Time (g_c+I1), s	11.3	20.0	13.2	47.1	26.5	24.8	14.1	26.0
Green Ext Time (p_c), s	0.3	6.0	0.7	0.0	0.8	2.7	0.8	7.5

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

Notes

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

Intersection	
Int Delay, s/veh	738.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	1656	14	114	1822	67	0	0	99	45	0	84
Future Vol, veh/h	104	1656	14	114	1822	67	0	0	99	45	0	84
Conflicting Peds, #/hr	7	0	11	11	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	100	-	151	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	4	2	0	0	0	1	0	0	0
Mvmt Flow	112	1781	15	123	1959	72	0	0	106	48	0	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2038	0	0	1807	0	0	-	-	909	3148	4243	987
Stage 1	-	-	-	-	-	-	-	-	-	2212	2212	-
Stage 2	-	-	-	-	-	-	-	-	-	936	2031	-
Critical Hdwy	5.3	-	-	5.38	-	-	-	-	7.12	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.14	-	-	-	-	3.91	3.8	4	3.9
Pot Cap-1 Maneuver	123	-	-	153	-	-	0	0	240	~ 12	2	215
Stage 1	-	-	-	-	-	-	0	0	-	~ 28	82	-
Stage 2	-	-	-	-	-	-	0	0	-	261	102	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	122	-	-	151	-	-	-	-	237	~ 1	0	214
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	~ 1	0	-
Stage 1	-	-	-	-	-	-	-	-	-	~ 2	15	-
Stage 2	-	-	-	-	-	-	-	-	-	~ 12	8	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.5	5.1	32	$ 22721.8
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	237	122	-	-	151	-	-	3
HCM Lane V/C Ratio	0.449	0.917	-	-	0.812	-	-	46.237
HCM Control Delay (s)	32	127.7	-	-	89	-	$	22721.8
HCM Lane LOS	D	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	2.2	5.9	-	-	5.2	-	-	19.6

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)	0	1163	637	0	1668	461	0	0	0	359	0	335
Future Volume (veh/h)	0	1163	637	0	1668	461	0	0	0	359	0	335
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1211	0	0	1738	0				399	0	349
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2289		0	3315					446	0	390
Arrive On Green	0.00	0.64	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1211	0	0	1738	0				399	0	349
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	23.9	0.0	0.0	0.0	0.0				27.9	0.0	27.9
Cycle Q Clear(g_c), s	0.0	23.9	0.0	0.0	0.0	0.0				27.9	0.0	27.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2289		0	3315					446	0	390
V/C Ratio(X)	0.00	0.53		0.00	0.52					0.90	0.00	0.89
Avail Cap(c_a), veh/h	0	2289		0	3315					621	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.5	0.0	0.0	0.0	0.0				47.2	0.0	47.2
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	0.5	0.0				12.1	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	9.0	0.0	0.0	0.1	0.0				13.9	0.0	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.4	0.0	0.0	0.5	0.0				59.3	0.0	60.5
LnGrp LOS	A	B		A	A					E	A	E
Approach Vol, veh/h		1211	A		1738	A					748	
Approach Delay, s/veh		13.4			0.5						59.9	
Approach LOS		B			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		90.7		39.3		90.7						
Change Period (Y+Rc), s		7.0		7.0		7.0						
Max Green Setting (Gmax), s		71.0		45.0		71.0						
Max Q Clear Time (g_c+I1), s		25.9		29.9		2.0						
Green Ext Time (p_c), s		19.4		2.3		38.1						

Intersection Summary												
HCM 6th Ctrl Delay			16.7									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1288	334	0	1570	420	559	0	711	0	0	0
Future Volume (veh/h)	0	1288	334	0	1570	420	559	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1342	0	0	1635	0	608	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2750		0	2728		1237	0	1007			
Arrive On Green	0.00	1.00	0.00	0.00	0.53	0.00	0.36	0.00	0.36			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1342	0	0	1635	0	608	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	28.5	0.0	17.8	0.0	29.9			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	28.5	0.0	17.8	0.0	29.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2750		0	2728		1237	0	1007			
V/C Ratio(X)	0.00	0.49		0.00	0.60		0.49	0.00	0.74			
Avail Cap(c_a), veh/h	0	2750		0	2728		1595	0	1298			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.75	0.00	0.00	0.64	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	20.7	0.0	32.5	0.0	36.4			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.6	0.0	0.7	0.0	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	11.0	0.0	7.6	0.0	10.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	21.4	0.0	33.2	0.0	39.2			
LnGrp LOS	A	A		A	C		C	A	D			
Approach Vol, veh/h		1342	A		1635	A		1349				
Approach Delay, s/veh		0.5			21.4			36.5				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		76.5				76.5		53.5				
Change Period (Y+Rc), s		7.0				7.0		7.0				
Max Green Setting (Gmax), s		56.0				56.0		60.0				
Max Q Clear Time (g_c+I1), s		2.0				30.5		31.9				
Green Ext Time (p_c), s		27.8				20.3		14.7				

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	337	1536	210	127	1394	89	424	336	133	145	283	172
Future Volume (veh/h)	337	1536	210	127	1394	89	424	336	133	145	283	172
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		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	351	1600	219	132	1452	93	442	350	139	151	295	179
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	400	2057	281	182	1980	613	479	870	382	177	739	317
Arrive On Green	0.12	0.45	0.45	0.05	0.39	0.39	0.14	0.25	0.25	0.10	0.21	0.21
Sat Flow, veh/h	3456	4563	623	3456	5106	1582	3483	3526	1547	1795	3554	1523
Grp Volume(v), veh/h	351	1202	617	132	1452	93	442	350	139	151	295	179
Grp Sat Flow(s),veh/h/ln	1728	1716	1755	1728	1702	1582	1742	1763	1547	1795	1777	1523
Q Serve(g_s), s	13.1	38.8	39.0	4.9	31.9	5.0	16.4	10.9	9.7	10.8	9.4	13.8
Cycle Q Clear(g_c), s	13.1	38.8	39.0	4.9	31.9	5.0	16.4	10.9	9.7	10.8	9.4	13.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1547	791	182	1980	613	479	870	382	177	739	317
V/C Ratio(X)	0.88	0.78	0.78	0.72	0.73	0.15	0.92	0.40	0.36	0.85	0.40	0.57
Avail Cap(c_a), veh/h	422	1547	791	237	1980	613	479	969	425	219	922	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)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.0	30.4	30.5	61.1	34.3	26.1	55.8	41.3	40.8	58.1	44.8	46.6
Incr Delay (d2), s/veh	14.1	3.1	6.1	4.6	2.5	0.5	23.3	0.7	1.4	19.6	0.1	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	6.4	16.1	17.2	2.3	13.3	2.0	8.8	4.8	3.8	5.8	4.1	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	33.5	36.6	65.7	36.8	26.6	79.1	42.0	42.2	77.7	45.0	47.2
LnGrp LOS	E	C	D	E	D	C	E	D	D	E	D	D
Approach Vol, veh/h		2170			1677			931			625	
Approach Delay, s/veh		40.5			38.5			59.6			53.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	32.1	20.2	55.7	17.9	37.2	11.9	64.0
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	18.0	34.0	16.0	43.1	16.0	36.0	9.0	50.1
Max Q Clear Time (g_c+I1), s	18.4	15.8	15.1	33.9	12.8	12.9	6.9	41.0
Green Ext Time (p_c), s	0.0	1.4	0.1	8.0	0.1	5.5	0.0	8.4

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	378	152	128	289	163	155	1059	110	289	1170	131
Future Volume (veh/h)	178	378	152	128	289	163	155	1059	110	289	1170	131
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1870	1870
Adj Flow Rate, veh/h	189	402	162	136	307	173	165	1127	117	307	1245	139
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	1	1	0	1	1	1	0	2	2
Cap, veh/h	212	533	212	159	666	296	188	1848	192	330	2179	243
Arrive On Green	0.12	0.22	0.22	0.09	0.19	0.19	0.10	0.39	0.39	0.18	0.47	0.47
Sat Flow, veh/h	1795	2476	983	1795	3582	1592	1795	4726	490	1810	4650	519
Grp Volume(v), veh/h	189	289	275	136	307	173	165	818	426	307	911	473
Grp Sat Flow(s),veh/h/ln	1795	1791	1669	1795	1791	1592	1795	1716	1785	1810	1702	1765
Q Serve(g_s), s	15.6	22.7	23.2	11.2	11.4	14.9	13.6	28.6	28.6	25.1	29.1	29.1
Cycle Q Clear(g_c), s	15.6	22.7	23.2	11.2	11.4	14.9	13.6	28.6	28.6	25.1	29.1	29.1
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.27	1.00		0.29
Lane Grp Cap(c), veh/h	212	386	359	159	666	296	188	1342	698	330	1595	827
V/C Ratio(X)	0.89	0.75	0.76	0.86	0.46	0.58	0.88	0.61	0.61	0.93	0.57	0.57
Avail Cap(c_a), veh/h	311	418	389	311	836	371	304	1342	698	427	1595	827
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	0.91	0.91	0.91	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	55.1	55.3	67.4	54.4	55.8	66.2	36.5	36.5	60.4	28.9	28.9
Incr Delay (d2), s/veh	14.8	12.6	14.4	5.0	1.1	3.9	8.6	1.9	3.6	21.0	1.5	2.9
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	7.9	11.5	11.1	5.3	5.2	6.3	6.6	12.2	13.0	13.3	12.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	67.6	69.6	72.4	55.4	59.7	74.7	38.4	40.1	81.4	30.4	31.8
LnGrp LOS	F	E	E	E	E	E	E	D	D	F	C	C
Approach Vol, veh/h		753			616			1409			1691	
Approach Delay, s/veh		71.5			60.4			43.2			40.1	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	75.2	21.7	32.8	32.0	63.6	17.3	37.2
Change Period (Y+Rc), s	4.6	* 4.9	4.0	4.9	4.6	4.9	4.0	4.9
Max Green Setting (Gmax), s	25.4	* 45	26.0	35.0	35.4	35.1	26.0	35.0
Max Q Clear Time (g_c+I1), s	15.6	31.1	17.6	16.9	27.1	30.6	13.2	25.2
Green Ext Time (p_c), s	0.1	9.6	0.2	4.3	0.3	3.7	0.1	5.7

Intersection Summary	
HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	0	108	68	1	41	226	1254	61	134	1288	29
Future Volume (veh/h)	29	0	108	68	1	41	226	1254	61	134	1288	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1885	1870	1885	1885
Adj Flow Rate, veh/h	30	0	112	71	1	43	235	1306	64	140	1342	30
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	0	0	0	0	1	1	2	1	1
Cap, veh/h	232	0	233	170	5	229	249	3155	155	169	3034	68
Arrive On Green	0.15	0.00	0.15	0.15	0.15	0.15	0.14	0.63	0.63	0.09	0.59	0.59
Sat Flow, veh/h	1381	0	1607	1299	37	1576	1810	5018	246	1781	5176	116
Grp Volume(v), veh/h	30	0	112	71	0	44	235	893	477	140	890	482
Grp Sat Flow(s),veh/h/ln	1381	0	1607	1299	0	1612	1810	1716	1833	1781	1716	1861
Q Serve(g_s), s	2.2	0.0	7.2	5.9	0.0	2.7	14.4	14.6	14.6	8.6	16.2	16.2
Cycle Q Clear(g_c), s	4.9	0.0	7.2	13.1	0.0	2.7	14.4	14.6	14.6	8.6	16.2	16.2
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.13	1.00		0.06
Lane Grp Cap(c), veh/h	232	0	233	170	0	234	249	2157	1152	169	2011	1091
V/C Ratio(X)	0.13	0.00	0.48	0.42	0.00	0.19	0.94	0.41	0.41	0.83	0.44	0.44
Avail Cap(c_a), veh/h	670	0	743	582	0	746	249	2157	1152	245	2011	1091
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	44.2	0.0	44.0	50.0	0.0	42.1	47.9	10.4	10.4	49.8	13.0	13.0
Incr Delay (d2), s/veh	0.2	0.0	1.5	1.6	0.0	0.4	41.9	0.6	1.1	10.2	0.5	0.9
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	0.8	0.0	3.0	2.0	0.0	1.1	9.2	5.1	5.6	4.2	5.9	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	45.5	51.7	0.0	42.5	89.8	11.0	11.5	60.0	13.4	13.9
LnGrp LOS	D	A	D	D	A	D	F	B	B	E	B	B
Approach Vol, veh/h		142			115			1605			1512	
Approach Delay, s/veh		45.3			48.1			22.7			17.9	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	70.5		21.5	15.2	75.3		21.5
Change Period (Y+Rc), s	4.6	4.9		* 5.2	4.6	4.9		* 5.2
Max Green Setting (Gmax), s	15.4	30.1		* 52	15.4	30.1		* 52
Max Q Clear Time (g_c+I1), s	16.4	18.2		15.1	10.6	16.6		9.2
Green Ext Time (p_c), s	0.0	9.4		0.5	0.1	10.5		0.8

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	22	3	0	7	53	1113	6	26	1077	13
Future Vol, veh/h	5	0	22	3	0	7	53	1113	6	26	1077	13
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	7	7	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	5	33	0	0	0	1	0	0	2	0
Mvmt Flow	5	0	23	3	0	7	56	1172	6	27	1134	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1778	2494	576	1802	2498	596	1150	0	0	1185	0	0
Stage 1	1197	1197	-	1294	1294	-	-	-	-	-	-	-
Stage 2	581	1297	-	508	1204	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.2	7.06	6.5	7.1	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.96	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	7.36	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.95	4.13	4	3.9	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	89	29	389	60	29	387	337	-	-	324	-	-
Stage 1	147	261	-	96	235	-	-	-	-	-	-	-
Stage 2	430	234	-	407	259	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	71	22	388	46	22	384	336	-	-	322	-	-
Mov Cap-2 Maneuver	71	22	-	46	22	-	-	-	-	-	-	-
Stage 1	122	239	-	79	194	-	-	-	-	-	-	-
Stage 2	351	194	-	351	237	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.6	37.9	0.8	0.4
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	336	-	-	212	120	322	-	-
HCM Lane V/C Ratio	0.166	-	-	0.134	0.088	0.085	-	-
HCM Control Delay (s)	17.8	-	-	24.6	37.9	17.2	-	-
HCM Lane LOS	C	-	-	C	E	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.5	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	224	46	1511	1377	86
Future Vol, veh/h	30	224	46	1511	1377	86
Conflicting Peds, #/hr	1	0	11	0	0	11
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	96	96	96	96	96	96
Heavy Vehicles, %	0	3	0	1	1	0
Mvmt Flow	31	233	48	1574	1434	90

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2217	773	1535	0	-	0
Stage 1	1490	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Critical Hdwy	5.7	7.16	5.3	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.93	3.1	-	-	-
Pot Cap-1 Maneuver	73	292	218	-	-	-
Stage 1	122	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	289	216	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	400	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	72.6	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	216	-	289	-	-
HCM Lane V/C Ratio	0.222	-	0.916	-	-
HCM Control Delay (s)	26.4	-	72.6	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	8.6	-	-

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.9	0.2	0.2	0.3	0.0	0.1	1.9	0.4	2.1	1.8	0.2	0.2
Total Del/Veh (s)	69.8	20.7	18.2	69.8	26.3	27.0	48.8	38.8	20.3	67.7	35.9	14.0

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.9

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	0.0		0.1	0.1	0.0
Total Del/Veh (s)	21.0	3.5	0.5	4.5	4.6		20.8	12.3	4.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.2	0.5	0.0	0.0	0.1	0.6	0.0	0.6	0.0	0.0	0.0
Total Del/Veh (s)	59.1	55.7	33.2	55.7	36.4	12.0	64.1	33.5	17.6	169.0	42.2	23.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	50.6

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.7	0.0
Total Del/Veh (s)	24.1	8.7	6.1	22.3	1.5	0.9	27.2	415.2	312.6	12.9

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.4	0.1
Total Del/Veh (s)	10.1	2.0	11.2	8.6	45.4	19.0	11.9

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.4
Total Del/Veh (s)	19.9	6.4	22.1	3.6	25.5	28.2	20.1

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.1	0.1	3.0	0.2	3.0	2.7	0.4	2.8
Total Del/Veh (s)	53.2	43.0	40.4	62.5	37.4	25.2	60.4	39.6	14.9	61.7	38.1	15.9

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	40.0

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.9	0.2	0.3	3.1	0.2	3.0	0.1	0.0	0.0	2.2	0.2	0.2
Total Del/Veh (s)	71.9	35.4	26.0	63.4	31.3	6.4	70.0	32.7	26.2	68.2	38.9	24.3

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	38.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	63.9	65.2	13.3	67.1	47.0	6.8	63.0	4.3	3.1	45.6	7.8	6.4

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.4

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.7	0.2	0.3	1.8	0.1	0.1	0.2
Total Del/Veh (s)	82.0	21.0	13.1	2.8	12.0	0.4	0.1	5.3	0.5	0.7	1.0

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	42.4	19.0	20.4	2.4	3.5	2.0	3.9

Total Zone Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	1624.8

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	380	394	384	142	387	424	439	120	342	140	157
Average Queue (ft)	149	222	230	236	37	215	241	262	57	178	32	103
95th Queue (ft)	224	335	339	341	105	370	410	432	127	303	108	173
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	6	9			0	19			8	42	0	8
Queuing Penalty (veh)	37	15			1	5			22	40	1	16

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	334	143
Average Queue (ft)	129	63
95th Queue (ft)	253	118
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	7	
Queuing Penalty (veh)	8	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	T	TR	LTR	LTR
Maximum Queue (ft)	81	153	204	253	5	13	43	87
Average Queue (ft)	32	16	26	49	0	1	13	28
95th Queue (ft)	69	106	145	212	5	6	40	71
Link Distance (ft)		615	615	615	546	546	587	433
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	80							
Storage Blk Time (%)	2	1						
Queuing Penalty (veh)	11	1						

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	124	375	546	567	576	255	156	241	368	418	464	300
Average Queue (ft)	53	133	348	382	419	201	74	98	208	242	260	104
95th Queue (ft)	105	336	559	589	641	337	130	178	336	379	409	285
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			2	3	7							
Queuing Penalty (veh)			13	18	46							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	24		31	1	0	0	11		21	
Queuing Penalty (veh)		0	37		102	4	0	0	22		39	

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	190	224	230	194	157	126	306	409	511	479	394	210
Average Queue (ft)	104	130	113	93	55	40	234	308	301	235	224	119
95th Queue (ft)	172	194	181	156	119	91	374	471	554	407	363	250
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)									6	0	0	
Queuing Penalty (veh)									32	1	1	
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	0	1	1		1	1	21	62	10		40	5
Queuing Penalty (veh)	0	2	2		2	1	71	208	33		72	17

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	R	R	LTR
Maximum Queue (ft)	92	215	242	74	93	13	75	409
Average Queue (ft)	21	30	45	3	33	1	27	202
95th Queue (ft)	61	133	167	68	75	6	59	532
Link Distance (ft)		695	695	695			701	726
Upstream Blk Time (%)				0				1
Queuing Penalty (veh)				0				0
Storage Bay Dist (ft)	200				100	151		
Storage Blk Time (%)		0			1			
Queuing Penalty (veh)		0			3			

