APPENDIX J

Transportation Background Information

Dana Reserve Nipomo
Transportation Impact Study

Dana Reserve Nipomo

Transportation Impact Study

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0.0 Executive Summary

This study evaluates the potential transportation impacts of the Dana Reserve development located outside of the Nipomo Community Plan Area in unincorporated San Luis Obispo County. The project consists of 833 single family residential units, 610 multi-family dwelling units (including 152 ADUs), 113,000 square feet of various commercial uses, a 110-room hotel, and 30,000 square feet for education. The project is expected to generate 17,892 net new daily trips, 1,156 net new AM peak hour trips, 1,379 net new PM peak hour trips, 12,930 net new Sunday daily trips, and 1,201 net new Sunday midday peak hour trips.

The following summarizes the key findings of the Transportation Impact Study (TIS):

0.1 KEY FINDINGS

1. The proposed frontage road extension would complete a necessary circulation connection between Sandydale Drive and Willow Road. This improvement will divert existing traffic away from Tefft Street and will benefit daily commuter operations as well as Swap Meet circulation on Sundays. In addition to the frontage road connection, the project will construct an additional north-south connector roadway between Willow Road and Pomeroy Road improving circulation.
2. The US 101 northbound and southbound ramp intersections on Willow Road operate unacceptably with project traffic. Signalization is warranted at both intersections and would result in acceptable operations with existing lane configurations under Plus Project conditions. Signalization at these intersections is consistent with the South County Circulation Study.
3. The project entry at Willow Road/North Frontage Road meets peak hour signal warrants and was assumed to be signalized under Plus Project conditions. The intersection operates acceptably with a traffic signal, a dedicated eastbound right turn lane and westbound left turn lane on Willow Road, and left and right turn lanes on the project approach.
4. The Willow Road/West Project Entry operates acceptably with side-street-stop control, a dedicated eastbound right turn lane and westbound left turn lane on Willow Road, and left and right turn lanes on the project approach.
5. The Pomeroy Road/Southwest Project Entry operates acceptably with side street stop control, a dedicated eastbound left and westbound right turn lane on Pomeroy Road, and left and right turn lanes on the project approach.
6. Portions of the Tefft Street corridor near US 101 would operate unacceptably during at least one peak hour under all studied scenarios. The improvements currently under construction would result in acceptable operations under Existing Plus Project conditions but not under Cumulative conditions.
7. Per the South County Circulation Study a new Southland interchange is required under Cumulative conditions reflecting buildout of the Nipomo area.
8. All freeway segments operate unacceptably during at least one peak hour in all scenarios. No capacity enhancements are currently programmed on the studied freeway segments.
9. Collectors A, B, and C operate acceptably as two-lane collectors and Local Road D operates acceptably as a two-lane local road. A center turn lane is recommended and required on Collector A per County Standard A-2d.
10. An additional multi-use trail connection to Willow Road is recommended for consistency with the Parks and Recreation Element.
11. The project will have a significant and unavoidable impact to VMT.

Contents

1.0 Introduction

This study evaluates the potential transportation impacts of the Dana Reserve development to become a part of the Nipomo Community Plan Area in unincorporated San Luis Obispo County. The project consists of 833 single family residential units of varying lot sizes, 458 multi-family dwelling units, 152 accessory dwelling units (ADUs), 113,000 square feet (s.f) of various commercial uses, a 110-room hotel, and a 30,000 s.f. education facility.

This TIS scope of work was developed in consultation with County staff and the draft TIS was revised following peer review by the County and other consultants. Refer to **Appendix F** for comments and responses.

The project's location and study intersections are shown on **Figure 1**, while **Figure 2** shows the project site plan. Study intersections were identified in consultation with County staff. The following intersections were analyzed during the weekday morning (7-9 AM) and evening (4-6 PM) time periods:

1. Willow Road/State Route 1
2. Willow Road/Pomeroy Road
3. Willow Road/Hetrick Avenue
4. Willow Road/West Project Entry (future intersection)
5. Willow Road/North Frontage Road (future intersection)
6. Willow Road/US 101 SB Ramps
7. Willow Road/US 101 NB Ramps
8. Willow Road/Thompson Avenue
9. Southwest Project Entry/Pomeroy Road (future intersection)
10. West Tefft Street/Pomeroy Road
11. West Tefft Street/Mary Avenue
12. West Tefft Street/US 101 SB Ramps/South Frontage Road
13. West Tefft Street/US 101 NB Ramps

The following intersections were analyzed during the Sunday midday peak hour while the Nipomo Swap Meet and Flea Market was underway:

1. West Tefft Street/Pomeroy Road
2. West Tefft Street/Mary Avenue
3. West Tefft Street/US 101 SB Ramps/South Frontage Road
4. West Tefft Street/US 101 NB Ramps
5. Mary Avenue/Juniper Street
6. Willow Road/North Frontage Road (future intersection)

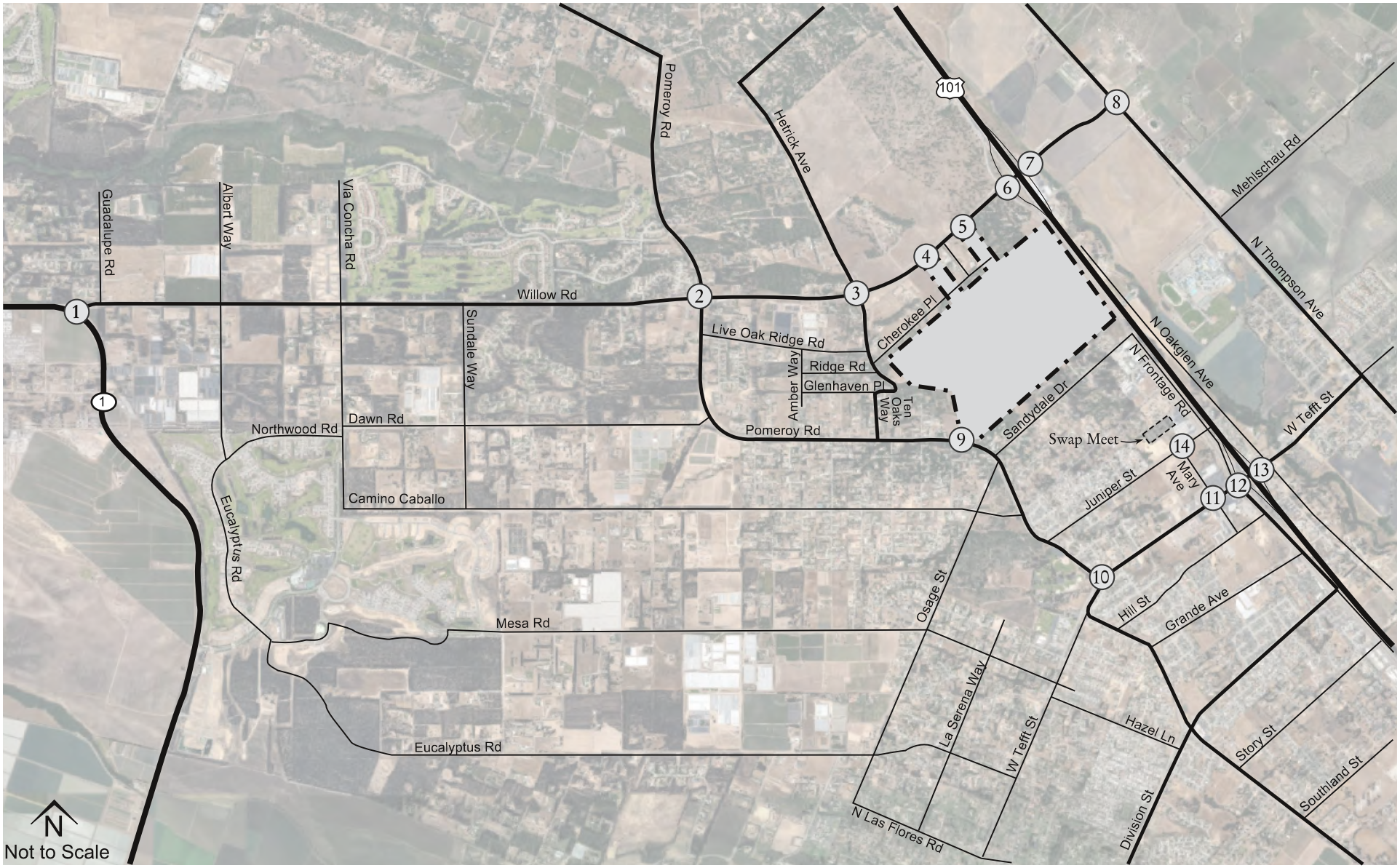
US 101 was analyzed during the weekday AM and PM peak hours near the Willow Road interchange.

The study locations were evaluated under the following scenarios:

1. **Existing Conditions** reflects recent traffic counts and the existing transportation network.
2. **Existing Plus Project Conditions** adds Project-generated traffic to existing volumes.
3. **Cumulative Conditions** represents future traffic conditions reflective of the General Plan buildout of land uses in the area, not including the proposed Project.
4. **Cumulative Plus Project Conditions** represents future traffic conditions reflective of the buildout of land uses in the area, including the proposed Project.

Each scenario is described in more detail in the corresponding chapter.

Figure 1: Project and Study Locations



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Legend:

- Project Site
- (17) - Study Intersection

July 2021

Dana Reserve

Figure 2: Project Site Plan

Not to Scale

Source: RRM Design Group

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2.0 Analysis Methods

2.1 LEVEL OF SERVICE THRESHOLDS AND POLICIES

The analysis approach was developed based on the Highway Capacity Manual (HCM), County of San Luis Obispo, and Caltrans standards.

2.1.1 Intersection Level of Service Thresholds

The level of service (LOS) thresholds for intersections are based on the 6th Edition of the HCM and are presented in **Table 1**.

Table 1: Intersection Level of Service Thresholds

Level of Service Thresholds			
Signalized Intersections[1]		**Stop Controlled Intersections[2]**	
Control Delay[3]	**LOS**	**Control Delay[3]**	**LOS**
≤ 10	A	≤ 10	A
> 10 - 20	B	> 10 - 15	B
> 20 - 35	C	> 15 - 25	C
> 35 - 55	D	> 25 - 35	D
> 55 - 80	E	> 35 - 50	E
> 80	F	> 50 or v/c > 1	F

1. Source: Exhibit 19-8 of the 6th Edition Highway Capacity Manual.
2. Source: Exhibits 20-2 and 21-8 of the 6th Edition Highway Capacity Manual.
3. Control delay is seconds per vehicle.

The study intersections were analyzed with the Synchro 10 software package applying the HCM 6 methods except as noted below.

The latest available signal timing was obtained from Caltrans and the County. Due to the signal phasing, the intersections of West Tefft Street/Pomeroy Road (#10) and West Tefft Street/US 101 SB Ramps/South Frontage Road (#12) were analyzed using the 2000 HCM methodology as the HCM 6 methodology does not support the intersection phasing.

2.1.2 Freeway Level of Service Thresholds

The LOS thresholds for freeway facilities are also based on the 6th Edition of the HCM and are presented in **Table 2**. The mainline, merge, and diverge segments of US 101 were evaluated using the HCS 7 software package with a vehicle density calculation consistent with the HCM 6 methodology.

Table 2: Freeway Level of Service Thresholds

Freeway Level of Service Thresholds			
Basic Freeway & Multilane Highway Segments[1]		**Freeway Merge/Diverge Segments[2]**	
Density[3]	**LOS**	**Density[3]**	**LOS**
≤ 11	A	≤ 10	A
> 11 - 18	B	> 10 - 20	B
> 18 - 26	C	> 20 - 28	C
> 26 - 35	D	> 28 - 35	D
> 35 - 45	E	> 35	E
> 45 (Demand>Capacity)	F	v/c > 1	F

1. Source: Exhibit 12-15 of the 6th Edition Highway Capacity Manual.
2. Source: Exhibit 14-3 of the 6th Edition Highway Capacity Manual.
3. Density is passenger cars per vehicle per lane.

2.1.3 County of San Luis Obispo Facilities

The County of San Luis Obispo has adopted the following LOS standard for roadways and intersections:

- Rural areas (outside the Urban Reserve Line): LOS C is acceptable; LOS D is not.
- Urban areas (within the Urban Reserve Line): LOS D is acceptable; LOS E is not.

Willow Road and a portion of Pomeroy Road are currently outside the Urban Reserve Line (URL). However, approval of the project would modify the URL and the LOS D standard was used for all study locations.

2.2 VEHICLE MILES TRAVELED THRESHOLDS

2.2.1 County of San Luis Obispo Facilities

The County of San Luis Obispo's Transportation Impact Analysis Guidelines (October, 2020) provide the following thresholds of significance for VMT impacts:

- Residential Projects: 27.2 VMT per capita.
- Work Projects: 25.7 VMT per employee.
- Retail and other projects: no net increase in overall VMT.

The County developed a quick-response tool for use in calculating VMT which is applied in this study.

2.2.2 Caltrans Facilities

Caltrans has eliminated LOS consistent with SB 743 and now relies on VMT and safety to evaluate transportation impacts. Caltrans recently issued a series of policy documents related to transportation impacts and CEQA determinations, briefly summarized below.

Caltrans published a VMT Focused TIS Guide in May 2020 which replaced the prior guide reliant on LOS. The TIS Guide notes that lead agencies have the discretion to choose VMT thresholds and methods, and generally conforms to OPR guidance.

Caltrans issued Traffic Safety Bulletin 20-02-R1 in December 2020 providing guidance for intergovernmental review for potential safety impacts of land use projects and plans affecting the State Highway System. The Bulletin describes the procedure for Caltrans staff to review potential safety impacts and develop mitigation measures as appropriate.

3.0 Existing Conditions

This section describes the existing transportation system and operating conditions in the study area.

3.1 EXISTING ROADWAY NETWORK

US Highway 101 is a major north-south interstate facility connecting Los Angeles to San Francisco. Near the project it is has four lanes with full access interchanges at Willow Road and Tefft Street.

State Route 1 (SR 1) is a north-south state highway facility connecting the South County area to the Five Cities area to the north. SR 1 branches off US 101 in Pismo Beach, running parallel to US 101 throughout South County as a conventional two-lane highway.

Willow Road is an undivided, two-lane arterial running east-west with a speed limit of 50 to 55 mph connecting SR 1 to US 101 with a full access interchange. There are two project entries planned along Willow Road between Hetrick Avenue and the US 101 ramps.

Hetrick Avenue is a two-lane residential collector road with no posted speed limit. Hetrick Avenue links residential neighborhoods to Willow Road, providing regional access via SR 1 and US 101.

North Frontage Road is a north-south commercial collector road connecting Juniper Street to Sandydale Drive with no posted speed limit. It would be extended to Willow Road as a part of the project, providing access to two of the four project entries.

Thompson Avenue is a two-lane, undivided arterial running north-south with posted speed limits ranging from 35 to 55 mph. Thompson Avenue links the residential areas east of US 101 to commercial services via Tefft Street, as well as providing regional access via full access interchanges with US 101 at Willow Road and Los Berros Road.

Pomeroy Road is a two-lane, north-south undivided facility considered an arterial south of Willow Road and a collector north of Willow Road with a speed limit ranging from 45 to 55 mph. There is one project entry planned along Pomeroy Road between Calimex Place and Sandydale Drive.

Tefft Street is a four-lane, major east-west arterial with speed limits ranging from 25 to 45 mph. Tefft Street connects Thompson Avenue and Pomeroy Road to a variety of commercial and retail services, as well as to a full access interchange with US 101.

Mary Avenue is a north-south, two-lane undivided commercial collector with a continuous center left turn lane. Mary Avenue connects the residential areas along Juniper Street to the commercial services along Tefft Street.

Juniper Street is an east-west, two-lane undivided residential collector with a speed limit of 35 mph. Juniper Street connects the residential properties to the commercial areas to the east via Mary Avenue, or to Pomeroy Road to the west.

3.2 EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals at all signalized intersections. The signalized intersection of Willow Road and Pomeroy Road does not have sidewalks but has crosswalks and pedestrian signals, except on the east leg. The signalized intersection of Tefft Street and Pomeroy Road has crosswalks on the north and east legs and the south leg has a sidewalk. The signalized intersection of Tefft Street and Mary Avenue has crosswalks on each leg. The all-way stop controlled intersection of Mary Avenue and Juniper Street has partial sidewalk coverage on the south leg and discontinuous sidewalk coverage on the

north leg; this intersection has no marked crosswalks. The signalized intersections of Tefft Street and the US 101 northbound and southbound ramps have crosswalks on each leg except the west and east legs, respectively. All other remaining intersections do not have pedestrian facilities.

Bicycle facilities in the study area consist of Class II and III bikeways. A Class II bike lane provides a striped lane for one-way bicycle travel on the side of the street adjacent to vehicle traffic. Class III bike routes consist of a roadway that is shared between bicycle and vehicle traffic with supplemental bike signage. The bikeways in the project vicinity are described below.

- *Willow Road:* existing Class II bike lanes between SR 1 and Thompson Avenue.
- *Thompson Avenue:* existing Class II bike lanes between Knotts Street to Nipomo High School.
- *Pomeroy Road:* existing Class II bike lanes between Tefft Street and Willow Road.
- *Tefft Street:* existing Class II bike lanes between Las Flores Drive and the Nipomo Creek Bridge and Class III bike route between Nipomo Creek Bridge and Thompson Avenue.
- *Mary Avenue:* existing Class II bike lanes between Juniper Street and Hill Street.
- *Juniper Street:* existing Class III bike route.

3.3 EXISTING TRANSIT SERVICE

San Luis Obispo Regional Transit Authority (SLORTA) serves Nipomo via Routes 10 and 10 Express (10X). The Route 10 stops within Nipomo are all located outside the study area, specifically along Thompson Avenue near the high school and along Tefft Street east of the US 101 ramps. Nipomo Dial-A-Ride provides curb-to-curb transportation within the local Nipomo area. It operates Monday through Friday from 7:00 AM to 6:30 PM and can provide connections to Route 10, as well as to the two Old Towne Nipomo bus stops on Tefft Street.

3.4 EXISTING TRANSPORTATION CONDITIONS

This section is divided into the following analysis subsections: 1) weekday intersection operations, 2) Sunday midday intersection operations, and 3) freeway segment operations.

The ramp widening and signal modification improvements at the Tefft Street interchange, currently in construction, were assumed to be in place under Existing conditions. However, analysis results for 2018 conditions without the improvements are also shown where applicable.

3.4.1 Weekday Intersection Operations

Traffic counts were collected for weekday AM and PM peak hour conditions at the study intersections in May 2018 when local schools were in session. Traffic count sheets are provided in **Appendix A**.

Figure 3 shows the existing peak hour traffic volumes. **Table 3** and

Table 4 summarize the existing LOS and key queues exceeding storage for the study intersections during the weekday peak hours with detailed calculation sheets included in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 3: Existing Weekday Intersection LOS

Existing Weekday Intersection Auto Levels of Service			
Intersection	**Peak Hour**	**Delay[1] (sec/veh)**	**LOS**
1. Willow Rd/SR 1	AM	4.9 (12.4)	- (B)
	PM	4.4 (13.4)	- (B)
2. Willow Rd/Pomeroy Rd	AM	20.8	C
	PM	21.2	C
3. Willow Rd/Hetrick Ave	AM	4.2 (31.2)	- (D)
	PM	1.8 (17.7)	- (C)
4. Willow Rd/W Project Entry	AM	*Future Intersection*	
	PM		
5. Willow Rd/N Frontage Rd	AM	*Future Intersection*	
	PM		
6. Willow Rd/US 101 SB Ramps	AM	2.2 (12.8)	- (B)
	PM	4.5 (12.7)	- (B)
7. Willow Rd/US 101 NB Ramps	AM	**32.1 (181.0)**	**- (F)**
	PM	8.6 (18.9)	- (C)
8. Willow Rd/Thompson Ave	AM	5.4 (15.3)	- (C)
	PM	3.6 (11.0)	- (B)
9. SW Project Entry/Pomeroy Rd	AM	*Future Intersection*	
	PM		
10. W Tefft St/Pomeroy Rd	AM	15.0	B
	PM	15.8	B
11. W Tefft St/Mary Ave[2]	AM	38.9/34.7	D/C
	PM	47.1/36.8	D/D
12. W Tefft St/US 101 SB Ramps/S Frontage Rd[2]	AM	**59.3**/26.3	**E**/C
	PM	**42.0**/22.0	**D**/C
13. W Tefft St/US 101 NB Ramps[2]	AM	23.5/19.5	C/B
	PM	**39.7**/19.1	**D**/B

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction.

Note: Unacceptable operations shown in **bold** text.

Table 4: Existing Weekday Intersection Queues

Existing Intersection Queues				
Intersection	**Movement**	**Storage Length (ft)**	**Peak Hour**	**95th Percentile Queue (ft)[1]**
2. Pomeroy Rd. & Willow Rd.	NBR	25	AM	**35**
			PM	0
3. Hetrick Ave. & Willow Rd.	NBR	25	AM	**55**
			PM	5
11. Tefft St. & Mary Ave.[2]	NBL	120	AM	62
			PM	**137**/117
	SBL	120	AM	**137**/110
			PM	**236/161**
13. 101 NB Ramps & Tefft St.[2]	NBL	125/200	AM	**227**/131
			PM	**371**/182

1. Queue length that would not be exceeded 95 percent of the time.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction.

# indicates 95th percentile volume exceeds capacity, queue may be longer.

Bold indicates queue length longer than storage length.

Detailed queues provided in Appendix B.

All County intersections operate acceptably at LOS D or better during both weekday peak hours. However, the following queue lengths are exceeded:

- Pomeroy Road/Willow Rd (#2): the northbound right exceeds the small storage length provided within the shoulder during the AM peak hour. However, the queue would not block the through movement during the signal phase.
- Hetrick Avenue/Willow Rd (#3): the northbound right exceeds the small storage length provided with a flared approach during the AM peak hour. There is a small number of northbound through vehicles and the northbound queue would be less than three vehicles without a northbound right turn lane.
- Tefft Street/Mary Avenue (#11): the southbound left turn lane exceeds storage during the PM peak hour with the ramp widening improvements. However, additional storage is available in the approach and the queue would not block the through movement during the signal phase.

The following Caltrans intersections operate below the LOS C threshold or queues exceed storage:

- Willow Road/US 101 NB Ramps (#7): the northbound approach operates at LOS F during the AM peak hour due to long delays resulting from side street stop control, low peak hour factor due to High School traffic, and the high volumes along Willow Road. However, the peak hour traffic signal warrant is not met under Existing conditions.
- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS E and LOS D during the AM and PM peak hour, respectively, due to high volumes on all approaches. The intersection will operate acceptably with the ramp widening improvements currently under construction.
- West Tefft Street/US 101 NB Ramps (#13): operates at LOS D during the PM peak hour and the northbound left turn lane exceeds storage during the AM and PM peak hours. The intersection will operate acceptably with the ramp widening improvements currently under construction.

3.4.2 Sunday Midday Intersection Operations

Figure 4 shows the existing Sunday midday peak hour volumes at key intersections affected by the Swap Meet. Sunday traffic counts were collected in 2017 and 2018 while the Swap Meet was underway. Traffic count sheets are provided in **Appendix A**.

Table 5 and **Table 6** summarize the existing LOS and key queues for the study intersections during the Sunday midday peak with detailed calculation sheets included in **Appendix B**.

Table 5: Existing Sunday Intersection LOS

Existing Sunday Intersection Auto Levels of Service		
Intersection	**Delay[1] (sec/veh)**	**LOS**
5. Willow Rd/N Frontage Rd	*Future Intersection*	
10. W Tefft St/Pomeroy Rd	18.5	B
11. W Tefft St/Mary Ave[2]	47.1/38.5	D/D
12. W Tefft St/US 101 SB Ramps/S Frontage Rd[2]	**36.8**/24.2	**D**/C
13. W Tefft St/US 101 NB Ramps[2]	31.0/23.1	C/C
14. Mary Avenue/Juniper Street	18.8	C

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction.

Note: Unacceptable operations shown in **bold** text.

Table 6: Existing Sunday Intersection Queues

Existing Sunday Intersection Queues			
Intersection	**Movement**	**Storage Length (ft)**	**95th Percentile Queue (ft)[1]**
11. Tefft St. & Mary Ave.[2]	EBL	120	**149/134**
	SBL	120	**312/255**
13. 101 NB Ramps & Tefft St.[2]	NBL	125/200	**344/229**

1. Queue length that would not be exceeded 95 percent of the time.
2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction.
# indicates 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.
Detailed queues provided in Appendix B.

All County intersections operate acceptably at LOS D or better during the Sunday midday peak hour. However, the following queue lengths exceed storage capacity:

- Tefft Street/Mary Avenue (#11): the eastbound and southbound left turn lanes exceed storage during the Sunday midday peak hour with the ramp widening improvements.

The following Caltrans intersections operate below the LOS C threshold or queues exceed storage:

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS D during the AM peak hour due to high volumes on all approaches. Ramp widening improvements at this location are currently in construction and would improve operations to LOS C.
- West Tefft Street/US 101 NB Ramps (#13): the northbound left turn lane exceeds storage during the Sunday midday peak hour with the ramp widening improvements.

3.4.3 Freeway Segment Operations

Table 7 summarizes the existing LOS at the freeway mainline and ramp locations during the weekday peak hours. Mainline peak hour volumes were obtained using September 2019 traffic counts and ramp volumes were derived from the ramp terminal intersection counts. The mainline truck percentage was obtained from Caltrans data. Detailed calculation sheets are included in **Appendix C**.

Table 7: Existing Freeway LOS

Existing Freeway Operations					
Direction	**Location**	**Segment Type**	**Peak Hour**	**Density (pc/mi/ln)[1]**	**LOS**
US 101 NB	South of Willow Rd	Mainline	AM	**27.1**	**D**
			PM	22.5	C
	Willow Rd Off Ramp	Diverge	AM	**32.3**	**D**
			PM	**28.5**	**D**
	Willow Rd On Ramp	Merge	AM	**30.1**	**D**
			PM	24.5	C
	North of Willow Rd	Mainline	AM	**30.5**	**D**
			PM	22.2	C
US 101 SB	North of Willow Rd	Mainline	AM	21.9	C
			PM	**37.3**	**E**
	Willow Rd Off Ramp	Diverge	AM	27.9	C
			PM	**38.1**	**E**
	Willow Rd On Ramp	Merge	AM	24.8	C
			PM	**32.7**	**D**
	South of Willow Rd	Mainline	AM	22.4	C
			PM	**34.4**	**D**

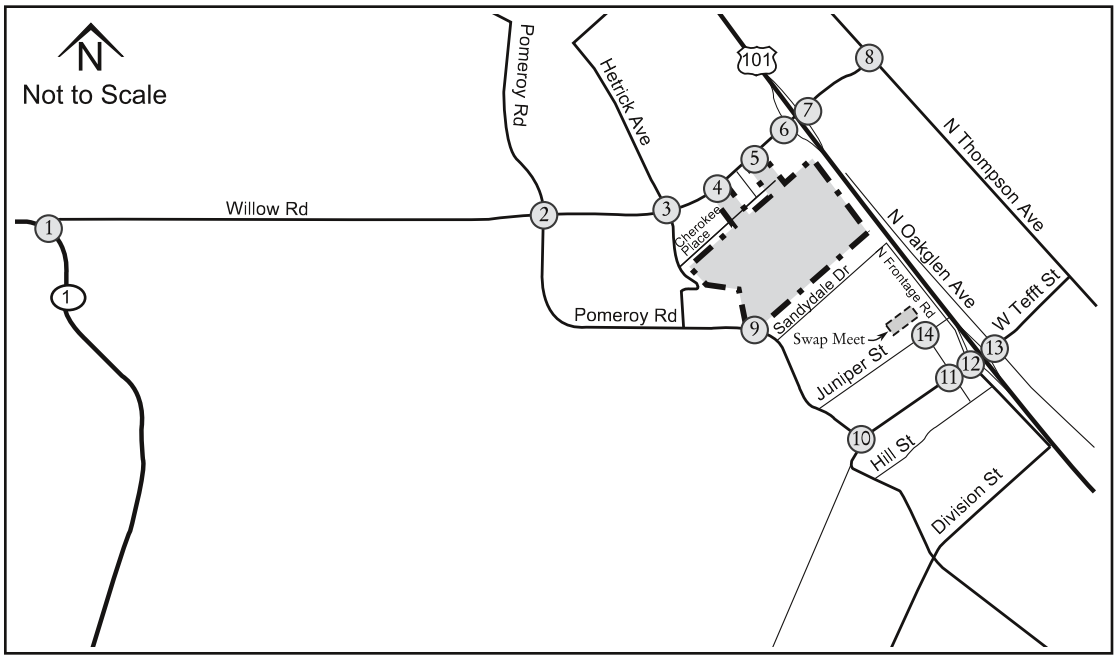
1. HCM 6th density (passenger car per mile per lane).
Note: Unacceptable operations shown in **bold** text.

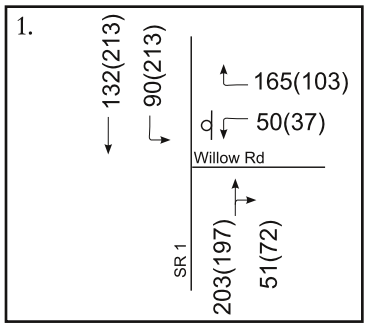
The following Caltrans freeway segments operate below the LOS C threshold:

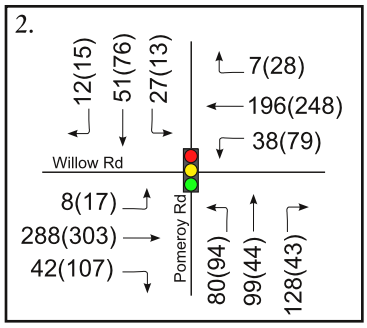
- US 101 Mainline south of Willow Road operates at LOS D northbound during the AM peak hour and southbound during the PM peak hour.
- US 101 Mainline north of Willow Road operates at LOS D northbound during the AM peak hour and LOS E southbound during the PM peak hour.

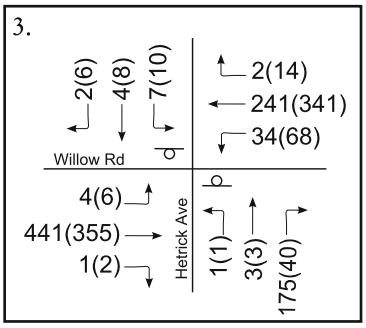
- Willow Road northbound off ramp operates at LOS D during the AM and PM peak hours.
- Willow Road northbound on ramp operates at LOS D during the AM peak hour.
- Willow Road southbound off ramp operates at LOS E during the PM peak hour.
- Willow Road southbound on ramp operates at LOS D during the PM peak hour.

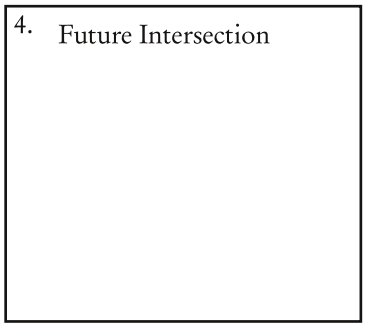
Figure 3: Existing Weekday Peak Hour Volumes with Lane Configurations

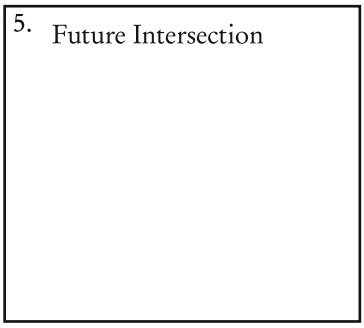


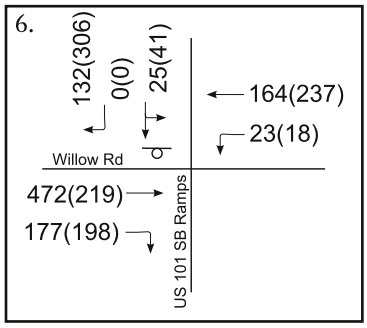


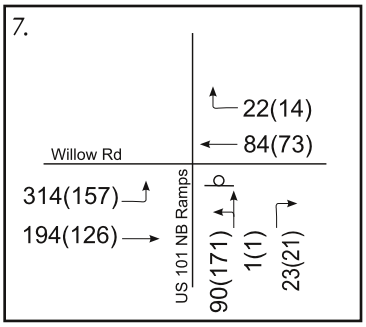


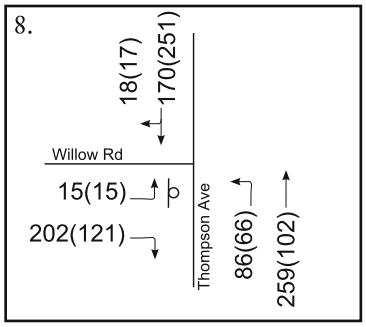


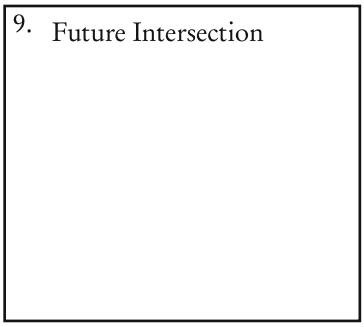


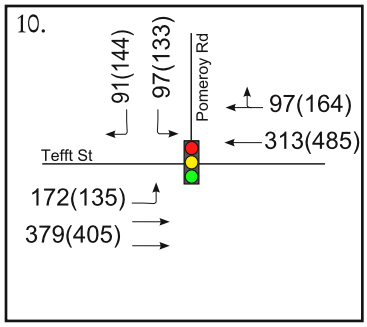


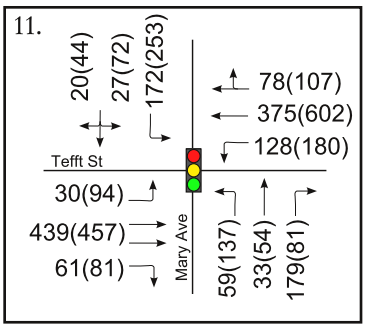


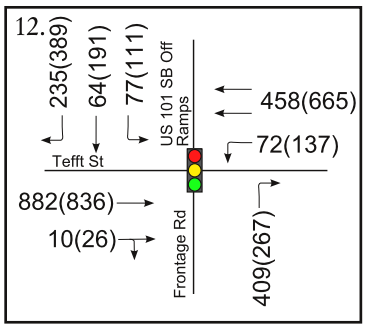


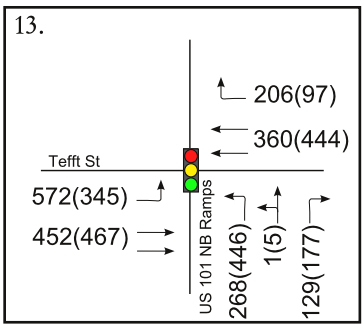


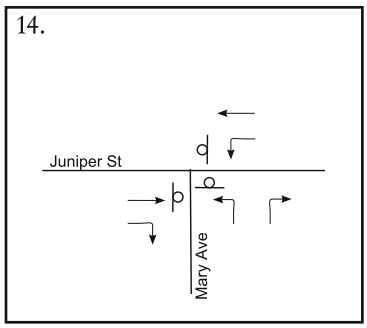












Legend:

- Traffic Signal
- xx(yy) - AM(PM) Peak Hour Traffic Volumes
- Project Site
- Stop Sign
- (17) - Study Intersection

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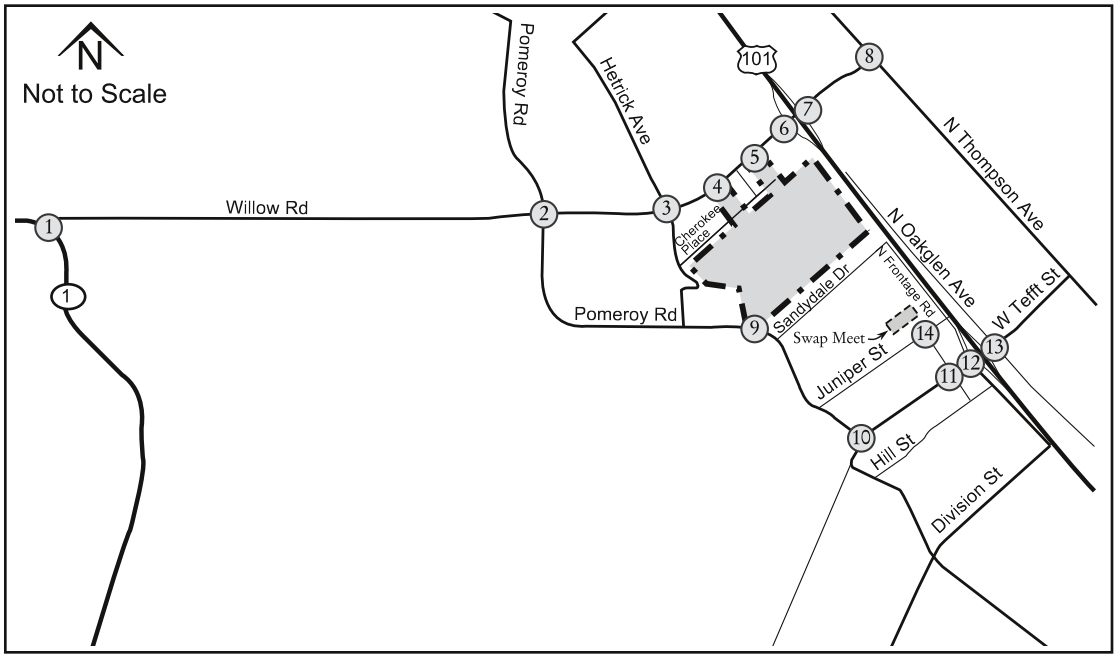
Figure 4: Existing and Existing Plus Project Sunday Midday Volumes



Existing Sunday Midday Volumes

5. Future Intersection

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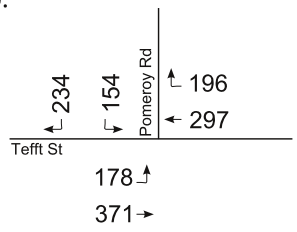

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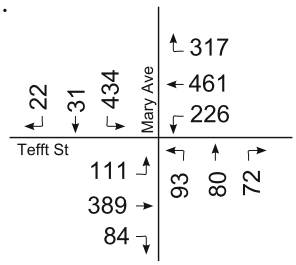

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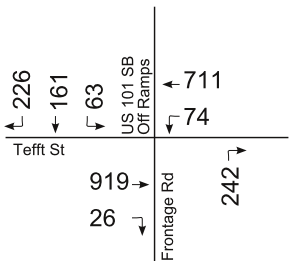

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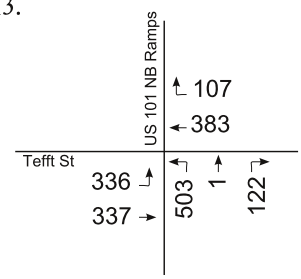

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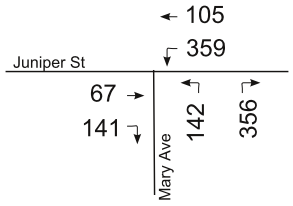

Existing Plus Project Sunday Midday Volumes

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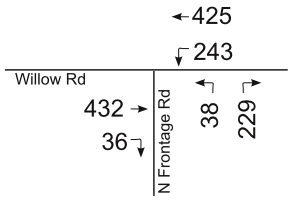

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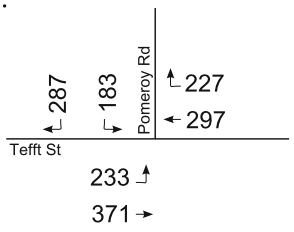

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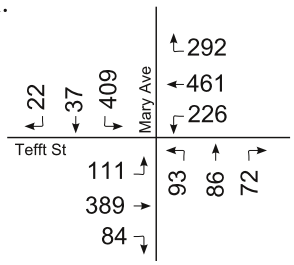

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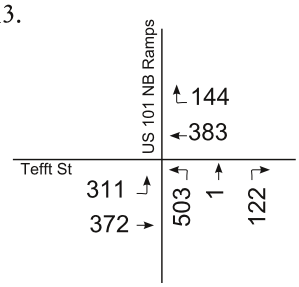

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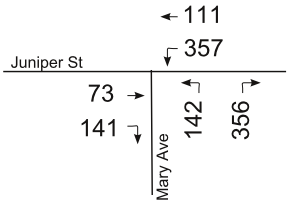

Legend:

xx - Sunday Midday Traffic Volumes

17 - Study Intersection

- Project Site

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4.0 Existing Plus Project Conditions

This section evaluates the impacts of the proposed project on the surrounding transportation network.

4.1 PROJECT TRAFFIC ESTIMATES

The amount of project traffic affecting the study locations is estimated in three steps: trip generation, trip distribution, and trip assignment. Trip generation refers to the total number of trips generated by the site. Trip distribution identifies the general origins and destination of these trips, and trip assignment specifies the routes taken to reach these origins and destinations.

4.1.1 Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th Edition was used to estimate project trip generation. **Table 8** summarizes the estimated trip generation from the proposed project.

Table 8: Project Trip Generation

Weekday and Sunday Vehicle Trip Generation													
			Weekday	AM Peak Hour			PM Peak Hour			Sunday	Sunday MID[6]		
Land Use	Size	Unit	Daily	In	Out	Total	In	Out	Total	Daily	In	Out	Total
Single Family Residential[1]	833	DU	7,310	149	447	596	490	287	777	7,324	355	314	669
Multi Family Residential[2]	610	DU	4,571	61	205	266	186	109	295	3,831	205	204	409
Commercial Services[3]	113,000	SF	6,533	129	79	208	286	309	595	2,384	154	161	315
Education[4]	30,000	SF	608	48	14	62	28	28	56	36	3	3	6
Hotel[5]	110	Rooms	920	31	21	52	34	32	66	655	29	33	62
		Gross Trips	19,942	418	766	1,184	1,024	765	1,789	14,230	746	715	1,461
		Internal Trips[7]	*1,240*	*14*	*14*	*28*	*124*	*124*	*248*	*1,020*	*102*	*102*	*204*
		Pass-by Trips[8]	*810*	*0*	*0*	*0*	*81*	*81*	*162*	*280*	*28*	*28*	*56*
		Net New Trips	**17,892**	**404**	**752**	**1,156**	**819**	**560**	**1,379**	**12,930**	**616**	**585**	**1,201**

DU=Dwelling Unit; SF= Square Feet

1) ITE Land Use Code #210, Single-Family Detached Housing. Fitted curve equations used for weekday and Sunday.

2) ITE Land Use Code #220, Multifamily Housing (Low-Rise). Fitted curve equation used for weekday; Average rate used for Sunday.

3) ITE Land Use Code #820, Shopping Center. Fitted curve equation used for weekday; Average rate used for Sunday.

4) ITE Land Use Code #540, Junior/Community College. Average rates used for weekday and Sunday.

5) ITE Land Use Code #310, Hotel. Average rate used for weekday and Sunday.

6) Sunday, Peak Hour of Generator rates and equations used for midday.

7) Internal trips calculated using *TripGen 10* software. Sunday mid-day internal capture assumed same as weekday PM. PM and mid-day internal trips multiplied by factor of 5 to determine daily internal trips.

8) Pass-by rates from ITE *Trip Generation Handbook*, 3rd Edition. PM peak hour and Sunday Mid-day volumes both multiplied by a factor of 5 to determine weekday and Sunday daily pass-by trips, respectively. Saturday Mid-day pass-by rates used for Sunday Mid-day.

Source: ITE *Trip Generation Manual*, 10th Edition; CCTC, 2021.

The project is expected to generate a total of 17,892 net new daily trips, 1,156 net new AM peak hour trips, 1,379 net new PM peak hour trips, 12,930 net new Sunday daily trips, and 1,201 net new Sunday midday peak hour trips. Net new trips were found by subtracting internal capture trips and pass-by trips from the gross trip generation. The trip generation assumes up 1,443 residential units including 458 multi-family units and 152 accessory dwelling units (ADUs).

ITE Land Use #820 for shopping center includes a variety of uses: office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities. The fitted curve equations were used for the weekday trip generation estimates. Use of the average trip rates would reduce the AM and PM peak hour trips by approximately 49% and 28%, respectively. Use of the average trip rate plus one standard deviation would result in fewer AM peak hour trips and 11% more PM peak hours trip compared to the fitted curve equations. Although the trip generation will be affected by the tenants and can vary greatly, use of the shopping center fitted curve is appropriate for the analysis.

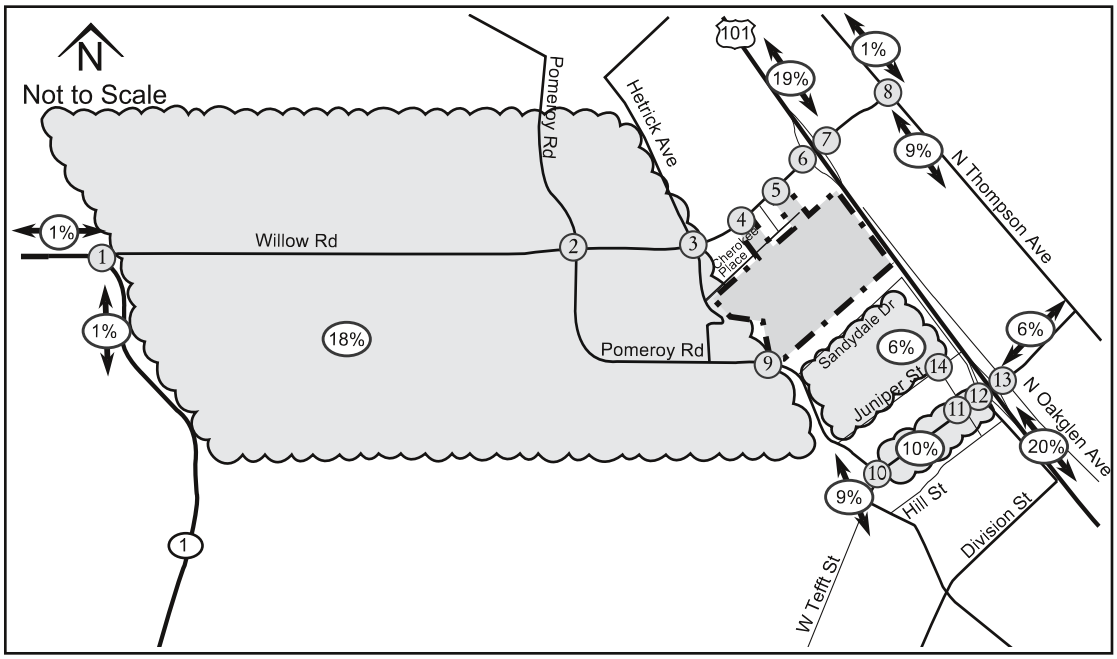
Pass-by trips were only applied on Willow Road at Willow Rd/North Frontage Rd (#5). ITE internal capture trip data was also applied. This site is 288 acres within the applicable range of ITE data.

Trips could be also diverted from US 101. However, per ITE it is common for a traffic impact assessment of site development to treat diverted trips as additional trips. This conservative approach is applied in this TIS.

4.1.2 Trip Distribution and Assignment

Project trip distribution and assignment were derived using a select zone procedure in the SLOCOG Travel Demand Model (TDM). Existing Plus Project conditions volumes were redistributed based on the North Frontage Road extension and the additional north-south connector. **Figure 5** shows the trip distribution percentages and project trip assignment including pass-by trips and redistributed trips. Project trip assignment volumes were balanced between intersections to account for the effects of rounding.

Figure 5: Project Trip Distribution and Assignment



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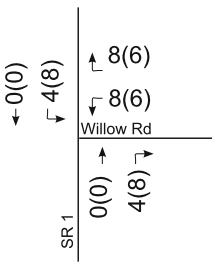

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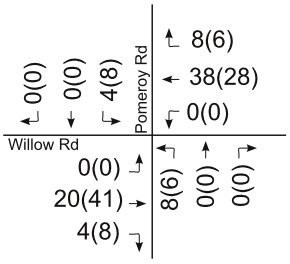

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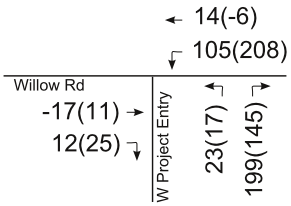

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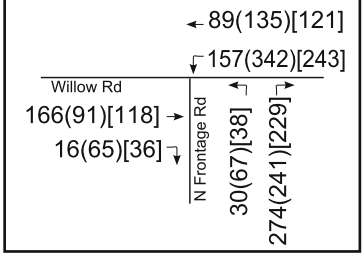

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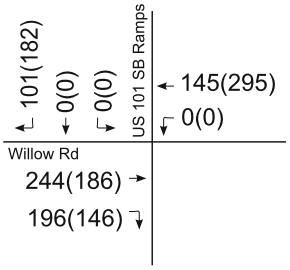

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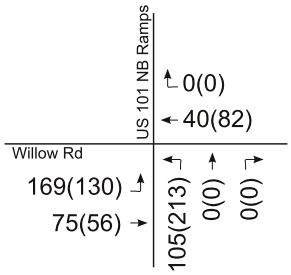

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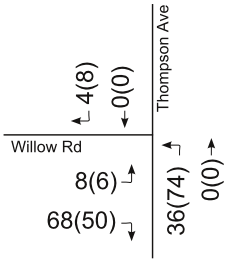

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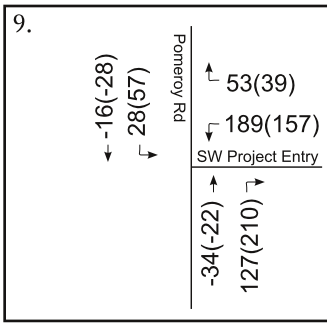

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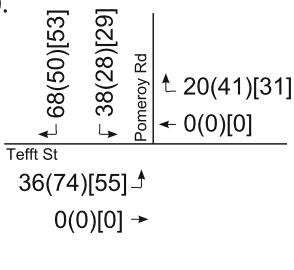

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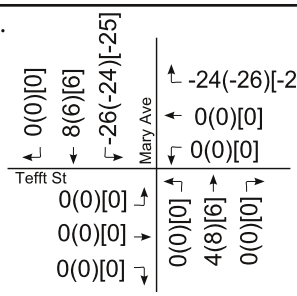

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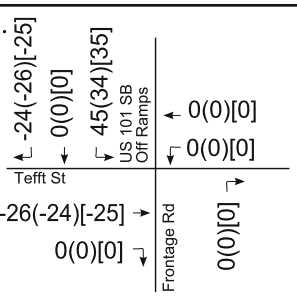

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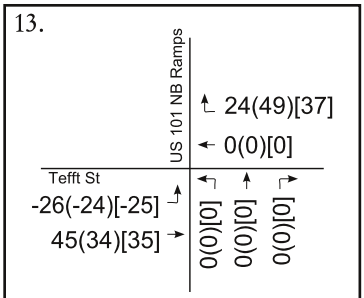

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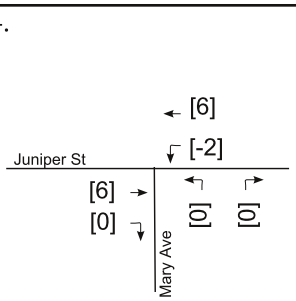

Legend:

xx(yy)[zz] - AM(PM) Peak Hour [Sunday] Midday Traffic Volumes

- Project Site

x% - Project Trip Distribution

17 - Study Intersection

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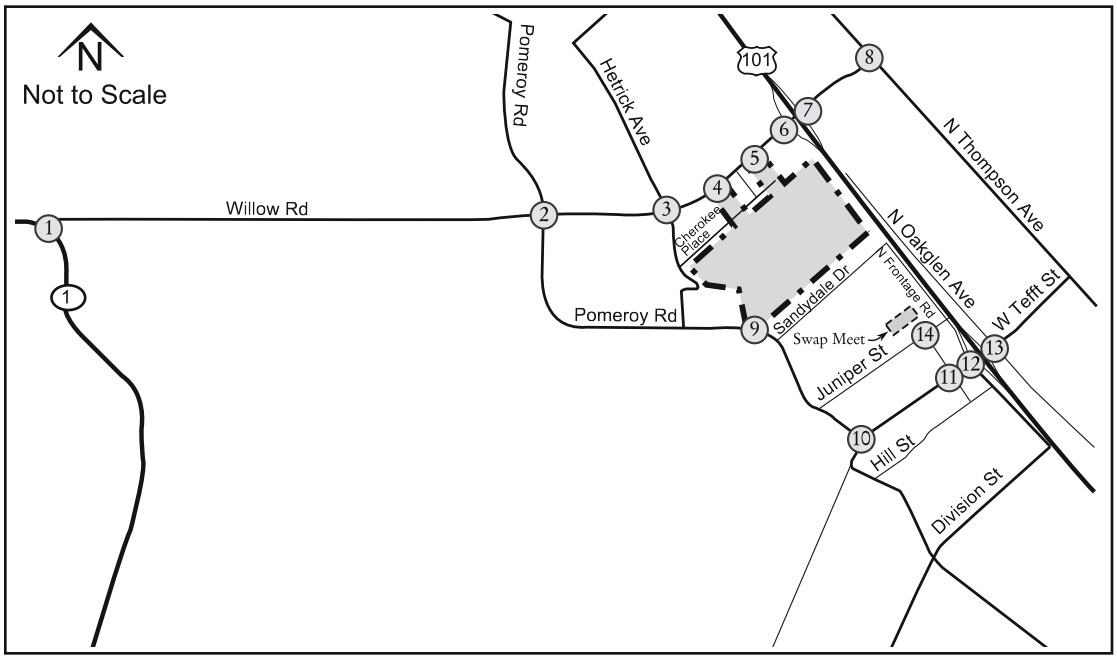
Figure 6: Existing Plus Project Weekday Peak Hour Volumes



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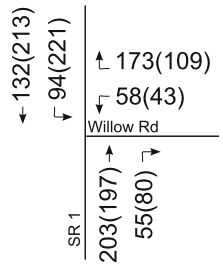

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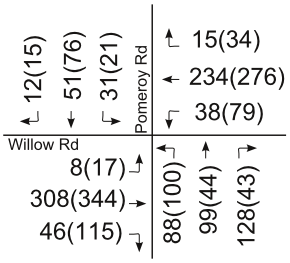

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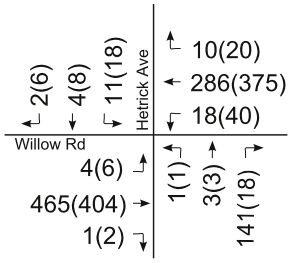

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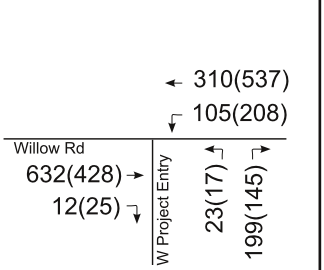

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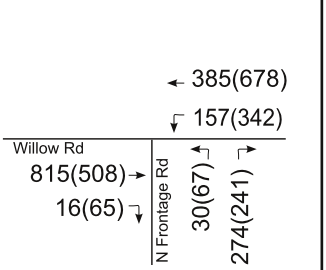

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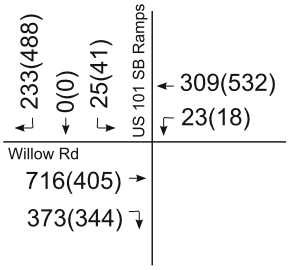

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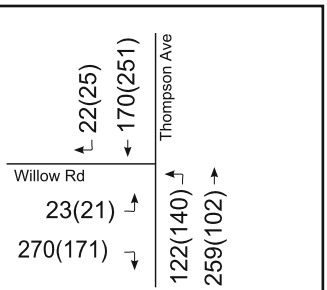

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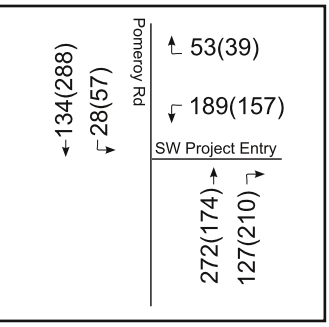

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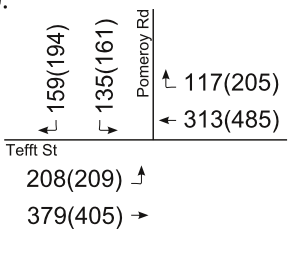

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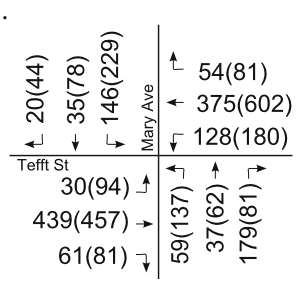

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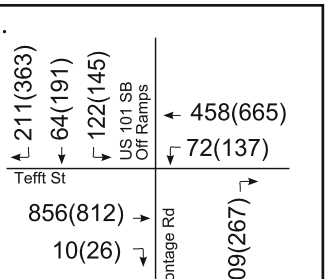

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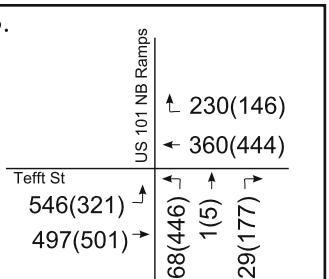

Legend:

xx(yy) - AM(PM) Peak Hour Traffic Volumes

- Project Site

(17) - Study Intersection

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4.2 EXISTING PLUS PROJECT IMPACT ANALYSIS

This section is divided into the following analysis subsections: 1) weekday intersection operations, 2) Sunday midday intersection operations, and 3) freeway segment operations. The Tefft Street improvements that are currently under construction have been assumed to be complete under Existing Plus Project conditions.

4.2.1 Weekday Intersection Operations

Figure 6 shows the LOS for the study intersections during the weekday peak hours under Existing Plus Project conditions, with detailed calculation sheets included in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 9 and **Table 10** summarize the LOS and key queues for the study intersections during the weekday peak hours under Existing and Existing Plus Project conditions.

Table 9: Weekday Existing Plus Project LOS

Existing and Existing Plus Project Intersection Auto Levels of Service					
		Existing		Existing + Project	
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS	Delay[1] (sec/veh)	LOS
1. Willow Rd/SR 1	AM	4.9 (12.4)	- (B)	5.1 (12.6)	- (B)
	PM	4.4 (13.4)	- (B)	4.6 (14.1)	- (B)
2. Willow Rd/Pomeroy Rd	AM	20.8	C	21.3	C
	PM	21.2	C	22.1	C
3. Willow Rd/Hetrick Ave	AM	4.2 (31.2)	- (D)	3.3 (33.0)	- (D)
	PM	1.8 (17.7)	- (C)	1.4 (18.7)	- (C)
4. Willow Rd/W Project Entry	AM	*Future Intersection*		4.5 (21.4)	- (C)
	PM			3.4 (16.6)	- (C)
5. Willow Rd/N Frontage Rd	AM	*Future Intersection*		24.8	C
	PM			15.4	B
6. Willow Rd/US 101 SB Ramps	AM	2.2 (12.8)	- (B)	3.6 (22.4)	- (C)
	PM	4.5 (12.7)	- (B)	**14.8 (50.9)**	**- (F)**
7. Willow Rd/US 101 NB Ramps	AM	**32.1 (181.0)**	**- (F)**	**>200 (>200)**	**- (F)**
	PM	8.6 (18.9)	- (C)	**199.1 (>200)**	**- (F)**
8. Willow Rd/Thompson Ave	AM	5.4 (15.3)	- (C)	8.0 (20.2)	- (C)
	PM	3.6 (11.0)	- (B)	4.9 (12.0)	- (B)
9. SW Project Entry/Pomeroy Rd	AM	*Future Intersection*		4.9 (15.2)	- (C)
	PM			4.2 (17.2)	- (C)
10. W Tefft St/Pomeroy Rd	AM	15.0	B	18.1	B
	PM	15.8	B	19.5	B
11. W Tefft St/Mary Ave[2]	AM	38.9/34.7	D/C	34.4	C
	PM	47.1/36.8	D/D	36.2	D
12. W Tefft St/US 101 SB Ramps/S Frontage Rd[2]	AM	**59.3**/26.3	**E**/C	31.3	C
	PM	**42.0**/22.0	**D**/C	23.0	C
13. W Tefft St/US 101 NB Ramps[2]	AM	23.5/19.5	C/B	20.5	C
	PM	**39.7**/19.1	**D**/B	19.3	B

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction. EX+P results assume construction is complete.

Note: Unacceptable operations shown in **bold** text.

Table 10: Weekday Existing Plus Project Queues

Existing and Existing Plus Project Intersection Queues					
Intersection	**Movement**	**Storage Length (ft)**	**Peak Hour**	**EX 95th Percentile Queue (ft)[1]**	**EX+ P 95th Percentile Queue (ft)[1]**
2. Pomeroy Rd. & Willow Rd.	NBR	25	AM	**35**	**35**
			PM	0	**0**
3. Hetrick Ave. & Willow Rd.	NBR	25	AM	**55**	**40**
			PM	5	3
11. Tefft St. & Mary Ave.[2]	NBL	120	AM	62	62
			PM	**137**/117	117
	SBL	120	AM	**137**/110	102
			PM	**236/161**	**155**
13. 101 NB Ramps & Tefft St.[2]	NBL	125/200	AM	**227**/131	131
			PM	**371**/182	182

1. Queue length that would not be exceeded 95 percent of the time.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction. EX+P results assume construction is complete.

# indicates 95th percentile volume exceeds capacity, queue may be longer.

Bold indicates queue length longer than storage length.

Detailed queues provided in Appendix B.

All County intersections operate at LOS D or better under Existing and Existing Plus Project conditions. However, the following queue lengths are exceeded:

- Pomeroy Road/Willow Rd (#2): the northbound right exceeds the small storage length provided within the shoulder during the AM peak hour. However, the queue would not block the through movement during the signal phase and the project does not exacerbate the queue.

  Recommendation: None.

- Hetrick Avenue/Willow Rd (#3): the northbound right exceeds the small storage length provided with a flared approach during the AM peak hour. There is a small number of northbound through vehicles and the northbound queue would be less than two vehicles without a northbound right turn lane. The project reduced the queue length on this approach. Refer to section 4.4.2 for additional discussion of Hetrick Avenue.

  Recommendation: None.

- Tefft Street/Mary Avenue (#11): the southbound left turn lane exceeds storage during the PM peak hour with the ramp widening improvements. However, additional storage is available in the approach and the queue would not block the through movement during the signal phase.

  Recommendation: None, acceptable queues will result from the improvements under construction.

Although the Mary Avenue/Juniper Street (#14) intersection was only evaluated under Sunday Conditions, the intersection would operate acceptably during the weekday peak hours with the addition of project traffic.

The following Caltrans intersections operate below the LOS C threshold:

- Willow Road/US 101 SB Ramps (#6): the southbound approach operates at LOS F during the PM peak hour with project traffic due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive phasing on the westbound Willow Road approach and the existing lane configurations would result in

LOS C or better during both peak hours. This improvement is included in the South County Road Improvement Fee Program and the peak hour signal warrant is met under the Existing Plus Project conditions.

Recommendation: Install traffic signal.

- Willow Road/US 101 NB Ramps (#7): the northbound approach operates at LOS F during both peak hours due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive on the eastbound Willow Road approach and the existing lane configurations would result in LOS C or better during both peak hours. This improvement is included in the South County Road Improvement Fee Program and the peak hour signal warrant is met under the Existing Plus Project conditions.

  Recommendation: Install traffic signal.

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS E and LOS D during the AM and PM peak hours, respectively. Installation of the improvements under construction, including an additional turn lane on the northbound and southbound off-ramps and restricting northbound left turns on Frontage Road would result in LOS C or better during both peak hours. The improvement will also reduce queuing on Tefft Street near the Mary Avenue intersection.

  Recommendation: None, acceptable operations will result from the improvements under construction.

- West Tefft Street/US 101 NB Ramps (#13): operates at LOS D during the PM peak hours. Installation of the ramp improvements currently under construction would result in LOS C or better during both peak hours.

  Recommendation: None, acceptable operations will result from the improvements under construction.

The Frontage Road connection to Willow Road will shift traffic away from the Tefft Street corridor and improve operations, reducing delay.

4.2.2 Sunday Midday Intersection Operations

Figure 4 shows the Existing and Existing Plus Project Sunday midday volumes.

Table 11 and **Table 12** summarize the LOS and key queues for the study intersections during the Sunday midday peak hour under Existing and Existing Plus Project conditions with detailed calculation sheets included in **Appendix B**.

Table 11: Sunday Existing Plus Project Intersection LOS

Existing and Existing Plus Project Sunday Intersection Auto Levels of Service				
Intersection	Sunday Existing Delay[1]	LOS	Sun Existing + Project Delay[1]	LOS
5. Willow Rd/N Frontage Rd	*Future Intersection*		13.6	B
10. W Tefft St/Pomeroy Rd	18.5	B	20.6	C
11. W Tefft St/Mary Ave[2]	47.1/38.5	D/D	37.9	D
12. W Tefft St/US 101 SB Ramps/S Frontage Rd[2]	**36.8**/24.2	**D**/C	24.4	C
13. W Tefft St/US 101 NB Ramps[2]	31.0/23.1	C/C	23.1	C
14. Mary Avenue/Juniper Street	18.8	C	18.8	C

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction. EX+P results assume construction is complete.

Note: Unacceptable operations shown in **bold** text.

Table 12: Sunday Existing Plus Project Intersection Queues

Existing and Existing Plus Project Sunday Intersection Queues				
Intersection	Movement	Storage Length (ft)	Sun EX 95th Percentile Queue (ft)[1]	Sun EX+ P 95th Percentile Queue (ft)[1]
11. Tefft St. & Mary Ave.[2]	EBL	120	**149/134**	**134**
	SBL	120	**312/255**	**244**
13. 101 NB Ramps & Tefft St.[2]	NBL	125/200	**344/229**	**229**

1. Queue length that would not be exceeded 95 percent of the time.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction. EX+P results assume construction is complete.

# indicates 95th percentile volume exceeds capacity, queue may be longer.

Bold indicates queue length longer than storage length.

Detailed queues provided in Appendix B.

All County intersections operate at LOS D or better under the Sunday conditions. However, the following queue lengths are exceeded:

- Tefft Street/Mary Avenue (#11): the eastbound and southbound left turn lanes exceed storage during the Sunday midday peak hour with the ramp widening improvements. This is a temporary condition associated with the Swap Meet and no improvements are recommended.

  Recommendation: None.

The following Caltrans intersections operates below the LOS C threshold:

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS D during the Sunday midday peak hour due to high volumes on all approaches. Installation of the intersection improvements currently under construction would result in acceptable LOS during the Sunday midday peak hour.

  Recommendation: None, acceptable operations will result from improvements under construction.

- West Tefft Street/US 101 NB Ramps (#13): the northbound left turn lane exceeds storage during the Sunday midday peak hour with the ramp widening improvements. The queues will be shorter than the current condition without the project. This is a temporary condition associated with the Swap Meet and no improvements are recommended.

  Recommendation: None.

The Frontage Road connection to Willow Road will shift traffic away from the Tefft Street corridor and improve operations, reducing delay.

4.2.3 Freeway Segment Operations

Table 13 summarizes the LOS at the freeway mainline and ramp locations under Existing and Existing Plus Project conditions. Detailed calculation sheets are included in **Appendix C**.

Table 13: Freeway Existing Plus Project LOS

Existing and Existing Plus Project Freeway Operations							
				Existing		Existing Plus Project	
Direction	Location	Segment Type	Peak Hour	Density (pc/mi/ln)[1]	LOS	Density (pc/mi/ln)[1]	LOS
US 101 NB	South of Willow Rd	Mainline	AM	**27.1**	**D**	**28.6**	**D**
			PM	22.5	C	25.0	C
	Willow Rd Off Ramp	Diverge	AM	**32.3**	**D**	**33.4**	**D**
			PM	**28.5**	**D**	**30.7**	**D**
	Willow Rd On Ramp	Merge	AM	**30.1**	**D**	**31.5**	**D**
			PM	24.5	C	25.6	C
	North of Willow Rd	Mainline	AM	**30.5**	**D**	**33.5**	**D**
			PM	22.2	C	23.8	C
US 101 SB	North of Willow Rd	Mainline	AM	21.9	C	23.2	C
			PM	**37.3**	**E**	**41.8**	**E**
	Willow Rd Off Ramp	Diverge	AM	27.9	C	**29.0**	**D**
			PM	**38.1**	**E**	**40.1**	**E**
	Willow Rd On Ramp	Merge	AM	24.8	C	26.9	C
			PM	**32.7**	**D**	**34.4**	**D**
	South of Willow Rd	Mainline	AM	22.4	C	25.1	C
			PM	**34.4**	**D**	**37.5**	**E**

1. HCM 6th density (passenger car per mile per lane).
Note: Unacceptable operations shown in **bold** text.

All freeway segments operate below the LOS C threshold during at least one peak hour under both Existing and Existing Plus Project conditions.

The 2014 US 101 Transportation Concept Report supports Tefft Street interchange improvements, parallel routes, enhanced transit, transportation demand management (TDM), and transportation system management (TSM) strategies in the project vicinity. The project would contribute to these goals by providing multi-modal facilities, construction of the Frontage Road as a parallel route, and impact fee contributions supporting future infrastructure improvements.

Auxiliary lanes and high occupancy vehicle (HOV) lanes, which would improve operations, are not currently planned on US 101 in the project vicinity.

4.3 SITE ACCESS AND ON-SITE CIRCULATION

This section discusses issues related to site access and on-site circulation. On-site circulation deficiencies would occur if the project designs fail to meet appropriate standards, fail to provide adequate truck access, or would result in hazardous conditions.

Roadways within the development will be designed consistent with the San Luis Obispo County Public Improvement Standards. We recommend truck turning templates be applied to all Public Improvements and site designs as the project design plans develop.

4.3.1 Project Entries

The project entries with Willow Road and Pomeroy Road were analyzed under the weekday intersection operations section and all operate at LOS C or better under the Existing and Cumulative Conditions with the addition of project traffic as summarized below:

- Willow Road/West Project Entry (Collector B) (#4): operates at LOS C or better with side street stop control, a dedicated eastbound right turn lane and westbound left turn lane on Willow Road, and left and right turn lanes on the project approach.
- Willow Road/North Frontage Road (Collector A) (#5): operates at LOS C or better with a traffic signal, a dedicated eastbound right turn lane and westbound left turn lane on Willow Road, and left and right turn lanes on the project approach. The intersection meets the peak hour signal warrant in both the AM and PM peak hours under Existing Plus Project conditions. To minimize eastbound through and westbound left turn queues on Willow Road, we recommend coordination with the US 101 ramp traffic signals as well as westbound protective/permissive left turn phasing and northbound right turn overlap phasing.
- Southwest Project Entry (Collector B)/Pomeroy Road (#9): operates at LOS C or better with side street stop control, dedicated left and right turn lanes on Pomeroy Road, and left and right turn lanes on the project approach.

All turn lane storage lengths at the project entries are adequate as proposed and can accommodate 95th percentile queues.

4.3.2 Internal Streets

The project access along the three proposed collectors and local road were also analyzed under Existing and Cumulative Conditions. Consistent with County Circulation Studies, the ADT would need to exceed 10,500 on a two-lane collector and 4,000 on a local road for unacceptable LOS E operations. Operations on the internal roadways are summarized below:

- Collector A (North Frontage Road): Collector A is anticipated to carry between 6,000 and 10,500 vehicles per day under Cumulative Conditions and would operate acceptably. Twelve-foot travel lanes,

with turn lanes at intersections, eight-foot bike lanes, and five-to-six-foot detached sidewalks comply with County Standard A-2d. We recommend a left-turn lane be provided at intersections on Collector A.