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	246	249	204	196	199	67	376	279
Average Queue (ft)	109	123	88	89	77	2	189	128
95th Queue (ft)	270	288	167	163	154	39	307	228
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	4	5						
Queuing Penalty (veh)	24	32						
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	337	331	366	225	294	339	419	192	230	377	258	244
Average Queue (ft)	158	150	148	35	135	172	223	8	132	155	192	149
95th Queue (ft)	283	275	288	168	273	335	411	84	210	289	269	259
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			3	0						1	3	0
Queuing Penalty (veh)			10	0						3	7	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	203	339	493	499	508	89	227	356	409	451	130	176
Average Queue (ft)	114	160	290	312	336	24	75	189	228	287	61	46
95th Queue (ft)	180	295	435	449	466	63	169	297	352	420	154	127
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	5				0	2		41	0	
Queuing Penalty (veh)		0	14				0	1		41	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	230	301	271	130	229	279	287	190
Average Queue (ft)	116	176	153	68	125	164	134	113
95th Queue (ft)	195	258	241	145	206	243	238	194
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)		0	17	0	0	2	2	3
Queuing Penalty (veh)		1	15	1	1	2	7	7

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	362	324	174	254	201	84	155	192	226	260	274
Average Queue (ft)	94	209	188	114	137	104	39	76	85	111	137	178
95th Queue (ft)	176	312	284	182	214	181	70	136	168	203	231	310
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	2	24		4	5	0						0
Queuing Penalty (veh)	5	21		8	6	0						2

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	472	435	362
Average Queue (ft)	314	278	224
95th Queue (ft)	442	398	333
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	17		
Queuing Penalty (veh)	27		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	37	52	94	56	80	117	132	158	145	98	102	130
Average Queue (ft)	5	6	31	19	25	29	36	52	68	31	33	44
95th Queue (ft)	23	31	74	49	63	87	101	122	126	79	79	99
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	78	31	54	18	6	3	31	29	17	11
Average Queue (ft)	23	3	15	1	0	0	6	1	1	0
95th Queue (ft)	67	19	42	10	4	3	25	13	9	7
Link Distance (ft)	596	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)								0		
Queuing Penalty (veh)								0		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB	SB
Directions Served	LR	LT	T	T	T	T	TR
Maximum Queue (ft)	107	133	104	8	161	123	85
Average Queue (ft)	43	33	6	0	24	10	5
95th Queue (ft)	83	99	45	6	121	74	49
Link Distance (ft)	391	514	514	514	649	649	649
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1122

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.2	0.0	0.0	0.0	609.0	615.9	572.8	6.4	3.7	3.2
Total Del/Veh (s)	64.8	21.3	18.5	70.3	29.9	32.4	541.3	487.3	461.2	217.2	141.4	23.7

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	77.8
Total Del/Veh (s)	84.8

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	30.6	4.7	5.8	27.2	5.4	5.5	15.9	16.4	6.0

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	1.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	68.4	58.7	33.1	66.9	52.5	27.2	73.2	58.8	35.0	84.8	41.8	25.0

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	54.2

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1568.0	1516.6	49.6
Total Del/Veh (s)	55.3	7.2	4.9	37.9	2.1	1.1	55.7	1894.5	1924.5	34.6

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.1
Total Del/Veh (s)	12.7	1.8	12.6	9.6	44.4	26.5	13.8

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.4
Total Del/Veh (s)	23.2	6.9	23.2	3.5	30.1	31.0	21.8

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	64.5	59.4	68.8	2.7	0.4	2.6	2.6	0.4	2.8
Total Del/Veh (s)	62.5	36.4	35.6	338.3	433.1	616.1	64.2	38.5	16.1	63.2	40.9	19.4

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	19.4
Total Del/Veh (s)	165.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	5.9	3.0	3.2	2.6	0.3	2.7	0.0	0.0	0.0	2.2	0.4	0.4
Total Del/Veh (s)	172.0	127.7	117.5	102.0	48.9	13.1	73.7	52.3	55.1	77.6	42.9	32.6

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	1.2
Total Del/Veh (s)	67.5

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	58.1	44.6	16.0	63.7	28.5	10.4	73.3	10.7	10.0	65.6	9.7	8.2

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	16.7

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	2.2	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	73.6	11.8	21.6	6.3	13.8	0.7	12.1	1.2	1.7	1.4

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	129.8	97.6	0.0	0.0	0.0	0.0	6.7
Total Del/Veh (s)	176.9	140.7	27.0	4.5	5.8	2.5	14.4

Total Zone Performance

Denied Del/Veh (s)	50.2
Total Del/Veh (s)	2146.5

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	353	337	343	149	472	510	530	120	1767	140	158
Average Queue (ft)	148	217	217	225	64	249	289	312	107	1718	44	111
95th Queue (ft)	223	318	314	321	137	461	504	525	145	1882	138	195
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										92		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	5	10			1	20			63	61	1	23
Queuing Penalty (veh)	28	18			4	11			301	116	3	73

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1222	918
Average Queue (ft)	518	233
95th Queue (ft)	1339	987
Link Distance (ft)	1817	1817
Upstream Blk Time (%)	4	2
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	36	
Queuing Penalty (veh)	35	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	101	168	136	164	42	5	33	35	128
Average Queue (ft)	49	20	18	26	8	0	2	8	52
95th Queue (ft)	96	127	129	168	30	3	14	29	106
Link Distance (ft)		615	615	615		546	546	587	433
Upstream Blk Time (%)				0					
Queuing Penalty (veh)				0					
Storage Bay Dist (ft)	80				150				
Storage Blk Time (%)	6	1							
Queuing Penalty (veh)	36	1							

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	169	379	531	546	557	255	178	345	523	529	575	300
Average Queue (ft)	95	165	344	380	408	183	95	156	303	332	361	226
95th Queue (ft)	154	358	527	552	585	343	161	320	463	486	531	386
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)			2	2	3							
Queuing Penalty (veh)			9	11	20							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	26		33	0	0	0	27		36	3
Queuing Penalty (veh)		0	62		74	1	0	1	69		148	15

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	235	290	452	408	368	195	306	412	504	393	390	210
Average Queue (ft)	132	202	279	248	223	142	233	310	281	207	223	143
95th Queue (ft)	207	322	408	363	345	241	360	456	539	329	355	259
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)			0	0	0				7	0		
Queuing Penalty (veh)			0	0	0				43	0		
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)	1	4	28		35	16	13	43	7		39	11
Queuing Penalty (veh)	4	12	89		78	47	41	135	36		100	36

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	R	R	LTR
Maximum Queue (ft)	193	253	266	32	114	60	20	19	203	734
Average Queue (ft)	75	41	55	2	53	2	1	2	95	723
95th Queue (ft)	151	163	196	17	102	36	18	10	181	747
Link Distance (ft)		695	695	695		225	225		702	719
Upstream Blk Time (%)						0				98
Queuing Penalty (veh)						0				0
Storage Bay Dist (ft)	200				100			151		
Storage Blk Time (%)	1	1			3					
Queuing Penalty (veh)	8	0			18					

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	249	250	286	349	436	201	412	339
Average Queue (ft)	133	148	114	113	125	17	222	166
95th Queue (ft)	276	285	217	242	291	115	352	284
Link Distance (ft)	225	225	730	730	730		573	573
Upstream Blk Time (%)	4	5			0		0	
Queuing Penalty (veh)	28	36			0		0	
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					1	0		
Queuing Penalty (veh)					7	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	354	361	395	225	318	387	443	341	293	390	258	241
Average Queue (ft)	184	170	172	49	91	138	183	20	150	177	185	135
95th Queue (ft)	311	296	316	202	221	283	333	164	251	308	272	247
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			6	0						2	2	0
Queuing Penalty (veh)			20	0						8	5	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	249	310	385	399	412	110	265	2446	2444	2443	130	280
Average Queue (ft)	135	156	212	240	262	43	148	2097	2092	2089	52	142
95th Queue (ft)	211	255	332	352	376	89	319	2785	2768	2748	148	258
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)								38	39	41		
Queuing Penalty (veh)								0	0	0		
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	1				0	54		71	0	0
Queuing Penalty (veh)		0	4				0	72		51	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	302	403	367	130	238	348	366	190
Average Queue (ft)	202	218	211	78	140	196	179	137
95th Queue (ft)	293	351	329	159	231	294	299	219
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	2	1	29	0	1	4	5	5
Queuing Penalty (veh)	5	5	31	0	4	6	20	14

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	866	844	174	500	443	265	280	344	387	483	275
Average Queue (ft)	150	606	579	161	306	265	100	164	205	233	260	254
95th Queue (ft)	194	1007	993	204	465	414	242	261	338	368	421	319
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)		7	7									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	34	56		28	26	7	0	0	0			14
Queuing Penalty (veh)	119	90		98	47	15	0	0	1			61

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	636	566	416
Average Queue (ft)	387	326	252
95th Queue (ft)	573	508	360
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	17		
Queuing Penalty (veh)	50		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	82	89	149	65	302	297	321	344	202	151	104	140
Average Queue (ft)	32	33	69	26	139	92	106	134	100	56	40	72
95th Queue (ft)	73	70	129	55	252	236	265	291	173	123	86	125
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	L	T	T	TR
Maximum Queue (ft)	55	30	72	38	8	58	13	14	17
Average Queue (ft)	19	4	20	2	0	20	1	1	1
95th Queue (ft)	48	21	51	18	5	50	11	9	9
Link Distance (ft)	596	558		629	629		598	598	598
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			100			
Storage Blk Time (%)			0	0		0			
Queuing Penalty (veh)			1	0		0			

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB	SB
Directions Served	LR	LT	T	T	T	T	TR
Maximum Queue (ft)	420	288	173	34	171	64	59
Average Queue (ft)	273	77	16	2	56	10	5
95th Queue (ft)	488	219	106	37	306	97	49
Link Distance (ft)	391	514	514	514	649	649	649
Upstream Blk Time (%)	32				0		
Queuing Penalty (veh)	0				2		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 2488

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.2	0.2	0.0	0.0	0.0	2.2	0.5	2.3	1.7	0.2	0.1
Total Del/Veh (s)	59.1	14.5	9.9	68.7	19.7	19.5	70.7	60.4	26.1	110.3	58.9	12.6

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	26.6

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	20.4	1.7	0.8	16.8	4.6	4.9	75.7	14.5	8.3	4.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	62.2	44.1	14.7	60.7	49.7	34.9	68.5	52.1	25.9	115.7	43.2	22.9

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	52.3

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	956.0	1027.7	31.8
Total Del/Veh (s)	35.0	4.9	3.4	25.5	2.6	1.4	29.4	1435.8	1267.7	34.1

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.4	0.4	0.1
Total Del/Veh (s)	10.7	1.3	22.3	15.0	46.0	25.2	17.9

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.0	1.2	3.0	0.6
Total Del/Veh (s)	27.2	8.0	18.2	3.5	25.2	29.9	21.2

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.5	0.3	0.2	0.2	3.0	0.4	2.8	3.2	0.2	3.2
Total Del/Veh (s)	69.5	50.9	52.4	72.1	70.5	85.2	125.1	38.8	13.4	63.6	41.1	11.7

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	61.5

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.2	0.3	3.1	0.2	3.2	0.0	0.0	0.0	2.3	0.5	0.4
Total Del/Veh (s)	84.4	44.9	31.2	69.6	44.3	9.5	71.3	53.2	56.8	79.3	41.1	29.4

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	49.6

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	48.1	14.2	48.8	25.8	10.0	52.7	11.1	9.2	60.3	17.2	14.7	19.8

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	2.5	0.3	0.2	0.0	0.0	0.0	0.2
Total Del/Veh (s)	34.7	8.4	40.0	4.6	9.0	0.6	0.1	8.7	0.9	1.4	1.3

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	310.1	331.3	0.0	0.0	0.0	0.0	26.8
Total Del/Veh (s)	241.3	210.6	24.2	4.1	9.7	3.7	21.8

Total Zone Performance

Denied Del/Veh (s)	18.3
Total Del/Veh (s)	1783.7

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	185	255	220	246	149	364	393	416	120	509	140	155
Average Queue (ft)	85	142	126	122	56	149	183	206	95	266	47	82
95th Queue (ft)	162	219	199	205	123	324	360	382	149	475	131	155
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	1	3			0	10			30	50	0	11
Queuing Penalty (veh)	3	3			2	5			91	97	1	11

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	300	121
Average Queue (ft)	112	51
95th Queue (ft)	324	96
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	2	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	100	129	5	10	63	5	14	25	65	70
Average Queue (ft)	46	7	0	0	19	0	0	2	18	33
95th Queue (ft)	87	64	5	6	51	5	8	13	51	58
Link Distance (ft)		615	615	615		546	546	546	587	433
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	4									
Queuing Penalty (veh)	20									

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	185	262	362	359	387	255	225	341	400	439	537	300
Average Queue (ft)	105	120	200	225	225	86	116	149	233	257	300	241
95th Queue (ft)	164	194	309	325	352	234	190	257	348	378	475	362
Link Distance (ft)			546	546	546				695	695	695	
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	0	0	6		9	0	1	2	17		20	21
Queuing Penalty (veh)	0	0	16		15	0	3	6	50		112	73

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	161	285	353	316	299	195	306	413	530	414	371	210
Average Queue (ft)	93	141	221	191	161	114	278	386	412	174	193	124
95th Queue (ft)	154	250	316	276	253	205	367	473	684	311	320	244
Link Distance (ft)			545	545	545				514	514	514	
Upstream Blk Time (%)									19	0	0	
Queuing Penalty (veh)									101	0	0	
Storage Bay Dist (ft)	195	195				95	200	200				90
Storage Blk Time (%)		0	15		22	13	29	64	2		37	10
Queuing Penalty (veh)		1	35		57	32	73	160	11		93	25

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	R	LTR
Maximum Queue (ft)	138	92	138	18	122	181	66	14	21	129	741
Average Queue (ft)	61	6	15	1	60	11	2	1	2	54	708
95th Queue (ft)	116	42	75	10	113	83	37	10	13	105	844
Link Distance (ft)		695	695	695		226	226	226		701	726
Upstream Blk Time (%)						0	0				87
Queuing Penalty (veh)						1	0				0
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)					5						
Queuing Penalty (veh)					30						

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	246	247	414	512	705	225	463	320
Average Queue (ft)	100	129	197	190	304	133	241	152
95th Queue (ft)	234	261	352	377	581	314	394	265
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	1	3		0	0		0	
Queuing Penalty (veh)	9	15		0	1		0	
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					13	0		
Queuing Penalty (veh)					60	1		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	343	334	402	225	318	396	444	96	395	578	258	245
Average Queue (ft)	210	196	207	75	83	117	183	3	132	218	223	190
95th Queue (ft)	322	309	351	248	222	298	402	56	261	429	286	282
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)									0	0		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			8	0						1	7	1
Queuing Penalty (veh)			25	1						5	19	3

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	234	340	521	544	552	191	265	661	739	789	130	292
Average Queue (ft)	135	226	346	371	395	49	157	382	465	529	61	251
95th Queue (ft)	210	389	498	516	526	119	299	718	828	865	157	353
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	1	2							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	12			0	0	14		61	0	1
Queuing Penalty (veh)		0	39			0	1	18		54	0	2

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	304	699	607	130	223	220	179	130
Average Queue (ft)	278	333	241	78	120	122	80	55
95th Queue (ft)	347	713	577	149	198	191	156	102
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)		1	0					
Queuing Penalty (veh)		0	0					
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	30	0	14	1	1	0	0	0
Queuing Penalty (veh)	51	1	19	2	1	0	1	0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	TR	L
Maximum Queue (ft)	165	410	353	173	262	216	119	301	405	441	455	275
Average Queue (ft)	145	235	192	110	133	94	50	143	243	279	301	254
95th Queue (ft)	194	388	316	182	224	184	90	249	380	422	442	317
Link Distance (ft)		1068	1068		1070	1070			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	30	14		6	4	0		0	1			15
Queuing Penalty (veh)	57	25		9	5	0		0	2			58

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	646	563	399
Average Queue (ft)	369	298	225
95th Queue (ft)	575	492	346
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	15		
Queuing Penalty (veh)	43		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	68	122	123	64	292	269	297	319	287	399	296	320
Average Queue (ft)	23	48	55	26	162	82	109	134	125	136	98	130
95th Queue (ft)	57	91	104	57	272	203	234	263	231	318	246	282
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)									0	2		
Queuing Penalty (veh)									0	3		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	60	52	65	2	56	4
Average Queue (ft)	23	10	21	0	19	0
95th Queue (ft)	52	37	51	2	47	3
Link Distance (ft)	596	558		629		598
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	NB	NB	NB	SB	SB	SB
Directions Served	LR	LT	T	T	T	T	TR
Maximum Queue (ft)	438	318	207	3	402	161	42
Average Queue (ft)	363	101	14	0	118	8	2
95th Queue (ft)	520	258	97	3	383	90	19
Link Distance (ft)	391	514	514	514	649	649	649
Upstream Blk Time (%)	73				0	0	
Queuing Penalty (veh)	0				1	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1661

Appendix 8 Cumulative Plus Project Traffic Level-of-Service Worksheets

HCM 6th Signalized Intersection Summary
1: N Maroa Ave & W Shaw Ave

11/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	1899	34	25	1537	100	63	267	32	126	197	174
Future Volume (veh/h)	171	1899	34	25	1537	100	63	267	32	126	197	174
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1781	1856	1856	1870	1870	1811	1885	1870	1870
Adj Flow Rate, veh/h	188	2087	37	27	1689	110	69	293	35	138	216	191
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	3	3	8	3	3	2	2	6	1	2	2
Cap, veh/h	316	3025	54	46	2109	137	236	535	437	211	535	445
Arrive On Green	0.18	0.59	0.59	0.01	0.14	0.14	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5125	91	1697	4859	316	977	1870	1527	1059	1870	1555
Grp Volume(v), veh/h	188	1374	750	27	1173	626	69	293	35	138	216	191
Grp Sat Flow(s),veh/h/ln	1781	1689	1839	1697	1689	1798	977	1870	1527	1059	1870	1555
Q Serve(g_s), s	14.6	42.2	42.3	2.4	50.4	50.5	9.2	19.9	2.5	19.0	14.0	15.0
Cycle Q Clear(g_c), s	14.6	42.2	42.3	2.4	50.4	50.5	23.2	19.9	2.5	38.9	14.0	15.0
Prop In Lane	1.00		0.05	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	1993	1085	46	1466	780	236	535	437	211	535	445
V/C Ratio(X)	0.60	0.69	0.69	0.59	0.80	0.80	0.29	0.55	0.08	0.66	0.40	0.43
Avail Cap(c_a), veh/h	316	1993	1085	79	1466	780	253	566	462	228	566	471
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	21.2	21.3	73.5	58.0	58.0	52.6	45.3	39.1	61.8	43.2	43.6
Incr Delay (d2), s/veh	2.1	2.0	3.6	4.4	4.7	8.5	2.0	2.6	0.2	10.7	1.4	1.9
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	6.7	16.4	18.5	1.1	23.8	26.3	2.4	9.7	1.0	5.8	6.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	23.2	24.9	77.9	62.7	66.5	54.5	47.9	39.3	72.5	44.6	45.5
LnGrp LOS	E	C	C	E	E	E	D	D	D	E	D	D
Approach Vol, veh/h		2312			1826			397			545	
Approach Delay, s/veh		26.7			64.2			48.3			52.0	
Approach LOS		C			E			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		48.5	31.5	70.0		48.5	8.1	93.4				
Change Period (Y+Rc), s		5.6	4.9	* 4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		45.4	25.0	* 65		45.4	7.0	83.1				
Max Q Clear Time (g_c+I1), s		40.9	16.6	52.5		25.2	4.4	44.3				
Green Ext Time (p_c), s		2.0	0.2	11.3		4.6	0.0	34.1				