- Collector B (West/Southwest Project Entry): Collector B is anticipated to carry less than 6,000 vehicles per day under Cumulative Conditions and would operate acceptably. Two travel lanes with eight-foot bike lanes, and five-to-six-foot detached sidewalks as proposed complies with County Standard A-2c. Where turn lanes are proposed, the travel lane is reduced to 11 feet which may require a design exception.
- Collector C (East-West connection from Collector A to B): Collector C is anticipated to carry less than 6,000 vehicles per day under Cumulative Conditions and would operate acceptably. Twelve-foot travel lanes, eight-foot bike lanes, and five foot or greater sidewalks as proposed complies with County Standard A-2c.
- Local Road D: Local Road D is anticipated to carry less than 4,000 vehicles per day under Cumulative Conditions and would operate acceptably. Twelve-foot travel lanes, eight-foot parking lanes, and five-foot detached sidewalks as proposed complies with County Standard A-2c.

Driveways accessing the Village Commercial as well as all driveways on Collectors A, B, and C shall be located no closer than 200 feet to the adjacent intersection(s) consistent with County Standards. In addition, the distance between driveways shall not be less than 200 feet.

Two roundabouts are proposed within the project where Collector C intersects Collector A and Collector B. The single lane roundabouts operate acceptably as proposed. All other intersections on Collectors A, B, and C would operate acceptably with two-way stop control.

4.3.3 Emergency Access

The project will provide two connections to Willow Road, one to North Frontage Road/Sandydale Drive, and one to Pomeroy Road as well as emergency access to Hetrick Avenue and Cory Way. All neighborhoods have two access points to Collectors A, B, C, or Local Road D, except for Neighborhood Three which has additional access through Neighborhood One and emergency access to Neighborhood Seven.

Cal Fire in Nipomo is located on North Oakglen Avenue north of Tefft Street approximately two miles from the project site via Tefft Street and three miles via Thompson Avenue which typically does not experience congestion. As neighborhoods develop, Cal Fire approval will be required for access as well as other proposed improvements.

4.4 NEIGHBORHOOD CIRCULATION

4.4.1 Cherokee Place

Cherokee Place is an unimproved non-County maintained road parallel to and south of Willow Road along the project frontage. Although the road will not provide the fastest or most convenient route to most destinations, a small amount of project traffic may use the route to access neighborhoods off Hetrick Avenue. Any increase in traffic could deteriorate the roadway and the County has recommended a maintenance agreement.

4.4.2 Hetrick Avenue

Prior to the Willow Road extension and interchange project completed in 2012, vehicles used Los Berros Road, North Frontage Road, Summit Station Road, Hetrick Avenue, Glenhaven Place, and Ten Oaks Way to access Pomeroy Road as an alternative to the Tefft Street interchange. The Willow Road extension and interchange project created a faster less circuitous route to both Willow Road and Pomeroy Road. Although the traffic

volumes decreased following the completion of the Willow Road extension and interchange project, area residents are still concerned with cut through traffic, speeds, horizontal alignment, and the condition of the roadway along the Hetrick Avenue, Glenhaven Place, and Ten Oaks Way corridor.

To address the residents' concerns the project is proposing the following:

- Terminate Glenhaven Place with a cul-de-sac at Hetrick Avenue.
- Terminate Hetrick Avenue at Ridge Road and improve intersection.
- Allow emergency access only on Hetrick Avenue between Ridge Road and Glenhaven Place.

In addition, the existing Hetrick Road intersection with Pomeroy Road will be removed and residences on Hetrick Road would access Collector B.

Restricting access on Hetrick Avenue would result in additional vehicles using Collector B (West/Southwest Project Entry). The Willow Road/Hetrick Ave (#3), Willow Road/West Project Entry (Collector B) (#4), and Southwest Project Entry (Collector B)/Pomeroy Road (#9) intersections would operate acceptably at LOS D or better during both peak hours under Cumulative Conditions with the redistribution of traffic.

4.5 PLAN CONSISTENCY

Planning documents with transportation improvements in the Nipomo Area include the South County Circulation Study, Nipomo Community Plan, Parks and Recreation Element, and Bikeways Plan, as summarized in the following section. In summary, the proposed transportation facilities are consistent with these planning documents.

4.5.1 South County Circulation Study

The South County Circulation Study and Road Improvement Fee (RIF) Update analyzed the existing and cumulative capacity of area intersections and roadways based on the existing General Plan land uses. The project will construct the following facilities consistent with the 2015 South County Circulation Study:

- Frontage Road extension from Willow Road to Sandydale Drive. We recommend that the project be conditioned to complete Frontage Road extension just north of Sandydale Drive if not completed by adjacent development prior to project occupancy.
- Installation of a traffic signal at Willow Road/US 101 SB Ramps (#6).
- Installation of a traffic signal at Willow Road/US 101 NB Ramps (#7).
- Construction of additional north-south collector is functionally equivalent to the Hetrick Road extension. (Note: Hetrick Road extension is not included in RIF funding).

4.5.2 Nipomo Community Plan

The Nipomo Community Plan was adopted in 2014 with content last updated in 1994. The plan included the areas within the URL. The plan recommends the following consistent with the project:

- Improve North Frontage Road to urban collector standards from Sandydale Drive to the proposed interchange at the Willow Road extension.
- Class II bike lanes should be developed on all urban collector and arterial streets within the Nipomo urban area.

We recommend improvements on North Frontage Road/Collector A be consistent with County Standard A-2d. Class II bike lanes are proposed on all project collector roadways.

4.5.3 County Bikeways Plan

The County Bikeways Plan identifies existing Class II bike lanes on Pomeroy Road and Willow Road. Per the Bike Plan goals, all new roadways shall be evaluated for multi-modal improvements. Class II bike lanes are proposed on Collectors A, B and C, with two connections to Willow Road and one connection to Pomeroy Road. All proposed bike lanes are eight feet wide. Sidewalks will also be constructed on Collectors A, B and C, as well as Local Road D.

4.5.4 Parks and Recreation Element

The San Luis Obispo County Parks and Recreation Element identifies future multi-use trails on Sandydale Drive, Pomeroy Road, Hetrick Avenue, and Willow Road near the project as well as a north-south connection from Sandydale Drive to Willow Road.

The project would construct a network of multi-use trails including two east-west trails and two north-south trails connecting to Pomeroy Road, Hetrick Avenue, and Cory Way north of Sandydale Drive. An additional multi-use trail connection to Willow Road is recommended for consistency with the Parks and Recreation Element.

A network of pedestrian trails are proposed in addition to the sidewalks and multi-use trails. The pedestrian trails provide access within and between neighborhoods and connect to the public recreation facilities.

4.6 VEHICLE MILES TRAVELED (VMT)

The project's potential impacts to VMT were evaluated under a few scenarios (residential only, no residential, and mixed use as proposed) using the County's SB743 Sketch VMT Tool as shown in **Table 14**. The additional scenarios were evaluated to determine if specific components of the project would have different VMT impacts.

Table 14: SLO County SB743 Sketch VMT Tool Summary

SLO County SB743 Sketch VMT Tool Summary					
Scenario		**Overall VMT**	**Miles Per Trip**	**VMT Per Employee**	**VMT Per Capita**
	Threshold	*N/A*	*N/A*	*25.7*	*27.2*
	Current	*9,812,738*	*11.26*	***27.0***	***29.8***
Residential Only	w/Project	-	-	-	**30.1**
Mixed Use (as proposed)	w/Project	**9,839,599**	11.21	**26.9**	**30.0**
Mixed Use (No Residential)	w/Project	**9,842,931**	11.21	**26.9**	-

Source: CCTC, 2021, County of SLO Quick Response Tool Version 6.6.
Project APN 091-301-073 shown. Bold indicates higher than threshold.

Currently, the project site's VMT per Employee and VMT per Capita exceed the County's thresholds without the addition of project traffic. The project would generate 26.9 VMT per capita and 30.0 VMT per employee, which are 4.8 and 9.5 percent above the threshold, respectively. The overall regional VMT would increase by 26,861 miles, which exceeds the threshold for retail project components. The addition of mixed-use components lowers the residential VMT per capita and overall VMT when compared to the residential only scenario.

Table 15 summarizes the California Air Pollution Control Officers Association (CAPCOA) mitigation measure strategies and percent VMT reductions for land use and site design strategies.

Table 15: CAPCOA VMT Reductions

CAPCOA VMT Reductions			
#	**Strategy**	**VMT Reduction**	**Notes**
Land Use/Location VMT Reduction Strategies			
LUT-4	Increase Destination Accessibility	1.7%	Reductions for distance to downtown job center
LUT-6	Integrate Affordable & Below Market Rate Housing	0.2%	Reduction for percentage of low income housing
LUT-8	Locate Project near Bike Path/Bike Lane	0.625%	Reduction for bike path/lane
LUT-9	Improve Design of Development	25.0%	Reduction for intersections per square mile
Total (Land Use/Location) Reductions		*10.0%*	*Max Reduction for Suburban Land Use/Location Strategies (LUT-2)*
Neighborhood/Site Design Reduction Strategies			
SDT-1	Provide Pedestrian Network Improvements	1.0%	Reduction for pedestrian network within urban/suburban project site.
SDT-5	Incorporate Bike Lane Street Design (on-site)	0.9%	Reduction for each mile of bikeway per 100,000 residents
Total (Land Use/Location) Reductions		*1.9%*	
TOTAL VMT Mitigation Reductions		**11.9%**	

Source: CAPCOA Quantifying Greenhouse Gas Mitigation Measures (2010).
Parking Policy/Pricing, Commute Trip Reduction, and Transit System Improvement Management Strategies not included.

The maximum VMT reduction allowed for suburban land uses is 11.9 percent. The project site design incorporates most of these VMT reduction strategies. However, the effectiveness of these design features in reducing VMT to the extent needed is not certain and the project increases overall VMT. Therefore, we recommend a finding of a significant and unavoidable impact to VMT.

4.6.1 Induced Demand

Transportation projects such as roadway widenings or new roads have the potential to increase VMT. This is called induced demand- new capacity lowers the cost (e.g. time) of travel and more people travel as a result. Research has shown that increasing roadway capacity generally increases demand for travel.

The County's TIA Guidelines list a number of transportation projects that can be presumed to have a less-than-significant impact. These include the addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and transit if applicable. They also include the installation of turn lanes at intersections.

The project would construct new local and collector roads with extensive facilities for pedestrians and cyclists. Therefore the project's transportation improvements would have a less-than-significant impact to VMT as it relates to induced demand.

5.0 Cumulative Conditions

Cumulative conditions represent build-out of the land uses in the region consistent with the General Plan. This section evaluates the Cumulative conditions of the study area and the impacts of the proposed project on the surrounding transportation network.

5.1 CUMULATIVE VOLUME FORECASTS

Cumulative intersection and ramp traffic volume forecasts were obtained from the 2015 South County Circulation Study and Traffic Impact Fee Update. Freeway volumes were derived using the traffic counts, SLOCOG Travel Demand Model, and the US 101 Corridor Mobility Study.

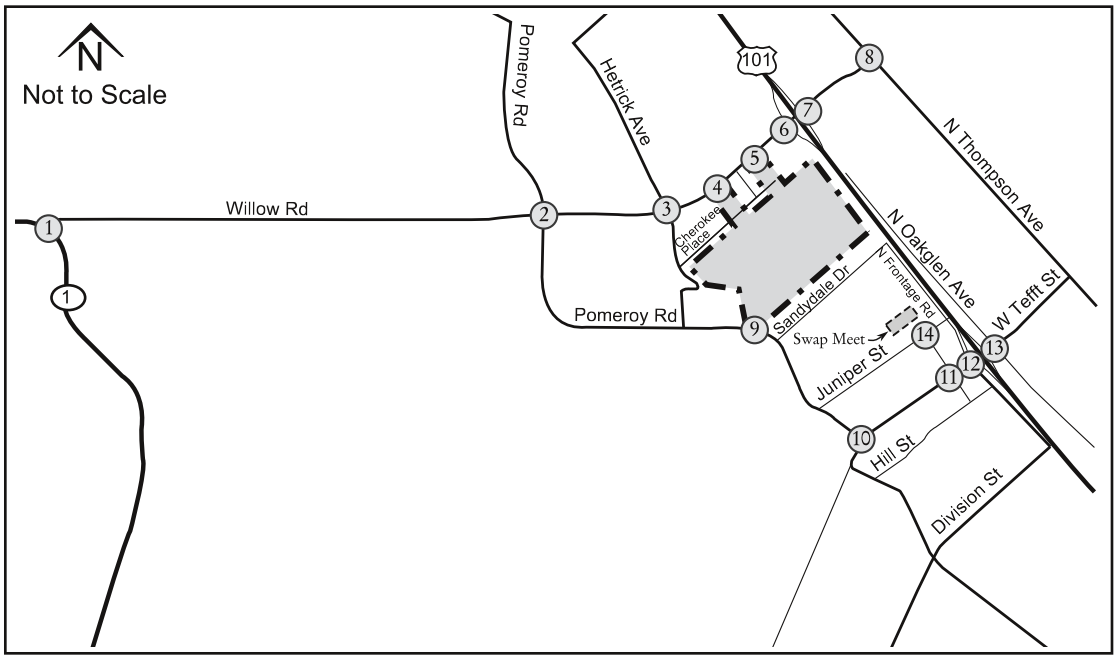
Intersection and ramp volumes for Cumulative conditions were obtained from the 2035 Base Buildout volumes of the Circulation Study which does not include any identified capital improvements projects for the region including the North Frontage Road extension. Volumes were rounded up from the study if the existing volumes were higher.

The Cumulative conditions base network assumed the ramp widening improvements at the Tefft Street interchange. The Cumulative Plus Project conditions network included the project roadway network and the North Frontage Road extension in addition to the Tefft Street Interchange improvements under construction.

Cumulative Plus Project conditions volumes were redistributed based on the North Frontage Road extension and the additional north-south connector.

Figure 7 and **Figure 8** show the Cumulative and Cumulative Plus Project traffic volumes, respectively.

Figure 7: Cumulative Weekday Peak Hour Volumes



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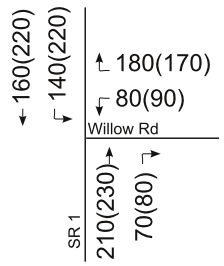

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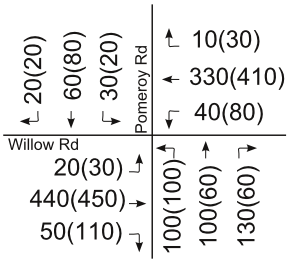

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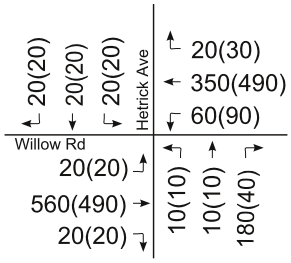

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5. Future Intersection

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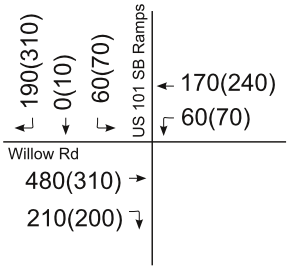

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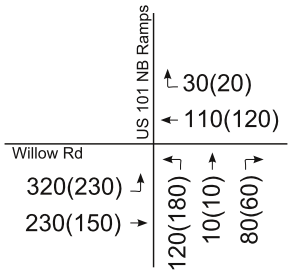

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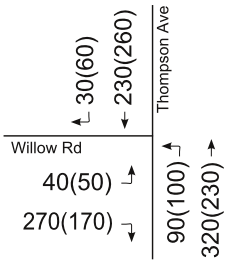

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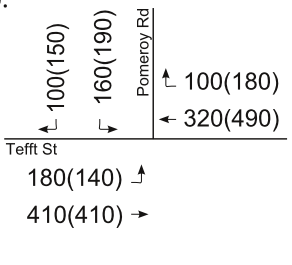

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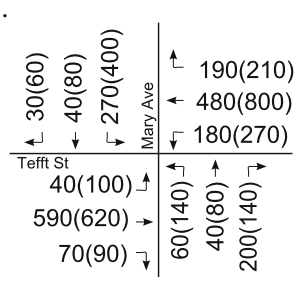

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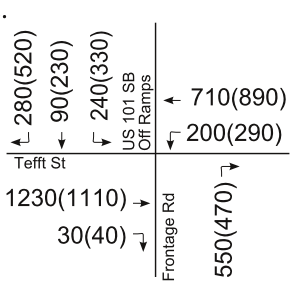

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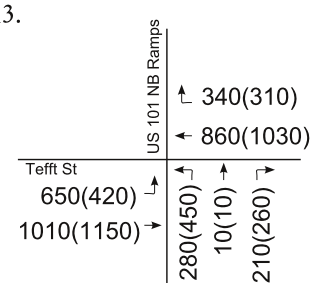

Legend:

xx(yy) - AM(PM) Peak Hour Traffic Volumes

- Project Site

(17) - Study Intersection

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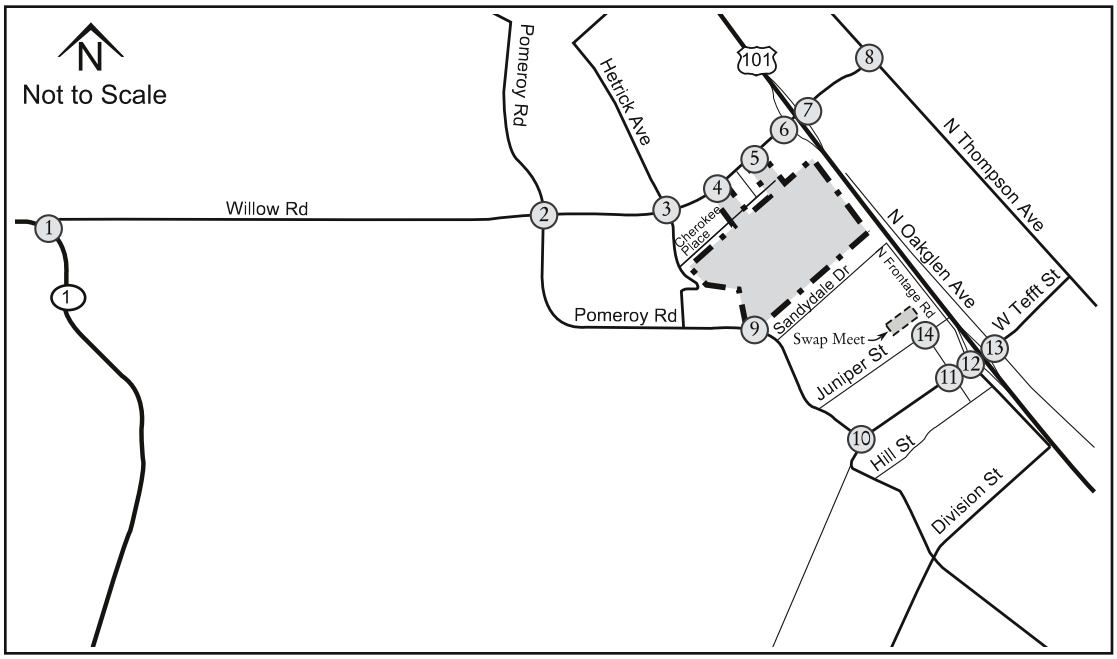
Figure 8: Cumulative Plus Project Weekday Peak Hour Volumes



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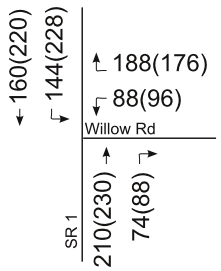

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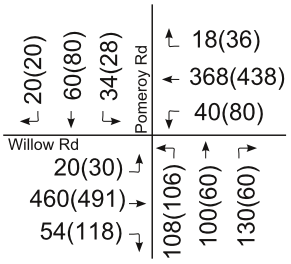

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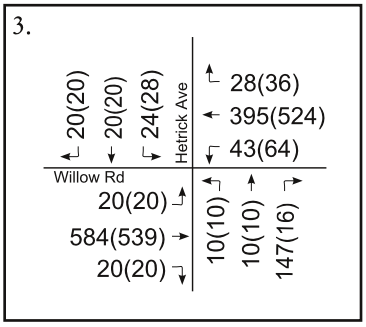

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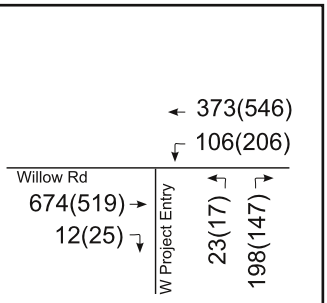

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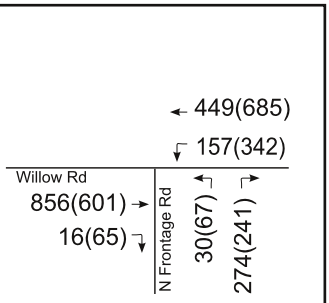

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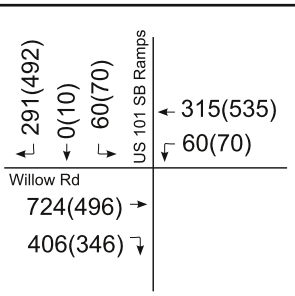

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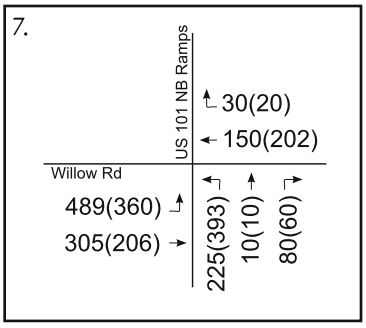

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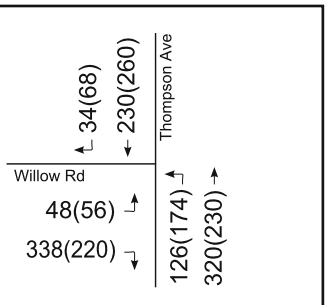

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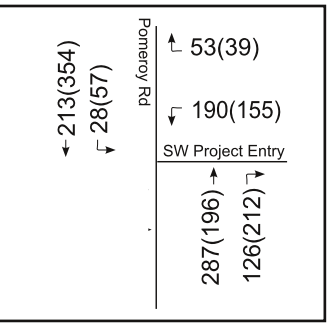

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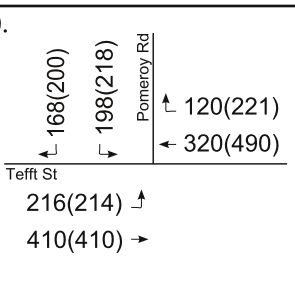

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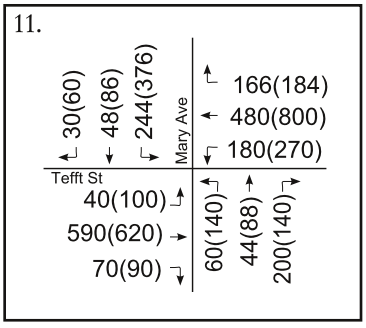

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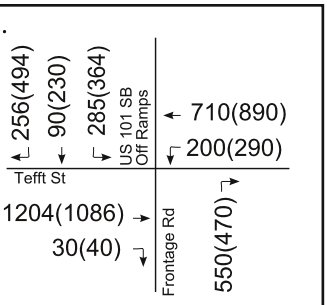

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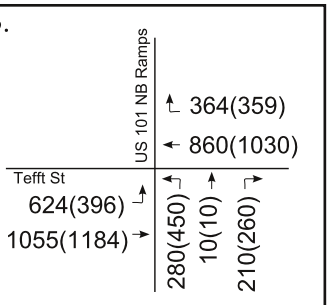

Legend:

xx(yy) - AM(PM) Peak Hour Traffic Volumes

- Project Site

(17) - Study Intersection

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5.2 CUMULATIVE TRANSPORTATION CONDITIONS

This section is divided into the following analysis subsections for Cumulative and Cumulative Plus Project conditions: 1) weekday intersection operations and 2) freeway segment operations.

5.2.1 Intersection Operations

Table 16 and **Table 17** summarize the LOS and key queues at the study intersections during the weekday peak hours under Cumulative and Cumulative Plus Project conditions, with detailed calculation sheets included in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 16: Cumulative and Cumulative Plus Project Intersection LOS

Cumulative and Cumulative Plus Project Intersection Auto Levels of Service					
		Cumulative		Cumulative + Project	
Intersection	Hour	Delay[1]	LOS	Delay[1]	LOS
1. Willow Rd/SR 1	AM	5.7 (14.0)	- (B)	6.0 (14.5)	- (B)
	PM	6.7 (18.6)	- (C)	7.1 (20.0)	- (C)
2. Willow Rd/Pomeroy Rd	AM	22.0	C	22.4	C
	PM	22.3	C	22.8	C
3. Willow Rd/Hetrick Ave	AM	**5.2 (37.1)**	**- (E)**	**4.6 (38.8)**	**- (E)**
	PM	3.1 (29.0)	- (D)	2.9 (31.7)	- (D)
4. Willow Rd/W Project Entry	AM	*Future Intersection*		4.5 (23.7)	- (C)
	PM			3.5 (19.0)	- (C)
5. Willow Rd/N Frontage Rd	AM	*Future Intersection*		26.2	C
	PM			17.7	B
6. Willow Rd/US 101 SB Ramps	AM	3.4 (13.6)	- (B)	4.8 (23.3)	- (C)
	PM	5.1 (14.1)	- (B)	**16.3 (56.3)**	**- (F)**
7. Willow Rd/US 101 NB Ramps	AM	**14.5 (49.4)**	**- (E)**	**>200 (>200)**	**- (F)**
	PM	**13.8 (35.2)**	**- (E)**	**>200 (>200)**	**- (F)**
8. Willow Rd/Thompson Ave	AM	4.9 (13.2)	- (B)	6.1 (14.8)	- (B)
	PM	4.3 (13.2)	- (B)	5.6 (15.0)	- (C)
9. SW Project Entry/Pomeroy Rd	AM	*Future Intersection*		5.1 (17.7)	- (C)
	PM			4.3 (19.8)	- (C)
10. W Tefft St/Pomeroy Rd	AM	17.2	B	19.7	B
	PM	18.3	B	21.0	C
11. W Tefft St/Mary Ave	AM	40.3	D	39.9	D
	PM	44.0	D	43.9	D
12. W Tefft St/US 101 SB Ramps/S Frontage Rd	AM	**96.6**	**F**	**101.7**	**F**
	PM	**87.1**	**F**	**89.0**	**F**
13. W Tefft St/US 101 NB Ramps	AM	30.3	C	33.5	C
	PM	28.9	C	28.9	C

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

Note: Unacceptable operations shown in **bold** text.

Table 17: Cumulative and Cumulative Plus Project Intersection Queues

Cumulative and Cumulative Plus Project Intersection Queues					
Intersection	**Movement**	**Storage Length (ft)**	**Peak Hour**	**CM 95th Percentile Queue (ft)[1]**	**CM +P 95th Percentile Queue (ft)[1]**
2. Pomeroy Rd. & Willow Rd.	NBR	25	AM	**51**	**51**
			PM	0	0
3. Hetrick Ave. & Willow Rd.	NBR	25	AM	**48**	**38**
			PM	5	3
10. Tefft St. & Pomeroy Rd.	EBL	95	AM	63	77
			PM	69	**105**
11. Tefft St. & Mary Ave.	EBL	125	AM	59	59
			PM	**137**	**137**
	NBL	120	AM	82	82
			PM	**172**	**172**
	SBL	120	AM	**205**	**194**
			PM	**311**	**302**
12. Frontage Road/101 SB Off Ramp & Tefft St.	SBL	250	AM	**382**	**465**
			PM	**505**	**569**
13. 101 NB Ramps & Tefft St.	NBL	200	AM	174	173
			PM	**273**	**273**
	NBR	200	AM	140	149
			PM	**204**	**211**

1. Queue length that would not be exceeded 95 percent of the time.
# indicates 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.
Detailed queues provided in Appendix B.

The project entries with Willow Road and Pomeroy Road all operate at LOS D or better under Cumulative Plus Project conditions with the same intersection control and geometry as under the Existing Plus Project conditions.

Although the Mary Avenue/Juniper Street (#14) intersection was only evaluated under Sunday Existing Conditions, the intersection would operate acceptably during the weekday peak hours under Cumulative Conditions with the addition of project traffic.

The following County intersections operates below the LOS D threshold or queue lengths exceed storage:

- Pomeroy Road/Willow Rd (#2): the northbound right exceeds the small storage length provided within the shoulder during the AM peak hour. However, the queue would not block the through movement during the signal phase and the project does not exacerbate the queue.

  Recommendation: None.

- Willow Road/Hetrick Avenue (#3): the southbound approach operates at LOS E during the AM peak hour under Cumulative and Cumulative Plus Project conditions due to long delays resulting from side street stop control and the high volumes along Willow Road. The proposed project improves operations at this location by providing two new parallel routes to Hetrick Avenue. Although the intersection operates below the LOS threshold, the peak hour traffic signal warrant is not met due to low side street volumes. The maximum vehicle queue under Cumulative Plus Project conditions is less than two vehicles and no capital improvements are warranted at this location. Construction of the proposed project including the North Frontage Road and the additional north-south connector road will provide alternative routes with improved traffic control, benefiting this intersection.

Recommendation: None, traffic signal warrant not met.

- Tefft Street/Pomeroy Road (#10): the eastbound left turn lane exceeds the storage length during the PM peak hour. However, additional storage is available in the bay taper.

  Recommendation: None.

- Tefft Street/Mary Avenue (#11): the eastbound, northbound, and southbound left turn lane exceeds storage during one or more peak hours under Cumulative Conditions. A ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street would be required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program. The additional interchange will also benefit Tefft Street/Mary Avenue.

  Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements.

The following Caltrans intersections operate below the LOS C threshold or queue lengths exceed storage:

- Willow Road/US 101 SB Ramps (#6): the southbound approach operates at LOS F in the PM peak hour under Cumulative Plus Project conditions due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive on the westbound Willow Road approach and the existing lane configurations would result in LOS C during both peak hours. This improvement is consistent with the South County Road Improvement Fee Program and the traffic signal warrant is met.

  Recommendation: Install traffic signal.

- Willow Road/US 101 NB Ramps (#7): the northbound approach operates at LOS F during both peak hours under Cumulative conditions and LOS F during both peak hours under Cumulative Plus Project conditions due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive on the eastbound Willow Road approach and the existing lane configurations would result in LOS C or better during both peak hours. This improvement is consistent with the South County Road Improvement Fee Program and the traffic signal warrant is met.

  Recommendation: Install traffic signal.

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS F during both peak hours under Cumulative and Cumulative Plus Project conditions due to high volumes on all approaches. The Tefft Street corridor is geometrically constrained. A ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street is required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program.

  Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements.

- West Tefft Street/US 101 NB Ramps (#13): the northbound left and right turn lanes exceed storage during the PM peak hour under Cumulative Conditions. The Tefft Street corridor is geometrically constrained. A ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street is required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program.

  Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements.

The Frontage Road connection to Willow Road will shift traffic away from the Tefft Street corridor and improve operations, reducing delay.

5.2.2 Freeway Segment Operations

Table 18 summarizes the LOS at the freeway mainline and ramp locations under Cumulative and Cumulative Plus Project conditions. Detailed calculation sheets are included in **Appendix C**.

Table 18: Cumulative and Cumulative Plus Project Freeway LOS

Cumulative and Cumulative Plus Project Freeway Operations							
				Cumulative		CM + P	
Direction	Location	Segment Type	Peak Hour	Density (pc/mi/ln)[1]	LOS	Density (pc/mi/ln)[1]	LOS
US 101 NB	South of Willow Rd	Mainline	AM	**32.4**	**D**	**34.3**	**D**
			PM	**28.4**	**D**	**31.9**	**D**
	Willow Rd Off Ramp	Diverge	AM	**35.7**	**E**	**36.8**	**E**
			PM	**33.2**	**D**	**35.4**	**E**
	Willow Rd On Ramp	Merge	AM	**32.3**	**D**	**33.7**	**D**
			PM	**29.0**	**D**	**30.0**	**D**
	North of Willow Rd	Mainline	AM	**35.2**	**E**	**38.9**	**E**
			PM	**28.6**	**D**	**30.6**	**D**
US 101 SB	North of Willow Rd	Mainline	AM	23.0	C	24.2	C
			PM	**v/c > 1**	**F**	**v/c > 1**	**F**
	Willow Rd Off Ramp	Diverge	AM	**28.9**	**D**	**29.9**	**D**
			PM	**v/c > 1**	**F**	**v/c > 1**	**F**
	Willow Rd On Ramp	Merge	AM	25.3	C	27.0	C
			PM	**v/c > 1**	**F**	**v/c > 1**	**F**
	South of Willow Rd	Mainline	AM	23.3	C	25.7	C
			PM	**v/c > 1**	**F**	**v/c > 1**	**F**

1. HCM 6th density (passenger car per mile per lane).
Note: Unacceptable operations shown in **bold** text.

All freeway segments operate below the LOS C threshold during at least one peak hour under both Cumulative and Cumulative Plus Project conditions. The 2014 US 101 Transportation Concept Report supports Tefft Street interchange improvements, parallel routes, enhanced transit, transportation demand management (TDM), and transportation system management (TSM) strategies in the project vicinity. The South County Road Improvement Fee Program includes Tefft Street interchange improvements and construction of an additional interchange south of Tefft Street. Auxiliary lanes and high occupancy vehicle (HOV) lanes, which would improve operations, are not currently planned on US 101 in the project vicinity.

6.0 References

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Appendix A: Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Willow Rd @ SR 1 **LATITUDE** 35.0467

COUNTY San Luis Obispo **LONGITUDE** -120.5698

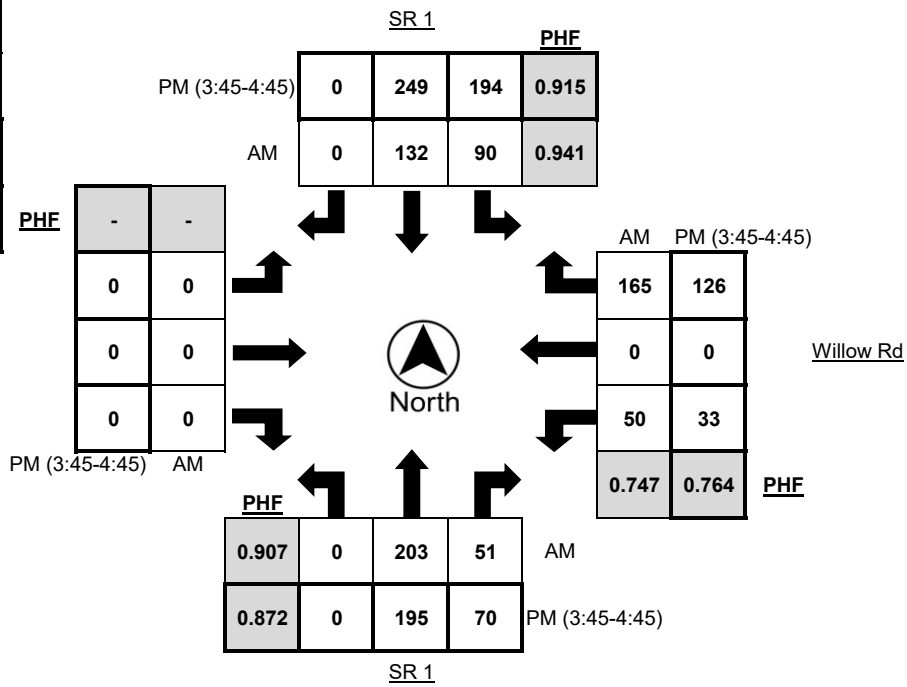
COLLECTION DATE Tuesday, May 22, 2018 **WEATHER** Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	23	10	0	13	38	0	3	0	0	0	0	9	0	24	4
7:15 AM - 7:30 AM	0	58	12	4	22	29	0	7	0	0	0	0	14	0	35	7
7:30 AM - 7:45 AM	0	42	17	4	24	29	0	2	0	0	0	0	10	0	45	6
7:45 AM - 8:00 AM	0	57	12	6	20	39	0	3	0	0	0	0	16	0	56	4
8:00 AM - 8:15 AM	0	46	10	9	24	35	0	3	0	0	0	0	10	0	29	0
8:15 AM - 8:30 AM	0	34	10	3	20	33	0	7	0	0	0	0	6	0	25	0
8:30 AM - 8:45 AM	0	38	14	3	24	25	0	3	0	0	0	0	4	0	24	1
8:45 AM - 9:00 AM	0	42	9	4	18	33	0	7	0	0	0	0	9	0	31	3
TOTAL	**0**	**340**	**94**	**33**	**165**	**261**	**0**	**35**	**0**	**0**	**0**	**0**	**78**	**0**	**269**	**25**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	0	30	4	0	29	31	0	2	0	0	0	0	11	0	38	3
2:15 PM - 2:30 PM	0	38	13	3	48	33	0	3	0	0	0	0	8	0	25	2
2:30 PM - 2:45 PM	0	29	15	2	37	44	0	0	0	0	0	0	7	0	26	6
2:45 PM - 3:00 PM	0	31	9	6	40	39	0	4	0	0	0	0	8	0	21	2
3:00 PM - 3:15 PM	0	40	10	1	37	49	0	8	0	0	0	0	10	0	31	3
3:15 PM - 3:30 PM	0	32	11	2	52	41	0	4	0	0	0	0	14	0	28	4
3:30 PM - 3:45 PM	0	42	7	6	51	49	0	5	0	0	0	0	10	0	31	1
3:45 PM - 4:00 PM	0	49	12	3	48	68	0	6	0	0	0	0	11	0	31	4
4:00 PM - 4:15 PM	0	42	20	9	38	69	0	3	0	0	0	0	7	0	45	1
4:15 PM - 4:30 PM	0	46	20	4	46	53	0	2	0	0	0	0	10	0	32	1
4:30 PM - 4:45 PM	0	58	18	3	62	59	0	2	0	0	0	0	5	0	18	0
4:45 PM - 5:00 PM	0	38	17	3	39	56	0	3	0	0	0	0	10	0	25	3
5:00 PM - 5:15 PM	0	48	14	3	60	50	0	2	0	0	0	0	13	0	33	3
5:15 PM - 5:30 PM	0	53	23	2	52	48	0	0	0	0	0	0	9	0	27	0
5:30 PM - 5:45 PM	0	43	24	4	48	37	0	3	0	0	0	0	7	0	31	0
5:45 PM - 6:00 PM	0	37	7	0	32	55	0	3	0	0	0	0	14	0	32	4
TOTAL	**0**	**656**	**224**	**51**	**719**	**781**	**0**	**50**	**0**	**0**	**0**	**0**	**154**	**0**	**474**	**37**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	0	203	51	23	90	132	0	15	0	0	0	0	50	0	165	17
3:45 PM - 4:45 PM	0	195	70	19	194	249	0	13	0	0	0	0	33	0	126	6
4:30 PM - 5:30 PM	0	197	72	11	213	213	0	7	0	0	0	0	37	0	103	6

	PHF	Trucks
AM	0.864	8.0%
PM (3:45-4:45)	0.981	4.4%
PM (4:30-5:30)	0.949	2.9%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Willow Rd @ SR 1 **LATITUDE** 35.0467

COUNTY San Luis Obispo **LONGITUDE** -120.5698

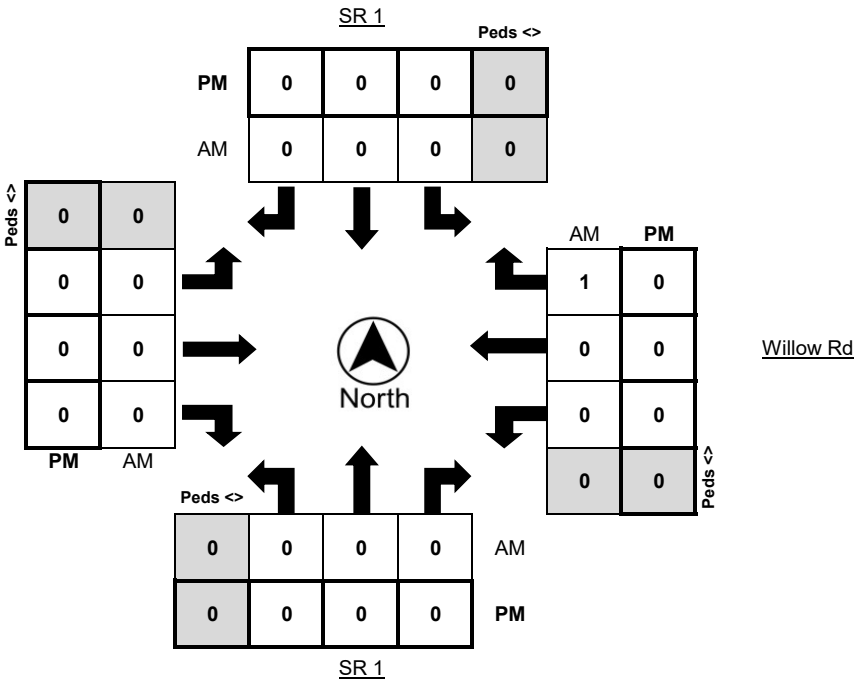
COLLECTION DATE Tuesday, May 22, 2018 **WEATHER** Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
3:45 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	1	0
PM Peak Total (3:45-4:45 & 4:30-5:30)	0	0



Metro Traffic Data Inc.
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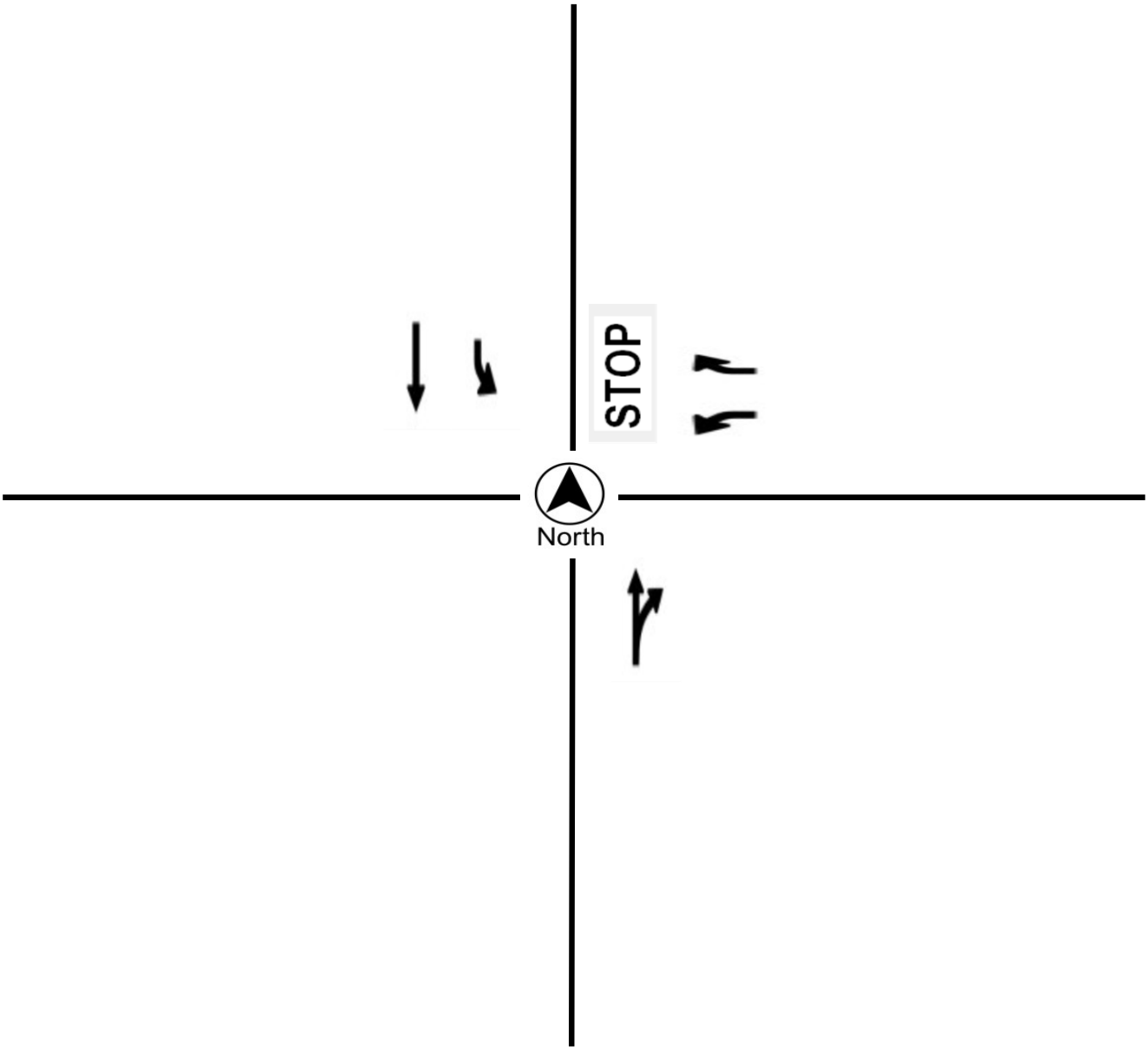
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ SR 1	**N/S STREET**	SR 1 / SR 1
COUNTY	San Luis Obispo	**E/W STREET**	Willow Rd /
COLLECTION DATE	Tuesday, May 22, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

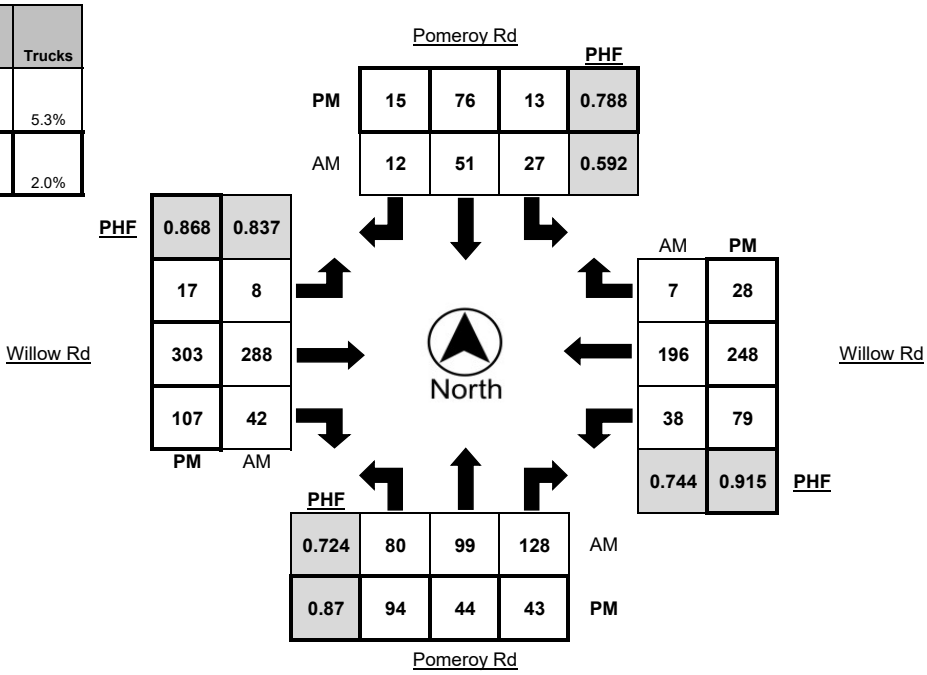
LOCATION Willow Rd @ Pomeroy Rd
LATITUDE 35.0478
COUNTY San Luis Obispo
LONGITUDE -120.5243
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	9	8	14	0	4	5	3	0	1	48	8	4	3	34	4	5
7:15 AM - 7:30 AM	24	27	32	2	3	4	5	1	4	64	6	7	7	31	1	7
7:30 AM - 7:45 AM	23	46	37	3	11	7	4	1	1	93	7	2	6	58	2	8
7:45 AM - 8:00 AM	20	18	32	1	10	27	1	0	3	71	17	3	14	66	1	4
8:00 AM - 8:15 AM	13	8	27	3	3	13	2	0	0	60	12	8	11	41	3	2
8:15 AM - 8:30 AM	18	5	27	2	2	6	1	0	6	61	18	5	3	38	3	2
8:30 AM - 8:45 AM	18	6	17	1	3	8	2	1	1	68	23	7	4	45	3	3
8:45 AM - 9:00 AM	16	12	29	1	3	5	1	0	1	59	9	6	10	38	3	6
TOTAL	**141**	**130**	**215**	**13**	**39**	**75**	**19**	**3**	**17**	**524**	**100**	**42**	**58**	**351**	**20**	**37**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	25	13	12	0	1	9	1	0	2	40	17	3	9	57	5	5
2:15 PM - 2:30 PM	17	10	7	2	2	23	2	1	3	53	31	4	11	51	3	4
2:30 PM - 2:45 PM	17	12	21	1	3	17	3	2	6	57	28	1	13	64	4	6
2:45 PM - 3:00 PM	14	15	19	1	10	4	3	1	5	63	18	4	18	56	4	2
3:00 PM - 3:15 PM	16	7	13	0	2	11	5	0	2	63	17	7	25	63	9	5
3:15 PM - 3:30 PM	28	8	17	1	5	13	5	0	3	68	32	1	17	83	6	3
3:30 PM - 3:45 PM	24	10	13	0	1	6	1	0	2	57	22	4	18	62	0	5
3:45 PM - 4:00 PM	22	17	10	2	1	10	4	0	2	71	35	6	15	59	6	3
4:00 PM - 4:15 PM	26	13	16	3	11	11	4	0	0	57	20	3	15	54	8	1
4:15 PM - 4:30 PM	26	12	12	0	4	19	5	0	8	79	34	5	22	63	12	1
4:30 PM - 4:45 PM	18	5	10	1	3	29	1	0	3	72	20	3	20	58	3	0
4:45 PM - 5:00 PM	22	15	9	0	4	12	6	0	1	65	22	1	19	62	7	4
5:00 PM - 5:15 PM	28	12	12	0	2	16	3	0	5	87	31	3	18	65	6	3
5:15 PM - 5:30 PM	30	11	22	1	3	12	2	0	2	59	35	3	17	49	7	0
5:30 PM - 5:45 PM	20	16	17	0	1	11	2	0	5	66	23	3	14	45	2	0
5:45 PM - 6:00 PM	28	13	14	2	6	15	4	1	1	54	15	0	11	58	9	5
TOTAL	**361**	**189**	**224**	**14**	**59**	**218**	**51**	**5**	**50**	**1011**	**400**	**51**	**262**	**949**	**91**	**47**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	80	99	128	9	27	51	12	2	8	288	42	20	38	196	7	21
4:15 PM - 5:15 PM	94	44	43	1	13	76	15	0	17	303	107	12	79	248	28	8

	PHF	Trucks
AM	0.827	5.3%
PM	0.901	2.0%



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

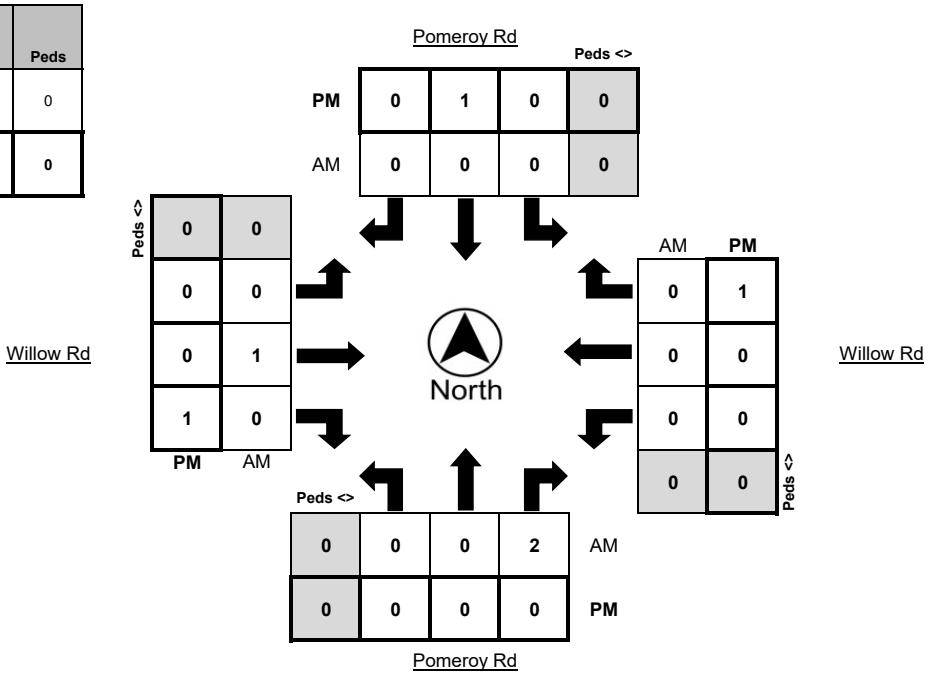
LOCATION Willow Rd @ Pomeroy Rd
LATITUDE 35.0478
COUNTY San Luis Obispo
LONGITUDE -120.5243
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0

	Bikes	Peds
AM Peak Total	3	0
PM Peak Total	3	0



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Turning Movement Report

Prepared For:
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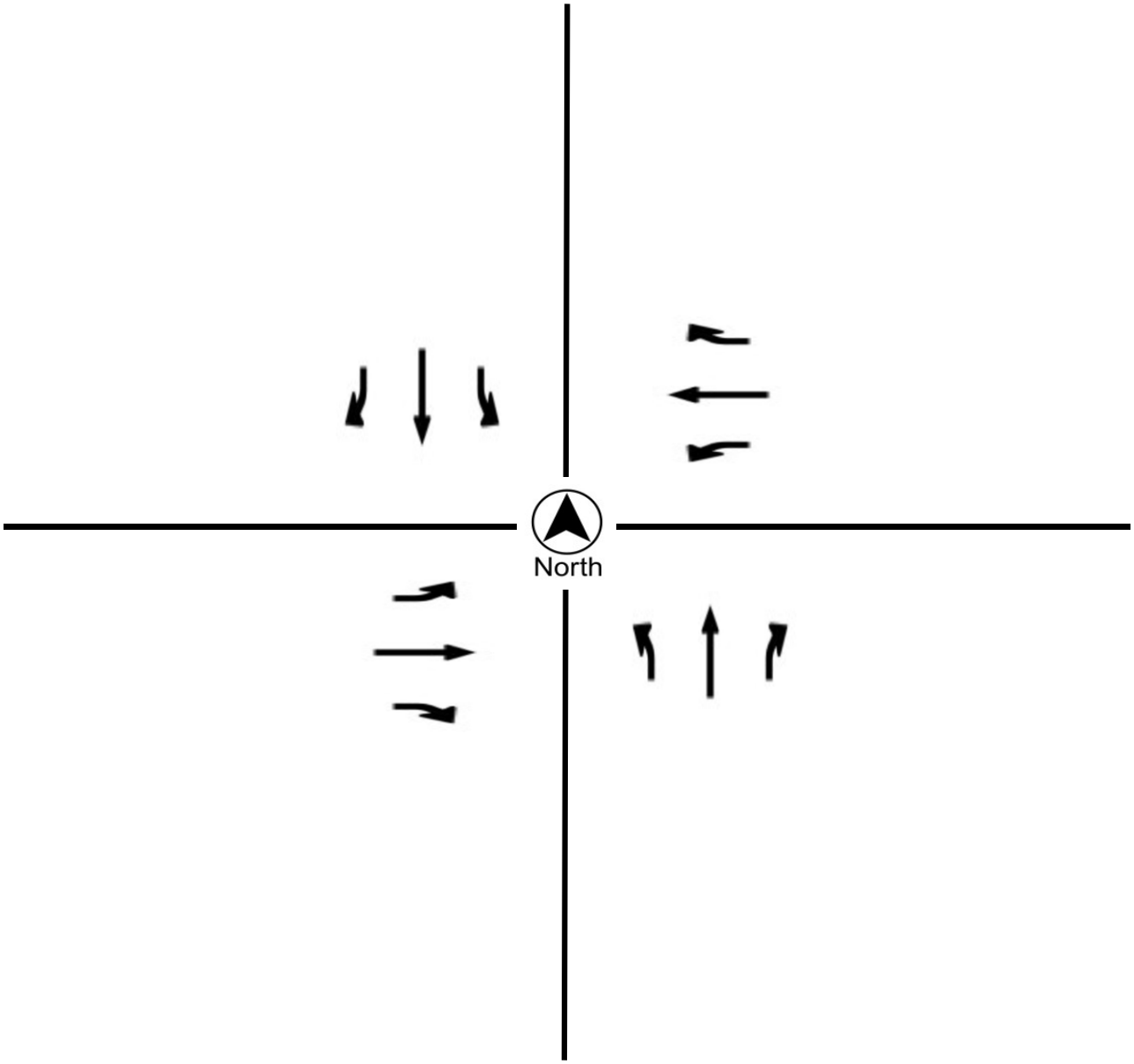
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ Pomeroy Rd	**N/S STREET**	Pomeroy Rd / Pomeroy Rd
COUNTY	San Luis Obispo	**E/W STREET**	Willow Rd / Willow Rd
COLLECTION DATE	Tuesday, May 22, 2018	**WEATHER**	Clear
CYCLE TIME	93 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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Morro Bay, CA 93442

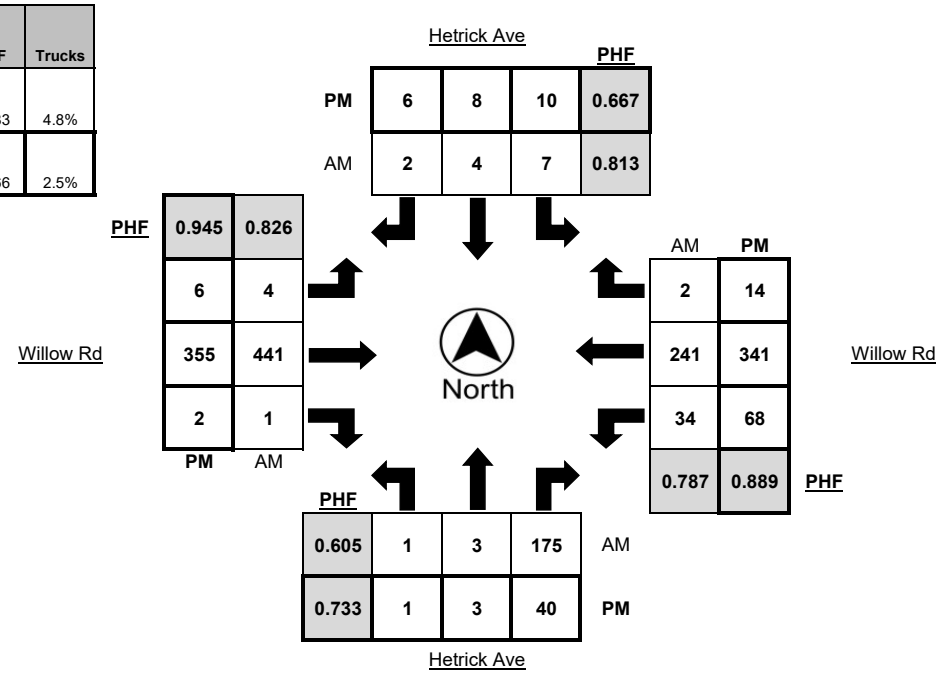
LOCATION Willow Rd @ Hetrick Ave
LATITUDE 35.0480
COUNTY San Luis Obispo
LONGITUDE -120.5128
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	21	0	1	1	0	0	0	67	0	5	4	39	1	5
7:15 AM - 7:30 AM	0	2	52	0	2	2	0	0	2	99	0	7	4	39	0	7
7:30 AM - 7:45 AM	0	1	73	0	2	0	1	1	2	133	0	2	11	69	0	8
7:45 AM - 8:00 AM	1	0	27	0	1	1	1	1	0	116	0	0	8	79	1	6
8:00 AM - 8:15 AM	0	0	23	0	2	1	0	1	0	93	1	7	11	54	1	4
8:15 AM - 8:30 AM	0	0	16	0	5	2	0	0	0	95	0	6	4	43	0	3
8:30 AM - 8:45 AM	1	0	21	0	1	1	0	0	1	79	0	6	6	51	1	4
8:45 AM - 9:00 AM	0	1	16	1	1	1	1	0	0	97	0	7	3	50	2	6
TOTAL	**2**	**4**	**249**	**1**	**15**	**9**	**3**	**3**	**5**	**779**	**1**	**40**	**51**	**424**	**6**	**43**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	0	2	8	0	1	2	1	0	1	51	2	2	13	67	4	5
2:15 PM - 2:30 PM	1	0	5	0	3	1	1	0	0	63	0	4	13	66	3	4
2:30 PM - 2:45 PM	1	1	8	0	2	1	1	0	2	78	1	0	8	76	1	6
2:45 PM - 3:00 PM	0	3	16	0	2	1	3	0	1	94	0	0	11	80	5	2
3:00 PM - 3:15 PM	1	2	11	0	3	0	0	0	0	75	1	5	18	95	0	7
3:15 PM - 3:30 PM	1	0	9	0	0	0	2	0	1	82	1	2	16	105	3	5
3:30 PM - 3:45 PM	1	0	24	0	2	1	2	0	0	83	0	3	16	77	4	7
3:45 PM - 4:00 PM	0	1	7	0	1	2	2	1	2	71	0	3	10	76	3	1
4:00 PM - 4:15 PM	1	3	8	0	0	0	2	0	1	87	2	5	17	73	0	3
4:15 PM - 4:30 PM	0	2	7	0	1	1	1	0	1	95	0	4	12	94	2	1
4:30 PM - 4:45 PM	1	0	9	0	1	2	2	0	3	88	0	3	12	73	6	0
4:45 PM - 5:00 PM	0	1	14	0	4	2	1	0	0	79	1	2	24	91	4	4
5:00 PM - 5:15 PM	0	0	10	0	4	3	2	0	2	93	1	3	20	83	2	4
5:15 PM - 5:30 PM	0	1	18	0	2	2	1	0	0	84	0	2	15	76	2	0
5:30 PM - 5:45 PM	0	1	13	0	2	3	0	0	0	86	0	4	15	68	1	1
5:45 PM - 6:00 PM	0	2	17	1	2	4	1	1	2	70	1	0	12	73	3	4
TOTAL	**7**	**19**	**184**	**1**	**30**	**25**	**22**	**2**	**16**	**1279**	**10**	**42**	**232**	**1273**	**43**	**54**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	1	3	175	0	7	4	2	3	4	441	1	16	34	241	2	25
4:15 PM - 5:15 PM	1	3	40	0	10	8	6	0	6	355	2	12	68	341	14	9

	PHF	Trucks
AM	0.783	4.8%
PM	0.966	2.5%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

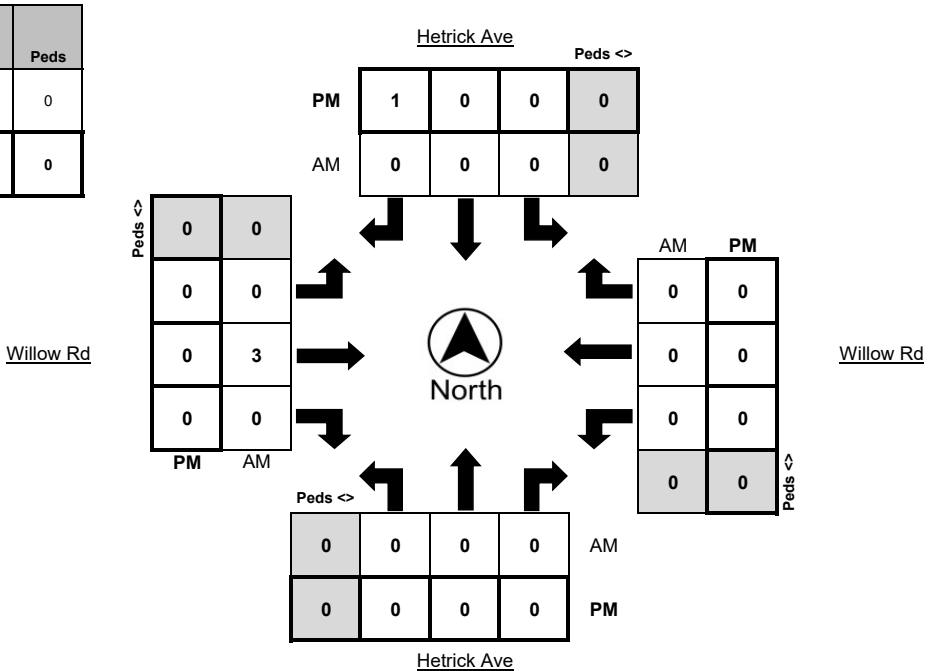
LOCATION Willow Rd @ Hetrick Ave
LATITUDE 35.0480
COUNTY San Luis Obispo
LONGITUDE -120.5128
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	3	0
PM Peak Total	1	0



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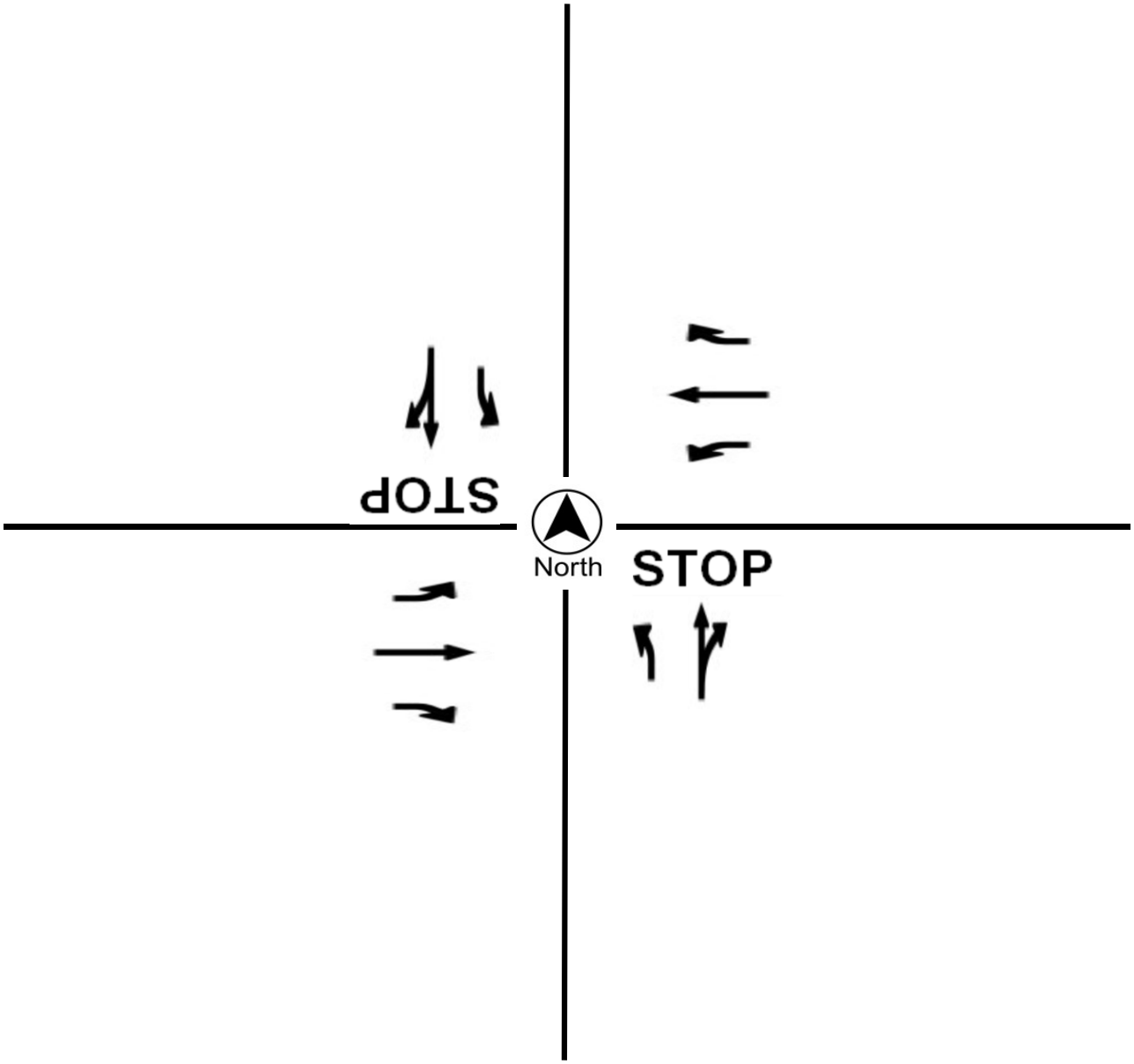
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ Hetrick Ave	**N/S STREET**	Hetrick Ave / Hetrick Ave
COUNTY	San Luis Obispo	**E/W STREET**	Willow Rd / Willow Rd
COLLECTION DATE	Tuesday, May 22, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

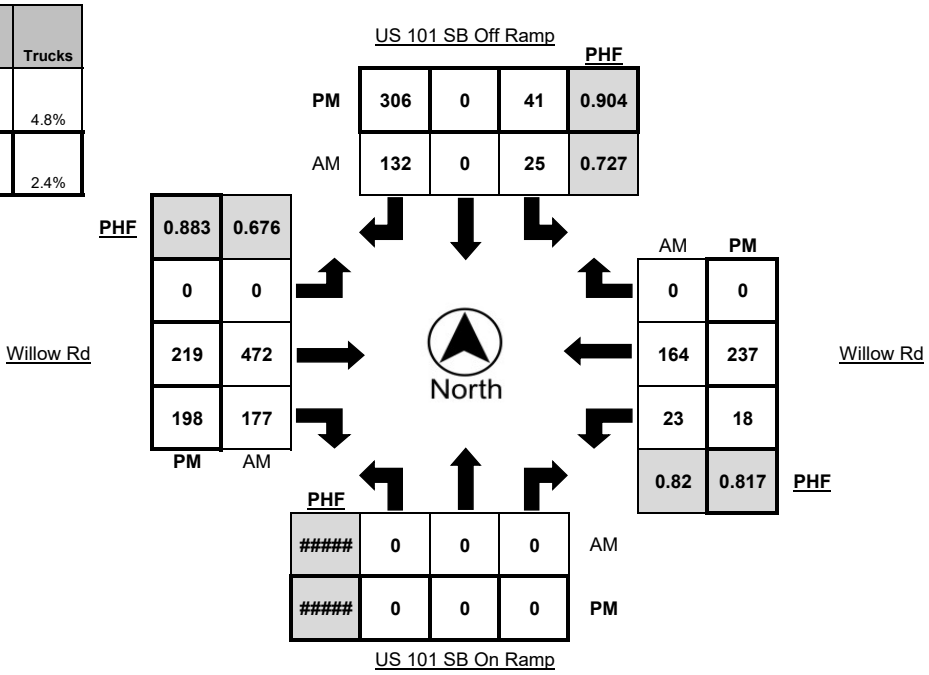
LOCATION Willow Rd @ US 101 SB Ramps
LATITUDE 35.0546
COUNTY San Luis Obispo
LONGITUDE -120.5021
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	0	0	4	0	13	4	0	53	29	0	7	26	0	1
7:15 AM - 7:30 AM	0	0	0	0	11	0	17	6	0	96	30	2	2	24	0	2
7:30 AM - 7:45 AM	0	0	0	0	16	0	31	6	0	182	58	7	9	48	0	1
7:45 AM - 8:00 AM	0	0	0	0	2	0	52	6	0	114	40	1	5	52	0	1
8:00 AM - 8:15 AM	0	0	0	0	2	0	25	4	0	83	42	7	4	28	0	1
8:15 AM - 8:30 AM	0	0	0	0	5	0	24	2	0	93	37	12	5	36	0	0
8:30 AM - 8:45 AM	0	0	0	0	9	0	25	6	0	81	39	9	6	36	0	7
8:45 AM - 9:00 AM	0	0	0	0	3	0	30	4	0	81	22	5	4	40	0	3
TOTAL	**0**	**0**	**0**	**0**	**52**	**0**	**217**	**38**	**0**	**783**	**297**	**43**	**42**	**290**	**0**	**16**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	0	0	0	0	1	0	37	1	0	40	29	2	1	31	0	1
2:15 PM - 2:30 PM	0	0	0	0	5	0	45	8	0	53	30	7	4	32	0	1
2:30 PM - 2:45 PM	0	0	0	0	9	0	43	1	0	48	28	5	6	40	0	5
2:45 PM - 3:00 PM	0	0	0	0	7	0	49	4	0	55	30	5	3	65	0	3
3:00 PM - 3:15 PM	0	0	0	0	12	0	59	7	0	66	32	6	1	71	0	2
3:15 PM - 3:30 PM	0	0	0	0	8	0	53	5	0	64	36	7	2	52	0	2
3:30 PM - 3:45 PM	0	0	0	0	11	0	46	3	0	56	40	5	8	49	0	4
3:45 PM - 4:00 PM	0	0	0	0	10	0	38	5	0	51	43	2	4	51	0	4
4:00 PM - 4:15 PM	0	0	0	0	8	0	49	1	0	55	46	6	4	57	0	3
4:15 PM - 4:30 PM	0	0	0	0	6	0	79	1	0	51	67	5	4	56	0	3
4:30 PM - 4:45 PM	0	0	0	0	14	0	74	1	0	50	58	4	5	54	0	2
4:45 PM - 5:00 PM	0	0	0	0	9	0	87	2	0	56	33	1	2	56	0	2
5:00 PM - 5:15 PM	0	0	0	0	12	0	66	0	0	62	40	2	7	71	0	1
5:15 PM - 5:30 PM	0	0	0	0	15	0	71	2	0	59	46	4	4	49	0	1
5:30 PM - 5:45 PM	0	0	0	0	17	0	44	0	0	55	79	2	8	49	0	1
5:45 PM - 6:00 PM	0	0	0	0	5	0	55	0	0	36	35	1	3	45	0	0
TOTAL	**0**	**0**	**0**	**0**	**149**	**0**	**895**	**41**	**0**	**857**	**672**	**64**	**66**	**828**	**0**	**35**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	0	0	0	25	0	132	18	0	472	177	27	23	164	0	3
4:15 PM - 5:15 PM	0	0	0	0	41	0	306	4	0	219	198	12	18	237	0	8