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	2066	4	0	1673	42	1	0	13	0	0	27
Future Volume (vph)	57	2066	4	0	1673	42	1	0	13	0	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91			0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			1.00			0.87			0.86	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1805	5033			5019			1655			1236	
Flt Permitted	0.10	1.00			1.00			0.99			1.00	
Satd. Flow (perm)	191	5033			5019			1649			1236	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	63	2270	4	0	1838	46	1	0	14	0	0	30
RTOR Reduction (vph)	0	0	0	0	1	0	0	13	0	0	27	0
Lane Group Flow (vph)	63	2274	0	0	1883	0	0	2	0	0	3	0
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	3%	25%	0%	3%	0%	0%	0%	0%	0%	0%	33%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	128.9	128.9			128.9			14.2			14.2	
Effective Green, g (s)	128.9	128.9			128.9			14.2			14.2	
Actuated g/C Ratio	0.86	0.86			0.86			0.09			0.09	
Clearance Time (s)	4.9	4.9			4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	164	4325			4312			156			117	
v/s Ratio Prot		c0.45			0.38						c0.00	
v/s Ratio Perm	0.33							0.00				
v/c Ratio	0.38	0.53			0.44			0.01			0.02	
Uniform Delay, d1	2.2	2.7			2.4			61.6			61.6	
Progression Factor	1.44	1.45			0.25			1.00			1.00	
Incremental Delay, d2	5.4	0.4			0.2			0.0			0.1	
Delay (s)	8.6	4.3			0.8			61.6			61.7	
Level of Service	A	A			A			E			E	
Approach Delay (s)		4.4			0.8			61.6			61.7	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	1620	331	209	1273	190	264	430	106	345	1003	178
Future Volume (vph)	155	1620	331	209	1273	190	264	430	106	345	1003	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5085	1546	3335	5036	1506	3400	3374	1504	3367	3505	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5085	1546	3335	5036	1506	3400	3374	1504	3367	3505	1500
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	178	1862	380	240	1463	218	303	494	122	397	1153	205
RTOR Reduction (vph)	0	0	136	0	0	101	0	0	88	0	0	97
Lane Group Flow (vph)	178	1862	244	240	1463	117	303	494	34	397	1153	108
Confl. Peds. (#/hr)			2			8			9			19
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	2%	3%	5%	3%	5%	3%	7%	5%	4%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.2	51.7	51.7	10.4	50.9	50.9	15.4	41.8	41.8	18.7	45.1	45.1
Effective Green, g (s)	11.2	51.7	51.7	10.4	50.9	50.9	15.4	41.8	41.8	18.7	45.1	45.1
Actuated g/C Ratio	0.07	0.34	0.34	0.07	0.34	0.34	0.10	0.28	0.28	0.12	0.30	0.30
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	253	1752	532	231	1708	511	349	940	419	419	1053	451
v/s Ratio Prot	0.05	c0.37		c0.07	0.29		0.09	0.15		c0.12	c0.33	
v/s Ratio Perm			0.16			0.08			0.02			0.07
v/c Ratio	0.70	1.06	0.46	1.04	0.86	0.23	0.87	0.53	0.08	0.95	1.09	0.24
Uniform Delay, d1	67.8	49.1	38.3	69.8	46.1	35.5	66.3	45.7	39.9	65.2	52.5	39.5
Progression Factor	1.12	0.64	0.40	1.10	0.78	0.75	1.14	0.85	0.43	0.92	0.78	0.95
Incremental Delay, d2	7.6	39.3	2.5	67.2	5.3	1.0	18.8	0.5	0.1	26.4	54.9	0.2
Delay (s)	83.9	71.0	18.0	143.8	41.3	27.6	94.3	39.2	17.3	86.0	95.8	37.8
Level of Service	F	E	B	F	D	C	F	D	B	F	F	D
Approach Delay (s)		63.6			52.6			54.5			86.8	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1991	22	64	1619	39	0	0	46	20	0	53
Future Volume (vph)	32	1991	22	64	1619	39	0	0	46	20	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1805	4691		1770	5036	1552		1644			1690	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.89	
Satd. Flow (perm)	1805	4691		1770	5036	1552		1644			1526	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	2212	24	71	1799	43	0	0	51	22	0	59
RTOR Reduction (vph)	0	1	0	0	0	10	0	47	0	0	74	0
Lane Group Flow (vph)	36	2235	0	71	1799	33	0	4	0	0	7	0
Confl. Peds. (#/hr)	4		2	2		4						
Confl. Bikes (#/hr)			4			2						
Heavy Vehicles (%)	0%	3%	10%	2%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	6.9	111.9		10.8	115.8	115.8		12.2			12.2	
Effective Green, g (s)	6.9	111.9		10.8	115.8	115.8		12.2			12.2	
Actuated g/C Ratio	0.05	0.75		0.07	0.77	0.77		0.08			0.08	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	83	3499		127	3887	1198		133			124	
v/s Ratio Prot	0.02	c0.48		c0.04	0.36			0.00				
v/s Ratio Perm						0.02					c0.00	
v/c Ratio	0.43	0.64		0.56	0.46	0.03		0.03			0.05	
Uniform Delay, d1	69.6	9.2		67.3	6.1	4.0		63.5			63.6	
Progression Factor	0.66	0.27		1.14	0.51	0.13		1.00			1.00	
Incremental Delay, d2	1.1	0.3		4.5	0.3	0.0		0.1			0.2	
Delay (s)	46.8	2.8		81.2	3.4	0.5		63.6			63.7	
Level of Service	D	A		F	A	A		E			E	
Approach Delay (s)		3.5			6.2			63.6			63.7	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1318	738	0	1354	484	0	0	0	280	0	367
Future Volume (veh/h)	0	1318	738	0	1354	484	0	0	0	280	0	367
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1870	0	1841	1841				1885	0	1870
Adj Flow Rate, veh/h	0	1464	0	0	1504	0				311	0	408
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.90				0.90	0.92	0.90
Percent Heavy Veh, %	0	3	2	0	4	4				1	0	2
Cap, veh/h	0	2216		0	3159					499	0	441
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3618	1585	0	5191	1560				1795	0	1585
Grp Volume(v), veh/h	0	1464	0	0	1504	0				311	0	408
Grp Sat Flow(s),veh/h/ln	0	1763	1585	0	1675	1560				1795	0	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				22.7	0.0	37.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				22.7	0.0	37.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2216		0	3159					499	0	441
V/C Ratio(X)	0.00	0.66		0.00	0.48					0.62	0.00	0.93
Avail Cap(c_a), veh/h	0	2216		0	3159					634	0	560
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.00	0.00	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				47.3	0.0	52.6
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.4	0.0				1.3	0.0	18.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.1	0.0				10.4	0.0	17.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.1	0.0	0.0	0.4	0.0				48.5	0.0	71.3
LnGrp LOS	A	A		A	A					D	A	E
Approach Vol, veh/h		1464	A		1504	A					719	
Approach Delay, s/veh		1.1			0.4						61.5	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		101.3		48.7		101.3
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		83.0		53.0		83.0
Max Q Clear Time (g_c+I1), s		2.0		39.5		2.0
Green Ext Time (p_c), s		33.0		2.2		31.9

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1297	301	0	1302	330	536	0	522	0	0	0
Future Volume (veh/h)	0	1297	301	0	1302	330	536	0	522	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1826	0	1826	1826	1870	0	1856			
Adj Flow Rate, veh/h	0	1474	0	0	1480	0	583	0	593			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88			
Percent Heavy Veh, %	0	2	5	0	5	5	2	0	3			
Cap, veh/h	0	2424		0	2366		1156	0	926			
Arrive On Green	0.00	0.32	0.00	0.00	0.47	0.00	0.33	0.00	0.33			
Sat Flow, veh/h	0	5274	1547	0	5149	1547	3456	0	2768			
Grp Volume(v), veh/h	0	1474	0	0	1480	0	583	0	593			
Grp Sat Flow(s),veh/h/ln	0	1702	1547	0	1662	1547	1728	0	1384			
Q Serve(g_s), s	0.0	18.3	0.0	0.0	16.6	0.0	10.1	0.0	13.6			
Cycle Q Clear(g_c), s	0.0	18.3	0.0	0.0	16.6	0.0	10.1	0.0	13.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2424		0	2366		1156	0	926			
V/C Ratio(X)	0.00	0.61		0.00	0.63		0.50	0.00	0.64			
Avail Cap(c_a), veh/h	0	2424		0	2366		1341	0	1074			
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.70	0.00	0.00	0.65	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	19.7	0.0	0.0	14.7	0.0	20.0	0.0	21.1			
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.8	0.0	1.5	0.0	3.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	7.5	0.0	0.0	5.5	0.0	4.1	0.0	4.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.5	0.0	0.0	15.5	0.0	21.4	0.0	24.3			
LnGrp LOS	A	C		A	B		C	A	C			
Approach Vol, veh/h		1474	A		1480	A		1176				
Approach Delay, s/veh		20.5			15.5			22.9				
Approach LOS		C			B			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		42.6				42.6		32.4				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		31.6				31.6		29.1				
Max Q Clear Time (g_c+I1), s		20.3				18.6		15.6				
Green Ext Time (p_c), s		9.5				10.7		9.5				

Intersection Summary			
HCM 6th Ctrl Delay			19.4
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	1437	81	83	1085	99	165	467	87	140	425	390
Future Volume (veh/h)	301	1437	81	83	1085	99	165	467	87	140	425	390
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		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1841	1826	1885	1781	1856	1885	1826	1870	1870
Adj Flow Rate, veh/h	358	1711	96	99	1292	118	196	556	104	167	506	464
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, %	3	2	2	4	5	1	8	3	1	5	2	2
Cap, veh/h	399	2281	128	136	1919	600	239	909	396	189	1045	453
Arrive On Green	0.23	0.92	0.92	0.04	0.38	0.38	0.07	0.26	0.26	0.11	0.29	0.29
Sat Flow, veh/h	3428	4944	277	3401	4985	1560	3291	3526	1535	1739	3554	1540
Grp Volume(v), veh/h	358	1178	629	99	1292	118	196	556	104	167	506	464
Grp Sat Flow(s),veh/h/ln	1714	1702	1817	1700	1662	1560	1646	1763	1535	1739	1777	1540
Q Serve(g_s), s	15.2	13.0	13.1	4.3	32.3	7.6	8.8	20.8	8.1	14.2	17.6	44.1
Cycle Q Clear(g_c), s	15.2	13.0	13.1	4.3	32.3	7.6	8.8	20.8	8.1	14.2	17.6	44.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1571	838	136	1919	600	239	909	396	189	1045	453
V/C Ratio(X)	0.90	0.75	0.75	0.73	0.67	0.20	0.82	0.61	0.26	0.88	0.48	1.03
Avail Cap(c_a), veh/h	480	1571	838	136	1919	600	285	909	396	267	1045	453
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)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	3.6	3.6	71.2	38.3	30.7	68.6	49.1	44.3	65.9	43.6	53.0
Incr Delay (d2), s/veh	12.2	2.5	4.6	15.7	1.9	0.7	12.6	1.9	0.8	17.0	0.1	48.9
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	6.4	2.2	2.9	2.2	13.3	3.0	4.1	9.5	3.2	7.1	7.7	22.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	6.1	8.2	86.8	40.2	31.4	81.2	51.0	45.1	82.9	43.7	101.8
LnGrp LOS	E	A	A	F	D	C	F	D	D	F	D	F
Approach Vol, veh/h		2165			1509			856			1137	
Approach Delay, s/veh		17.1			42.6			57.2			73.2	
Approach LOS		B			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	49.0	22.5	62.6	21.3	43.6	11.0	74.1
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	4.9	5.0	4.9
Max Green Setting (Gmax), s	13.0	44.1	21.0	52.1	23.0	34.1	6.0	67.1
Max Q Clear Time (g_c+I1), s	10.8	46.1	17.2	34.3	16.2	22.8	6.3	15.1
Green Ext Time (p_c), s	0.1	0.0	0.3	13.4	0.1	5.2	0.0	38.2

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	552	113	131	395	131	79	567	99	161	1321	63
Future Volume (veh/h)	87	552	113	131	395	131	79	567	99	161	1321	63
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		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1870	1826	1856	1826	1841	1885	1841	1826
Adj Flow Rate, veh/h	105	665	136	158	476	158	95	683	119	194	1592	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	2	5	3	5	4	1	4	5
Cap, veh/h	126	694	142	168	943	402	111	1486	667	217	1702	742
Arrive On Green	0.07	0.24	0.24	0.09	0.27	0.27	0.06	0.43	0.43	0.12	0.49	0.49
Sat Flow, veh/h	1781	2931	599	1795	3554	1516	1767	3469	1558	1795	3497	1524
Grp Volume(v), veh/h	105	403	398	158	476	158	95	683	119	194	1592	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1752	1795	1777	1516	1767	1735	1558	1795	1749	1524
Q Serve(g_s), s	8.7	33.6	33.7	13.1	17.0	12.8	8.0	21.0	5.2	16.0	64.3	3.1
Cycle Q Clear(g_c), s	8.7	33.6	33.7	13.1	17.0	12.8	8.0	21.0	5.2	16.0	64.3	3.1
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	126	421	415	168	943	402	111	1486	667	217	1702	742
V/C Ratio(X)	0.83	0.96	0.96	0.94	0.50	0.39	0.86	0.46	0.18	0.89	0.94	0.10
Avail Cap(c_a), veh/h	143	421	415	168	943	402	111	1486	667	315	1702	742
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	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	56.5	56.5	67.6	46.7	45.2	69.6	30.5	14.4	65.0	36.3	12.2
Incr Delay (d2), s/veh	27.1	34.5	35.2	52.3	0.9	1.3	41.4	1.0	0.5	15.5	11.1	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	4.9	18.9	18.7	8.4	7.6	5.0	4.9	8.9	2.7	8.2	29.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.9	91.1	91.8	119.9	47.7	46.5	111.0	31.5	14.9	80.5	47.4	12.5
LnGrp LOS	F	F	F	F	D	D	F	C	B	F	D	B
Approach Vol, veh/h		906			792			897			1862	
Approach Delay, s/veh		91.9			61.8			37.7			49.4	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	77.6	14.6	44.7	22.7	69.2	18.9	40.4
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	9.4	* 73	12.0	37.5	26.3	55.8	14.0	* 36
Max Q Clear Time (g_c+I1), s	10.0	66.3	10.7	19.0	18.0	23.0	15.1	35.7
Green Ext Time (p_c), s	0.0	5.8	0.0	6.1	0.2	11.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.9
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	3	27	1	25	23	715	23	78	1482	6
Future Volume (vph)	5	2	3	27	1	25	23	715	23	78	1482	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1441		1805	1535		1805	3406	1565	1805	3471	1575
Flt Permitted	0.74	1.00		0.75	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1401	1441		1434	1535		1805	3406	1565	1805	3471	1575
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	6	2	3	31	1	29	27	831	27	91	1723	7
RTOR Reduction (vph)	0	3	0	0	26	0	0	0	9	0	0	2
Lane Group Flow (vph)	6	2	0	31	4	0	27	831	18	91	1723	5
Confl. Peds. (#/hr)									3			1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	50%	0%	0%	0%	6%	0%	6%	0%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	18.1	18.1		18.1	18.1		4.8	98.5	98.5	12.3	106.0	106.0
Effective Green, g (s)	18.1	18.1		18.1	18.1		4.8	98.5	98.5	12.3	106.0	106.0
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.03	0.66	0.66	0.08	0.71	0.71
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	169	173		173	185		57	2236	1027	148	2452	1113
v/s Ratio Prot		0.00			0.00		0.01	0.24		c0.05	c0.50	
v/s Ratio Perm	0.00			c0.02					0.01			0.00
v/c Ratio	0.04	0.01		0.18	0.02		0.47	0.37	0.02	0.61	0.70	0.00
Uniform Delay, d1	58.2	58.1		59.3	58.2		71.4	11.7	8.9	66.6	12.8	6.5
Progression Factor	1.00	1.00		1.00	1.00		1.48	0.22	1.00	1.18	0.15	1.00
Incremental Delay, d2	0.1	0.0		0.5	0.1		5.9	0.5	0.0	2.5	0.6	0.0
Delay (s)	58.3	58.1		59.8	58.2		111.7	3.1	9.0	80.9	2.5	6.5
Level of Service	E	E		E	E		F	A	A	F	A	A
Approach Delay (s)		58.2			59.0			6.6			6.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	19	1	0	3	27	814	2	10	1498	2
Future Volume (vph)	7	0	19	1	0	3	27	814	2	10	1498	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.90			0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1676			1678		1671	3406	1550	1805	3471	1028
Flt Permitted		0.94			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1593			1644		1671	3406	1550	1805	3471	1028
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	9	0	23	1	0	4	33	993	2	12	1827	2
RTOR Reduction (vph)	0	29	0	0	4	0	0	0	1	0	0	1
Lane Group Flow (vph)	0	3	0	0	1	0	33	993	1	12	1827	1
Confl. Peds. (#/hr)			1	1			5		4	4		5
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	6%	0%	0%	4%	50%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		15.4			15.4		5.3	112.4	112.4	2.1	109.2	109.2
Effective Green, g (s)		15.4			15.4		5.3	112.4	112.4	2.1	109.2	109.2
Actuated g/C Ratio		0.10			0.10		0.04	0.75	0.75	0.01	0.73	0.73
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		163			168		59	2552	1161	25	2526	748
v/s Ratio Prot							c0.02	c0.29		0.01	c0.53	
v/s Ratio Perm		c0.00			0.00				0.00			0.00
v/c Ratio		0.02			0.00		0.56	0.39	0.00	0.48	0.72	0.00
Uniform Delay, d1		60.5			60.4		71.2	6.7	4.7	73.4	11.7	5.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	0.94	0.73	1.00
Incremental Delay, d2		0.0			0.0		11.0	0.4	0.0	12.5	1.7	0.0
Delay (s)		60.6			60.4		82.2	7.1	4.7	81.6	10.2	5.6
Level of Service		E			E		F	A	A	F	B	A
Approach Delay (s)		60.6			60.4			9.5			10.6	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	66	24	750	1461	50
Future Volume (vph)	11	66	24	750	1461	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1593	1805	3438	3471	1551
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1593	1805	3438	3471	1551
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	12	75	27	852	1660	57
RTOR Reduction (vph)	0	67	0	0	0	11
Lane Group Flow (vph)	13	8	27	852	1660	46
Confl. Peds. (#/hr)		1	4			4
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	16.8	16.8	4.1	117.6	108.9	108.9
Effective Green, g (s)	16.8	16.8	4.1	117.6	108.9	108.9
Actuated g/C Ratio	0.11	0.11	0.03	0.78	0.73	0.73
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	178	49	2695	2519	1126
v/s Ratio Prot			c0.01	0.25	c0.48	
v/s Ratio Perm	c0.01	0.01				0.03
v/c Ratio	0.06	0.05	0.55	0.32	0.66	0.04
Uniform Delay, d1	59.6	59.5	72.0	4.7	10.8	5.8
Progression Factor	1.00	1.00	0.97	2.28	0.38	0.14
Incremental Delay, d2	0.1	0.1	11.1	0.3	1.0	0.1
Delay (s)	59.7	59.6	80.8	10.9	5.1	0.8
Level of Service	E	E	F	B	A	A
Approach Delay (s)	59.6			13.0	5.0	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	1781	89	55	1792	132	140	426	50	96	322	182
Future Volume (veh/h)	170	1781	89	55	1792	132	140	426	50	96	322	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1885	1885	1885	1900	1737	1885	1885	1870
Adj Flow Rate, veh/h	181	1895	95	59	1906	140	149	453	53	102	343	194
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, %	0	1	1	2	1	1	1	0	11	1	1	2
Cap, veh/h	232	2665	133	76	2153	157	206	626	483	155	621	513
Arrive On Green	0.13	0.53	0.53	0.01	0.15	0.15	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1810	5014	251	1781	4892	358	874	1900	1465	900	1885	1557
Grp Volume(v), veh/h	181	1295	695	59	1334	712	149	453	53	102	343	194
Grp Sat Flow(s),veh/h/ln	1810	1716	1834	1781	1716	1819	874	1900	1465	900	1885	1557
Q Serve(g_s), s	14.5	42.6	42.9	5.0	57.2	57.6	25.3	31.5	3.8	16.9	22.4	14.3
Cycle Q Clear(g_c), s	14.5	42.6	42.9	5.0	57.2	57.6	47.6	31.5	3.8	48.4	22.4	14.3
Prop In Lane	1.00		0.14	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	1824	975	76	1510	800	206	626	483	155	621	513
V/C Ratio(X)	0.78	0.71	0.71	0.78	0.88	0.89	0.72	0.72	0.11	0.66	0.55	0.38
Avail Cap(c_a), veh/h	242	1824	975	128	1510	800	206	626	483	155	621	513
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	26.4	26.5	73.2	60.4	60.5	60.8	44.3	35.0	65.6	41.2	38.5
Incr Delay (d2), s/veh	13.1	2.4	4.4	6.4	7.9	14.0	16.2	5.7	0.3	15.0	2.4	1.3
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	7.5	17.4	19.3	2.4	28.1	31.3	6.5	15.9	1.4	4.5	10.9	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	28.8	30.9	79.6	68.2	74.6	77.0	50.0	35.3	80.6	43.6	39.9
LnGrp LOS	E	C	C	E	E	E	E	D	D	F	D	D
Approach Vol, veh/h		2171			2105			655			639	
Approach Delay, s/veh		33.5			70.7			55.0			48.4	
Approach LOS		C			E			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0	24.1	70.9		55.0	10.4	84.6				
Change Period (Y+Rc), s		5.6	4.9	* 4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		49.4	20.1	* 66		49.4	10.8	75.3				
Max Q Clear Time (g_c+I1), s		50.4	16.5	59.6		49.6	7.0	44.9				
Green Ext Time (p_c), s		0.0	0.1	6.2		0.0	0.0	26.5				