	PHF	Trucks
AM	0.722	4.8%
PM	0.969	2.4%



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

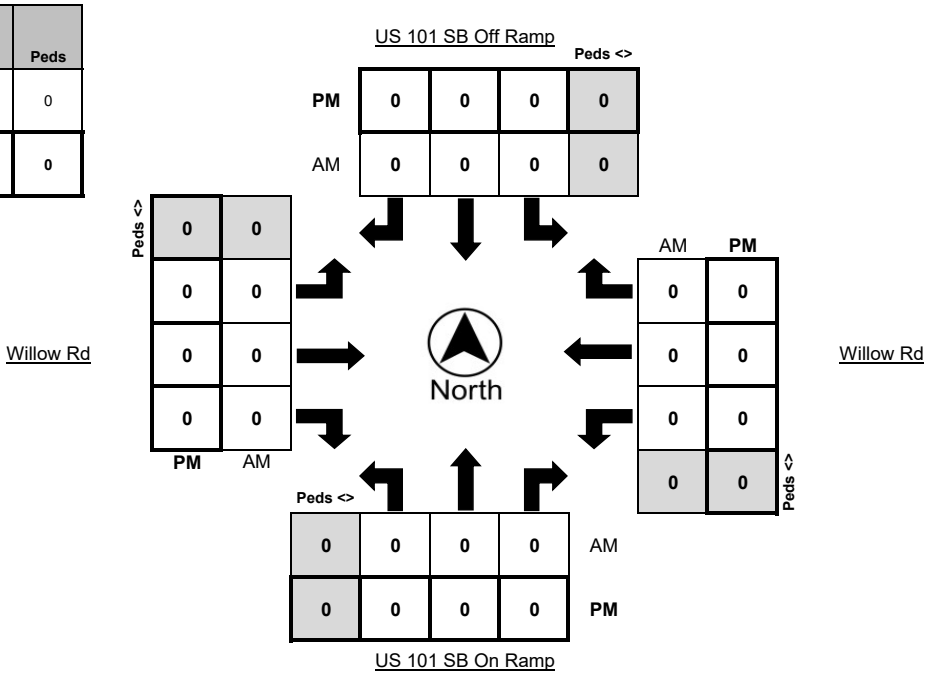
LOCATION Willow Rd @ US 101 SB Ramps
LATITUDE 35.0546
COUNTY San Luis Obispo
LONGITUDE -120.5021
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**0**



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Turning Movement Report

Prepared For:
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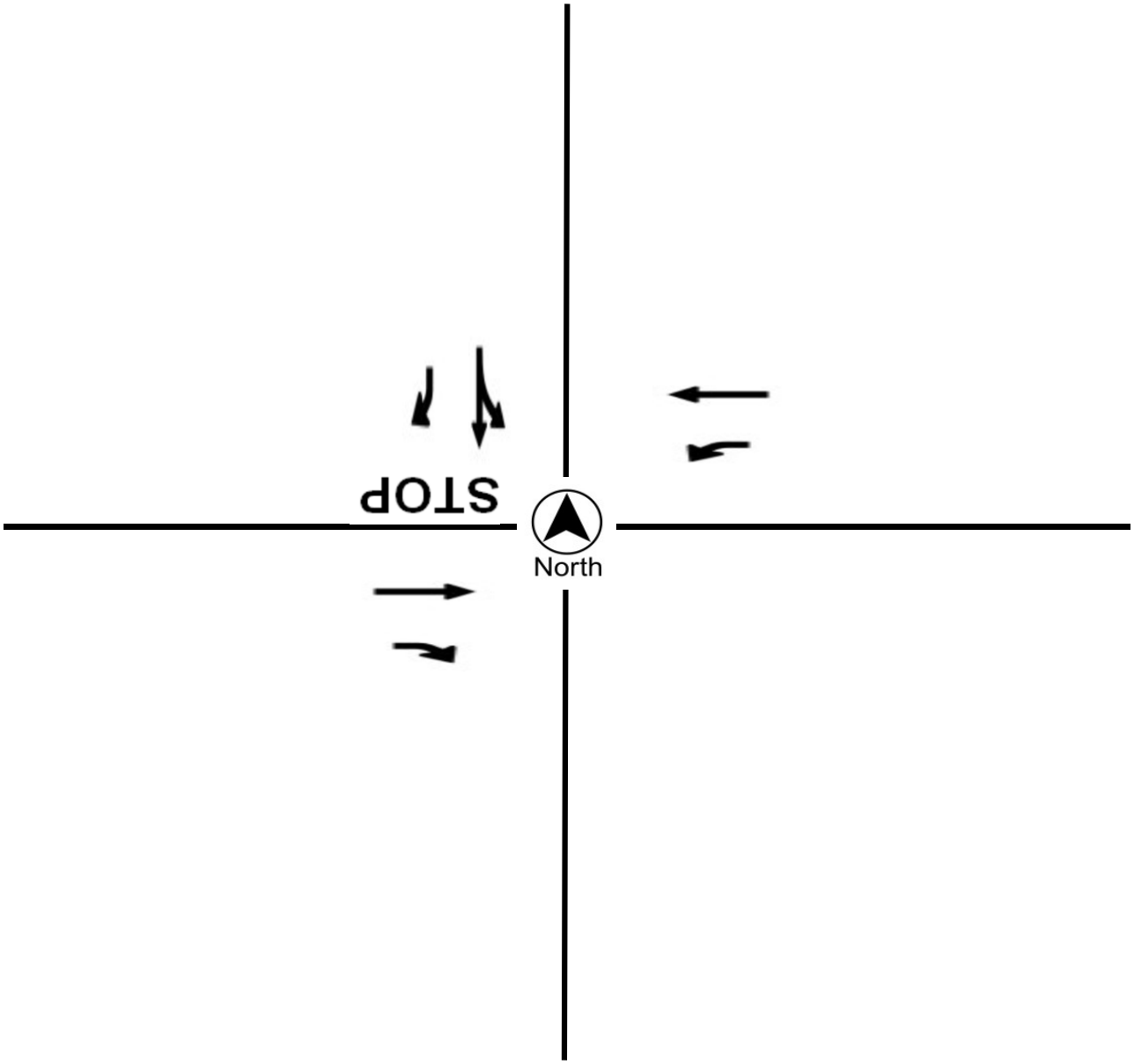
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ US 101 SB Ramps	**N/S STREET**	US 101 SB Off Ramp / US 101 SB On Ramp
COUNTY	San Luis Obispo	**E/W STREET**	Willow Rd / Willow Rd
COLLECTION DATE	Wednesday, May 23, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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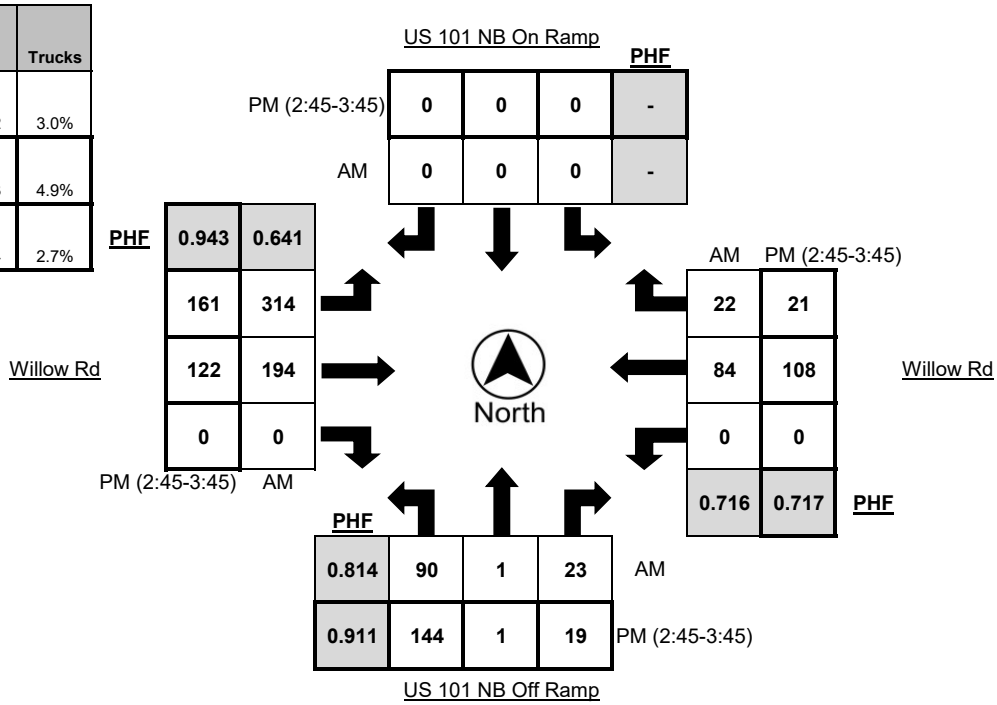
LOCATION Willow Rd @ US 101 NB Ramps
LATITUDE 35.0555
COUNTY San Luis Obispo
LONGITUDE -120.5009
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	24	0	5	1	0	0	0	0	47	7	0	4	0	10	1	0
7:15 AM - 7:30 AM	13	0	6	1	0	0	0	0	62	44	0	4	0	14	6	1
7:30 AM - 7:45 AM	25	0	7	1	0	0	0	0	91	107	0	5	0	28	9	1
7:45 AM - 8:00 AM	31	1	3	2	0	0	0	0	87	35	0	1	0	30	6	0
8:00 AM - 8:15 AM	21	0	7	1	0	0	0	0	74	8	0	5	0	12	1	0
8:15 AM - 8:30 AM	29	1	3	0	0	0	0	0	80	19	0	9	0	11	0	0
8:30 AM - 8:45 AM	26	0	2	6	0	0	0	0	69	24	0	6	0	16	2	1
8:45 AM - 9:00 AM	29	1	6	4	0	0	0	0	59	20	0	5	0	14	3	0
TOTAL	**198**	**3**	**39**	**16**	**0**	**0**	**0**	**0**	**569**	**264**	**0**	**39**	**0**	**135**	**28**	**3**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	30	0	4	1	0	0	0	0	31	5	0	1	0	5	2	0
2:15 PM - 2:30 PM	22	1	2	2	0	0	0	0	46	11	0	6	0	12	2	0
2:30 PM - 2:45 PM	35	1	3	3	0	0	0	0	37	25	0	7	0	10	3	3
2:45 PM - 3:00 PM	30	0	4	4	0	0	0	0	24	37	0	4	0	38	3	0
3:00 PM - 3:15 PM	39	0	6	2	0	0	0	0	39	36	0	3	0	36	9	0
3:15 PM - 3:30 PM	37	0	5	2	0	0	0	0	53	22	0	5	0	16	3	0
3:30 PM - 3:45 PM	38	1	4	2	0	0	0	0	45	27	0	4	0	18	6	2
3:45 PM - 4:00 PM	38	1	4	5	0	0	0	0	39	21	0	0	0	17	6	2
4:00 PM - 4:15 PM	43	0	5	3	0	0	0	0	40	24	0	1	0	18	6	0
4:15 PM - 4:30 PM	47	1	6	3	0	0	0	0	42	14	0	4	0	14	2	0
4:30 PM - 4:45 PM	42	0	3	1	0	0	0	0	35	30	0	2	0	16	2	2
4:45 PM - 5:00 PM	40	1	3	2	0	0	0	0	38	22	0	1	0	18	5	0
5:00 PM - 5:15 PM	47	0	4	2	0	0	0	0	46	28	0	1	0	27	2	0
5:15 PM - 5:30 PM	46	0	7	1	0	0	0	0	33	40	0	4	0	12	3	0
5:30 PM - 5:45 PM	38	0	7	0	0	0	0	0	40	36	0	2	0	16	4	2
5:45 PM - 6:00 PM	37	0	5	0	0	0	0	0	34	9	0	0	0	10	1	0
TOTAL	**609**	**6**	**72**	**33**	**0**	**0**	**0**	**0**	**622**	**387**	**0**	**45**	**0**	**283**	**59**	**11**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	90	1	23	5	0	0	0	0	314	194	0	15	0	84	22	2
2:45 PM - 3:45 PM	144	1	19	10	0	0	0	0	161	122	0	16	0	108	21	2
4:45 PM - 5:45 PM	171	1	21	5	0	0	0	0	157	126	0	8	0	73	14	2

	PHF	Trucks
AM	0.682	3.0%
PM (2:45-3:45)	0.873	4.9%
PM (4:30-5:30)	0.914	2.7%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

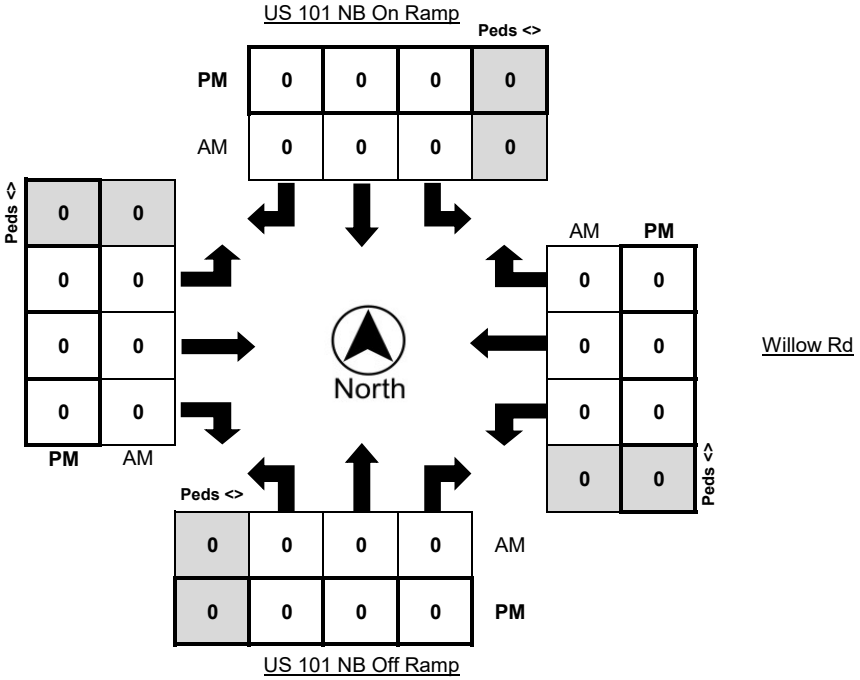
LOCATION Willow Rd @ US 101 NB Ramps
LATITUDE 35.0555
COUNTY San Luis Obispo
LONGITUDE -120.5009
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total (All)	**0**	**0**



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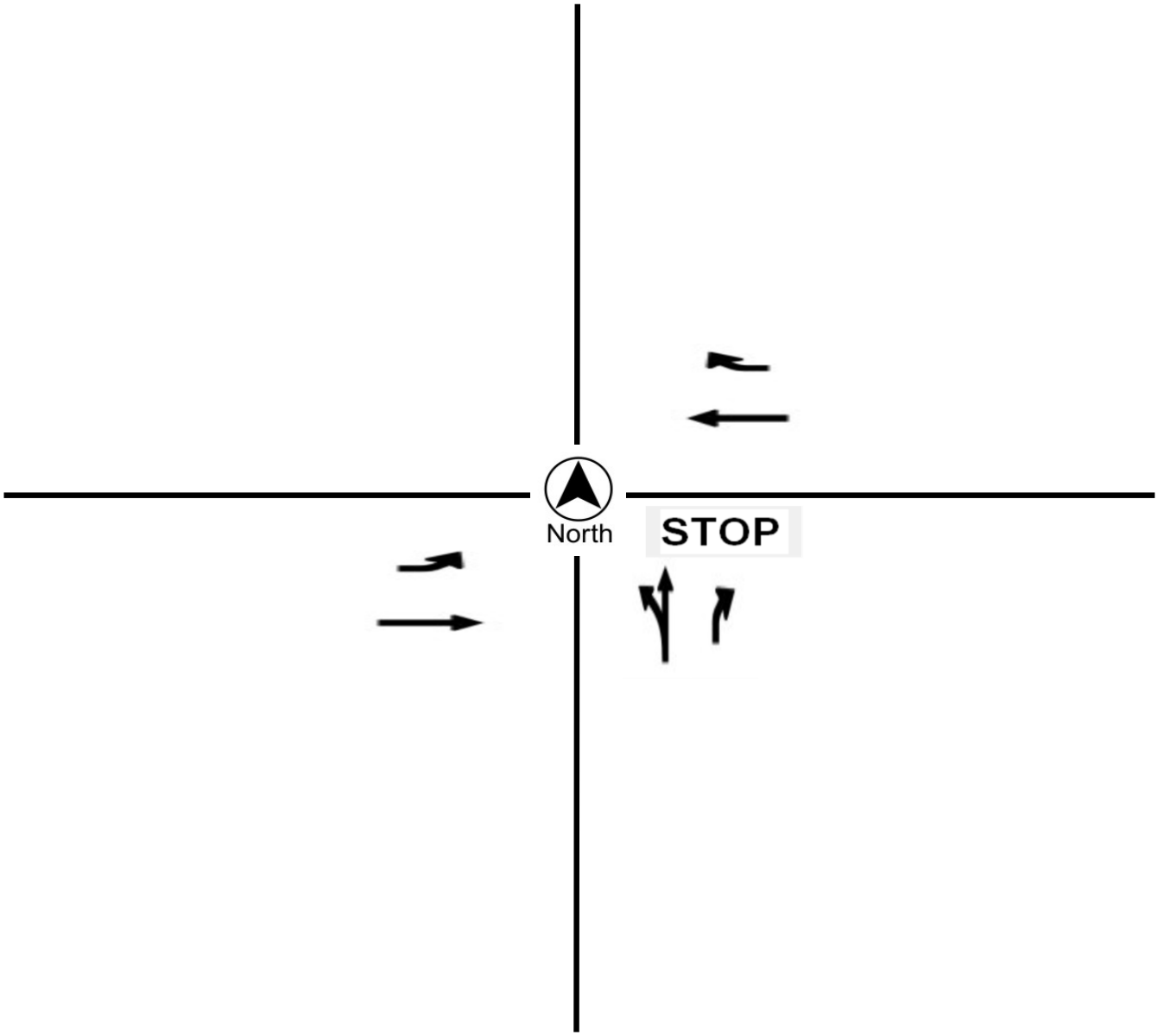
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ US 101 NB Ramps	**N/S STREET**	US 101 NB On Ramp / US 101 NB Off Ramp
COUNTY	San Luis Obispo	**E/W STREET**	Willow Rd / Willow Rd
COLLECTION DATE	Wednesday, May 23, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

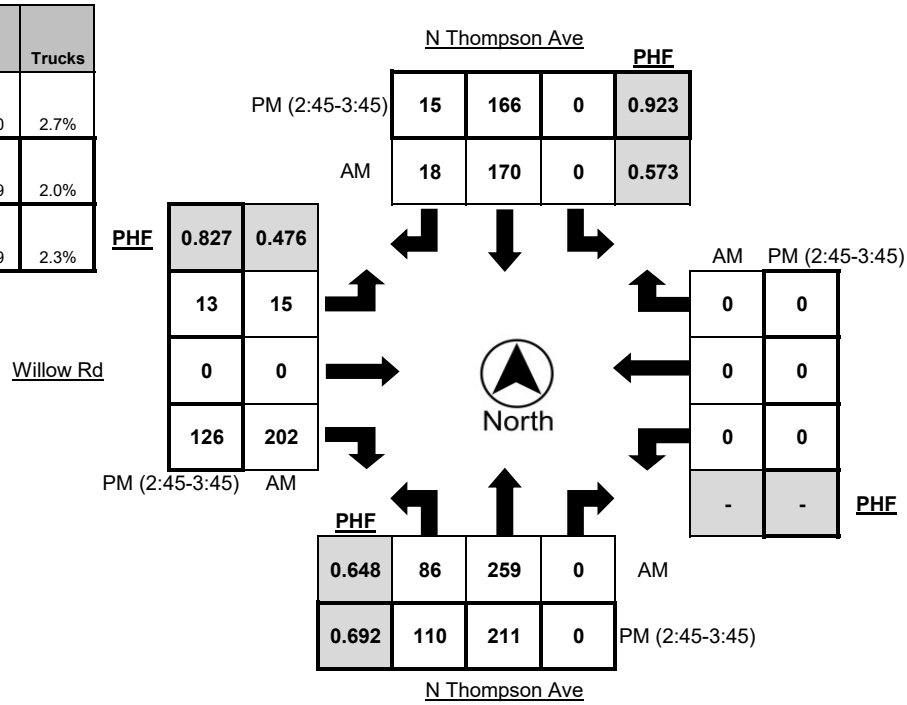
LOCATION Willow Rd @ Thompson Ave
LATITUDE 35.0594
COUNTY San Luis Obispo
LONGITUDE -120.4941
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	5	43	0	0	0	24	4	3	2	0	8	0	0	0	0	0
7:15 AM - 7:30 AM	16	59	0	7	0	44	4	2	3	0	48	2	0	0	0	0
7:30 AM - 7:45 AM	41	92	0	2	0	80	2	0	4	0	110	0	0	0	0	0
7:45 AM - 8:00 AM	24	66	0	4	0	27	5	2	4	0	33	0	0	0	0	0
8:00 AM - 8:15 AM	5	42	0	1	0	19	7	0	4	0	11	0	0	0	0	0
8:15 AM - 8:30 AM	7	33	0	0	0	28	4	1	4	0	17	1	0	0	0	0
8:30 AM - 8:45 AM	12	26	0	3	0	21	5	0	5	0	22	2	0	0	0	0
8:45 AM - 9:00 AM	14	36	0	2	0	22	5	0	4	0	21	1	0	0	0	0
TOTAL	**124**	**397**	**0**	**19**	**0**	**265**	**36**	**8**	**30**	**0**	**270**	**6**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	6	38	0	1	0	20	2	0	3	0	4	0	0	0	0	0
2:15 PM - 2:30 PM	9	31	0	1	0	36	4	3	2	0	11	1	0	0	0	0
2:30 PM - 2:45 PM	9	20	0	2	0	31	6	4	3	0	25	2	0	0	0	0
2:45 PM - 3:00 PM	37	66	0	0	0	38	1	1	2	0	38	2	0	0	0	0
3:00 PM - 3:15 PM	39	77	0	1	0	42	3	1	3	0	39	1	0	0	0	0
3:15 PM - 3:30 PM	17	36	0	0	0	45	3	1	4	0	24	1	0	0	0	0
3:30 PM - 3:45 PM	17	32	0	3	0	41	8	1	4	0	25	1	0	0	0	0
3:45 PM - 4:00 PM	14	33	0	1	0	37	6	1	3	0	22	1	0	0	0	0
4:00 PM - 4:15 PM	20	42	0	0	0	47	5	2	3	0	26	0	0	0	0	0
4:15 PM - 4:30 PM	12	30	0	0	0	50	5	0	5	0	15	1	0	0	0	0
4:30 PM - 4:45 PM	13	30	0	3	0	53	5	0	3	0	30	0	0	0	0	0
4:45 PM - 5:00 PM	17	29	0	0	0	67	4	3	1	0	23	0	0	0	0	0
5:00 PM - 5:15 PM	27	25	0	1	0	51	3	2	3	0	29	1	0	0	0	0
5:15 PM - 5:30 PM	9	18	0	0	0	80	5	1	8	0	39	2	0	0	0	0
5:30 PM - 5:45 PM	14	22	0	2	0	45	6	2	3	0	40	1	0	0	0	0
5:45 PM - 6:00 PM	11	23	0	2	0	49	2	2	6	0	8	0	0	0	0	0
TOTAL	**271**	**552**	**0**	**17**	**0**	**732**	**68**	**24**	**56**	**0**	**398**	**14**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	86	259	0	14	0	170	18	4	15	0	202	2	0	0	0	0
2:45 PM - 3:45 PM	110	211	0	4	0	166	15	4	13	0	126	5	0	0	0	0
4:30 PM - 5:30 PM	66	102	0	4	0	251	17	6	15	0	121	3	0	0	0	0

	PHF	Trucks
AM	0.570	2.7%
PM (2:45-3:45)	0.789	2.0%
PM (4:30-5:30)	0.899	2.3%



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

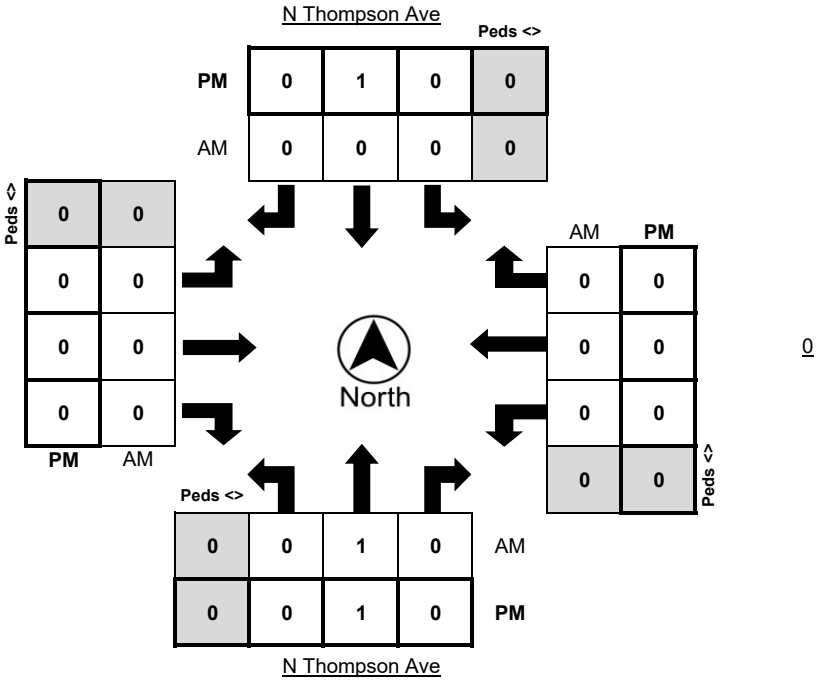
LOCATION Willow Rd @ Thompson Ave
LATITUDE 35.0594
COUNTY San Luis Obispo
LONGITUDE -120.4941
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	1	0
PM Peak Total (2:45-3:45)	2	0
PM Peak Total (4:30-5:30)	0	0



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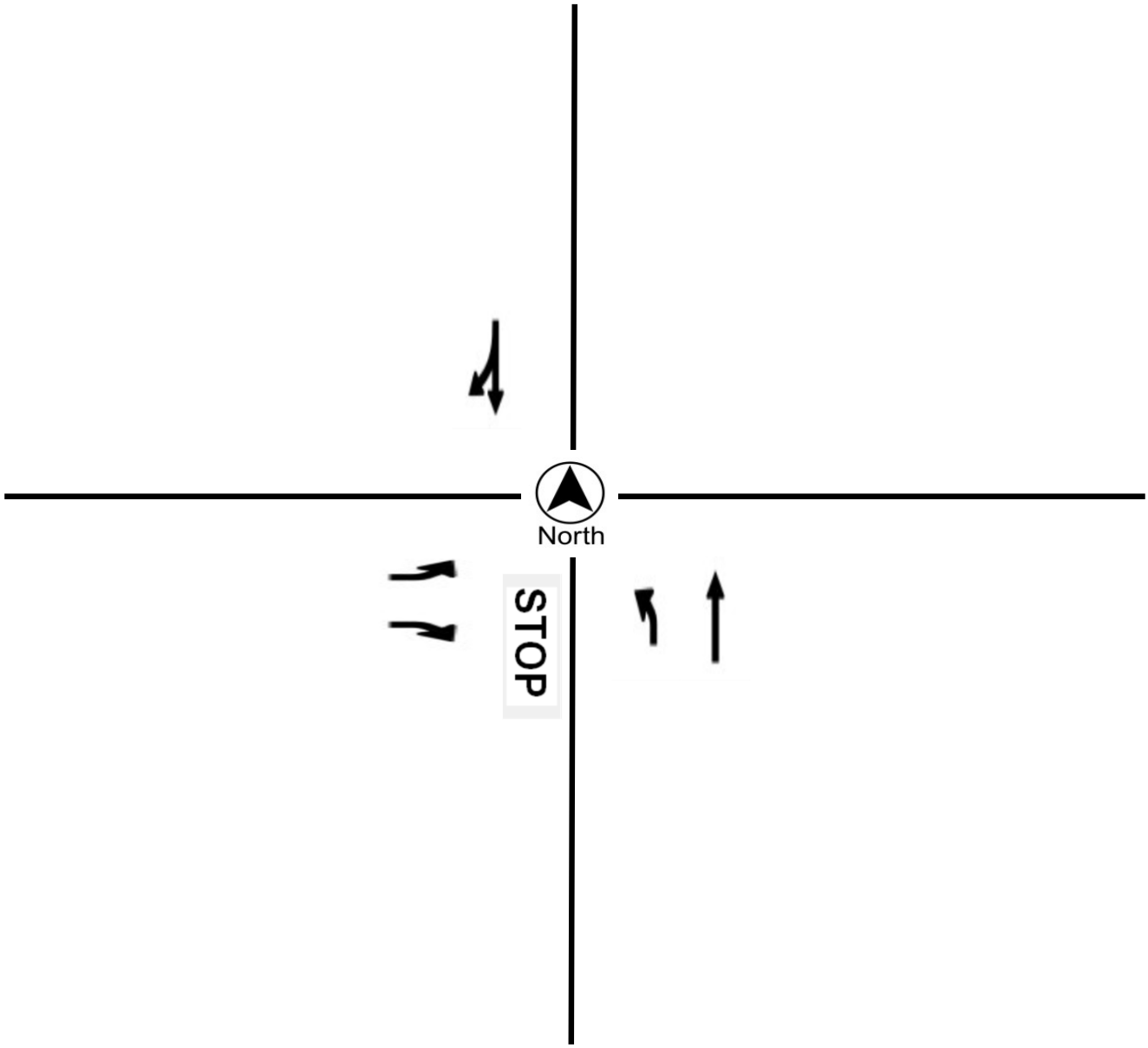
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Willow Rd @ Thompson Ave	**N/S STREET**	N Thompson Ave / N Thompson Ave
COUNTY	San Luis Obispo	**E/W STREET**	/ Willow Rd
COLLECTION DATE	Wednesday, May 23, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:
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Morro Bay, CA 93442

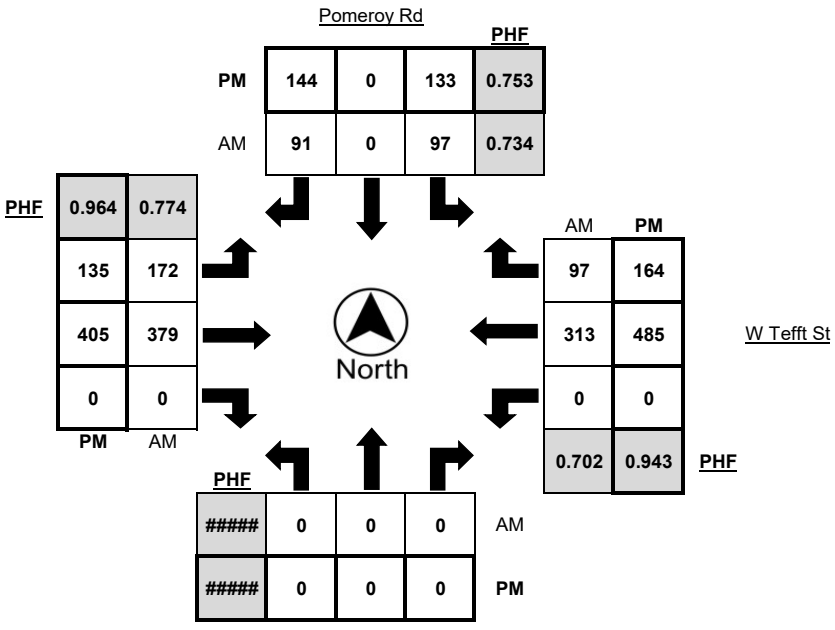
LOCATION W Tefft St @ Pomeroy Rd
LATITUDE 35.0308
COUNTY San Luis Obispo
LONGITUDE -120.4951
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	0	0	29	0	15	1	19	74	0	2	0	52	7	2
7:15 AM - 7:30 AM	0	0	0	0	16	0	13	1	60	118	0	3	0	58	25	2
7:30 AM - 7:45 AM	0	0	0	0	27	0	15	0	63	107	0	3	0	73	13	3
7:45 AM - 8:00 AM	0	0	0	0	30	0	34	0	28	75	0	1	0	109	37	1
8:00 AM - 8:15 AM	0	0	0	0	24	0	29	1	21	79	0	3	0	73	22	1
8:15 AM - 8:30 AM	0	0	0	0	29	0	11	0	15	76	0	1	0	62	20	3
8:30 AM - 8:45 AM	0	0	0	0	33	0	27	0	26	98	0	4	0	76	30	1
8:45 AM - 9:00 AM	0	0	0	0	51	0	15	0	23	141	0	1	0	82	28	4
TOTAL	**0**	**0**	**0**	**0**	**239**	**0**	**159**	**3**	**255**	**768**	**0**	**18**	**0**	**585**	**182**	**17**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	0	0	0	0	30	0	13	3	16	78	0	2	0	75	27	5
2:15 PM - 2:30 PM	0	0	0	0	31	0	21	1	16	75	0	2	0	82	36	2
2:30 PM - 2:45 PM	0	0	0	0	30	0	27	3	24	88	0	0	0	85	36	2
2:45 PM - 3:00 PM	0	0	0	0	28	0	27	2	9	97	0	2	0	111	34	3
3:00 PM - 3:15 PM	0	0	0	0	39	0	27	5	12	83	0	2	0	159	42	4
3:15 PM - 3:30 PM	0	0	0	0	43	0	34	1	23	91	0	6	0	105	54	4
3:30 PM - 3:45 PM	0	0	0	0	42	0	26	2	16	114	0	6	0	112	41	2
3:45 PM - 4:00 PM	0	0	0	0	32	0	27	0	30	90	0	0	0	112	55	1
4:00 PM - 4:15 PM	0	0	0	0	37	0	33	0	38	101	0	0	0	112	44	2
4:15 PM - 4:30 PM	0	0	0	0	35	0	27	0	24	98	0	1	0	115	43	0
4:30 PM - 4:45 PM	0	0	0	0	36	0	33	3	36	112	0	1	0	102	42	2
4:45 PM - 5:00 PM	0	0	0	0	36	0	39	1	33	107	0	1	0	115	57	2
5:00 PM - 5:15 PM	0	0	0	0	24	0	31	0	39	101	0	1	0	128	36	0
5:15 PM - 5:30 PM	0	0	0	0	22	0	33	1	33	97	0	0	0	118	42	1
5:30 PM - 5:45 PM	0	0	0	0	51	0	41	2	30	100	0	0	0	124	29	2
5:45 PM - 6:00 PM	0	0	0	0	53	0	27	0	26	69	0	2	0	115	42	1
TOTAL	**0**	**0**	**0**	**0**	**569**	**0**	**466**	**24**	**405**	**1501**	**0**	**26**	**0**	**1770**	**660**	**33**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	0	0	0	0	97	0	91	2	172	379	0	10	0	313	97	7
4:45 PM - 5:45 PM	0	0	0	0	133	0	144	4	135	405	0	2	0	485	164	5