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1830	12	10	1991	66	0	0	8	0	0	82
Future Volume (vph)	87	1830	12	10	1991	66	0	0	8	0	0	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.86			0.86	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1805	5078		1805	5109			1644			1370	
Flt Permitted	0.06	1.00		0.09	1.00			1.00			1.00	
Satd. Flow (perm)	122	5078		162	5109			1644			1370	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	1989	13	11	2164	72	0	0	9	0	0	89
RTOR Reduction (vph)	0	0	0	0	1	0	0	8	0	0	19	0
Lane Group Flow (vph)	95	2002	0	11	2235	0	0	1	0	0	70	0
Confl. Peds. (#/hr)	1		5	5		1						
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	0%	2%	8%	0%	1%	0%	0%	0%	0%	0%	0%	20%
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	125.2	125.2		125.2	125.2			17.9			17.9	
Effective Green, g (s)	125.2	125.2		125.2	125.2			17.9			17.9	
Actuated g/C Ratio	0.83	0.83		0.83	0.83			0.12			0.12	
Clearance Time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	101	4238		135	4264			196			163	
v/s Ratio Prot		0.39			0.44			0.00			c0.05	
v/s Ratio Perm	c0.78			0.07								
v/c Ratio	0.94	0.47		0.08	0.52			0.01			0.43	
Uniform Delay, d1	9.5	3.4		2.2	3.6			58.2			61.3	
Progression Factor	1.96	0.89		0.27	0.69			1.00			1.00	
Incremental Delay, d2	62.2	0.3		0.1	0.0			0.0			1.8	
Delay (s)	81.0	3.3		0.7	2.6			58.2			63.1	
Level of Service	F	A		A	A			E			E	
Approach Delay (s)		6.8			2.6			58.2			63.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	1433	222	261	1508	414	319	885	223	557	945	256
Future Volume (vph)	242	1433	222	261	1508	414	319	885	223	557	945	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1575	3502	5085	1547	3467	3539	1541	3467	3539	1564
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1575	3502	5085	1547	3467	3539	1541	3467	3539	1564
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	272	1610	249	293	1694	465	358	994	251	626	1062	288
RTOR Reduction (vph)	0	0	125	0	0	162	0	0	131	0	0	129
Lane Group Flow (vph)	272	1610	124	293	1694	303	358	994	120	626	1062	159
Confl. Peds. (#/hr)			3			18			12			8
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	2%	1%	0%	2%	1%	1%	2%	2%	1%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	13.4	46.1	46.1	11.4	44.1	44.1	15.7	41.1	41.1	24.0	49.4	49.4
Effective Green, g (s)	13.4	46.1	46.1	11.4	44.1	44.1	15.7	41.1	41.1	24.0	49.4	49.4
Actuated g/C Ratio	0.09	0.31	0.31	0.08	0.29	0.29	0.10	0.27	0.27	0.16	0.33	0.33
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1562	484	266	1494	454	362	969	422	554	1165	515
v/s Ratio Prot	0.08	0.32		c0.08	c0.33		0.10	c0.28		c0.18	c0.30	
v/s Ratio Perm			0.08			0.20			0.08			0.10
v/c Ratio	0.87	1.03	0.26	1.10	1.13	0.67	0.99	1.03	0.29	1.13	0.91	0.31
Uniform Delay, d1	67.5	52.0	39.1	69.3	53.0	46.5	67.1	54.4	42.9	63.0	48.2	37.6
Progression Factor	1.02	0.58	0.54	1.02	1.12	1.39	0.83	1.18	2.06	0.88	1.26	2.06
Incremental Delay, d2	20.8	30.1	0.3	78.7	67.3	2.9	40.7	33.8	0.3	75.5	8.7	0.3
Delay (s)	89.5	60.3	21.4	149.3	126.4	67.5	96.1	98.0	88.6	130.9	69.6	77.7
Level of Service	F	E	C	F	F	E	F	F	F	F	E	E
Approach Delay (s)		59.5			118.0			96.1			90.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	91.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1999	23	81	2090	67	0	0	123	39	0	93
Future Volume (vph)	98	1999	23	81	2090	67	0	0	123	39	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	*0.85		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.92		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1805	4738		1805	5136	1481		1627			1694	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.56	
Satd. Flow (perm)	1805	4738		1805	5136	1481		1627			955	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	2221	26	90	2322	74	0	0	137	43	0	103
RTOR Reduction (vph)	0	1	0	0	0	15	0	123	0	0	74	0
Lane Group Flow (vph)	109	2246	0	90	2322	59	0	14	0	0	72	0
Confl. Peds. (#/hr)	13		5	5		13						
Confl. Bikes (#/hr)			2			6						
Heavy Vehicles (%)	0%	2%	5%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	13.8	104.8		14.4	105.4	105.4		15.7			15.7	
Effective Green, g (s)	13.8	104.8		14.4	105.4	105.4		15.7			15.7	
Actuated g/C Ratio	0.09	0.70		0.10	0.70	0.70		0.10			0.10	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	166	3310		173	3608	1040		170			99	
v/s Ratio Prot	0.06	c0.47		0.05	c0.45			0.01				
v/s Ratio Perm						0.04					c0.08	
v/c Ratio	0.66	0.68		0.52	0.64	0.06		0.08			0.72	
Uniform Delay, d1	65.8	13.0		64.5	12.1	6.9		60.7			65.1	
Progression Factor	1.35	0.22		0.83	0.47	0.11		1.00			1.00	
Incremental Delay, d2	2.6	0.3		2.2	0.7	0.1		0.2			22.9	
Delay (s)	91.6	3.1		55.8	6.4	0.8		60.9			87.9	
Level of Service	F	A		E	A	A		E			F	
Approach Delay (s)		7.2			8.0			60.9			87.9	
Approach LOS		A			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1352	809	0	1863	597	0	0	0	350	0	375
Future Volume (veh/h)	0	1352	809	0	1863	597	0	0	0	350	0	375
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1885	1870				1885	0	1870
Adj Flow Rate, veh/h	0	1454	0	0	2003	0				389	0	403
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.90	0.93	0.93
Percent Heavy Veh, %	0	1	2	0	1	2				1	0	2
Cap, veh/h	0	2259		0	3245					496	0	438
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3676	1585	0	5316	1585				1795	0	1585
Grp Volume(v), veh/h	0	1454	0	0	2003	0				389	0	403
Grp Sat Flow(s),veh/h/ln	0	1791	1585	0	1716	1585				1795	0	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				30.0	0.0	37.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				30.0	0.0	37.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2259		0	3245					496	0	438
V/C Ratio(X)	0.00	0.64		0.00	0.62					0.78	0.00	0.92
Avail Cap(c_a), veh/h	0	2259		0	3245					622	0	549
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.00	0.00	0.72	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				50.2	0.0	52.7
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	0.6	0.0				5.2	0.0	18.4
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	0.0	0.3	0.0	0.0	0.2	0.0				14.3	0.0	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.0	0.0	0.0	0.6	0.0				55.3	0.0	71.1
LnGrp LOS	A	A		A	A					E	A	E
Approach Vol, veh/h		1454	A		2003	A					792	
Approach Delay, s/veh		1.0			0.6						63.4	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		101.6		48.4		101.6						
Change Period (Y+Rc), s		7.0		7.0		7.0						
Max Green Setting (Gmax), s		84.0		52.0		84.0						
Max Q Clear Time (g_c+I1), s		2.0		39.0		2.0						
Green Ext Time (p_c), s		32.6		2.4		52.2						

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1363	340	0	1895	505	565	0	477	0	0	0
Future Volume (veh/h)	0	1363	340	0	1895	505	565	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1885	0	1885	1900	1870	0	1900			
Adj Flow Rate, veh/h	0	1466	0	0	2038	0	614	0	513			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93			
Percent Heavy Veh, %	0	1	1	0	1	0	2	0	0			
Cap, veh/h	0	3231		0	3231		957	0	785			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.28	0.00	0.28			
Sat Flow, veh/h	0	5316	1598	0	5316	1610	3456	0	2834			
Grp Volume(v), veh/h	0	1466	0	0	2038	0	614	0	513			
Grp Sat Flow(s),veh/h/ln	0	1716	1598	0	1716	1610	1728	0	1417			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	23.4	0.0	24.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	23.4	0.0	24.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3231		0	3231		957	0	785			
V/C Ratio(X)	0.00	0.45		0.00	0.63		0.64	0.00	0.65			
Avail Cap(c_a), veh/h	0	3231		0	3231		1260	0	1033			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.68	0.00	0.00	0.38	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	47.7	0.0	47.9			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.4	0.0	3.1	0.0	3.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	10.6	0.0	9.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	0.4	0.0	50.8	0.0	51.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1466	A		2038	A		1127				
Approach Delay, s/veh		0.3			0.4			51.2				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		101.2				101.2		48.8				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		81.0				81.0		54.7				
Max Q Clear Time (g_c+I1), s		2.0				2.0		26.0				
Green Ext Time (p_c), s		37.8				60.3		15.6				

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	1383	150	132	1663	72	346	613	108	164	533	391
Future Volume (veh/h)	365	1383	150	132	1663	72	346	613	108	164	533	391
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1900	1885	1900	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	397	1503	163	143	1808	78	376	666	117	178	579	425
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	1	1	0	1	0	1	1	1	1	1	0
Cap, veh/h	438	1836	199	480	2062	629	395	820	356	200	814	360
Arrive On Green	0.25	0.78	0.78	0.14	0.40	0.40	0.11	0.23	0.23	0.11	0.23	0.23
Sat Flow, veh/h	3456	4702	510	3510	5147	1570	3483	3582	1555	1795	3582	1583
Grp Volume(v), veh/h	397	1096	570	143	1808	78	376	666	117	178	579	425
Grp Sat Flow(s),veh/h/ln	1728	1716	1781	1755	1716	1570	1742	1791	1555	1795	1791	1583
Q Serve(g_s), s	16.7	29.1	29.2	5.5	48.7	3.3	16.1	26.4	6.9	14.7	22.3	34.1
Cycle Q Clear(g_c), s	16.7	29.1	29.2	5.5	48.7	3.3	16.1	26.4	6.9	14.7	22.3	34.1
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	438	1340	695	480	2062	629	395	820	356	200	814	360
V/C Ratio(X)	0.91	0.82	0.82	0.30	0.88	0.12	0.95	0.81	0.33	0.89	0.71	1.18
Avail Cap(c_a), veh/h	438	1558	808	480	2062	629	395	820	356	203	814	360
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	55.1	13.2	13.2	58.3	41.5	14.1	66.1	54.8	26.1	65.8	53.4	57.9
Incr Delay (d2), s/veh	19.5	3.5	6.6	0.1	5.6	0.4	32.9	7.2	1.3	33.7	2.5	106.6
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	7.5	5.6	6.4	2.4	21.2	1.8	9.0	12.8	3.7	8.5	10.2	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.6	16.7	19.8	58.4	47.2	14.5	99.0	62.0	27.4	99.5	55.9	164.5
LnGrp LOS	E	B	B	E	D	B	F	E	C	F	E	F
Approach Vol, veh/h		2063			2029			1159			1182	
Approach Delay, s/veh		28.7			46.7			70.5			101.5	
Approach LOS		C			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	39.0	24.0	65.0	21.7	39.3	25.5	63.5
Change Period (Y+Rc), s	5.0	4.9	5.0	4.9	5.0	* 5	5.0	4.9
Max Green Setting (Gmax), s	17.0	34.1	19.0	60.1	17.0	* 34	11.0	68.1
Max Q Clear Time (g_c+I1), s	18.1	36.1	18.7	50.7	16.7	28.4	7.5	31.2
Green Ext Time (p_c), s	0.0	0.0	0.0	8.8	0.0	3.5	0.1	27.4

Intersection Summary	
HCM 6th Ctrl Delay	55.3
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	706	158	176	696	209	182	1092	139	296	1291	143
Future Volume (veh/h)	160	706	158	176	696	209	182	1092	139	296	1291	143
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1870	1900	1900	1870	1885
Adj Flow Rate, veh/h	176	776	174	193	765	230	200	1200	153	325	1419	157
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, %	1	1	1	1	1	1	1	2	0	0	2	1
Cap, veh/h	198	749	168	180	914	399	607	2022	900	321	1450	641
Arrive On Green	0.11	0.26	0.26	0.10	0.26	0.26	0.34	0.57	0.57	0.18	0.41	0.41
Sat Flow, veh/h	1795	2889	648	1795	3582	1564	1795	3554	1583	1810	3554	1571
Grp Volume(v), veh/h	176	481	469	193	765	230	200	1200	153	325	1419	157
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1795	1791	1564	1795	1777	1583	1810	1777	1571
Q Serve(g_s), s	14.5	38.9	38.9	15.0	30.3	19.3	12.4	33.0	8.0	26.6	59.0	11.0
Cycle Q Clear(g_c), s	14.5	38.9	38.9	15.0	30.3	19.3	12.4	33.0	8.0	26.6	59.0	11.0
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	464	453	180	914	399	607	2022	900	321	1450	641
V/C Ratio(X)	0.89	1.04	1.04	1.07	0.84	0.58	0.33	0.59	0.17	1.01	0.98	0.24
Avail Cap(c_a), veh/h	203	464	453	180	914	399	607	2022	900	321	1450	641
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	0.73	0.73	0.73	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	55.5	55.6	67.5	52.9	48.8	37.0	21.0	20.8	61.7	43.8	36.2
Incr Delay (d2), s/veh	33.3	51.3	51.8	88.5	7.5	3.3	0.1	0.9	0.3	53.5	19.1	0.9
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	8.4	23.9	23.3	11.2	14.4	7.8	5.5	13.5	3.0	16.8	29.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.1	106.9	107.4	156.0	60.4	52.0	37.0	22.0	21.1	115.2	62.8	37.1
LnGrp LOS	F	F	F	F	E	D	D	C	C	F	E	D
Approach Vol, veh/h		1126			1188			1553			1901	
Approach Delay, s/veh		105.9			74.3			23.8			69.7	
Approach LOS		F			E			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	56.5	65.8	20.5	43.2	31.2	91.1	19.9	43.8
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	16.8	* 61	17.0	36.9	26.6	51.1	15.0	* 39
Max Q Clear Time (g_c+I1), s	14.4	61.0	16.5	32.3	28.6	35.0	17.0	40.9
Green Ext Time (p_c), s	0.1	0.2	0.0	3.2	0.0	12.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.4
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	55	78	1	51	162	1327	49	108	1504	13
Future Volume (vph)	36	1	55	78	1	51	162	1327	49	108	1504	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1803	1564		1746	1599		1787	3539	1571	1787	3574	1537
Flt Permitted	0.72	1.00		0.72	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1366	1564		1318	1599		1787	3539	1571	1787	3574	1537
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	40	1	60	86	1	56	178	1458	54	119	1653	14
RTOR Reduction (vph)	0	51	0	0	48	0	0	0	20	0	0	6
Lane Group Flow (vph)	40	10	0	86	9	0	178	1458	34	119	1653	8
Confl. Peds. (#/hr)	1		3	3		1			2			8
Heavy Vehicles (%)	0%	0%	2%	3%	0%	0%	1%	2%	0%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	22.0	22.0		22.0	22.0		18.3	93.5	93.5	13.4	88.6	88.6
Effective Green, g (s)	22.0	22.0		22.0	22.0		18.3	93.5	93.5	13.4	88.6	88.6
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.12	0.62	0.62	0.09	0.59	0.59
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	200	229		193	234		218	2205	979	159	2111	907
v/s Ratio Prot		0.01			0.01		c0.10	c0.41		0.07	c0.46	
v/s Ratio Perm	0.03			c0.07					0.02			0.01
v/c Ratio	0.20	0.04		0.45	0.04		0.82	0.66	0.03	0.75	0.78	0.01
Uniform Delay, d1	56.3	55.0		58.4	54.9		64.2	18.1	10.9	66.7	23.4	12.6
Progression Factor	1.00	1.00		1.00	1.00		1.13	0.42	0.18	1.15	0.18	1.00
Incremental Delay, d2	0.5	0.1		1.6	0.1		17.4	1.3	0.1	4.4	0.7	0.0
Delay (s)	56.8	55.0		60.1	55.0		90.1	9.0	2.1	80.8	4.9	12.6
Level of Service	E	E		E	D		F	A	A	F	A	B
Approach Delay (s)		55.7			58.0			17.3			10.0	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	20	1	0	2	43	1386	0	29	1417	4
Future Volume (vph)	3	0	20	1	0	2	43	1386	0	29	1417	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1664			1686		1805	3539		1805	3539	1557
Flt Permitted		0.98			0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1637			1630		1805	3539		1805	3539	1557
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	3	0	22	1	0	2	47	1523	0	32	1557	4
RTOR Reduction (vph)	0	23	0	0	3	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2	0	0	0	0	47	1523	0	32	1557	3
Confl. Peds. (#/hr)	1					1	3		3	3		3
Confl. Bikes (#/hr)									2			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		14.3			14.3		7.2	111.3		4.3	108.4	108.4
Effective Green, g (s)		14.3			14.3		7.2	111.3		4.3	108.4	108.4
Actuated g/C Ratio		0.10			0.10		0.05	0.74		0.03	0.72	0.72
Clearance Time (s)		4.2			4.2		4.6	4.9		4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		156			155		86	2625		51	2557	1125
v/s Ratio Prot							c0.03	c0.43		0.02	c0.44	
v/s Ratio Perm		c0.00			0.00							0.00
v/c Ratio		0.02			0.00		0.55	0.58		0.63	0.61	0.00
Uniform Delay, d1		61.5			61.4		69.8	8.8		72.1	10.3	5.8
Progression Factor		1.00			1.00		1.00	1.00		1.33	0.45	1.00
Incremental Delay, d2		0.0			0.0		6.9	0.9		12.5	0.6	0.0
Delay (s)		61.5			61.4		76.7	9.7		108.3	5.3	5.8
Level of Service		E			E		E	A		F	A	A
Approach Delay (s)		61.5			61.4			11.7			7.3	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	193	38	1504	1566	71
Future Volume (vph)	34	193	38	1504	1566	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1524	1805	3574	3574	1552
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1524	1805	3574	3574	1552
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	37	212	42	1653	1721	78
RTOR Reduction (vph)	0	144	0	0	0	16
Lane Group Flow (vph)	37	68	42	1653	1721	62
Confl. Peds. (#/hr)			4			4
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	6%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	17.9	17.9	6.2	116.5	105.7	105.7
Effective Green, g (s)	17.9	17.9	6.2	116.5	105.7	105.7
Actuated g/C Ratio	0.12	0.12	0.04	0.78	0.70	0.70
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	181	74	2775	2518	1093
v/s Ratio Prot			0.02	c0.46	c0.48	
v/s Ratio Perm	0.02	c0.04				0.04
v/c Ratio	0.17	0.38	0.57	0.60	0.68	0.06
Uniform Delay, d1	59.4	60.9	70.6	7.0	12.6	6.8
Progression Factor	1.00	1.00	1.17	0.58	0.69	0.31
Incremental Delay, d2	0.4	1.3	3.6	0.3	1.0	0.1
Delay (s)	59.8	62.2	85.9	4.4	9.8	2.2
Level of Service	E	E	F	A	A	A
Approach Delay (s)	61.9			6.4	9.5	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	1308	68	48	1404	74	139	247	53	73	109	129
Future Volume (veh/h)	104	1308	68	48	1404	74	139	247	53	73	109	129
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		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1900	1870	1870	1885	1885	1900	1767	1856	1900
Adj Flow Rate, veh/h	107	1348	70	49	1447	76	143	255	55	75	112	133
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, %	0	1	1	0	2	2	1	1	0	9	3	0
Cap, veh/h	330	2477	129	93	1747	92	338	491	415	241	483	415
Arrive On Green	0.18	0.50	0.50	0.05	0.35	0.35	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1810	5002	260	1810	4963	261	1137	1885	1595	1005	1856	1595
Grp Volume(v), veh/h	107	925	493	49	993	530	143	255	55	75	112	133
Grp Sat Flow(s),veh/h/ln	1810	1716	1830	1810	1702	1819	1137	1885	1595	1005	1856	1595
Q Serve(g_s), s	3.9	14.0	14.0	2.0	20.0	20.0	8.5	8.7	2.0	5.2	3.6	5.0
Cycle Q Clear(g_c), s	3.9	14.0	14.0	2.0	20.0	20.0	12.1	8.7	2.0	13.8	3.6	5.0
Prop In Lane	1.00		0.14	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1699	906	93	1198	640	338	491	415	241	483	415
V/C Ratio(X)	0.32	0.54	0.54	0.53	0.83	0.83	0.42	0.52	0.13	0.31	0.23	0.32
Avail Cap(c_a), veh/h	330	1699	906	159	1198	640	451	679	574	342	668	574
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	26.6	13.1	13.1	34.7	22.2	22.2	26.6	23.7	21.3	29.7	21.8	22.4
Incr Delay (d2), s/veh	0.2	1.3	2.3	1.7	6.7	11.8	2.4	2.5	0.4	2.1	0.7	1.3
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	1.6	4.8	5.4	0.9	8.2	9.7	2.4	4.0	0.7	1.4	1.6	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	14.3	15.4	36.4	28.9	34.0	29.0	26.2	21.7	31.8	22.5	23.7
LnGrp LOS	C	B	B	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		1525			1572			453			320	
Approach Delay, s/veh		15.6			30.9			26.5			25.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.1	18.6	31.3		25.1	7.8	42.0				
Change Period (Y+Rc), s		5.6	4.9	* 4.9		5.6	4.0	4.9				
Max Green Setting (Gmax), s		27.0	7.1	* 26		27.0	6.6	26.9				
Max Q Clear Time (g_c+I1), s		15.8	5.9	22.0		14.1	4.0	16.0				
Green Ext Time (p_c), s		2.3	0.0	4.0		3.9	0.0	8.9				

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	1371	16	33	1419	80	6	0	12	0	0	76
Future Volume (vph)	101	1371	16	33	1419	80	6	0	12	0	0	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.91			0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1804	5077		1805	5043			1703			1644	
Flt Permitted	0.13	1.00		0.15	1.00			0.94			1.00	
Satd. Flow (perm)	250	5077		290	5043			1626			1644	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1490	17	36	1542	87	7	0	13	0	0	83
RTOR Reduction (vph)	0	1	0	0	4	0	0	17	0	0	24	0
Lane Group Flow (vph)	110	1506	0	36	1625	0	0	3	0	0	59	0
Confl. Peds. (#/hr)	7		2	2		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	57.4	57.4		57.4	57.4			10.7			10.7	
Effective Green, g (s)	57.4	57.4		57.4	57.4			10.7			10.7	
Actuated g/C Ratio	0.77	0.77		0.77	0.77			0.14			0.14	
Clearance Time (s)	4.9	4.9		4.9	4.9			2.0			2.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	191	3885		221	3859			231			234	
v/s Ratio Prot		0.30			0.32						c0.04	
v/s Ratio Perm	c0.44			0.12				0.00				
v/c Ratio	0.58	0.39		0.16	0.42			0.01			0.25	
Uniform Delay, d1	3.7	2.9		2.4	3.0			27.6			28.6	
Progression Factor	0.81	0.23		0.46	0.68			1.00			1.00	
Incremental Delay, d2	10.9	0.3		1.2	0.3			0.0			0.6	
Delay (s)	13.9	0.9		2.3	2.3			27.6			29.2	
Level of Service	B	A		A	A			C			C	
Approach Delay (s)		1.8			2.3			27.6			29.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	1005	159	298	1056	553	229	724	256	604	750	248
Future Volume (vph)	281	1005	159	298	1056	553	229	724	256	604	750	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5085	1529	3433	5085	1582	3467	3539	1529	3433	3539	1570
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5085	1529	3433	5085	1582	3467	3539	1529	3433	3539	1570
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	293	1047	166	310	1100	576	239	754	267	629	781	258
RTOR Reduction (vph)	0	0	121	0	0	312	0	0	180	0	0	158
Lane Group Flow (vph)	293	1047	45	310	1100	264	239	754	87	629	781	100
Confl. Peds. (#/hr)			11			7			16			14
Confl. Bikes (#/hr)			1			1			4			1
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	1%	2%	2%	2%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	15.7	40.7	40.7	14.9	39.9	39.9	14.3	36.5	36.5	30.5	52.7	52.7
Effective Green, g (s)	15.7	40.7	40.7	14.9	39.9	39.9	14.3	36.5	36.5	30.5	52.7	52.7
Actuated g/C Ratio	0.10	0.27	0.27	0.10	0.27	0.27	0.10	0.24	0.24	0.20	0.35	0.35
Clearance Time (s)	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9	5.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	1379	414	341	1352	420	330	861	372	698	1243	551
v/s Ratio Prot	0.08	0.21		c0.09	c0.22		0.07	c0.21		c0.18	0.22	
v/s Ratio Perm			0.03			0.17			0.06			0.06
v/c Ratio	0.80	0.76	0.11	0.91	0.81	0.63	0.72	0.88	0.23	0.90	0.63	0.18
Uniform Delay, d1	65.6	50.2	41.0	66.9	51.6	48.5	65.9	54.6	45.5	58.3	40.5	33.7
Progression Factor	0.98	0.90	2.17	1.26	0.88	1.15	1.20	0.82	0.42	0.72	1.26	3.20
Incremental Delay, d2	11.3	3.8	0.5	23.7	4.6	5.9	6.2	9.4	0.3	13.0	0.9	0.1
Delay (s)	75.3	48.6	89.4	108.2	50.1	61.7	85.4	54.3	19.5	55.0	52.0	108.1
Level of Service	E	D	F	F	D	E	F	D	B	D	D	F
Approach Delay (s)		58.3			62.5			52.9			61.8	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1656	14	114	1822	67	0	0	99	45	0	84
Future Volume (vph)	104	1656	14	114	1822	67	0	0	99	45	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.86			0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1805	5077		1736	5085	1530		1627			1703	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.70	
Satd. Flow (perm)	1805	5077		1736	5085	1530		1627			1219	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	112	1781	15	123	1959	72	0	0	106	48	0	90
RTOR Reduction (vph)	0	0	0	0	0	16	0	94	0	0	53	0
Lane Group Flow (vph)	112	1796	0	123	1959	56	0	12	0	0	85	0
Confl. Peds. (#/hr)	7		11	11		7						
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	2%	0%	4%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	14.6	102.6		15.6	103.6	103.6		16.7			16.7	
Effective Green, g (s)	14.6	102.6		15.6	103.6	103.6		16.7			16.7	
Actuated g/C Ratio	0.10	0.68		0.10	0.69	0.69		0.11			0.11	
Clearance Time (s)	4.6	4.9		4.6	4.9	4.9		5.6			5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	175	3472		180	3512	1056		181			135	
v/s Ratio Prot	0.06	0.35		c0.07	c0.39			0.01				
v/s Ratio Perm						0.04					c0.07	
v/c Ratio	0.64	0.52		0.68	0.56	0.05		0.07			0.63	
Uniform Delay, d1	65.2	11.6		64.8	11.7	7.4		59.7			63.7	
Progression Factor	0.89	0.22		1.04	0.52	0.20		1.00			1.00	
Incremental Delay, d2	5.1	0.4		8.9	0.6	0.1		0.2			8.8	
Delay (s)	63.3	2.9		76.5	6.7	1.6		59.8			72.5	
Level of Service	E	A		E	A	A		E			E	
Approach Delay (s)		6.4			10.5			59.8			72.5	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1163	637	0	1668	461	0	0	0	359	0	335
Future Volume (veh/h)	0	1163	637	0	1668	461	0	0	0	359	0	335
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1856	0	1885	1885				1885	0	1856
Adj Flow Rate, veh/h	0	1211	0	0	1738	0				399	0	349
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.90	0.96	0.96
Percent Heavy Veh, %	0	2	3	0	1	1				1	0	3
Cap, veh/h	0	2349		0	3401					441	0	387
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3647	1572	0	5316	1598				1795	0	1572
Grp Volume(v), veh/h	0	1211	0	0	1738	0				399	0	349
Grp Sat Flow(s),veh/h/ln	0	1777	1572	0	1716	1598				1795	0	1572
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				32.3	0.0	32.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				32.3	0.0	32.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2349		0	3401					441	0	387
V/C Ratio(X)	0.00	0.52		0.00	0.51					0.90	0.00	0.90
Avail Cap(c_a), veh/h	0	2349		0	3401					670	0	587
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	0.00	0.00	0.68	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				54.9	0.0	54.8
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.4	0.0				11.2	0.0	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.1	0.0				16.0	0.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.7	0.0	0.0	0.4	0.0				66.0	0.0	67.1
LnGrp LOS	A	A		A	A					E	A	E
Approach Vol, veh/h		1211	A		1738	A					748	
Approach Delay, s/veh		0.7			0.4						66.5	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		106.1		43.9		106.1
Change Period (Y+Rc), s		7.0		7.0		7.0
Max Green Setting (Gmax), s		80.0		56.0		80.0
Max Q Clear Time (g_c+I1), s		2.0		34.3		2.0
Green Ext Time (p_c), s		22.9		2.5		40.4

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1288	234	0	1570	420	559	0	711	0	0	0
Future Volume (veh/h)	0	1288	234	0	1570	420	559	0	711	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1885	1870	0	1870	1885	1870	0	1885			
Adj Flow Rate, veh/h	0	1342	0	0	1635	0	608	0	741			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96			
Percent Heavy Veh, %	0	1	2	0	2	1	2	0	1			
Cap, veh/h	0	2277		0	2259		1268	0	1032			
Arrive On Green	0.00	0.15	0.00	0.00	0.59	0.00	0.37	0.00	0.37			
Sat Flow, veh/h	0	5316	1585	0	5274	1598	3456	0	2812			
Grp Volume(v), veh/h	0	1342	0	0	1635	0	608	0	741			
Grp Sat Flow(s),veh/h/ln	0	1716	1585	0	1702	1598	1728	0	1406			
Q Serve(g_s), s	0.0	18.3	0.0	0.0	17.2	0.0	10.1	0.0	17.0			
Cycle Q Clear(g_c), s	0.0	18.3	0.0	0.0	17.2	0.0	10.1	0.0	17.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2277		0	2259		1268	0	1032			
V/C Ratio(X)	0.00	0.59		0.00	0.72		0.48	0.00	0.72			
Avail Cap(c_a), veh/h	0	2277		0	2259		1368	0	1113			
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.76	0.00	0.00	0.72	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	25.7	0.0	0.0	12.1	0.0	18.2	0.0	20.4			
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	1.5	0.0	1.2	0.0	4.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	8.4	0.0	0.0	4.7	0.0	4.0	0.0	5.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.5	0.0	0.0	13.6	0.0	19.5	0.0	24.5			
LnGrp LOS	A	C		A	B		B	A	C			
Approach Vol, veh/h		1342	A		1635	A		1349				
Approach Delay, s/veh		26.5			13.6			22.2				
Approach LOS		C			B			C				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		40.2				40.2		34.8				
Change Period (Y+Rc), s		7.0				7.0		7.3				
Max Green Setting (Gmax), s		31.0				31.0		29.7				
Max Q Clear Time (g_c+I1), s		20.3				19.2		19.0				
Green Ext Time (p_c), s		8.6				10.3		8.5				

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	337	1536	210	127	1394	89	424	336	133	145	283	172
Future Volume (veh/h)	337	1536	210	127	1394	89	424	336	133	145	283	172
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		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1870	1870	1900	1885	1856	1870	1885	1870	1900
Adj Flow Rate, veh/h	351	1600	219	132	1452	93	442	350	139	151	295	179
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, %	2	1	1	2	2	0	1	3	2	1	2	0
Cap, veh/h	392	1953	266	396	2188	679	490	803	351	174	656	280
Arrive On Green	0.23	0.86	0.86	0.11	0.43	0.43	0.14	0.23	0.23	0.10	0.18	0.18
Sat Flow, veh/h	3456	4563	623	3456	5106	1584	3483	3526	1543	1795	3554	1515
Grp Volume(v), veh/h	351	1202	617	132	1452	93	442	350	139	151	295	179
Grp Sat Flow(s),veh/h/ln	1728	1716	1754	1728	1702	1584	1742	1763	1543	1795	1777	1515
Q Serve(g_s), s	14.8	25.3	25.6	5.3	34.1	5.3	18.7	12.8	8.8	12.4	11.1	12.8
Cycle Q Clear(g_c), s	14.8	25.3	25.6	5.3	34.1	5.3	18.7	12.8	8.8	12.4	11.1	12.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	1468	751	396	2188	679	490	803	351	174	656	280
V/C Ratio(X)	0.90	0.82	0.82	0.33	0.66	0.14	0.90	0.44	0.40	0.87	0.45	0.64
Avail Cap(c_a), veh/h	461	1468	751	396	2188	679	557	870	381	251	806	343
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)	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	8.0	8.0	61.1	34.2	26.0	63.5	49.7	28.8	66.8	54.4	34.4
Incr Delay (d2), s/veh	12.7	3.9	7.4	0.2	1.6	0.4	15.6	0.9	1.7	14.5	0.2	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	4.2	5.0	2.3	14.2	2.1	9.4	5.8	3.4	6.4	4.9	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	11.8	15.4	61.3	35.8	26.4	79.1	50.5	30.5	81.3	54.5	35.7
LnGrp LOS	E	B	B	E	D	C	E	D	C	F	D	D
Approach Vol, veh/h		2170			1677			931			625	
Approach Delay, s/veh		22.2			37.3			61.1			55.6	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.1	32.6	22.0	69.3	19.5	39.2	22.2	69.1
Change Period (Y+Rc), s	5.0	4.9	5.0	* 5	5.0	* 5	5.0	4.9
Max Green Setting (Gmax), s	24.0	34.0	20.0	* 52	21.0	* 37	8.0	64.2
Max Q Clear Time (g_c+I1), s	20.7	14.8	16.8	36.1	14.4	14.8	7.3	27.6
Green Ext Time (p_c), s	0.3	1.4	0.2	13.1	0.1	5.5	0.0	29.3