	PHF	Trucks
AM	0.918	1.7%
PM	0.947	0.8%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

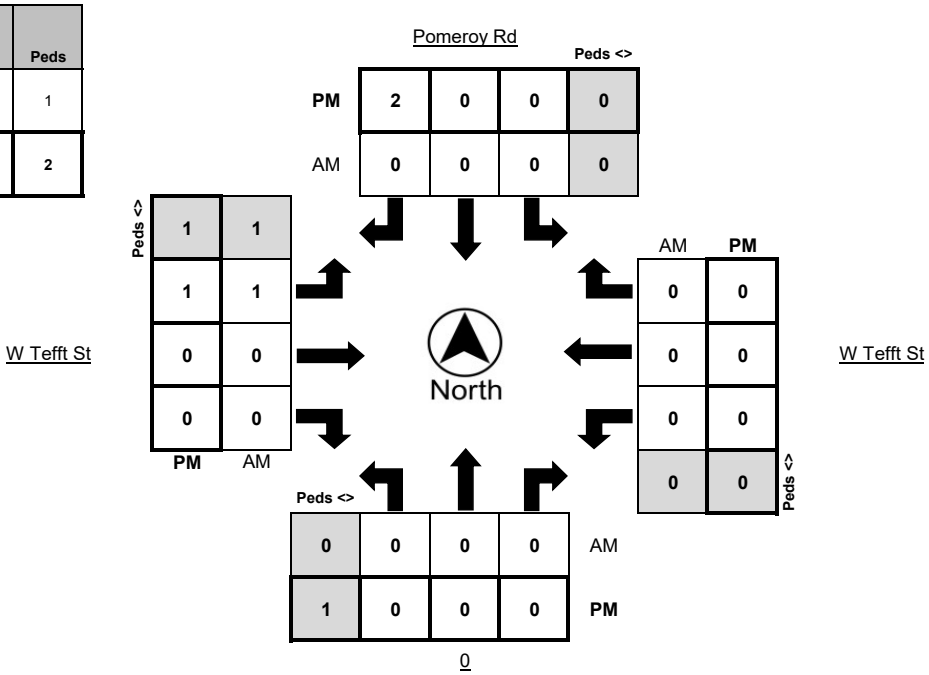
LOCATION W Tefft St @ Pomeroy Rd
LATITUDE 35.0308
COUNTY San Luis Obispo
LONGITUDE -120.4951
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
2:30 PM - 2:45 PM	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**2**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**3**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM - 5:45 PM	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	1

	Bikes	Peds
AM Peak Total	1	1
PM Peak Total	3	2



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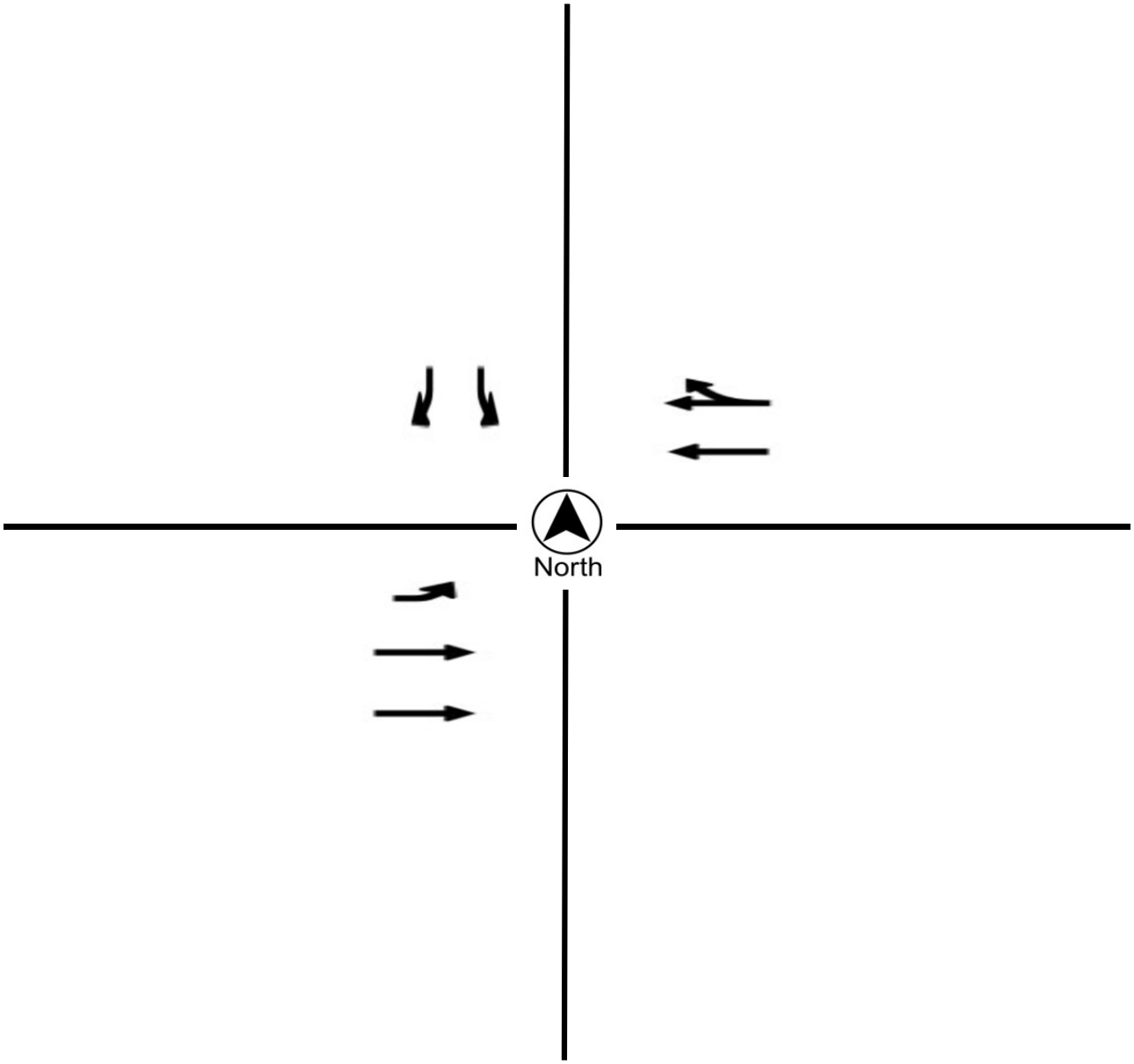
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	W Tefft St @ Pomeroy Rd	**N/S STREET**	Pomeroy Rd /
COUNTY	San Luis Obispo	**E/W STREET**	W Tefft St / W Tefft St
COLLECTION DATE	Wednesday, May 23, 2018	**WEATHER**	Clear
CYCLE TIME	58 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

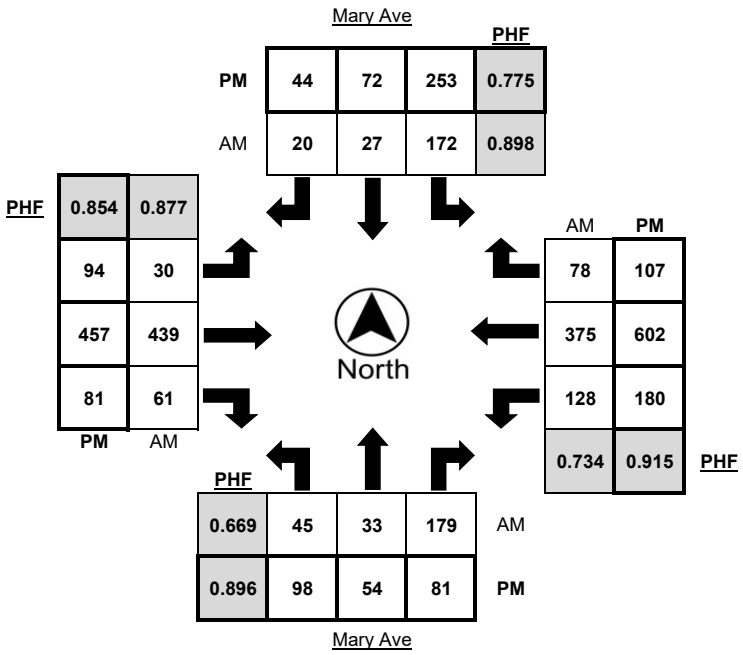
LOCATION Tefft St @ Mary Ave
LATITUDE 35.0357
COUNTY San Luis Obispo
LONGITUDE -120.4867
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	1	4	20	1	41	2	2	1	12	98	11	2	16	70	16	3
7:15 AM - 7:30 AM	7	12	52	0	46	8	2	1	5	117	13	3	26	70	14	4
7:30 AM - 7:45 AM	14	6	76	0	34	10	4	2	11	118	22	3	34	87	15	3
7:45 AM - 8:00 AM	16	8	37	1	45	8	8	0	6	114	17	1	34	134	30	2
8:00 AM - 8:15 AM	8	7	14	0	47	1	6	1	8	90	9	3	34	84	19	0
8:15 AM - 8:30 AM	7	12	20	1	30	4	2	2	8	100	14	0	24	82	27	4
8:30 AM - 8:45 AM	21	5	24	0	44	5	6	2	11	100	10	3	29	94	22	2
8:45 AM - 9:00 AM	8	4	19	0	48	9	3	1	23	164	18	1	14	119	23	6
TOTAL	**82**	**58**	**262**	**3**	**335**	**47**	**33**	**10**	**84**	**901**	**114**	**16**	**211**	**740**	**166**	**24**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	18	10	14	1	46	20	5	2	15	90	14	6	26	87	17	4
2:15 PM - 2:30 PM	21	11	18	1	46	12	8	0	21	81	18	1	24	101	21	3
2:30 PM - 2:45 PM	11	6	22	0	36	6	6	0	11	91	23	1	34	115	21	5
2:45 PM - 3:00 PM	22	8	15	2	59	16	10	1	24	107	22	3	35	132	28	6
3:00 PM - 3:15 PM	24	19	13	0	45	17	12	0	10	102	21	5	46	182	22	6
3:15 PM - 3:30 PM	29	13	17	0	51	20	11	1	17	107	26	6	46	137	28	3
3:30 PM - 3:45 PM	23	17	15	0	63	14	12	2	24	113	16	4	48	141	24	5
3:45 PM - 4:00 PM	17	21	15	0	55	24	8	0	21	104	17	0	52	168	26	3
4:00 PM - 4:15 PM	26	23	13	1	63	24	8	1	17	97	23	1	52	142	31	1
4:15 PM - 4:30 PM	19	15	16	0	73	14	10	1	24	101	23	2	34	148	27	3
4:30 PM - 4:45 PM	25	16	15	1	62	14	12	3	31	135	19	1	48	128	24	2
4:45 PM - 5:00 PM	23	13	23	1	49	20	9	2	25	108	23	3	37	168	33	2
5:00 PM - 5:15 PM	23	9	21	0	84	21	14	1	21	101	21	2	45	136	27	1
5:15 PM - 5:30 PM	27	16	22	1	58	17	9	1	17	113	18	1	50	170	23	0
5:30 PM - 5:45 PM	21	12	25	0	64	24	11	2	23	114	24	4	38	124	24	2
5:45 PM - 6:00 PM	18	20	23	0	64	21	12	2	18	111	15	1	36	141	19	2
TOTAL	**347**	**229**	**287**	**8**	**918**	**284**	**157**	**19**	**319**	**1675**	**323**	**41**	**651**	**2220**	**395**	**48**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	45	33	179	1	172	27	20	4	30	439	61	10	128	375	78	9
4:30 PM - 5:30 PM	98	54	81	3	253	72	44	7	94	457	81	7	180	602	107	5

	PHF	Trucks
AM	0.868	1.5%
PM	0.983	1.0%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

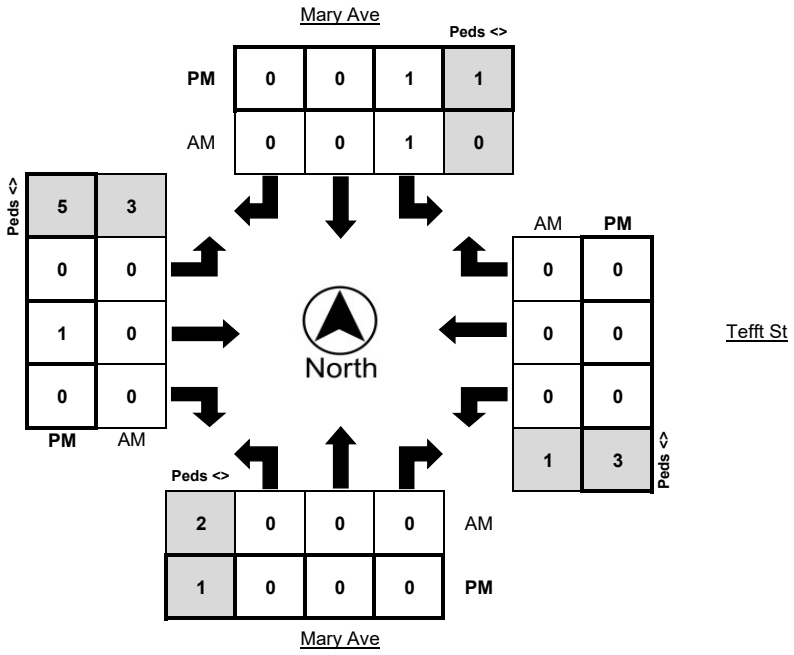
LOCATION Tefft St @ Mary Ave
LATITUDE 35.0357
COUNTY San Luis Obispo
LONGITUDE -120.4867
COLLECTION DATE Wednesday, May 23, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	1	0	0	2	0	0	0	1	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	4	0	0	0	1	0	0	0	4	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	1
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
3:00 PM - 3:15 PM	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	2
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	4	0	0	1	1	0	0	0	3
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:00 PM - 4:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
4:15 PM - 4:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4
5:00 PM - 5:15 PM	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**11**	**1**	**0**	**0**	**9**	**0**	**2**	**1**	**12**	**0**	**1**	**1**	**19**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	1	0	0	2	0	0	0	1	0	0	0	3
4:30 PM - 5:30 PM	0	0	0	1	1	0	0	1	0	1	0	3	0	0	0	5

	Bikes	Peds
AM Peak Total	1	6
PM Peak Total	**2**	**10**



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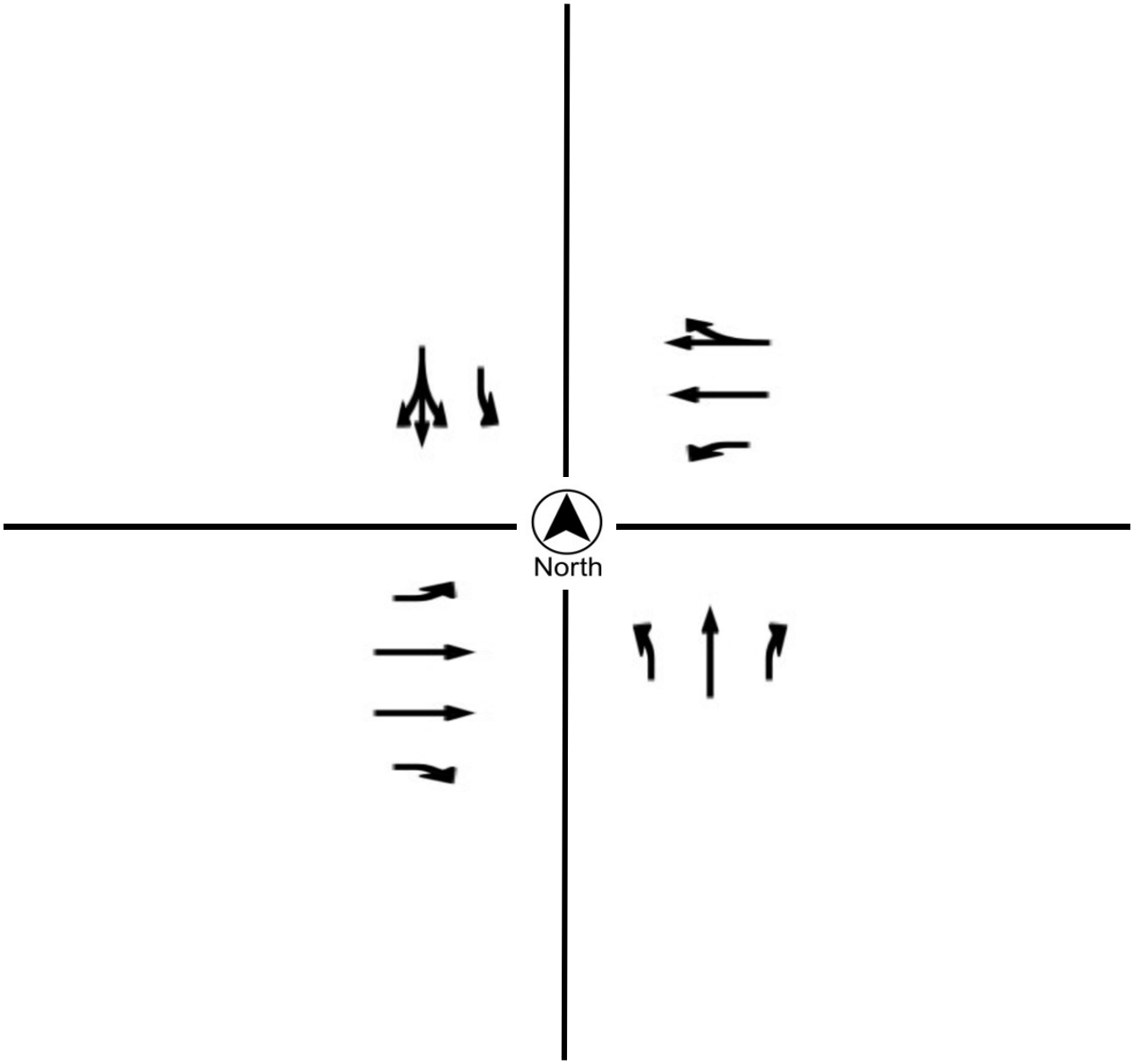
Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Tefft St @ Mary Ave	**N/S STREET**	Mary Ave / Mary Ave
COUNTY	San Luis Obispo	**E/W STREET**	Tefft St / Tefft St
COLLECTION DATE	Wednesday, May 23, 2018	**WEATHER**	Clear
CYCLE TIME	123 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

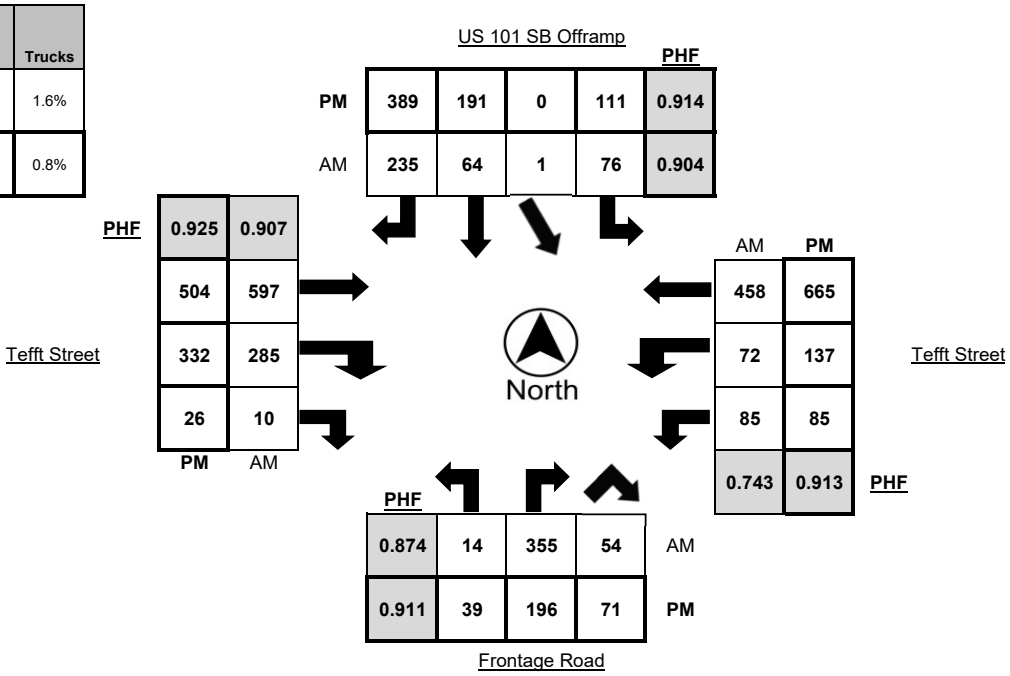
LOCATION Tefft Street @ US 101 SB Ramps
LATITUDE 35.0365
COUNTY San Luis Obispo
LONGITUDE -120.4853
COLLECTION DATE Thursday, May 24, 2018
WEATHER Clear

	Northbound				Southbound					Eastbound				Westbound			
Time	**Left**	**R-Tefft**	**R-101 S**	**Trucks**	**L-Tefft**	**L-101 S**	**Thru**	**Right**	**Trucks**	**Thru**	**R-101 S**	**R-Front**	**Trucks**	**L-101 S**	**L-Front**	**Thru**	**Trucks**
7:00 AM - 7:15 AM	8	56	7	2	8	0	10	44	4	114	59	1	5	18	13	90	4
7:15 AM - 7:30 AM	4	90	15	3	16	0	17	57	2	157	75	2	3	21	17	87	4
7:30 AM - 7:45 AM	0	103	18	1	21	1	17	47	2	160	68	3	2	26	20	109	1
7:45 AM - 8:00 AM	4	78	8	0	20	0	12	72	1	167	75	4	4	27	22	158	5
8:00 AM - 8:15 AM	6	84	13	0	19	0	18	59	3	113	67	1	5	11	13	104	1
8:15 AM - 8:30 AM	7	62	12	1	17	0	11	57	5	101	62	3	3	24	11	103	3
8:30 AM - 8:45 AM	7	64	10	2	11	0	15	42	2	123	66	4	0	22	14	114	5
8:45 AM - 9:00 AM	8	42	17	1	15	0	16	56	4	144	57	7	2	21	14	131	2
TOTAL	**44**	**579**	**100**	**10**	**127**	**1**	**116**	**434**	**23**	**1079**	**529**	**25**	**24**	**170**	**124**	**896**	**25**

	Northbound				Southbound					Eastbound				Westbound			
Time	**Left**	**R-Tefft**	**R-101 S**	**Trucks**	**L-Tefft**	**L-101 S**	**Thru**	**Right**	**Trucks**	**Thru**	**R-101 S**	**R-Front**	**Trucks**	**L-101 S**	**L-Front**	**Thru**	**Trucks**
2:00 PM - 2:15 PM	6	26	9	1	15	0	25	55	2	98	59	3	0	11	14	96	2
2:15 PM - 2:30 PM	5	44	11	2	21	0	31	68	5	85	63	6	0	13	23	126	2
2:30 PM - 2:45 PM	10	42	8	0	17	0	28	53	4	132	56	1	7	14	23	84	0
2:45 PM - 3:00 PM	9	58	9	2	13	1	27	78	3	131	50	5	0	10	27	162	4
3:00 PM - 3:15 PM	9	48	14	0	16	0	37	94	3	113	65	10	3	18	31	206	7
3:15 PM - 3:30 PM	9	31	8	2	20	0	44	108	5	122	73	10	2	21	43	157	6
3:30 PM - 3:45 PM	7	32	19	1	15	1	31	115	2	144	76	9	3	13	23	138	3
3:45 PM - 4:00 PM	8	47	15	4	25	0	47	93	4	113	80	9	2	19	22	152	3
4:00 PM - 4:15 PM	12	38	18	0	24	0	37	97	3	143	90	7	1	19	25	139	2
4:15 PM - 4:30 PM	9	53	9	0	25	0	51	78	1	118	68	11	5	25	32	148	1
4:30 PM - 4:45 PM	9	40	18	0	31	0	47	95	1	110	90	4	0	18	34	144	1
4:45 PM - 5:00 PM	8	56	13	1	26	0	41	98	3	135	80	6	6	18	34	191	2
5:00 PM - 5:15 PM	13	47	24	0	20	0	53	91	1	119	78	7	1	23	37	161	3
5:15 PM - 5:30 PM	9	53	16	1	34	0	50	105	1	140	84	9	1	26	32	169	1
5:30 PM - 5:45 PM	8	56	11	0	19	2	56	85	1	113	76	8	3	21	24	139	1
5:45 PM - 6:00 PM	9	58	15	0	18	0	48	106	0	117	83	12	0	24	30	129	1
TOTAL	**140**	**729**	**217**	**14**	**339**	**4**	**653**	**1419**	**39**	**1933**	**1171**	**117**	**34**	**293**	**454**	**2341**	**39**

	Northbound				Southbound					Eastbound				Westbound			
PEAK HOUR	**Left**	**R-Tefft**	**R-101 S**	**Trucks**	**L-Tefft**	**L-101 S**	**Thru**	**Right**	**Trucks**	**Thru**	**R-101 S**	**R-Front**	**Trucks**	**L-101 S**	**L-Front**	**Thru**	**Trucks**
7:15 AM - 8:15 AM	14	355	54	4	76	1	64	235	8	597	285	10	14	85	72	458	11
4:30 PM - 5:30 PM	39	196	71	2	111	0	191	389	6	504	332	26	8	85	137	665	7

	PHF	Trucks
AM	0.891	1.6%
PM	0.944	0.8%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

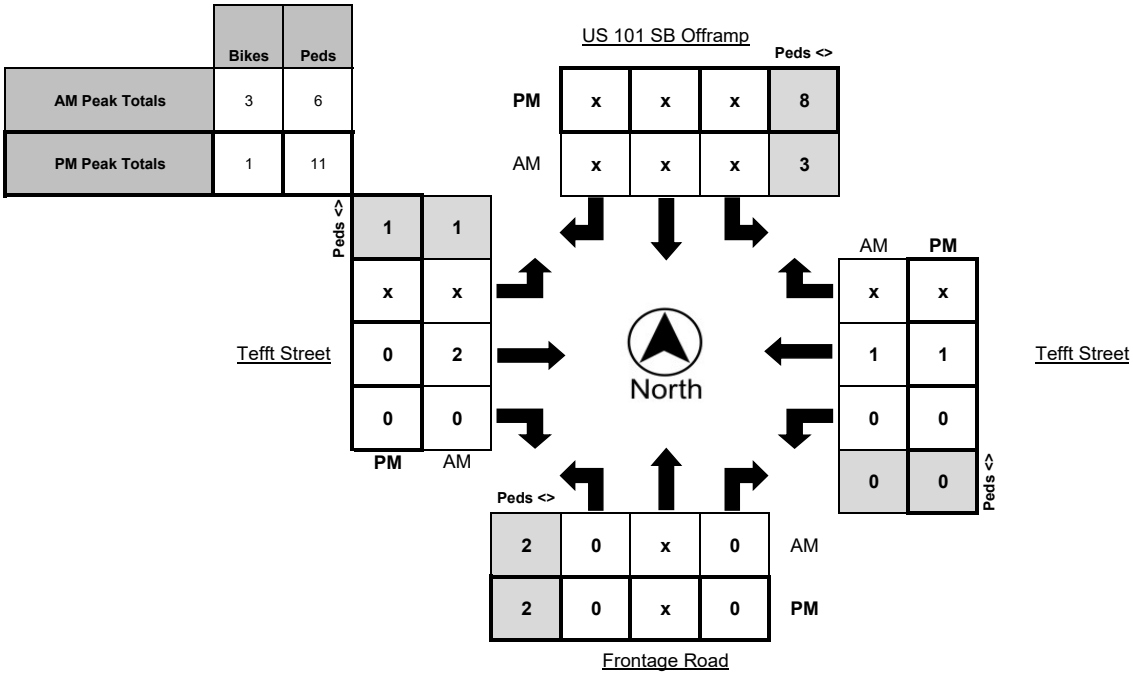
LOCATION Tefft Street @ US 101 SB Ramps
LATITUDE 35.0365
COUNTY San Luis Obispo
LONGITUDE -120.4853
COLLECTION DATE Thursday, May 24, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	x	0	0	x	x	x	2	x	0	0	0	0	1	x	0
7:15 AM - 7:30 AM	0	x	0	0	x	x	x	0	x	2	0	0	0	1	x	0
7:30 AM - 7:45 AM	0	x	0	1	x	x	x	1	x	0	0	0	0	0	x	1
7:45 AM - 8:00 AM	0	x	0	0	x	x	x	1	x	0	0	0	0	0	x	0
8:00 AM - 8:15 AM	0	x	0	2	x	x	x	0	x	0	0	0	0	0	x	0
8:15 AM - 8:30 AM	0	x	0	0	x	x	x	0	x	0	0	0	0	0	x	0
8:30 AM - 8:45 AM	0	x	0	1	x	x	x	2	x	0	0	0	0	0	x	0
8:45 AM - 9:00 AM	0	x	0	0	x	x	x	3	x	0	0	0	0	0	x	0
TOTAL	**0**	**x**	**0**	**4**	**x**	**x**	**x**	**9**	**x**	**2**	**0**	**0**	**0**	**2**	**x**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	x	0	2	x	x	x	0	x	0	0	0	0	0	x	0
2:15 PM - 2:30 PM	0	x	0	2	x	x	x	0	x	0	0	0	0	0	x	0
2:30 PM - 2:45 PM	0	x	0	0	x	x	x	1	x	0	0	0	0	0	x	2
2:45 PM - 3:00 PM	0	x	0	0	x	x	x	1	x	0	0	0	0	0	x	0
3:00 PM - 3:15 PM	0	x	0	5	x	x	x	1	x	0	0	0	0	1	x	1
3:15 PM - 3:30 PM	0	x	0	12	x	x	x	1	x	0	0	0	0	0	x	5
3:30 PM - 3:45 PM	0	x	0	12	x	x	x	2	x	0	0	0	0	0	x	1
3:45 PM - 4:00 PM	0	x	0	4	x	x	x	1	x	0	0	0	0	0	x	4
4:00 PM - 4:15 PM	0	x	0	2	x	x	x	0	x	1	0	0	0	0	x	0
4:15 PM - 4:30 PM	0	x	0	4	x	x	x	1	x	0	0	0	0	0	x	0
4:30 PM - 4:45 PM	0	x	0	6	x	x	x	0	x	0	0	0	0	0	x	0
4:45 PM - 5:00 PM	0	x	0	0	x	x	x	1	x	0	0	0	0	0	x	0
5:00 PM - 5:15 PM	0	x	0	1	x	x	x	0	x	0	0	0	0	0	x	1
5:15 PM - 5:30 PM	0	x	0	1	x	x	x	1	x	0	0	0	0	1	x	0
5:30 PM - 5:45 PM	0	x	0	0	x	x	x	1	x	0	0	0	0	0	x	1
5:45 PM - 6:00 PM	0	x	0	3	x	x	x	2	x	0	0	0	0	1	x	2
TOTAL	**0**	**x**	**0**	**54**	**x**	**x**	**x**	**13**	**x**	**1**	**0**	**0**	**0**	**3**	**x**	**17**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	x	0	3	x	x	x	2	x	2	0	0	0	1	x	1
4:30 PM - 5:30 PM	0	x	0	8	x	x	x	2	x	0	0	0	0	1	x	1

	Bikes	Peds
AM Peak Totals	3	6
PM Peak Totals	1	11



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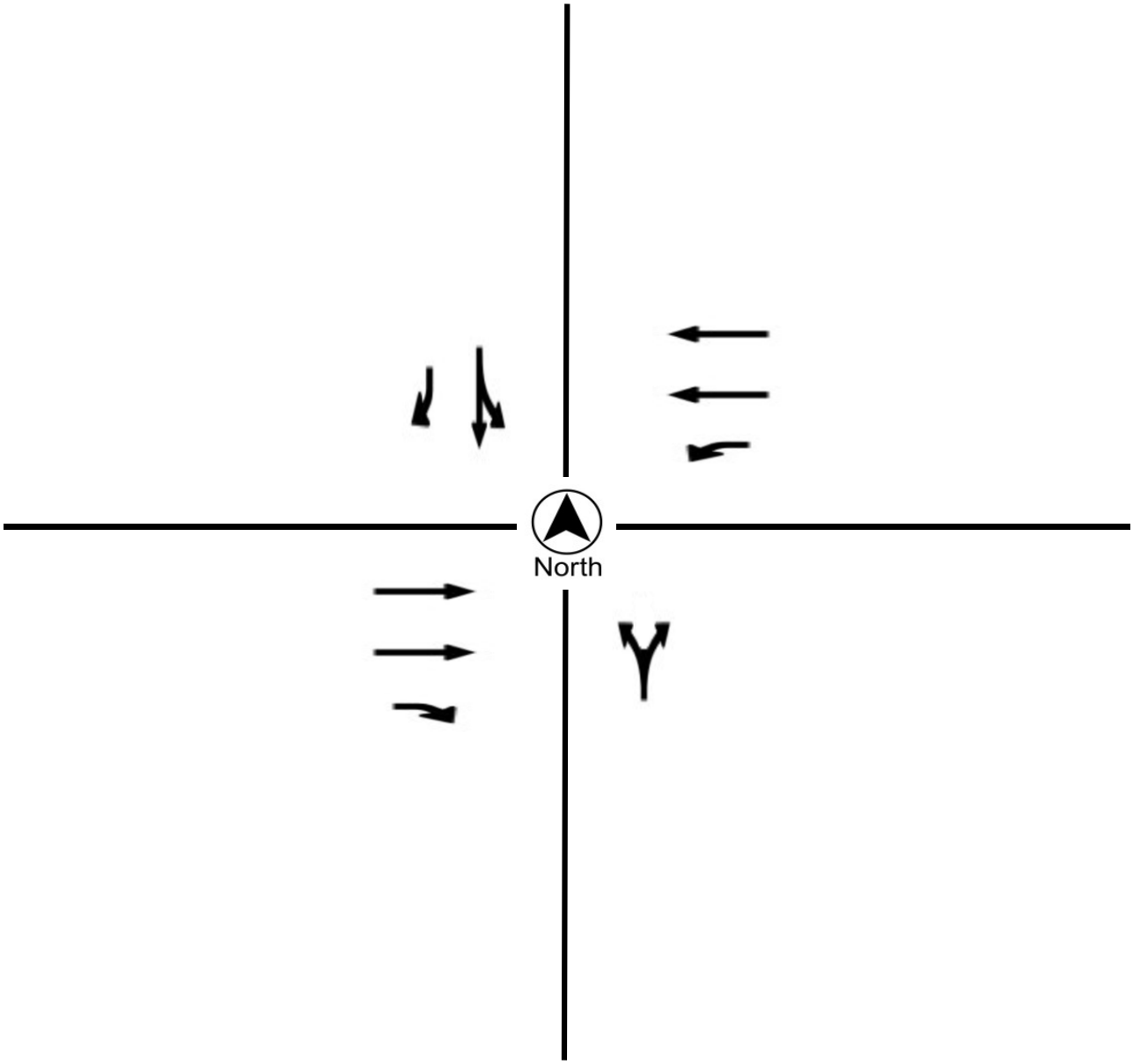
Turning Movement Report

Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Tefft Street @ US 101 SB Ramps	**N/S STREET**	US 101 SB Offramp
COUNTY	San Luis Obispo	**E/W STREET**	Tefft Street
COLLECTION DATE	Thursday, May 24, 2018	**WEATHER**	Clear
CYCLE TIME	105 Seconds	**CONTROL TYPE**	Signal

COMMENTS Northbound and southbound approaches are split.
Westbound left turns are protected.