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	378	152	128	289	163	155	1059	110	289	1170	131
Future Volume (veh/h)	178	378	152	128	289	163	155	1059	110	289	1170	131
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1870	1900	1870	1900
Adj Flow Rate, veh/h	189	402	162	136	307	173	165	1127	117	307	1245	139
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	1	1	0	1	1	2	0	2	0
Cap, veh/h	203	543	215	158	715	318	197	1223	529	328	1466	652
Arrive On Green	0.11	0.22	0.22	0.09	0.20	0.20	0.11	0.34	0.34	0.18	0.41	0.41
Sat Flow, veh/h	1795	2477	983	1795	3582	1593	1795	3582	1551	1810	3554	1579
Grp Volume(v), veh/h	189	289	275	136	307	173	165	1127	117	307	1245	139
Grp Sat Flow(s),veh/h/ln	1795	1791	1669	1795	1791	1593	1795	1791	1551	1810	1777	1579
Q Serve(g_s), s	15.6	22.5	23.1	11.2	11.3	14.6	13.5	45.4	5.7	25.1	47.5	5.4
Cycle Q Clear(g_c), s	15.6	22.5	23.1	11.2	11.3	14.6	13.5	45.4	5.7	25.1	47.5	5.4
Prop In Lane	1.00		0.59	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	392	366	158	715	318	197	1223	529	328	1466	652
V/C Ratio(X)	0.93	0.74	0.75	0.86	0.43	0.54	0.84	0.92	0.22	0.94	0.85	0.21
Avail Cap(c_a), veh/h	203	442	412	180	836	372	215	1223	529	343	1466	652
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	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	54.5	54.8	67.5	52.5	53.9	65.4	47.5	17.4	60.6	39.8	11.6
Incr Delay (d2), s/veh	42.9	11.7	13.3	27.3	0.9	3.1	17.3	10.7	0.8	31.3	6.3	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	9.5	11.3	11.0	6.3	5.1	6.1	7.1	21.6	3.1	14.2	21.5	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.8	66.2	68.1	94.8	53.4	57.0	82.7	58.1	18.2	91.9	46.1	12.3
LnGrp LOS	F	E	E	F	D	E	F	E	B	F	D	B
Approach Vol, veh/h		753			616			1409			1691	
Approach Delay, s/veh		77.6			63.5			57.7			51.7	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	66.5	21.0	34.9	31.8	56.1	18.1	37.8
Change Period (Y+Rc), s	4.9	* 4.6	4.0	4.9	4.6	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	18.0	* 62	17.0	35.0	28.4	51.2	15.0	* 37
Max Q Clear Time (g_c+I1), s	15.5	49.5	17.6	16.6	27.1	47.4	13.2	25.1
Green Ext Time (p_c), s	0.1	8.7	0.0	4.3	0.1	3.2	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	59.6
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	108	68	1	41	226	1254	61	134	1288	29
Future Volume (vph)	29	0	108	68	1	41	226	1254	61	134	1288	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1562		1803	1560		1805	3574	1545	1770	3574	1548
Flt Permitted	0.73	1.00		0.58	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1384	1562		1093	1560		1805	3574	1545	1770	3574	1548
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	30	0	112	71	1	43	235	1306	64	140	1342	30
RTOR Reduction (vph)	0	97	0	0	37	0	0	0	25	0	0	13
Lane Group Flow (vph)	30	16	0	71	7	0	235	1306	39	140	1342	17
Confl. Peds. (#/hr)			1	1					6			6
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%	0%	1%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4					6			2
Actuated Green, G (s)	21.5	21.5		21.5	21.5		22.8	92.1	92.1	15.3	84.6	84.6
Effective Green, g (s)	21.5	21.5		21.5	21.5		22.8	92.1	92.1	15.3	84.6	84.6
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.15	0.61	0.61	0.10	0.56	0.56
Clearance Time (s)	5.2	5.2		5.2	5.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.2	5.2	3.0	5.2	5.2
Lane Grp Cap (vph)	198	223		156	223		274	2194	948	180	2015	873
v/s Ratio Prot		0.01			0.00		c0.13	0.37		c0.08	c0.38	
v/s Ratio Perm	0.02			c0.06					0.03			0.01
v/c Ratio	0.15	0.07		0.46	0.03		0.86	0.60	0.04	0.78	0.67	0.02
Uniform Delay, d1	56.3	55.6		58.9	55.3		62.0	17.6	11.5	65.7	22.8	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.32	0.36	0.02	1.22	0.22	1.00
Incremental Delay, d2	0.4	0.1		2.1	0.1		19.5	1.0	0.1	11.9	1.1	0.0
Delay (s)	56.6	55.8		61.0	55.4		101.5	7.4	0.3	92.1	6.1	14.4
Level of Service	E	E		E	E		F	A	A	F	A	B
Approach Delay (s)		55.9			58.8			20.9			14.2	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	22	3	0	7	53	1113	6	26	1077	13
Future Volume (vph)	5	0	22	3	0	7	53	1113	6	26	1077	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00	0.94	1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.89			0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1608			1542		1805	3574	1523	1805	3539	1566
Flt Permitted		0.96			0.94		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1563			1478		1805	3574	1523	1805	3539	1566
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	0	23	3	0	7	56	1172	6	27	1134	14
RTOR Reduction (vph)	0	25	0	0	9	0	0	0	2	0	0	4
Lane Group Flow (vph)	0	3	0	0	1	0	56	1172	4	27	1134	10
Confl. Peds. (#/hr)							2		7	7		2
Confl. Bikes (#/hr)									6			1
Heavy Vehicles (%)	0%	0%	5%	33%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		14.3			14.3		8.7	110.3	110.3	5.2	106.9	106.9
Effective Green, g (s)		14.3			14.3		8.7	110.3	110.3	5.2	106.9	106.9
Actuated g/C Ratio		0.10			0.10		0.06	0.74	0.74	0.03	0.71	0.71
Clearance Time (s)		4.2			4.2		4.6	4.9	4.9	4.6	4.9	4.9
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		149			140		104	2628	1119	62	2522	1116
v/s Ratio Prot							c0.03	c0.33		c0.01	0.32	
v/s Ratio Perm		c0.00			0.00				0.00			0.01
v/c Ratio		0.02			0.01		0.54	0.45	0.00	0.44	0.45	0.01
Uniform Delay, d1		61.5			61.4		68.7	7.8	5.3	71.0	9.1	6.2
Progression Factor		1.00			1.00		1.00	1.00	1.00	0.87	0.83	1.00
Incremental Delay, d2		0.0			0.0		5.3	0.6	0.0	3.8	0.5	0.0
Delay (s)		61.5			61.4		74.0	8.4	5.3	65.4	8.0	6.2
Level of Service		E			E		E	A	A	E	A	A
Approach Delay (s)		61.5			61.4			11.3			9.3	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	224	46	1511	1377	86
Future Volume (vph)	30	224	46	1511	1377	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1803	1568	1805	3574	3574	1500
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1803	1568	1805	3574	3574	1500
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	233	48	1574	1434	90
RTOR Reduction (vph)	0	183	0	0	0	21
Lane Group Flow (vph)	31	50	48	1574	1434	69
Confl. Peds. (#/hr)	1		11			11
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	3%	0%	1%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	17.3	17.3	7.7	115.8	103.5	103.5
Effective Green, g (s)	17.3	17.3	7.7	115.8	103.5	103.5
Actuated g/C Ratio	0.12	0.12	0.05	0.77	0.69	0.69
Clearance Time (s)	4.2	4.2	4.6	4.9	4.9	4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	180	92	2759	2466	1035
v/s Ratio Prot			0.03	c0.44	0.40	
v/s Ratio Perm	0.02	c0.03				0.05
v/c Ratio	0.15	0.28	0.52	0.57	0.58	0.07
Uniform Delay, d1	59.7	60.6	69.4	7.0	12.0	7.6
Progression Factor	1.00	1.00	1.07	0.66	0.56	0.32
Incremental Delay, d2	0.3	0.8	3.0	0.5	0.8	0.1
Delay (s)	60.1	61.5	77.3	5.1	7.5	2.5
Level of Service	E	E	E	A	A	A
Approach Delay (s)	61.3			7.2	7.2	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.2	0.4	0.0	0.1	2.4	0.4	2.3	1.8	0.3	0.2
Total Del/Veh (s)	62.6	22.5	19.3	99.9	17.8	17.7	56.1	46.0	24.2	92.6	51.7	15.3

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.4

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.8	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	24.5	4.7	2.9	5.4	5.8	51.8	20.3	13.1	5.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.2	0.0	0.0	0.1	0.6	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	88.4	27.1	12.8	96.2	35.7	11.2	80.2	38.0	19.7	105.1	52.0	17.1

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	42.9

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0
Total Del/Veh (s)	53.5	9.3	7.1	73.4	7.9	3.1	25.6	58.8	22.2	10.7

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.1
Total Del/Veh (s)	5.5	2.3	12.9	7.9	57.2	25.7	12.4

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.8	0.4
Total Del/Veh (s)	14.0	4.8	16.3	3.2	17.5	20.9	14.5

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.2	3.0	0.2	3.0	2.8	0.4	2.9
Total Del/Veh (s)	64.0	26.4	26.0	75.8	36.9	23.8	75.4	48.5	19.1	70.0	44.2	18.1

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	37.9

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.2	0.3	3.1	0.2	3.1	0.1	0.0	0.0	2.3	0.4	0.3
Total Del/Veh (s)	119.4	58.7	45.9	78.5	48.2	10.8	57.0	13.2	3.9	88.0	32.6	4.2

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	40.2

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	50.2	27.2	16.8	61.8	39.8	4.8	88.3	9.4	1.9	71.0	9.4	1.6

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	12.6

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	3.0	0.3	0.3	1.3	0.3	0.6	0.3
Total Del/Veh (s)	50.2	14.7	31.4	5.5	81.5	6.0	1.3	65.3	8.7	1.3	8.9

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	67.4	23.6	78.4	6.8	15.5	1.3	13.5

Total Zone Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	1555.9

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	401	406	410	115	275	313	339	120	400	131	158
Average Queue (ft)	146	242	255	262	32	141	163	184	56	212	33	119
95th Queue (ft)	232	373	372	374	83	241	270	295	125	356	112	185
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	7	13			0	6			6	46	0	19
Queuing Penalty (veh)	42	22			0	1			19	44	1	38

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	423	155
Average Queue (ft)	179	66
95th Queue (ft)	359	123
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	13	
Queuing Penalty (veh)	16	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LTR	LTR
Maximum Queue (ft)	92	238	258	281	84	130	152	44	79
Average Queue (ft)	29	62	71	81	10	29	47	12	26
95th Queue (ft)	73	174	199	229	49	93	122	37	66
Link Distance (ft)		615	615	615	559	559	559	587	433
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	80								
Storage Blk Time (%)	1	3			0				
Queuing Penalty (veh)	8	1			0				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	139	223	431	470	486	255	203	235	319	352	374	298
Average Queue (ft)	70	95	213	256	260	122	105	126	191	214	228	72
95th Queue (ft)	124	170	370	414	453	277	181	202	297	322	343	213
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	1							
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)		0	4		6	0	0	1	8		17	
Queuing Penalty (veh)		0	6		19	1	2	6	16		32	

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	219	244	254	236	110	306	413	527	524	219
Average Queue (ft)	120	146	127	120	39	172	295	386	389	66
95th Queue (ft)	194	218	212	202	88	307	479	599	585	152
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)								6	3	0
Queuing Penalty (veh)								30	17	0
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	0	3	1			6	29	26		
Queuing Penalty (veh)	1	7	4			31	146	90		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	108	211	222	158	123	236	240	247	134	78	131
Average Queue (ft)	32	31	52	42	61	80	100	125	12	29	49
95th Queue (ft)	77	118	146	110	117	202	227	252	70	66	99
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						1	1	2			
Queuing Penalty (veh)						7	7	13			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)		1			6	5		7	0		
Queuing Penalty (veh)		0			34	3		3	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	249	241	263	281	325	201	448	391
Average Queue (ft)	47	60	117	113	105	19	230	154
95th Queue (ft)	161	174	229	233	250	122	387	304
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	1	1			0		0	0
Queuing Penalty (veh)	6	7			0		0	0
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					1	0		
Queuing Penalty (veh)					4	0		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	243	247	258	157	159	242	309	40	174	262	251	233
Average Queue (ft)	128	123	115	9	58	93	153	1	94	101	159	98
95th Queue (ft)	206	206	203	81	129	189	273	37	152	183	237	204
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0							1	0
Queuing Penalty (veh)			1	0							2	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	222	276	331	354	383	91	231	341	416	476	130	198
Average Queue (ft)	125	146	206	238	262	27	77	192	227	292	54	68
95th Queue (ft)	196	223	305	330	357	68	169	298	356	423	144	165
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)		0	0				0	2		40	0	
Queuing Penalty (veh)		0	1				0	2		39	0	

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	286	338	348	130	243	353	346	190
Average Queue (ft)	136	197	184	71	135	179	152	121
95th Queue (ft)	229	291	287	155	222	282	276	203
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	0	1	26	0	1	2	3	5
Queuing Penalty (veh)	0	2	23	1	2	3	11	10

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	454	410	174	330	284	124	177	187	209	65	275
Average Queue (ft)	117	279	255	126	179	143	39	83	59	73	18	191
95th Queue (ft)	194	407	375	196	281	239	89	153	142	161	49	316
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	12	42		9	13	0	0					1
Queuing Penalty (veh)	32	36		17	16	0	0					6

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	568	561	62
Average Queue (ft)	366	331	15
95th Queue (ft)	529	498	41
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	19		
Queuing Penalty (veh)	31		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	33	48	80	57	71	286	291	28	152	166	287	5
Average Queue (ft)	5	4	28	18	25	74	92	5	71	46	62	0
95th Queue (ft)	22	24	67	47	64	220	244	22	132	128	198	4
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)						0				0		
Queuing Penalty (veh)						0				0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	49	32	100	262	212	17	78	343	340	22
Average Queue (ft)	15	4	30	90	54	1	12	170	157	1
95th Queue (ft)	39	19	74	223	158	7	47	352	324	12
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			0	7				15		
Queuing Penalty (veh)			2	2				1		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	52	101	111	277	294	526	536	45
Average Queue (ft)	11	41	27	58	74	180	183	6
95th Queue (ft)	38	80	76	190	218	452	460	26
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)						0	0	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			150					
Storage Blk Time (%)				2				
Queuing Penalty (veh)				1				

Zone Summary

Zone wide Queuing Penalty: 933

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	0.2	0.1	0.0	0.0	161.2	159.9	161.9	1.8	0.3	0.2
Total Del/Veh (s)	69.3	29.5	25.7	100.5	21.7	25.3	371.5	335.4	314.9	175.9	93.2	19.8

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	19.1
Total Del/Veh (s)	70.3

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	30.3	4.6	3.6	22.6	8.0	7.9	15.7	13.9	7.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.2	0.9	0.0	0.7	0.6	0.7	0.4	0.2	0.0	0.0	0.0
Total Del/Veh (s)	99.1	45.2	17.7	221.6	109.4	85.9	135.3	97.7	42.0	76.4	51.5	30.1

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	81.4

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	19.5	26.1	0.7
Total Del/Veh (s)	94.2	14.9	14.8	50.1	14.2	5.0	29.8	237.7	214.2	23.0

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	25.7	25.7	3.5
Total Del/Veh (s)	5.3	2.6	21.8	13.2	49.3	70.4	19.0

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.7	2.9	0.3
Total Del/Veh (s)	9.8	4.3	10.9	3.5	39.6	41.5	15.5

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.2	0.2	2.7	0.4	2.7	2.7	0.4	2.8
Total Del/Veh (s)	75.9	26.4	24.2	71.6	67.6	80.0	91.3	56.5	26.2	93.1	55.6	30.4

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	54.6

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	15.8	13.1	12.3	2.6	0.3	2.7	0.0	0.0	0.0	5.9	4.2	3.7
Total Del/Veh (s)	241.6	183.6	175.1	110.9	67.1	28.4	87.0	52.0	8.7	167.3	85.6	10.7

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	4.3
Total Del/Veh (s)	96.1

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	58.1	32.9	16.2	60.6	37.6	8.2	60.1	18.7	2.7	71.0	18.8	2.7

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	23.4

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	2.3	0.5	0.0	0.0	0.0	0.3
Total Del/Veh (s)	50.4	19.1		8.2	82.8	9.7	82.8	4.2	0.3	9.1

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	67.9	24.2	93.0	12.0	15.7	2.3	15.7

Total Zone Performance

Denied Del/Veh (s)	10.0
Total Del/Veh (s)	1918.4

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	200	444	449	446	149	288	318	339	120	1760	138	158
Average Queue (ft)	153	305	297	294	64	149	182	205	103	1545	41	120
95th Queue (ft)	239	427	413	409	125	255	283	302	151	2052	130	194
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)										52		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	7	22			1	7			50	61	0	24
Queuing Penalty (veh)	39	37			6	4			237	115	2	76

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1093	606
Average Queue (ft)	416	111
95th Queue (ft)	970	433
Link Distance (ft)	1817	1817
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	33	
Queuing Penalty (veh)	32	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	99	167	163	181	34	123	158	164	35	113
Average Queue (ft)	44	35	34	42	5	27	53	65	7	49
95th Queue (ft)	89	120	125	140	23	88	136	153	28	93
Link Distance (ft)		615	615	615		559	559	559	587	433
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	4	1				0				
Queuing Penalty (veh)	25	1				0				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	213	370	535	562	562	255	261	345	726	735	729	300
Average Queue (ft)	114	156	285	321	316	135	197	303	596	610	626	283
95th Queue (ft)	182	322	506	549	556	307	311	432	803	811	818	368
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)			1	1	1				9	9	15	
Queuing Penalty (veh)			4	6	7				65	65	110	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	0	1	12		15	0	32	42	58		62	18
Queuing Penalty (veh)	1	3	29		33	1	161	209	151		256	88

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	242	290	573	572	294	306	413	515	520	384
Average Queue (ft)	178	272	505	483	135	237	312	378	365	155
95th Queue (ft)	270	348	639	632	250	345	460	520	490	294
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			20	11	0			3	1	0
Queuing Penalty (veh)			95	53	1			17	5	0
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	13	27	57			17	31	31		
Queuing Penalty (veh)	58	118	181			82	145	172		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	185	195	330	290	124	257	261	254	175	182	465
Average Queue (ft)	94	68	103	124	69	128	162	186	39	72	230
95th Queue (ft)	162	146	228	241	126	270	290	296	149	137	617
Link Distance (ft)		707	707	707		225	225	225		702	719
Upstream Blk Time (%)			0			2	3	9			10
Queuing Penalty (veh)			0			16	20	71			0
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)	1	0			4	12		19	0		
Queuing Penalty (veh)	10	0			31	10		13	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	R	T	T	T	R	L	R
Maximum Queue (ft)	138	174	26	359	416	563	225	496	498
Average Queue (ft)	35	52	1	193	208	267	120	291	290
95th Queue (ft)	108	137	26	323	383	509	303	520	556
Link Distance (ft)	225	225	225	730	730	730		573	573
Upstream Blk Time (%)		0	0			0		6	11
Queuing Penalty (veh)		0	0			1		0	0
Storage Bay Dist (ft)							200		
Storage Blk Time (%)						14	0		
Queuing Penalty (veh)						81	2		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	186	171	172	22	91	156	252	6	342	490	258	243
Average Queue (ft)	102	91	93	1	17	41	74	0	175	232	212	157
95th Queue (ft)	168	154	159	21	60	116	184	5	277	400	291	259
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0							6	4	1
Queuing Penalty (veh)			0							27	11	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	267	288	341	346	329	209	265	719	756	783	130	291
Average Queue (ft)	165	182	179	203	220	57	176	464	522	563	42	180
95th Queue (ft)	269	282	300	295	298	137	319	749	803	831	133	303
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)	0	1	0			0	0	23		58	0	0
Queuing Penalty (veh)	1	5	0			0	2	30		42	0	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	305	472	431	130	245	436	449	190
Average Queue (ft)	247	281	268	82	177	252	241	164
95th Queue (ft)	338	426	392	164	274	389	385	233
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	4	7	43	0	7	10	14	12
Queuing Penalty (veh)	12	24	47	1	18	17	53	33

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	1006	976	175	572	571	265	374	560	558	93	275
Average Queue (ft)	148	799	770	157	367	328	153	195	328	341	40	265
95th Queue (ft)	200	1218	1199	212	563	536	315	369	529	530	80	312
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)		19	17									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	43	59		26	41	19	0	1	7			42
Queuing Penalty (veh)	151	95		89	73	40	1	5	13			269

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	1049	1025	814
Average Queue (ft)	787	733	180
95th Queue (ft)	1139	1099	761
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)	11	7	3
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)	28		
Queuing Penalty (veh)	82		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	95	85	155	64	384	486	495	43	212	246	263	20
Average Queue (ft)	35	33	66	28	158	210	222	12	103	143	153	1
95th Queue (ft)	79	67	131	56	294	422	434	36	176	233	246	9
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)					0	3			0	0		
Queuing Penalty (veh)					0	5			1	0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	L	T	T	R
Maximum Queue (ft)	55	26	121	420	362	87	135	148	6
Average Queue (ft)	12	2	50	164	124	34	39	57	0
95th Queue (ft)	38	14	101	374	306	72	111	130	4
Link Distance (ft)	594	558		629	629		598	598	598
Upstream Blk Time (%)					0				
Queuing Penalty (veh)					0				
Storage Bay Dist (ft)			100			100			
Storage Blk Time (%)			3	13		1	1		
Queuing Penalty (veh)			20	5		7	0		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	102	251	136	501	509	546	564	48
Average Queue (ft)	35	100	48	182	196	199	197	13
95th Queue (ft)	79	199	110	457	474	462	473	39
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)		0		0	0	0	0	
Queuing Penalty (veh)		0		2	3	0	0	
Storage Bay Dist (ft)			150					
Storage Blk Time (%)			0	7				
Queuing Penalty (veh)			2	3				

Zone Summary

Zone wide Queuing Penalty: 4132

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.2	0.0	0.0	0.0	1.9	0.5	2.0	1.4	0.2	0.1
Total Del/Veh (s)	42.0	17.2	11.4	47.5	19.9	22.7	26.2	21.5	9.3	30.3	16.6	9.3

1: N Maroa Ave & W Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	19.7

2: N Glen Ave & W Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	30.3	2.4	1.0	19.0	8.0	7.7	30.0	9.7	8.3	6.4

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	59.7	45.7	10.8	164.4	59.9	60.3	78.4	54.7	21.1	79.0	44.0	19.2

3: N Blackstone Ave & Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	58.3

4: N Effie St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.0
Total Del/Veh (s)	55.2	10.4	9.1	63.5	10.1	3.7	21.5	61.4	39.2	14.2