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Turning Movement Report

Prepared For:
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895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

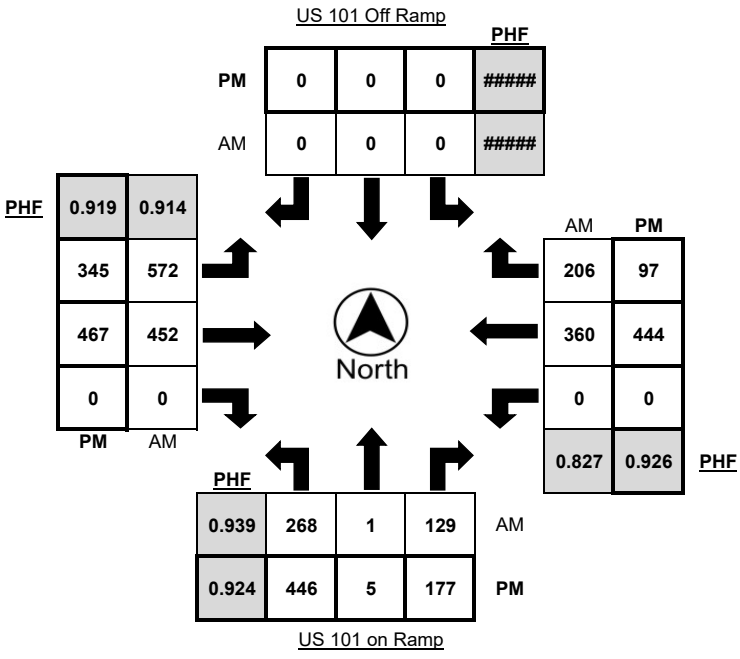
LOCATION Tefft St @ US 101 NB Ramps
LATITUDE 35.0371
COUNTY San Luis Obispo
LONGITUDE -120.4842
COLLECTION DATE Thursday, May 24, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	55	0	31	4	0	0	0	0	116	63	0	10	0	71	46	4
7:15 AM - 7:30 AM	47	0	38	1	0	0	0	0	150	127	0	8	0	68	54	5
7:30 AM - 7:45 AM	68	0	34	4	0	0	0	0	134	128	0	3	0	112	59	3
7:45 AM - 8:00 AM	74	1	31	4	0	0	0	0	157	123	0	6	0	111	52	2
8:00 AM - 8:15 AM	79	0	26	1	0	0	0	0	131	74	0	8	0	69	41	3
8:15 AM - 8:30 AM	54	0	23	3	0	0	0	0	106	77	0	5	0	69	36	3
8:30 AM - 8:45 AM	61	0	39	5	0	0	0	0	117	86	0	4	0	97	41	3
8:45 AM - 9:00 AM	75	0	33	3	0	0	0	0	89	109	0	4	0	84	35	2
TOTAL	**513**	**1**	**255**	**25**	**0**	**0**	**0**	**0**	**1000**	**787**	**0**	**48**	**0**	**681**	**364**	**25**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
2:00 PM - 2:15 PM	65	0	24	3	0	0	0	0	69	65	0	1	0	76	28	2
2:15 PM - 2:30 PM	79	0	30	2	0	0	0	0	81	73	0	5	0	75	27	3
2:30 PM - 2:45 PM	69	1	30	2	0	0	0	0	75	116	0	8	0	65	22	2
2:45 PM - 3:00 PM	75	0	28	2	0	0	0	0	91	110	0	1	0	112	22	4
3:00 PM - 3:15 PM	76	1	24	1	0	0	0	0	80	96	0	2	0	203	23	9
3:15 PM - 3:30 PM	82	0	30	5	0	0	0	0	74	100	0	5	0	111	29	5
3:30 PM - 3:45 PM	88	0	22	3	0	0	0	0	88	100	0	4	0	99	21	3
3:45 PM - 4:00 PM	82	0	34	2	0	0	0	0	73	112	0	8	0	113	23	3
4:00 PM - 4:15 PM	97	0	28	1	0	0	0	0	65	139	0	2	0	91	35	3
4:15 PM - 4:30 PM	94	0	48	1	0	0	0	0	68	134	0	4	0	103	27	4
4:30 PM - 4:45 PM	98	1	50	1	0	0	0	0	85	100	0	1	0	103	26	3
4:45 PM - 5:00 PM	122	1	41	5	0	0	0	0	81	128	0	6	0	122	24	1
5:00 PM - 5:15 PM	110	0	35	3	0	0	0	0	87	110	0	2	0	113	21	1
5:15 PM - 5:30 PM	116	3	51	0	0	0	0	0	92	129	0	1	0	106	26	2
5:30 PM - 5:45 PM	79	0	49	1	0	0	0	0	68	121	0	3	0	109	23	1
5:45 PM - 6:00 PM	71	0	37	1	0	0	0	0	73	118	0	0	0	104	35	0
TOTAL	**1403**	**7**	**561**	**33**	**0**	**0**	**0**	**0**	**1250**	**1751**	**0**	**53**	**0**	**1705**	**412**	**46**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	268	1	129	10	0	0	0	0	572	452	0	25	0	360	206	13
4:30 PM - 5:30 PM	446	5	177	9	0	0	0	0	345	467	0	10	0	444	97	7

	PHF	Trucks
AM	0.905	2.4%
PM	0.947	1.3%



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

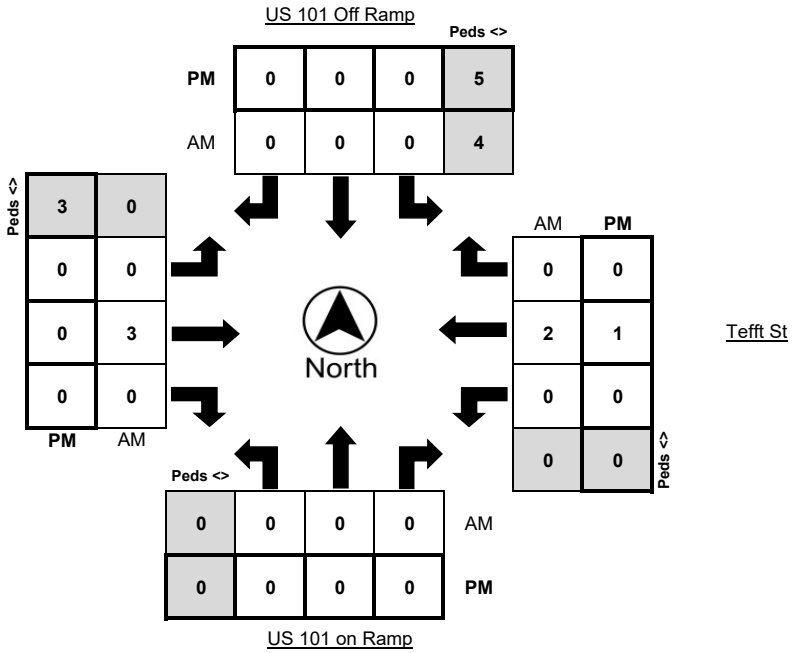
LOCATION Tefft St @ US 101 NB Ramps
LATITUDE 35.0371
COUNTY San Luis Obispo
LONGITUDE -120.4842
COLLECTION DATE Thursday, May 24, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	3	0	0	0	0	0	3	0	0	0	1	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7:45 AM - 8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
8:30 AM - 8:45 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2:45 PM - 3:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0
3:30 PM - 3:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM - 5:30 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**5**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	4	0	0	0	0	0	3	0	0	0	2	0	0
4:30 PM - 5:30 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	3

	Bikes	Peds
AM Peak Total	5	4
PM Peak Total	1	8



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Prepared For:
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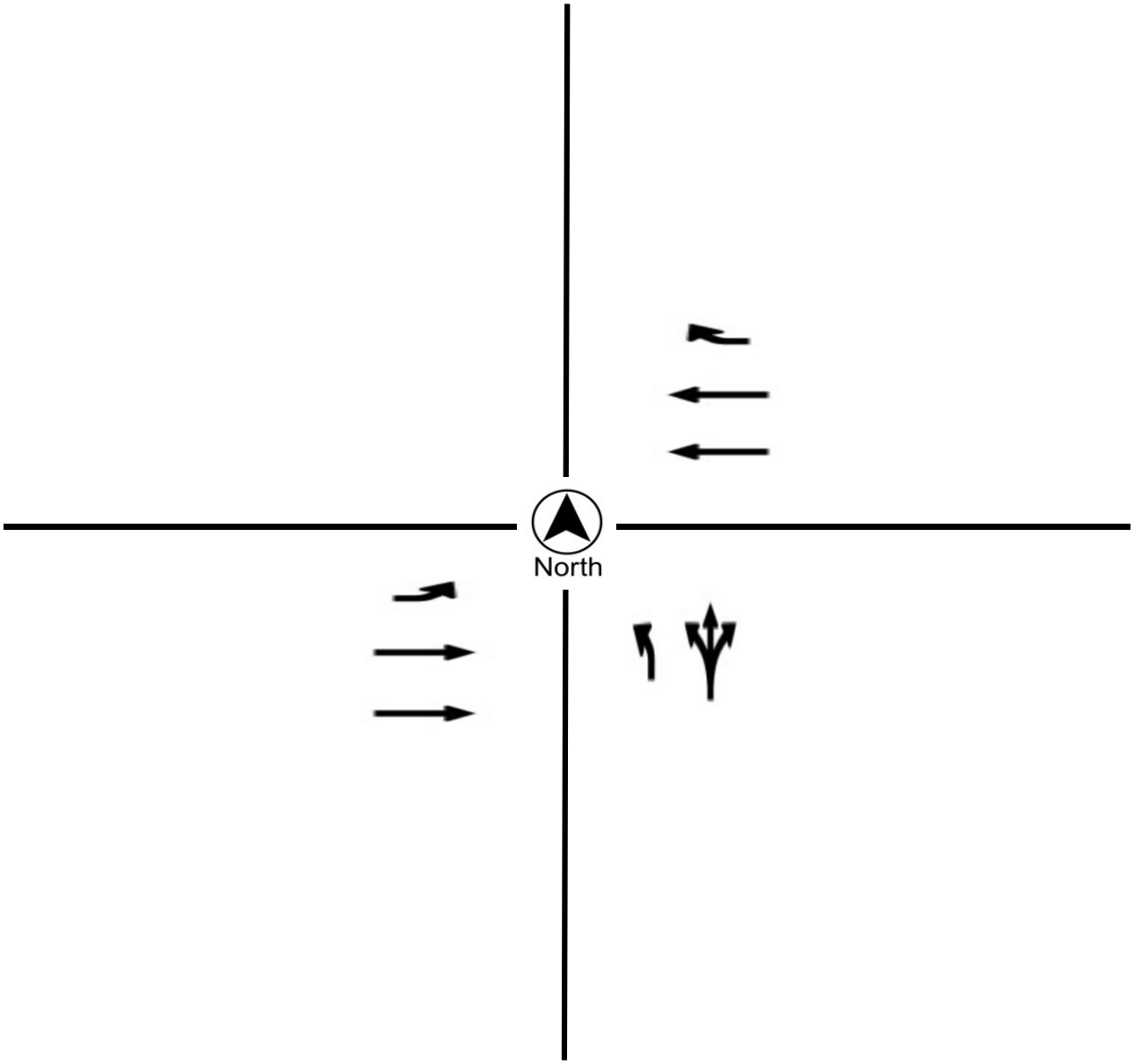
Morro Bay, CA 93442

LOCATION	Tefft St @ US 101 NB Ramps	**N/S STREET**	US 101 Off Ramp / US 101 on Ramp
COUNTY	San Luis Obispo	**E/W STREET**	Tefft St / Tefft St
COLLECTION DATE	Thursday, May 24, 2018	**WEATHER**	Clear
CYCLE TIME	123 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

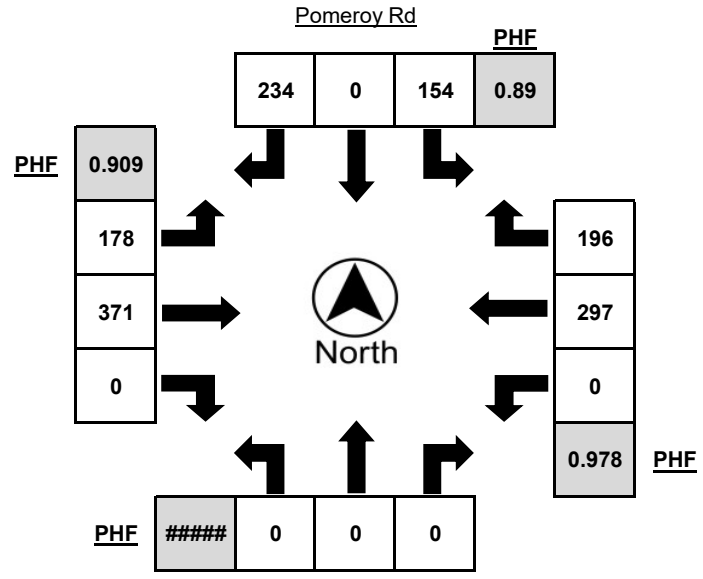
LOCATION Tefft St @ Pomeroy Rd
COUNTY San Luis Obispo
COLLECTION DATE Sunday, July 15, 2018

LATITUDE 35.030812°
LONGITUDE -120.495123°
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	0	0	0	36	0	21	1	29	73	0	0	0	44	33	0
11:45 AM - 12:00 PM	0	0	0	0	33	0	30	0	31	76	0	1	0	90	31	0
12:00 PM - 12:15 PM	0	0	0	0	37	0	24	1	28	74	0	1	0	60	49	0
12:15 PM - 12:30 PM	0	0	0	0	36	0	43	1	33	78	0	2	0	63	54	2
12:30 PM - 12:45 PM	0	0	0	0	43	0	47	1	36	84	0	0	0	68	57	3
12:45 PM - 1:00 PM	0	0	0	0	36	0	73	2	47	104	0	0	0	84	32	1
1:00 PM - 1:15 PM	0	0	0	0	38	0	62	2	51	96	0	1	0	77	49	0
1:15 PM - 1:30 PM	0	0	0	0	37	0	52	1	44	87	0	0	0	68	58	1
1:30 PM - 1:45 PM	0	0	0	0	34	0	48	0	41	97	0	3	0	53	42	0
1:45 PM - 2:00 PM	0	0	0	0	36	0	51	0	42	71	0	1	0	83	26	3
2:00 PM - 2:15 PM	0	0	0	0	39	0	42	2	27	64	0	0	0	68	28	1
2:15 PM - 2:30 PM	0	0	0	0	36	0	61	0	31	62	0	3	0	68	24	0
TOTAL	**0**	**0**	**0**	**0**	**441**	**0**	**554**	**11**	**440**	**966**	**0**	**12**	**0**	**826**	**483**	**11**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
12:30 PM - 1:30 PM	0	0	0	0	154	0	234	6	178	371	0	1	0	297	196	5

	PHF	Trucks
Peak Hour	0.951	0.8%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

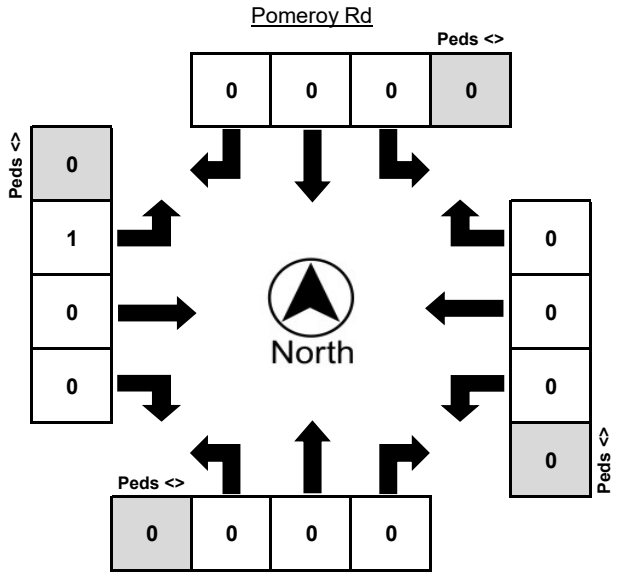
LOCATION Tefft St @ Pomeroy Rd
COUNTY San Luis Obispo
COLLECTION DATE Sunday, July 15, 2018

LATITUDE 35.030812°
LONGITUDE -120.495123°
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:30 PM - 1:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

	Bikes	Peds
Peak Totals	1	0



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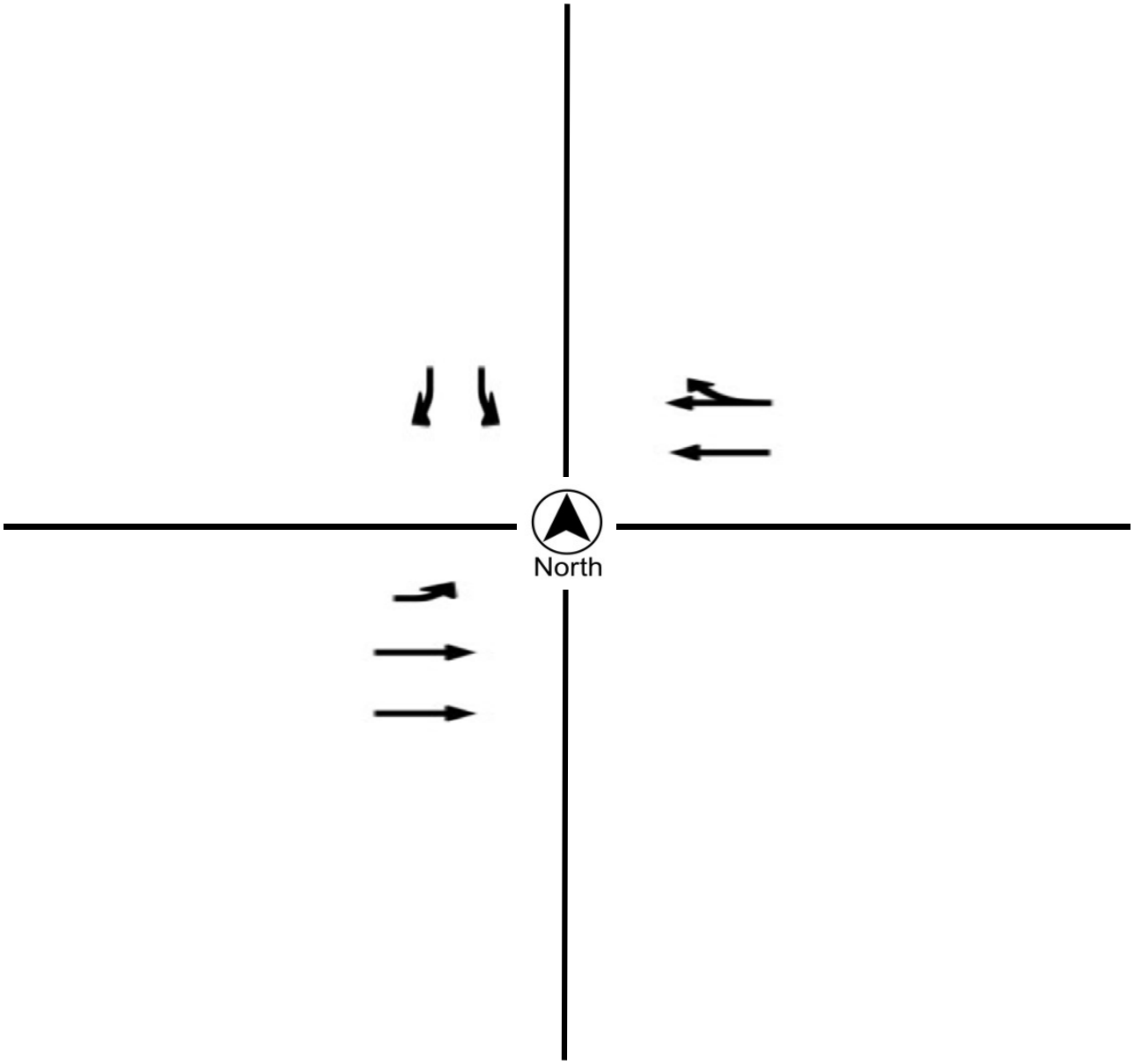
Turning Movement Report

Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Tefft St @ Pomeroy Rd	**N/S STREET**	Pomeroy Rd
COUNTY	San Luis Obispo	**E/W STREET**	Tefft St
COLLECTION DATE	Sunday, July 15, 2018	**WEATHER**	Clear
CYCLE TIME	66 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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Turning Movement Report

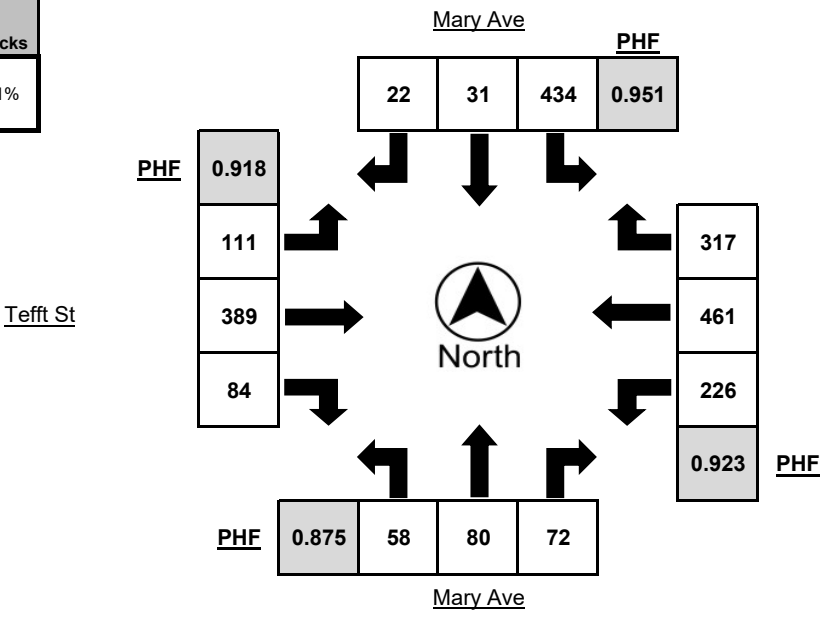
Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Tefft St @ Mary Ave
LATITUDE 35.0357
COUNTY San Luis Obispo
LONGITUDE -120.4867
COLLECTION DATE Sunday, July 8, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	13	9	21	1	107	8	1	2	22	94	4	2	45	75	74	2
11:45 AM - 12:00 PM	15	18	16	2	111	6	4	1	27	91	17	1	52	99	84	2
12:00 PM - 12:15 PM	13	28	13	0	113	7	5	2	33	89	21	0	65	119	88	4
12:15 PM - 12:30 PM	13	19	17	0	104	4	4	0	20	93	19	4	64	100	74	3
12:30 PM - 12:45 PM	17	12	18	1	113	10	5	0	32	101	26	1	59	135	75	3
12:45 PM - 1:00 PM	15	21	24	1	104	10	8	0	26	106	18	1	38	107	80	4
1:00 PM - 1:15 PM	24	17	16	0	107	13	9	2	26	86	11	4	44	109	75	9
1:15 PM - 1:30 PM	14	15	15	1	126	15	3	2	22	97	11	1	53	110	52	3
1:30 PM - 1:45 PM	17	12	21	0	106	6	14	2	28	105	18	5	52	104	53	1
1:45 PM - 2:00 PM	21	17	10	2	105	10	9	1	25	108	15	1	51	112	44	4
2:00 PM - 2:15 PM	20	13	10	1	98	4	7	2	20	76	14	1	32	84	41	5
2:15 PM - 2:30 PM	16	13	6	0	123	8	10	1	32	87	11	1	41	89	40	3
TOTAL	**198**	**194**	**187**	**9**	**1317**	**101**	**79**	**15**	**313**	**1133**	**185**	**22**	**596**	**1243**	**780**	**43**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	58	80	72	2	434	31	22	2	111	389	84	6	226	461	317	14

	PHF	Trucks
Peak Hour	0.947	1.1%



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Turning Movement Report

Prepared For:
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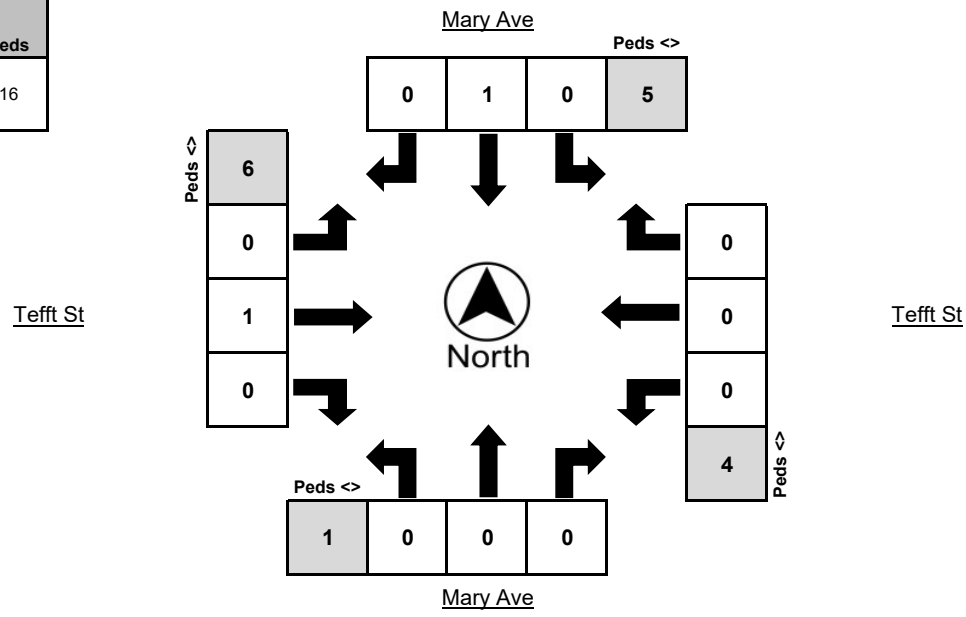
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Tefft St @ Mary Ave
LATITUDE 35.0357
COUNTY San Luis Obispo
LONGITUDE -120.4867
COLLECTION DATE Sunday, July 8, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
12:30 PM - 12:45 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4
12:45 PM - 1:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
1:00 PM - 1:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	3	1	1
1:45 PM - 2:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM - 2:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**8**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**11**	**0**	**3**	**1**	**9**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	5	0	1	0	1	0	1	0	4	0	0	0	6

	Bikes	Peds
Peak Totals	2	16



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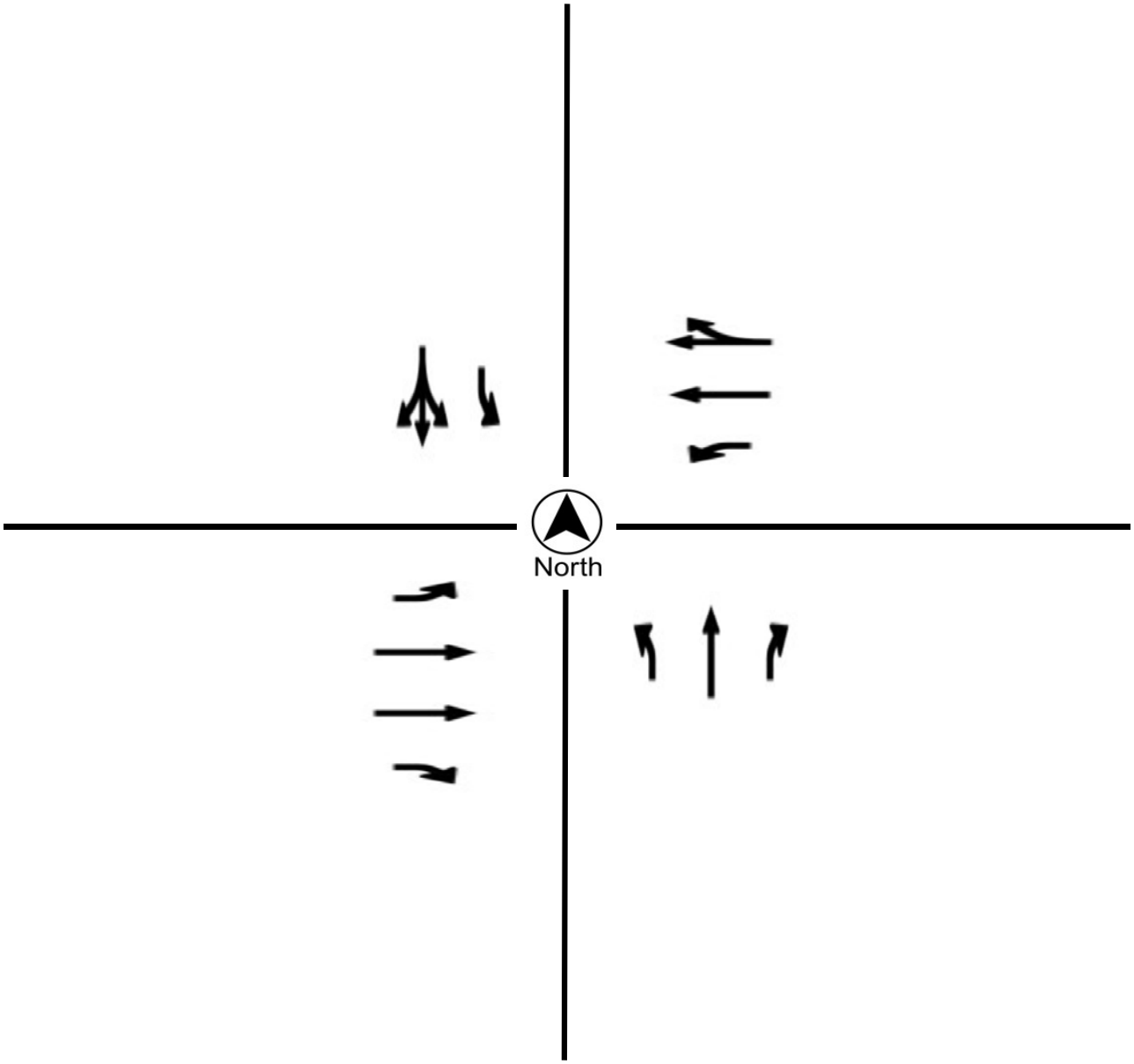
Turning Movement Report

Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	Tefft St @ Mary Ave	**N/S STREET**	Mary Ave
COUNTY	San Luis Obispo	**E/W STREET**	Tefft St
COLLECTION DATE	Sunday, July 8, 2018	**WEATHER**	Clear
CYCLE TIME	119 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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Turning Movement Report

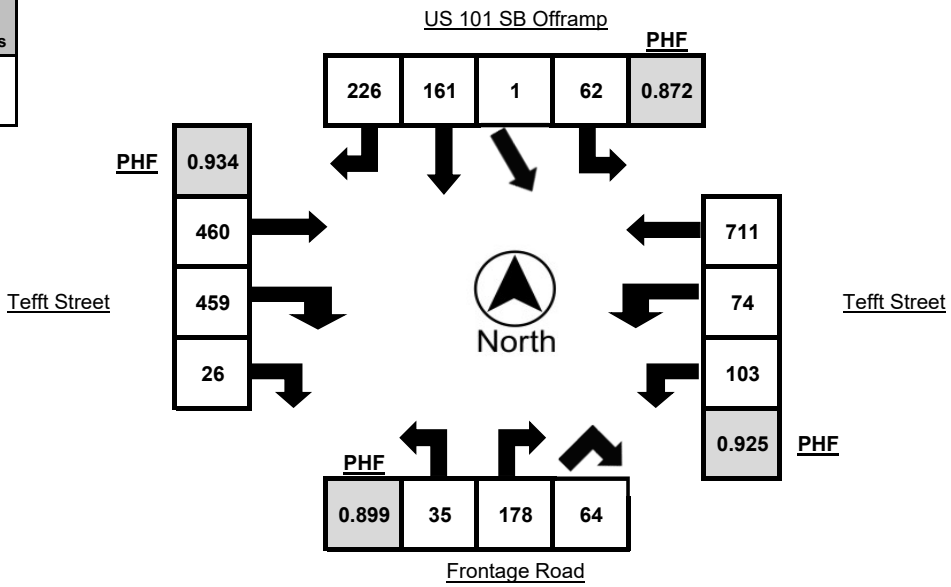
Prepared For:
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Tefft Street @ US 101 SB Ramps
LATITUDE 35.0365
COUNTY San Luis Obispo
LONGITUDE -120.4853
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound				Southbound					Eastbound				Westbound			
Time	Left	R-Tefft	R-101 S	Trucks	L-Tefft	L-101 S	Thru	Right	Trucks	Thru	R-101 S	R-Front	Trucks	L-101 S	L-Front	Thru	Trucks
10:30 AM - 10:45 AM	6	37	18	0	14	0	22	62	0	94	78	2	0	8	21	175	0
10:45 AM - 11:00 AM	6	53	14	1	8	0	15	60	0	116	71	2	0	20	29	198	1
11:00 AM - 11:15 AM	8	51	14	1	9	1	12	67	0	94	87	4	2	20	17	141	1
11:15 AM - 11:30 AM	7	43	16	1	16	0	29	53	0	97	92	8	1	18	12	163	0
11:30 AM - 11:45 AM	11	32	20	1	13	1	26	65	0	122	95	7	0	11	20	148	2
11:45 AM - 12:00 PM	10	52	9	1	14	0	26	57	1	98	110	2	0	18	21	168	0
12:00 PM - 12:15 PM	10	42	14	0	12	2	42	61	1	127	131	6	2	20	23	168	0
12:15 PM - 12:30 PM	5	54	18	0	18	0	41	57	1	109	102	3	2	14	23	170	1
12:30 PM - 12:45 PM	9	38	15	0	15	1	33	47	0	128	120	5	0	22	16	169	1
12:45 PM - 1:00 PM	7	41	15	0	16	0	38	42	0	108	100	6	0	28	16	196	0
1:00 PM - 1:15 PM	7	51	17	0	14	0	51	64	0	111	121	9	0	26	15	181	0
1:15 PM - 1:30 PM	12	48	17	0	17	0	39	73	0	113	118	6	0	27	27	165	2
1:30 PM - 1:45 PM	12	43	12	0	14	0	26	57	0	119	105	16	0	15	34	125	0
1:45 PM - 2:00 PM	7	48	17	0	12	0	30	74	2	113	131	5	0	20	26	138	0
2:00 PM - 2:15 PM	7	50	20	0	19	3	34	62	0	93	104	11	1	15	18	109	0
2:15 PM - 2:30 PM	12	36	14	0	11	2	29	66	1	91	132	6	0	14	20	102	2
TOTAL	**136**	**719**	**250**	**5**	**222**	**10**	**493**	**967**	**6**	**1733**	**1697**	**98**	**8**	**296**	**338**	**2516**	**10**

	Northbound				Southbound					Eastbound				Westbound			
PEAK HOUR	Left	R-Tefft	R-101 S	Trucks	L-Tefft	L-101 S	Thru	Right	Trucks	Thru	R-101 S	R-Front	Trucks	L-101 S	L-Front	Thru	Trucks
12:30 PM - 1:30 PM	35	178	64	0	62	1	161	226	0	460	459	26	0	103	74	711	3