5: E Shaw Ave & SR-41 SB Ramps Performance by movement

Movement	EBT	EBR	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.4	0.4	0.1
Total Del/Veh (s)	6.5	1.9	19.3	11.7	52.0	33.2	16.5

6: SR-41 NB Ramps & E Shaw Ave Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.2	2.9	0.6
Total Del/Veh (s)	16.2	5.0	28.0	3.3	18.3	23.8	19.9

7: N Fresno St & E Shaw Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.3	0.2	0.2	2.9	0.4	2.8	3.2	0.2	3.2
Total Del/Veh (s)	67.4	33.5	37.4	78.1	57.3	58.6	67.9	44.4	13.8	71.8	55.0	12.5

7: N Fresno St & E Shaw Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	48.4

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.2	0.3	3.2	0.2	3.2	0.0	0.0	0.0	2.3	0.6	0.3
Total Del/Veh (s)	97.8	51.1	39.9	71.8	49.0	18.8	57.5	32.9	5.0	104.7	46.6	4.1

8: N Blackstone Ave & Barstow Ave Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	47.5

9: N Blackstone Ave & San Jose Ave Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	59.9	17.1	61.9	42.3	8.5	74.2	10.5	1.8	73.0	13.5	2.6	20.3

10: N Blackstone Ave & E Santa Ana Ave Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	2.6	0.4	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	65.9	15.4	107.8	4.9	77.0	7.5	0.7	66.5	9.1	1.5	10.6

11: N Blackstone Ave & Yosemite Falls Dwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.3	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	61.8	28.4	81.5	5.6	17.9	2.1	13.9

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1632.4

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	R	L
Maximum Queue (ft)	177	236	200	223	136	285	337	349	119	255	131	124
Average Queue (ft)	68	139	122	120	44	143	186	207	73	114	31	51
95th Queue (ft)	131	207	184	192	101	266	313	328	122	202	86	97
Link Distance (ft)		2498	2498	2498		1236	1236	1236		1718		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175				125				60		80	133
Storage Blk Time (%)	0	2				8			13	21	0	0
Queuing Penalty (veh)	0	2				4			38	40	0	0

Intersection: 1: N Maroa Ave & W Shaw Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	117	104
Average Queue (ft)	50	47
95th Queue (ft)	96	84
Link Distance (ft)	1817	1817
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: N Glen Ave & W Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	103	219	90	91	72	198	210	244	46	66
Average Queue (ft)	54	37	16	19	21	45	60	72	15	32
95th Queue (ft)	101	138	60	62	55	142	174	198	42	58
Link Distance (ft)		615	615	615		559	559	559	587	433
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80				150					
Storage Blk Time (%)	8	1				1				
Queuing Penalty (veh)	38	1				0				

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	212	293	363	375	421	255	269	336	504	569	638	300
Average Queue (ft)	119	131	222	249	259	114	202	233	280	288	339	262
95th Queue (ft)	188	228	324	344	377	273	300	361	525	507	576	358
Link Distance (ft)			559	559	559				707	707	707	
Upstream Blk Time (%)					0				0	0	0	
Queuing Penalty (veh)					0				1	0	1	
Storage Bay Dist (ft)	230	230				230	200	200				200
Storage Blk Time (%)	0	0	8		12	0	27	38	23		25	43
Queuing Penalty (veh)	0	0	22		20	0	96	135	68		137	152

Intersection: 3: N Blackstone Ave & Shaw Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	180	290	480	448	218	306	413	520	467	209
Average Queue (ft)	97	159	264	250	93	257	334	353	281	94
95th Queue (ft)	162	291	449	415	179	365	479	581	429	181
Link Distance (ft)			545	545	545			502	502	502
Upstream Blk Time (%)			0	0				7	0	
Queuing Penalty (veh)			1	0				37	0	
Storage Bay Dist (ft)	195	195				200	200			
Storage Blk Time (%)	0	1	22			21	42	16		
Queuing Penalty (veh)	0	2	50			79	157	100		

Intersection: 4: N Effie St & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	179	140	146	191	124	255	253	249	176	116	198
Average Queue (ft)	91	58	76	95	94	129	124	157	21	49	89
95th Queue (ft)	159	115	134	172	147	270	258	273	94	94	170
Link Distance (ft)		707	707	707		226	226	226		701	726
Upstream Blk Time (%)						4	1	3			
Queuing Penalty (veh)						29	6	21			
Storage Bay Dist (ft)	200				100				151		
Storage Blk Time (%)	0				21	7		9	0		
Queuing Penalty (veh)	1				127	8		6	0		

Intersection: 5: E Shaw Ave & SR-41 SB Ramps

Movement	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	R	L	R
Maximum Queue (ft)	167	183	424	480	578	225	489	404
Average Queue (ft)	50	64	163	152	226	80	269	179
95th Queue (ft)	131	150	338	341	473	257	420	325
Link Distance (ft)	226	226	730	730	730		574	574
Upstream Blk Time (%)	0	0			0		0	0
Queuing Penalty (veh)	0	0			0		0	0
Storage Bay Dist (ft)						200		
Storage Blk Time (%)					7	0		
Queuing Penalty (veh)					31	1		

Intersection: 6: SR-41 NB Ramps & E Shaw Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	L	L	R	R
Maximum Queue (ft)	213	212	231	178	249	355	404	119	199	417	258	245
Average Queue (ft)	132	124	130	8	107	154	238	5	92	146	196	151
95th Queue (ft)	193	183	196	77	207	289	361	67	161	303	272	260
Link Distance (ft)	730	730	730		607	607	607	607	797	797		
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)				200							233	233
Storage Blk Time (%)			0	0						0	3	0
Queuing Penalty (veh)			1	0						1	7	1

Intersection: 7: N Fresno St & E Shaw Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	239	339	436	464	509	211	264	631	714	757	130	292
Average Queue (ft)	132	187	283	319	366	56	139	337	408	476	49	191
95th Queue (ft)	211	329	416	440	487	132	271	561	649	693	141	311
Link Distance (ft)			607	607	607			2408	2408	2408		
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	315	315				240	240				105	280
Storage Blk Time (%)	0	0	4			0	0	11		56	0	0
Queuing Penalty (veh)	0	0	13			0	1	14		50	0	0

Intersection: 7: N Fresno St & E Shaw Ave

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	304	433	347	130	232	262	225	171
Average Queue (ft)	237	170	149	78	136	145	108	61
95th Queue (ft)	323	340	278	152	220	222	195	119
Link Distance (ft)		955	955			811	811	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	280			105	220			165
Storage Blk Time (%)	6	0	16	1	1	1	1	0
Queuing Penalty (veh)	10	0	21	1	2	1	2	0

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	T	R	L
Maximum Queue (ft)	165	428	359	174	259	212	141	277	376	391	79	275
Average Queue (ft)	148	243	214	112	135	97	58	134	191	203	28	265
95th Queue (ft)	192	385	327	181	225	186	113	237	331	349	63	304
Link Distance (ft)		1068	1068		1071	1071			1224	1224	1224	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140			150			240	350				250
Storage Blk Time (%)	35	16		7	5	0			1			23
Queuing Penalty (veh)	67	29		9	7	0			1			133

Intersection: 8: N Blackstone Ave & Barstow Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	781	727	61
Average Queue (ft)	502	439	23
95th Queue (ft)	756	690	47
Link Distance (ft)	1044	1044	1044
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)	19		
Queuing Penalty (veh)	55		

Intersection: 9: N Blackstone Ave & San Jose Ave

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	78	119	154	63	346	246	267	36	234	214	218	27
Average Queue (ft)	27	50	65	24	208	111	125	10	124	92	90	3
95th Queue (ft)	63	93	126	55	313	220	236	32	206	188	184	18
Link Distance (ft)	524	524	630	630		649	649	649		1224	1224	1224
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					384				270			
Storage Blk Time (%)					0				0	0		
Queuing Penalty (veh)					1				1	0		

Intersection: 10: N Blackstone Ave & E Santa Ana Ave

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	66	44	122	338	294	20	110	251	266	27
Average Queue (ft)	17	8	54	120	93	1	31	110	128	3
95th Queue (ft)	48	32	108	282	233	9	80	243	261	17
Link Distance (ft)	594	558		629	629	629		598	598	598
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			100				100			
Storage Blk Time (%)			4	9			0	11		
Queuing Penalty (veh)			24	5			3	3		

Intersection: 11: N Blackstone Ave & Yosemite Falls Dwy

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	78	247	132	210	218	526	495	53
Average Queue (ft)	28	112	50	74	87	223	169	13
95th Queue (ft)	68	203	104	177	187	471	381	40
Link Distance (ft)	391	391		502	502	649	649	649
Upstream Blk Time (%)		0				0	0	
Queuing Penalty (veh)		0				2	0	
Storage Bay Dist (ft)			150					
Storage Blk Time (%)			0	2				
Queuing Penalty (veh)			0	1				

Zone Summary

Zone wide Queuing Penalty: 1880

Appendix 9 Existing Conditions Peak Hour Signal Warrants

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday AM Peak Hour**

Intersection: **Blackstone Avenue at Santa Ana Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.14 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (25 vph ; one lane) YES ☐ NO ☒

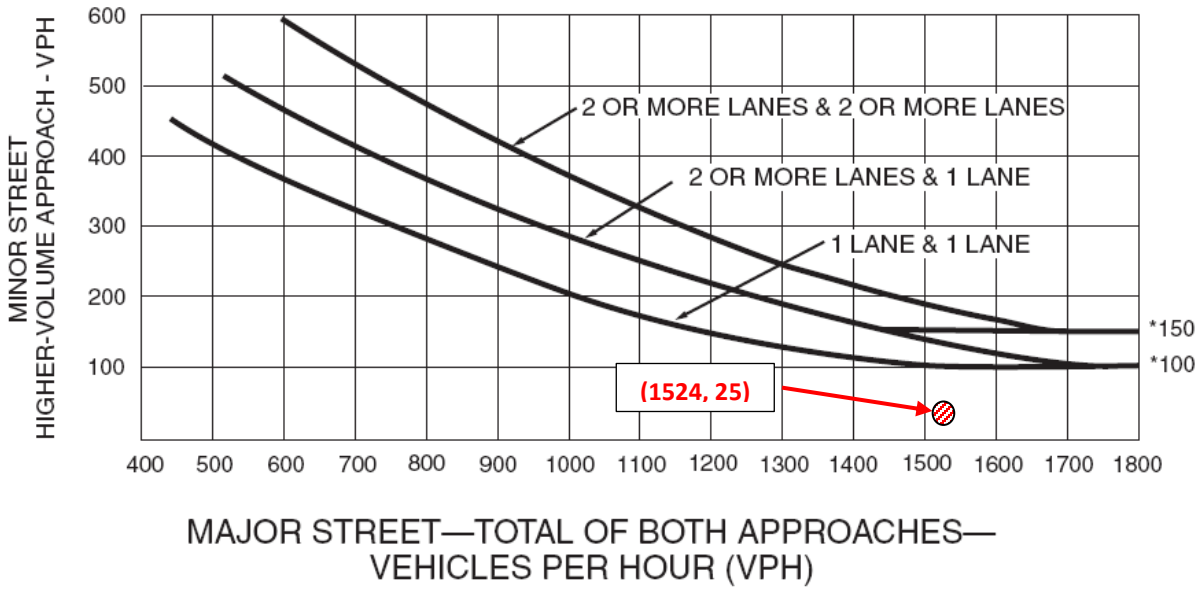
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (1553 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	1524
Highest Approaches – Minor Street	1	25

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday Midday Peak Hour**

Intersection: **Blackstone Avenue at Santa Ava Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.17 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (27 vph ; one lane) YES ☐ NO ☒

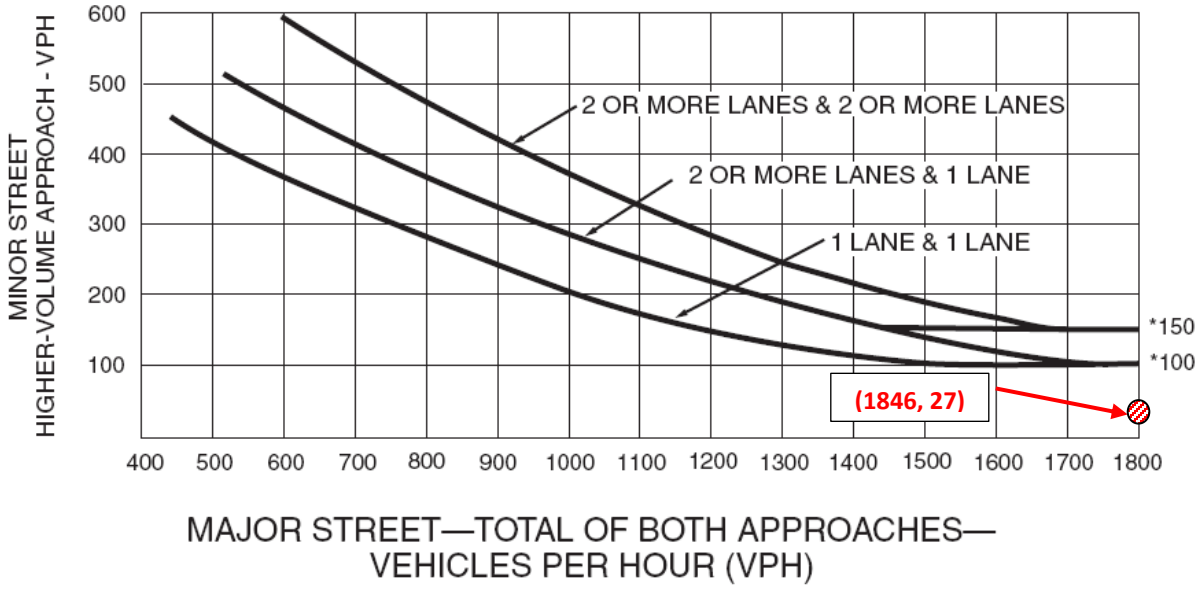
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (1883 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	1846
Highest Approaches – Minor Street	1	27

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday PM Peak Hour**

Intersection: **Blackstone Avenue at Santa Ava Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.21 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (23 vph ; one lane) YES ☐ NO ☒

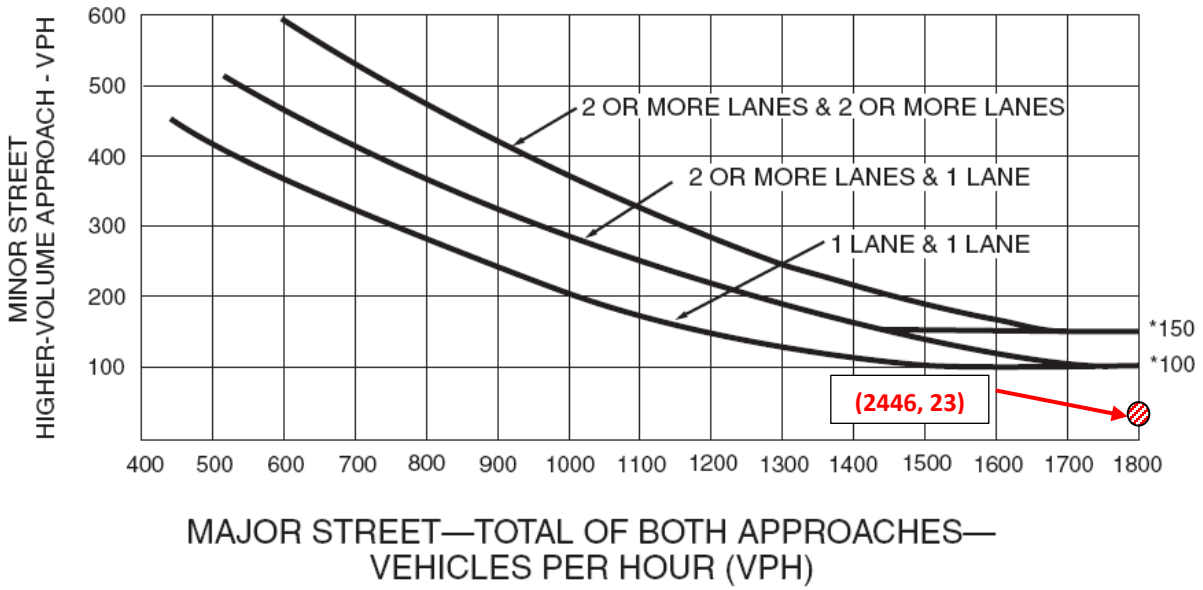
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (2472 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	2446
Highest Approaches – Minor Street	1	23

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday AM Peak Hour**

Intersection: **Shaw Avenue and Glenn Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.09 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (10 vph ; one lane) YES ☐ NO ☒

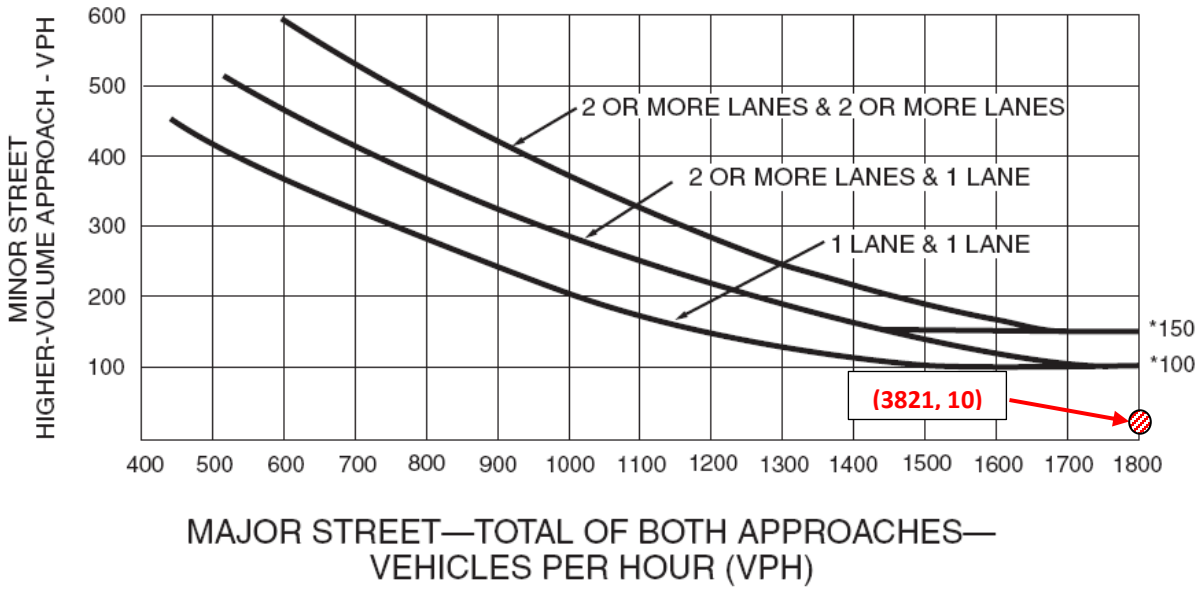
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (3839 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	3821
Highest Approaches – Minor Street	1	10

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday Midday Peak Hour**

Intersection: **Shaw Avenue and Glenn Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.14 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (17 vph ; one lane) YES ☐ NO ☒

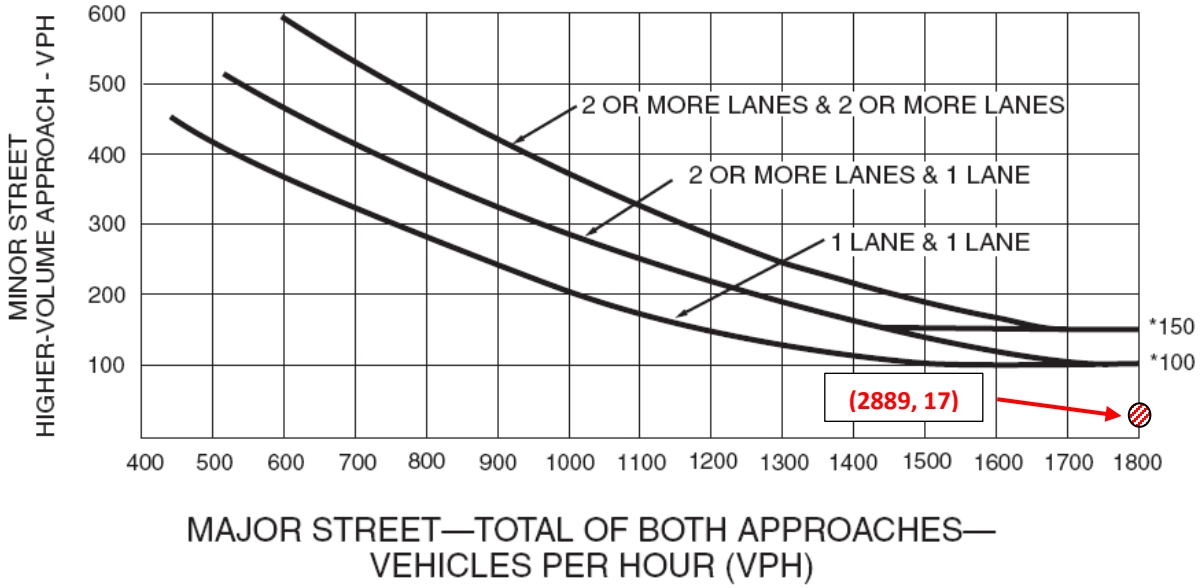
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (2916 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	2889
Highest Approaches – Minor Street	1	17

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday PM Peak Hour**

Intersection: **Shaw Avenue and Glenn Avenue**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.12 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (13 vph ; one lane) YES ☐ NO ☒

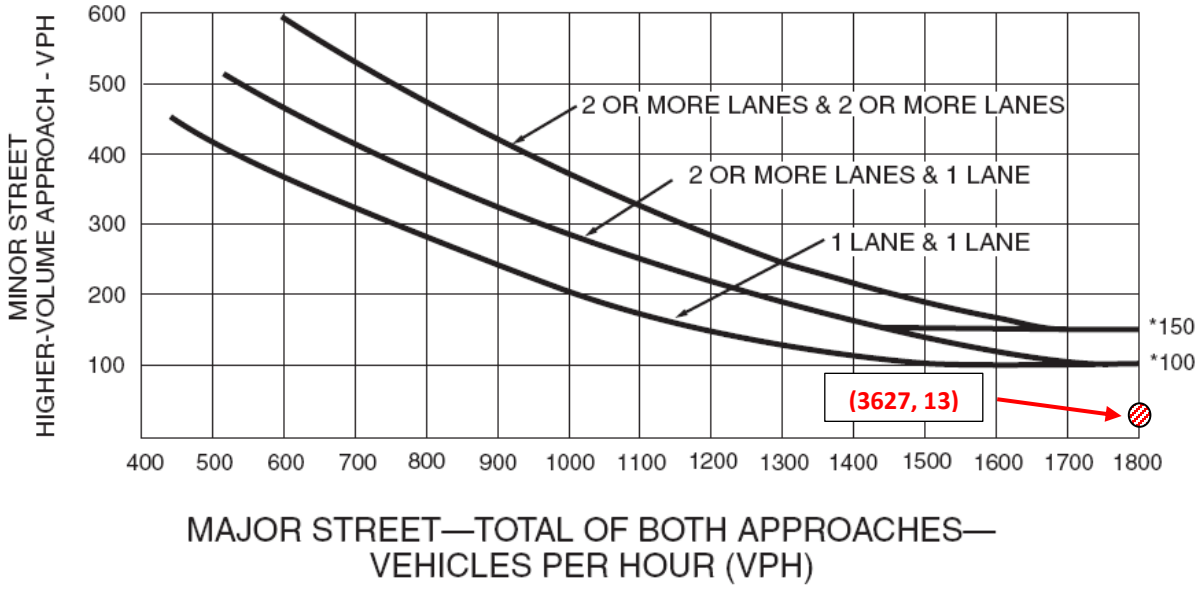
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (3633 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	3627
Highest Approaches – Minor Street	1	13

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday AM Peak Hour**

Intersection: **Shaw Avenue at Effie Street**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.21 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (25 vph ; one lane) YES ☐ NO ☒

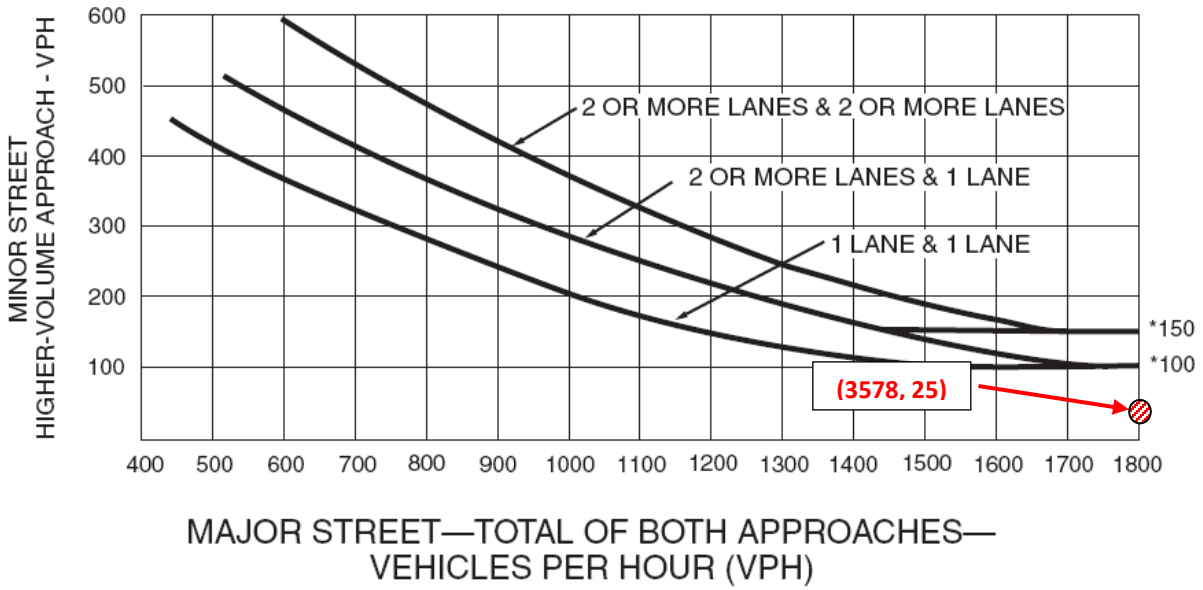
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (3578 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	3509
Highest Approaches – Minor Street	1	25

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday Midday Peak Hour**

Intersection: **Shaw Avenue at Effie Street**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (2.06 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (98 vph ; one lane) YES ☐ NO ☒

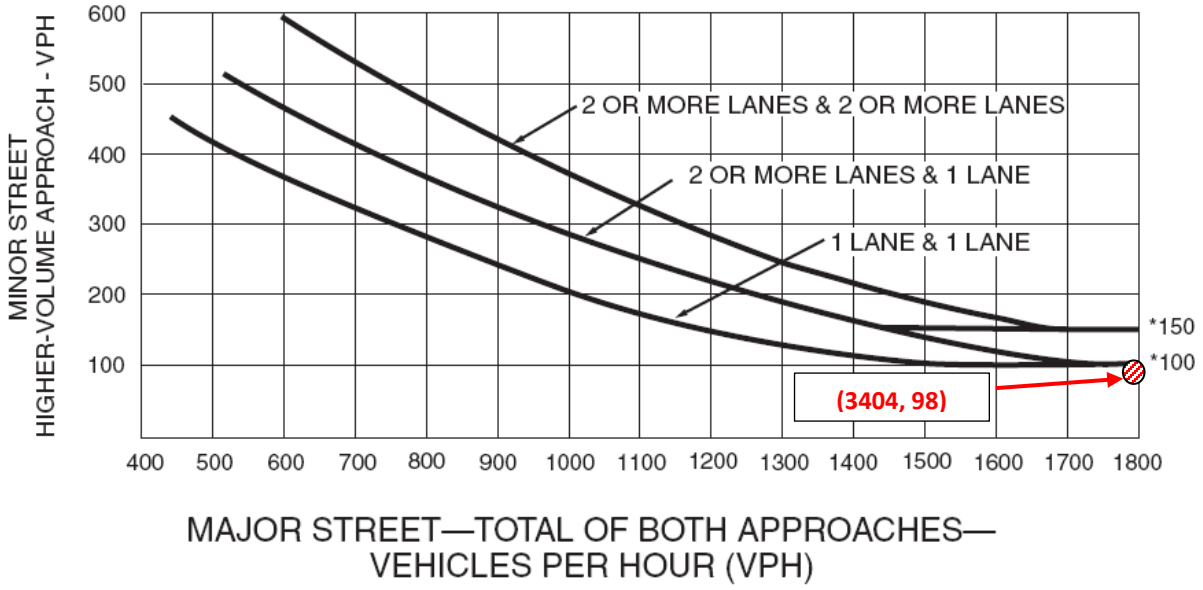
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (3523 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	3404
Highest Approaches – Minor Street	1	98

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday PM Peak Hour**

Intersection: **Shaw Avenue at Effie Street**

PART A or PART B SATISFIED YES ☒ NO ☐

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (2.69 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (123 vph ; one lane) YES ☐ NO ☒

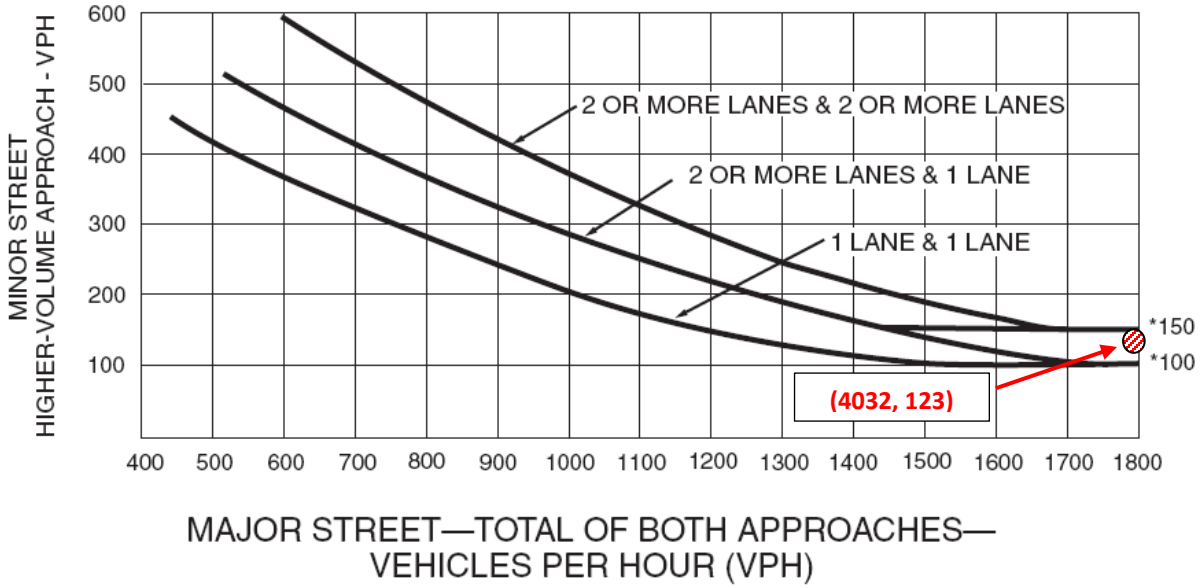
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (4190 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☒ NO ☐

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	4032
Highest Approaches – Minor Street	1	123

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday AM Peak Hour**

Intersection: **Blackstone Avenue at Yosemite Falls Dr.**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.02 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (8 vph ; one lane) YES ☐ NO ☒

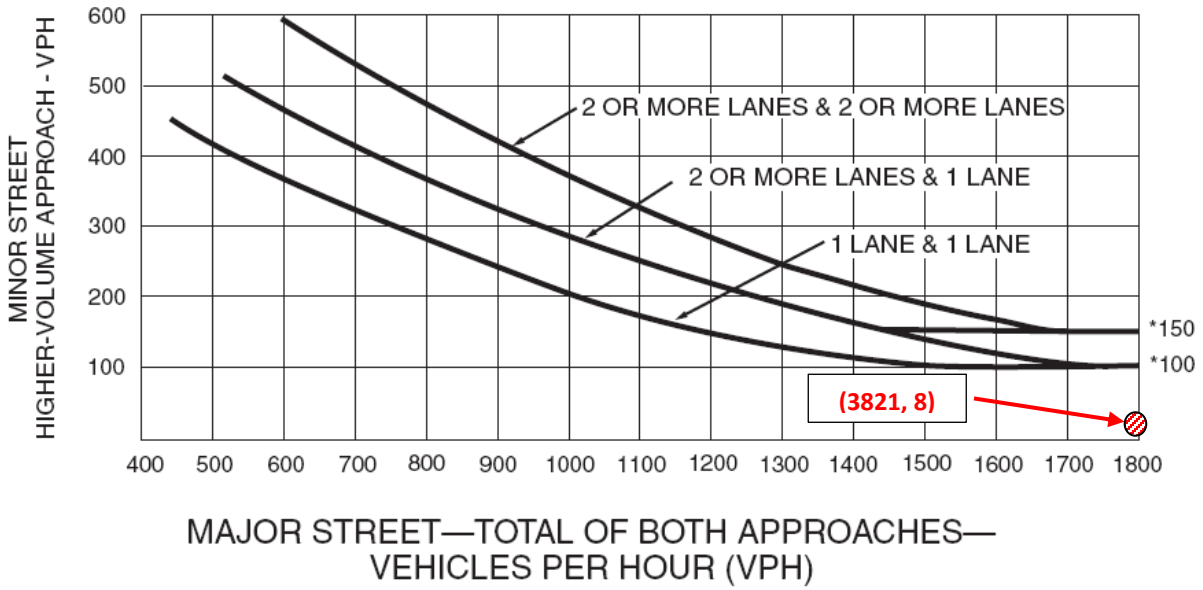
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (1514 vph ; 3 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	1506
Highest Approaches – Minor Street	1	8

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday Midday Peak Hour**

Intersection: **Blackstone Avenue at Yosemite Falls Dr.**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.17 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (67 vph ; one lane) YES ☐ NO ☒

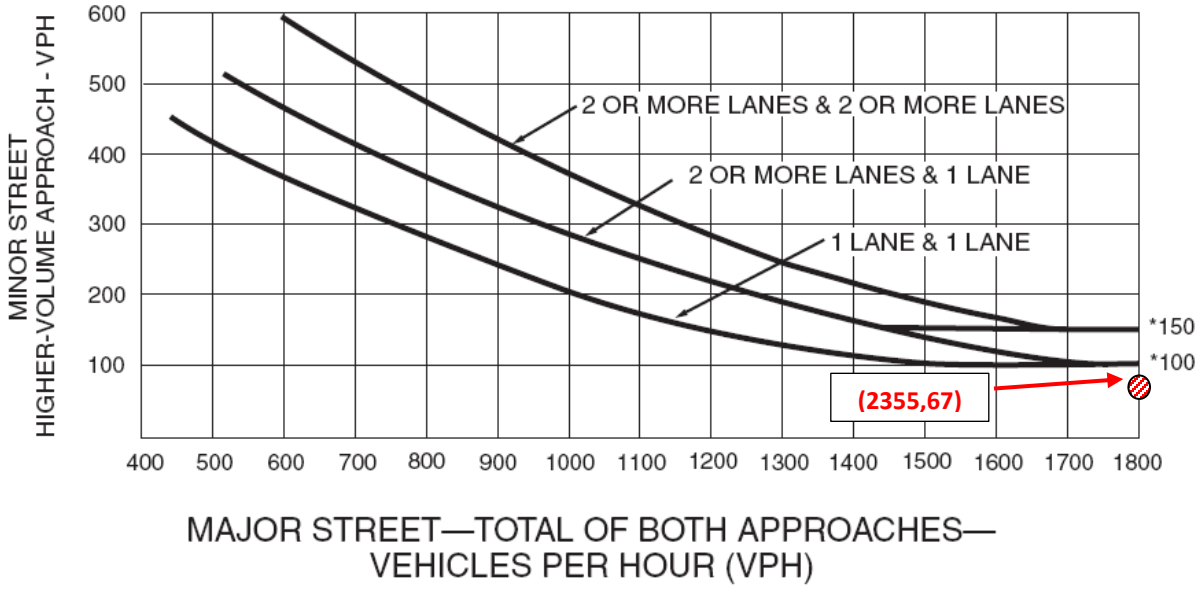
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (2422 vph ; 3 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	2355
Highest Approaches – Minor Street	1	67

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **Existing Conditions – Weekday PM Peak Hour**

Intersection: **Blackstone Avenue at Yosemite Falls Dr.**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — (.04 hours ; one lane) YES ☐ NO ☒

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — (17 vph ; one lane) YES ☐ NO ☒

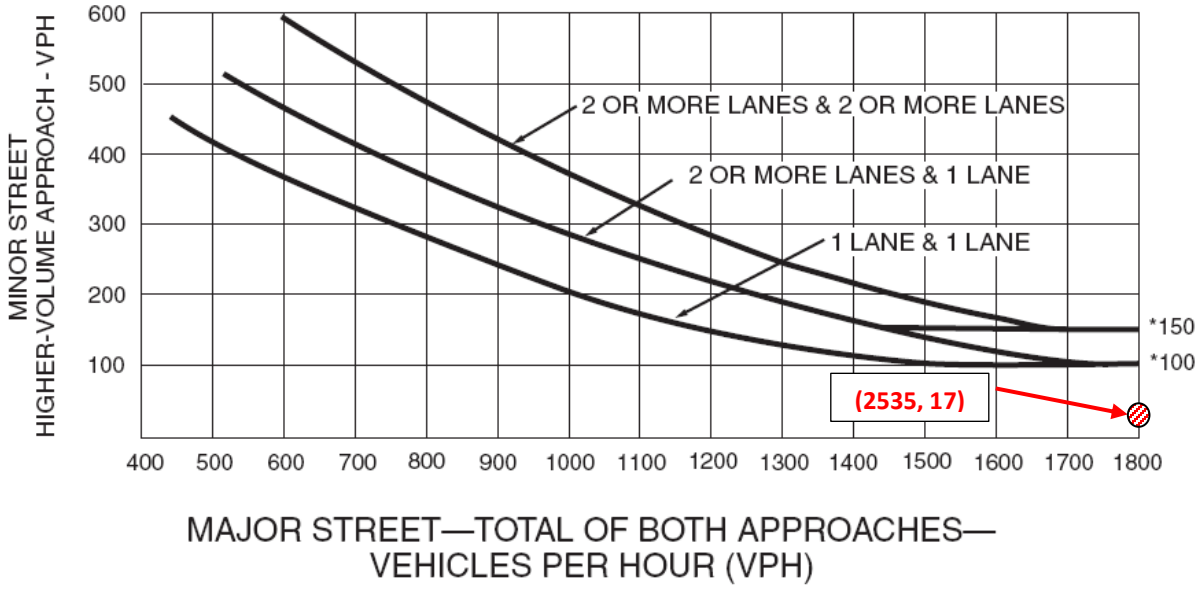
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (2552 vph ; 3 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	3	2535
Highest Approaches – Minor Street	1	17

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3.

Figure 4C-3.Warrant 3, Peak Hour



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