	PHF	Trucks
MID	0.960	0.1%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

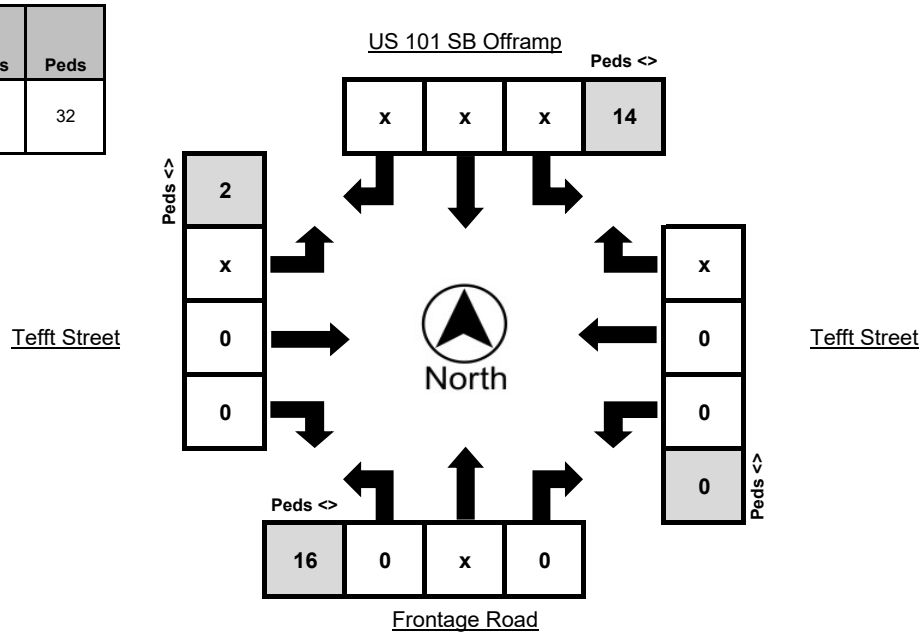
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Tefft Street @ US 101 SB Ramps
LATITUDE 35.0365
COUNTY San Luis Obispo
LONGITUDE -120.4853
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
10:30 AM - 10:45 AM	0	x	0	1	x	x	x	1	x	0	0	0	0	0	x	2
10:45 AM - 11:00 AM	0	x	0	1	x	x	x	0	x	0	0	0	0	0	x	0
11:00 AM - 11:15 AM	0	x	0	4	x	x	x	3	x	0	0	0	0	0	x	1
11:15 AM - 11:30 AM	0	x	0	0	x	x	x	2	x	1	0	0	0	0	x	0
11:30 AM - 11:45 AM	0	x	0	2	x	x	x	5	x	1	0	0	0	0	x	0
11:45 AM - 12:00 PM	0	x	0	1	x	x	x	3	x	0	0	0	0	1	x	3
12:00 PM - 12:15 PM	0	x	0	1	x	x	x	2	x	0	0	0	0	0	x	0
12:15 PM - 12:30 PM	0	x	0	1	x	x	x	4	x	1	0	0	0	0	x	2
12:30 PM - 12:45 PM	0	x	0	4	x	x	x	6	x	0	0	0	0	0	x	0
12:45 PM - 1:00 PM	0	x	0	0	x	x	x	3	x	0	0	0	0	0	x	0
1:00 PM - 1:15 PM	0	x	0	8	x	x	x	1	x	0	0	0	0	0	x	2
1:15 PM - 1:30 PM	0	x	0	2	x	x	x	6	x	0	0	0	0	0	x	0
1:30 PM - 1:45 PM	0	x	0	0	x	x	x	4	x	0	0	0	0	1	x	2
1:45 PM - 2:00 PM	0	x	0	1	x	x	x	7	x	0	0	0	0	0	x	0
2:00 PM - 2:15 PM	0	x	0	3	x	x	x	0	x	0	0	0	0	0	x	1
2:15 PM - 2:30 PM	0	x	0	0	x	x	x	0	x	0	2	0	1	0	x	1
TOTAL	**0**	**x**	**0**	**29**	**x**	**x**	**x**	**47**	**x**	**3**	**2**	**0**	**1**	**2**	**x**	**14**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:30 PM - 1:30 PM	0	x	0	14	x	x	x	16	x	0	0	0	0	0	x	2

	Bikes	Peds
MID Peak Totals	0	32



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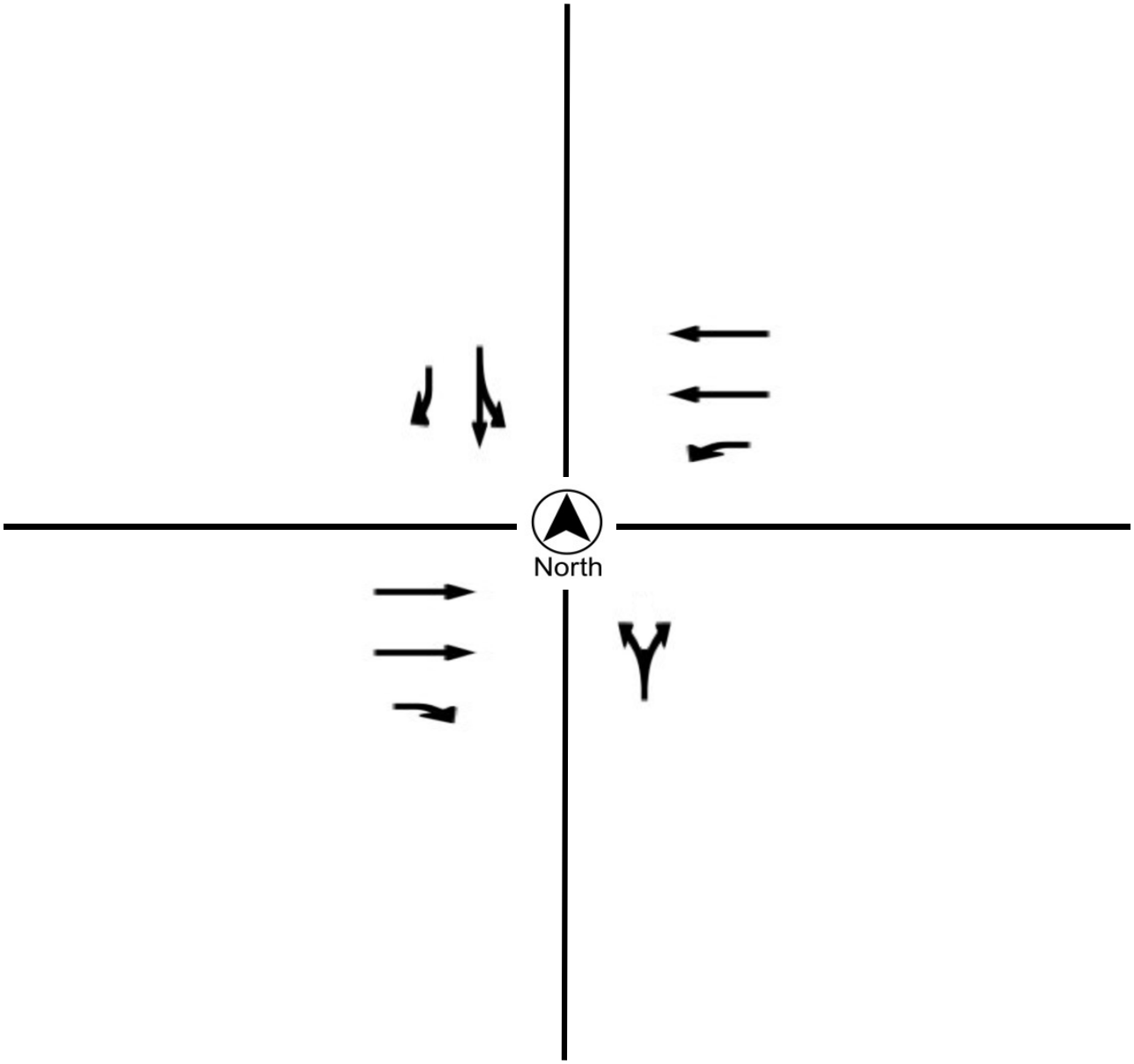
Turning Movement Report

Prepared For:

County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION	Tefft Street @ US 101 SB Ramps	**N/S STREET**	US 101 SB Offramp
COUNTY	San Luis Obispo	**E/W STREET**	Tefft Street
COLLECTION DATE	Sunday, June 4, 2017	**WEATHER**	Clear
CYCLE TIME	105 Seconds	**CONTROL TYPE**	Signal

COMMENTS Northbound and southbound approaches are split.
Westbound left turns are protected.



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Turning Movement Report

Prepared For:

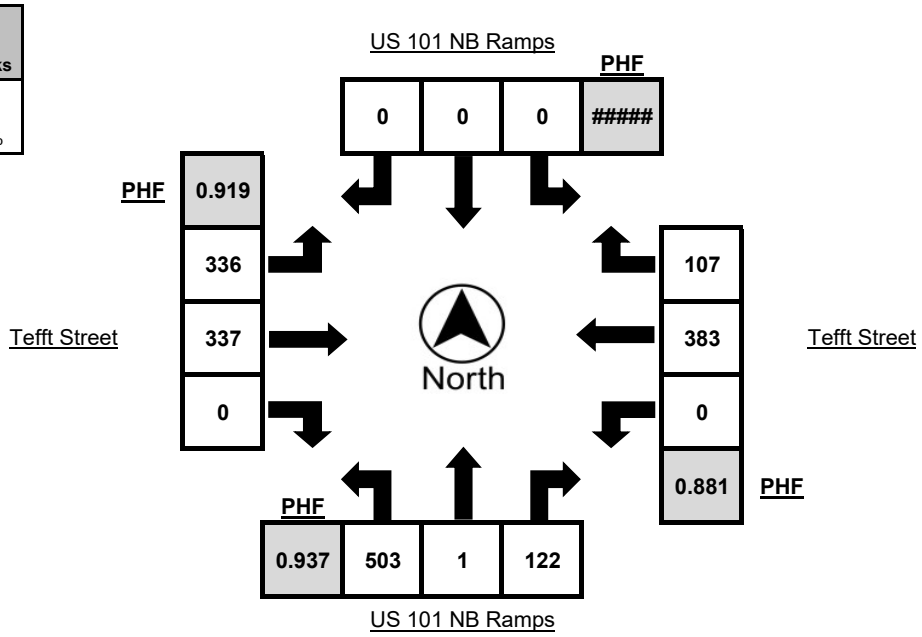
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Tefft Street @ US 101 NB Ramps
LATITUDE 35.0371
COUNTY San Luis Obispo
LONGITUDE -120.4842
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
10:30 AM - 10:45 AM	132	0	17	0	0	0	0	0	68	74	0	0	0	85	30	0
10:45 AM - 11:00 AM	149	0	22	0	0	0	0	0	77	92	0	1	0	105	18	0
11:00 AM - 11:15 AM	113	0	20	0	0	0	0	0	75	81	0	0	0	68	23	2
11:15 AM - 11:30 AM	112	0	22	0	0	0	0	0	75	72	0	1	0	71	22	1
11:30 AM - 11:45 AM	91	0	19	1	0	0	0	0	91	78	0	1	0	90	18	0
11:45 AM - 12:00 PM	134	0	26	0	0	0	0	0	86	82	0	0	0	95	21	0
12:00 PM - 12:15 PM	116	0	28	1	0	0	0	0	82	89	0	1	0	85	31	0
12:15 PM - 12:30 PM	103	0	19	0	0	0	0	0	90	107	0	1	0	108	28	1
12:30 PM - 12:45 PM	134	0	24	1	0	0	0	0	82	79	0	0	0	82	22	1
12:45 PM - 1:00 PM	138	0	29	0	0	0	0	0	89	72	0	0	0	96	17	0
1:00 PM - 1:15 PM	135	0	27	0	0	0	0	0	78	90	0	2	0	104	30	0
1:15 PM - 1:30 PM	96	1	42	1	0	0	0	0	87	96	0	0	0	101	38	1
1:30 PM - 1:45 PM	78	1	29	0	0	0	0	0	95	89	0	0	0	91	40	1
1:45 PM - 2:00 PM	91	0	21	0	0	0	0	0	71	91	0	0	0	102	27	0
2:00 PM - 2:15 PM	53	0	34	0	0	0	0	0	81	88	0	0	0	69	37	1
2:15 PM - 2:30 PM	76	0	31	1	0	0	0	0	71	60	0	1	0	81	32	1
TOTAL	**1751**	**2**	**410**	**5**	**0**	**0**	**0**	**0**	**1298**	**1340**	**0**	**8**	**0**	**1433**	**434**	**9**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
12:30 PM - 1:30 PM	503	1	122	2	0	0	0	0	336	337	0	2	0	383	107	2

	PHF	Trucks
MID	0.964	0.3%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

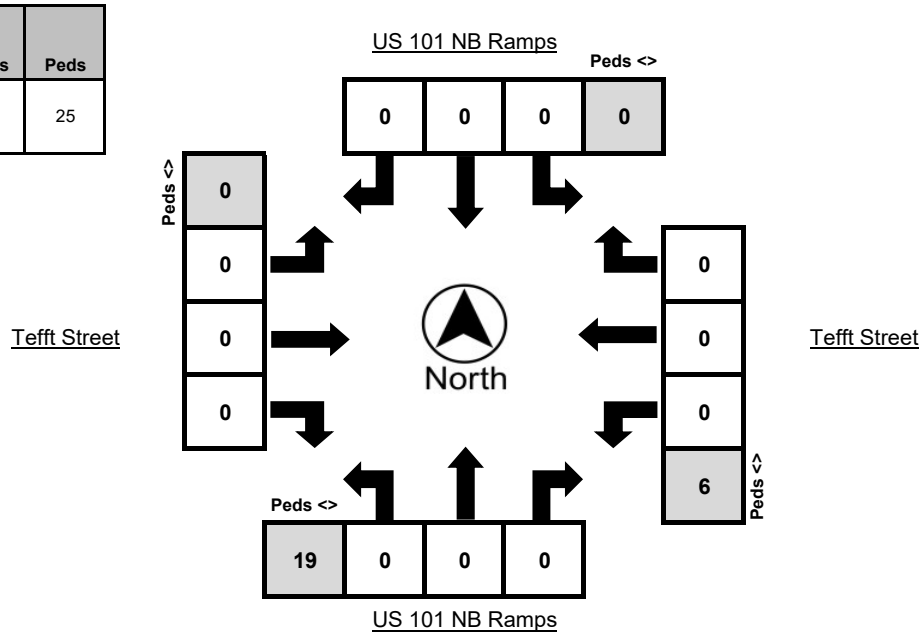
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Tefft Street @ US 101 NB Ramps
LATITUDE 35.0371
COUNTY San Luis Obispo
LONGITUDE -120.4842
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
10:30 AM - 10:45 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
10:45 AM - 11:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
11:00 AM - 11:15 AM	0	0	0	0	0	0	0	6	0	2	0	2	0	0	0	1
11:15 AM - 11:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	4	0	1	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	6	0	0	0	3	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	8	0	0	0	0	0	1	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**6**	**0**	**15**	**0**	**3**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:30 PM - 1:30 PM	0	0	0	0	0	0	0	19	0	0	0	6	0	0	0	0

	Bikes	Peds
MID Peak Totals	0	25



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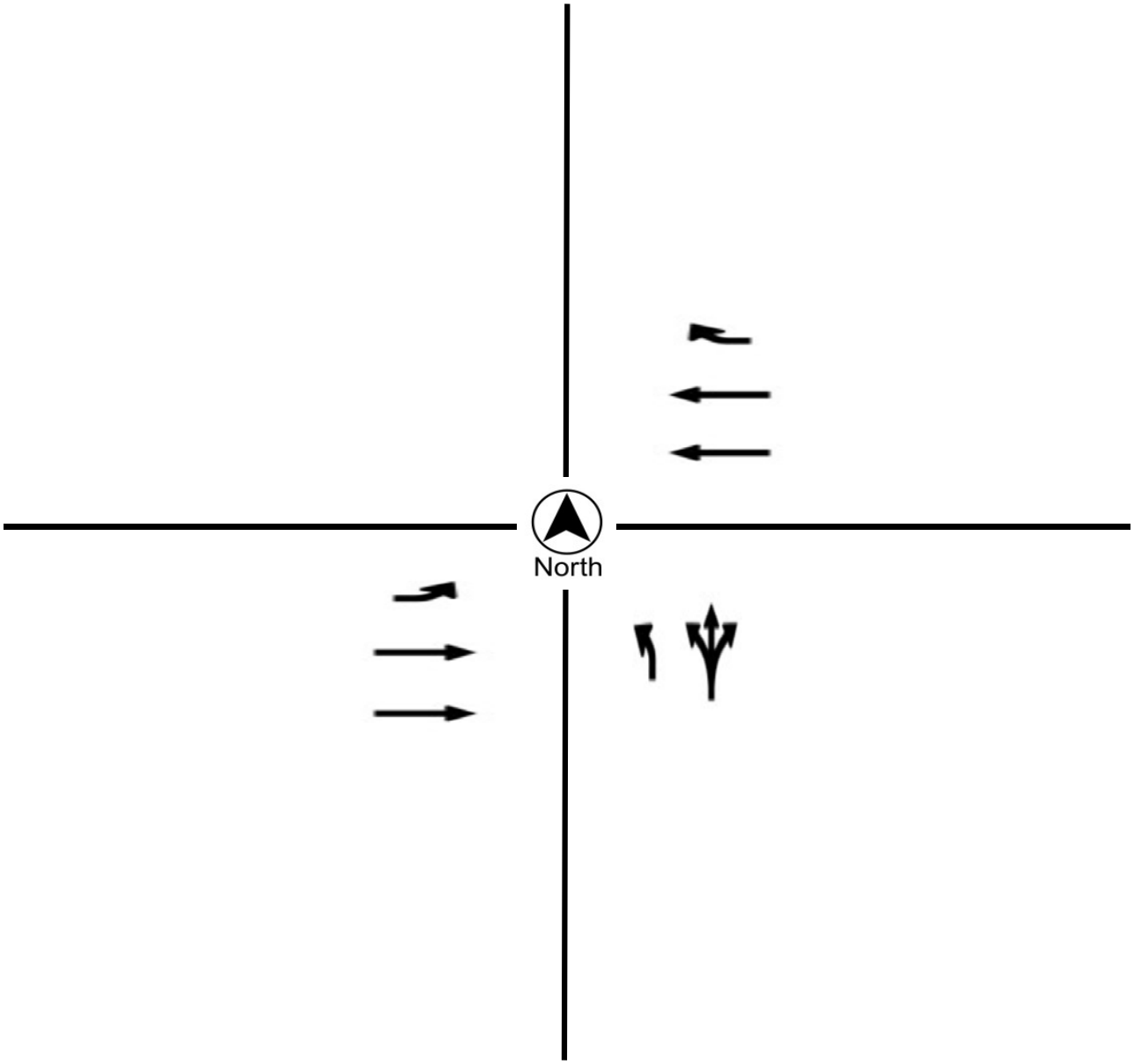
Turning Movement Report

Prepared For:

County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION	Tefft Street @ US 101 NB Ramps	**N/S STREET**	US 101 NB Ramps
COUNTY	San Luis Obispo	**E/W STREET**	Tefft Street
COLLECTION DATE	Sunday, June 4, 2017	**WEATHER**	Clear
CYCLE TIME	105 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected/permitted.



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Turning Movement Report

Prepared For:

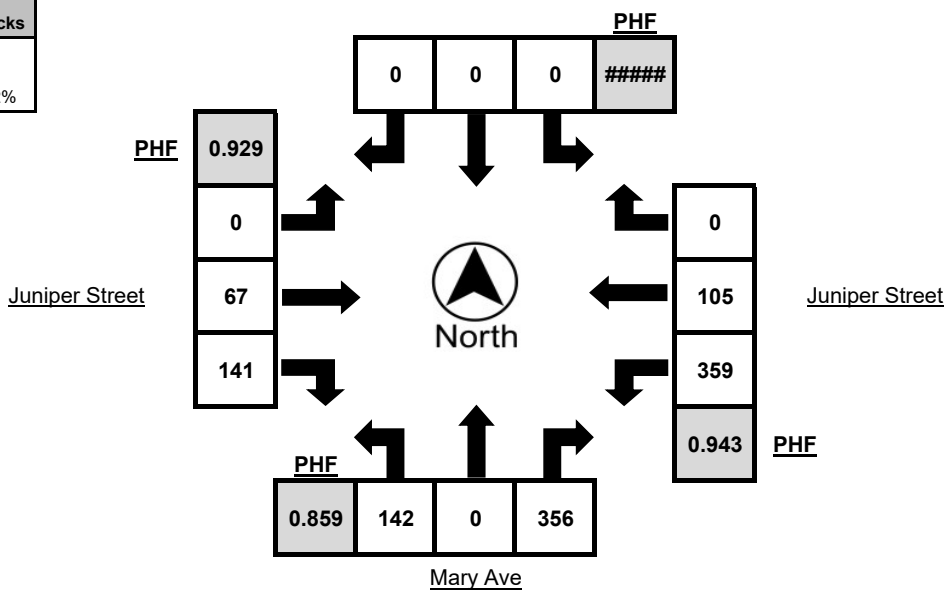
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Mary Ave @ Juniper St
LATITUDE 35.0388
COUNTY San Luis Obispo
LONGITUDE -120.4893
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
10:30 AM - 10:45 AM	33	0	94	1	0	0	0	0	0	17	33	0	39	6	0	0
10:45 AM - 11:00 AM	32	0	81	0	0	0	0	0	0	15	30	0	57	10	0	0
11:00 AM - 11:15 AM	26	0	103	1	0	0	0	0	0	19	27	0	56	9	0	0
11:15 AM - 11:30 AM	35	0	92	1	0	0	0	0	0	27	26	0	57	11	0	0
11:30 AM - 11:45 AM	35	0	90	0	0	0	0	0	0	17	41	0	76	10	0	1
11:45 AM - 12:00 PM	33	0	96	0	0	0	0	0	0	18	40	0	82	19	0	0
12:00 PM - 12:15 PM	33	0	96	1	0	0	0	0	0	16	25	0	78	24	0	0
12:15 PM - 12:30 PM	33	0	88	0	0	0	0	0	0	23	41	1	70	30	0	0
12:30 PM - 12:45 PM	35	0	89	0	0	0	0	0	0	19	37	1	77	31	0	0
12:45 PM - 1:00 PM	39	0	80	0	0	0	0	0	0	12	38	0	93	23	0	0
1:00 PM - 1:15 PM	27	0	83	0	0	0	0	0	0	23	33	0	95	22	0	0
1:15 PM - 1:30 PM	41	0	104	1	0	0	0	0	0	13	33	0	94	29	0	0
1:30 PM - 1:45 PM	37	0	60	0	0	0	0	0	0	5	19	0	74	34	0	0
1:45 PM - 2:00 PM	35	0	49	1	0	0	0	0	0	2	39	1	92	31	0	2
2:00 PM - 2:15 PM	25	0	39	0	0	0	0	0	0	7	28	0	87	38	0	0
2:15 PM - 2:30 PM	34	0	36	1	0	0	0	0	0	6	34	0	89	44	0	0
TOTAL	**533**	**0**	**1280**	**7**	**0**	**0**	**0**	**0**	**0**	**239**	**524**	**3**	**1216**	**371**	**0**	**3**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
12:30 PM - 1:30 PM	142	0	356	1	0	0	0	0	0	67	141	1	359	105	0	0

	PHF	Trucks
MID	0.932	0.2%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

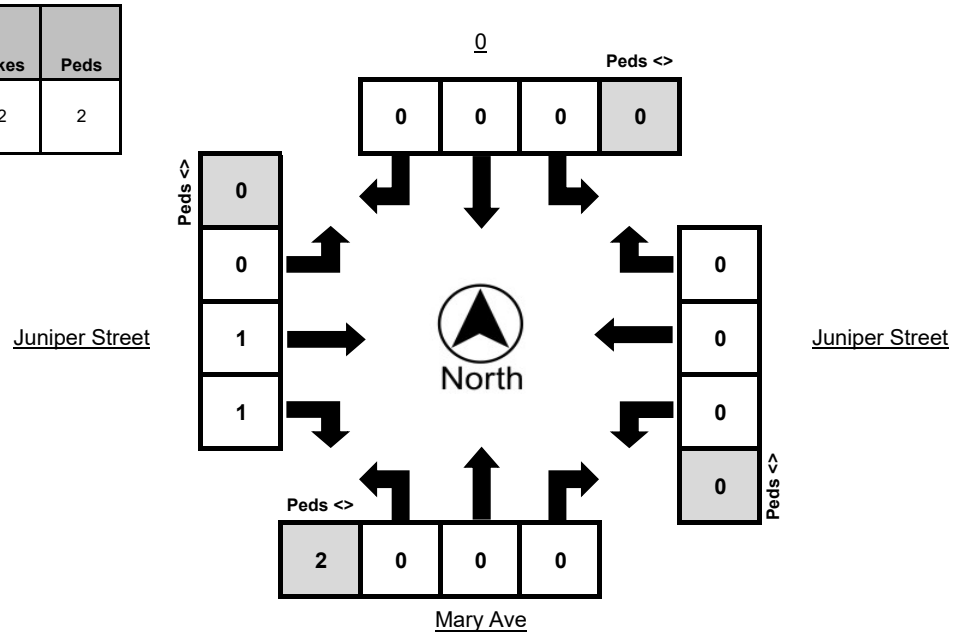
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION Mary Ave @ Juniper St
LATITUDE 35.0388
COUNTY San Luis Obispo
LONGITUDE -120.4893
COLLECTION DATE Sunday, June 4, 2017
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
10:30 AM - 10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM - 11:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**1**	**1**	**1**	**0**	**3**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:30 PM - 1:30 PM	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0

	Bikes	Peds
MID Peak Totals	2	2



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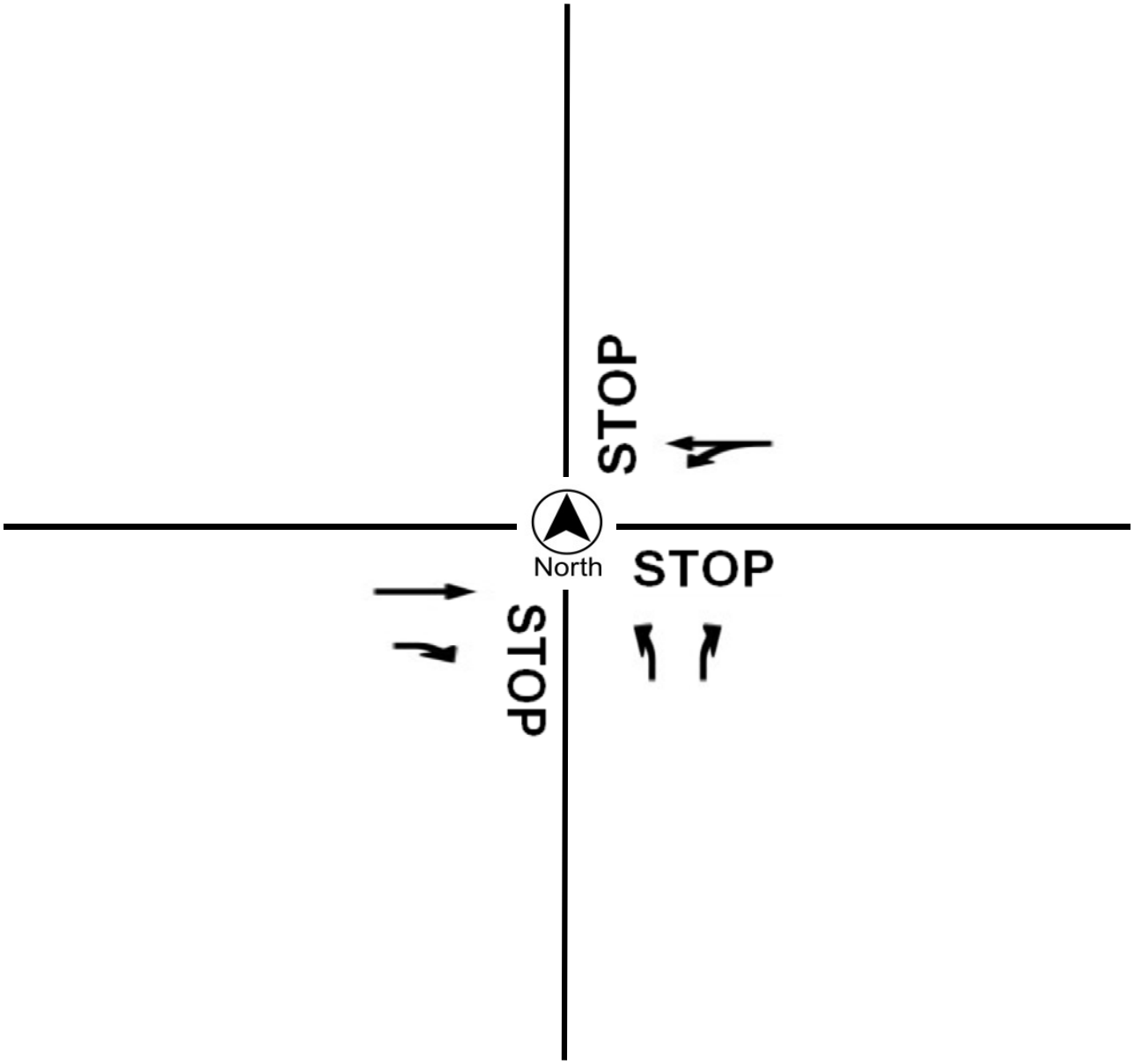
Turning Movement Report

Prepared For:

County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

LOCATION	Mary Ave @ Juniper St	**N/S STREET**	Mary Ave
COUNTY	San Luis Obispo	**E/W STREET**	Juniper Street
COLLECTION DATE	Sunday, June 4, 2017	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



Metro Traffic Data Inc.
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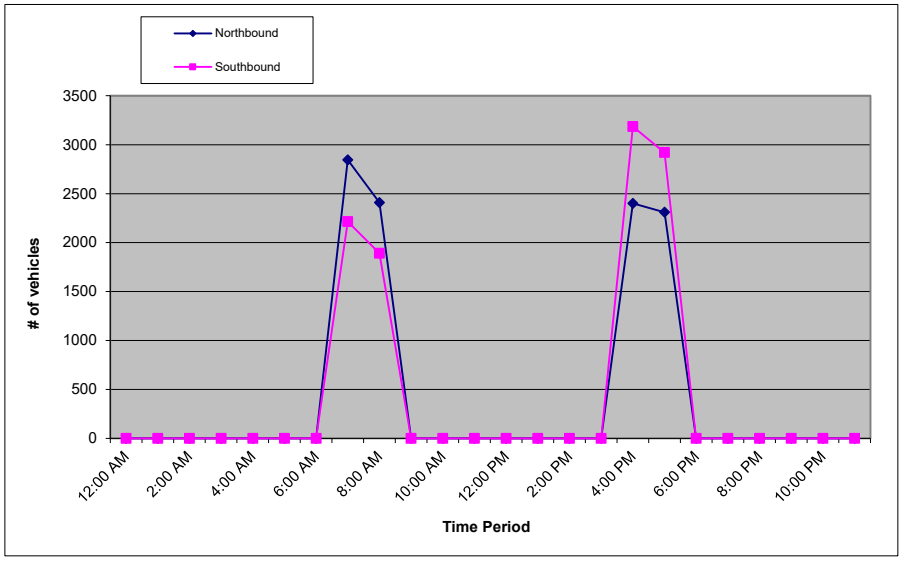
24 Hour Volume Report

Prepared For: **Central Coast Transportation Consulting**
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION US 101 Mainline south of Willow Rd
LATITUDE 35.048938°
COUNTY San Luis Obispo
LONGITUDE -120.495556°
COLLECTION DATE Wednesday, September 4, 2019
WEATHER Clear
NUMBER OF LANES 4

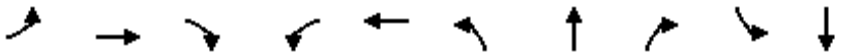
	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
1:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
2:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
3:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
5:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
6:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
7:00 AM	646	739	758	703	**2846**	509	509	535	662	**2215**	**5061**
8:00 AM	651	620	595	544	**2410**	509	465	459	458	**1891**	**4301**
9:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
10:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
11:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
12:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
1:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
2:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
3:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 PM	552	617	631	601	**2401**	767	873	760	786	**3186**	**5587**
5:00 PM	661	599	563	488	**2311**	746	776	760	638	**2920**	**5231**
6:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
7:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
8:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
9:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
10:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
11:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Total	**49.4%**				**9968**	**50.6%**				**10212**	
	20180										

AM%	**46.4%**	**AM Peak**	**5066**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.93**
PM%	**53.6%**	**PM Peak**	**5675**	**4:15 pm to 5:15 pm**	**PM P.H.F.**	**0.95**



Appendix B: Intersection LOS Calculation Sheets

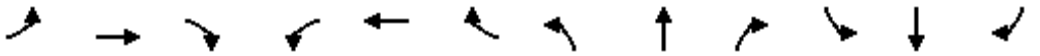
2018 Existing



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	521	52	38	206	127	125
v/c Ratio	0.13	0.28	0.08	0.69	0.29	0.34	0.24	0.47	0.64	0.61
Control Delay	35.9	18.6	0.2	50.4	9.1	49.1	45.9	7.8	58.2	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	18.7	0.2	50.4	9.1	49.1	45.9	7.8	58.2	52.3
Queue Length 50th (ft)	18	98	0	104	46	34	25	15	87	77
Queue Length 95th (ft)	44	187	0	m148	m71	63	50	35	137	129
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	285	1801	866	318	1853	327	344	525	326	331
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	110	0	0	0	0	0	5	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.30	0.08	0.46	0.28	0.16	0.11	0.40	0.39	0.38

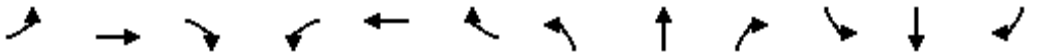
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	78	45	33	179	172	27	20
Future Volume (vph)	30	439	61	128	375	78	45	33	179	172	27	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	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	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1539	1770	3448		1770	1863	1576	1681	1668	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1539	1770	3448		1770	1863	1576	1681	1668	
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)	34	505	70	147	431	90	52	38	206	198	31	23
RTOR Reduction (vph)	0	0	36	0	13	0	0	0	132	0	9	0
Lane Group Flow (vph)	34	505	34	147	508	0	52	38	74	127	116	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	13.8	50.5	50.5	14.6	51.3		8.1	8.1	22.7	12.4	12.4	
Effective Green, g (s)	13.8	50.5	50.5	14.6	51.3		8.1	8.1	22.7	12.4	12.4	
Actuated g/C Ratio	0.13	0.48	0.48	0.14	0.49		0.08	0.08	0.22	0.12	0.12	
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	232	1702	740	246	1684		136	143	340	198	196	
v/s Ratio Prot	0.02	0.14		c0.08	c0.15		c0.03	0.02	0.03	c0.08	0.07	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.15	0.30	0.05	0.60	0.30		0.38	0.27	0.22	0.64	0.59	
Uniform Delay, d1	40.4	16.5	14.5	42.4	16.1		46.1	45.6	33.8	44.2	43.9	
Progression Factor	1.00	1.00	1.00	0.79	0.45		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.4	0.1	2.4	0.4		0.7	0.4	0.1	5.2	3.2	
Delay (s)	40.5	16.9	14.6	35.8	7.6		46.7	46.0	34.0	49.4	47.1	
Level of Service	D	B	B	D	A		D	D	C	D	D	
Approach Delay (s)		18.0			13.8			37.7			48.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



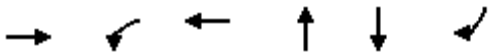
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	439	61	128	375	78	45	33	179	172	27	20
Future Volume (veh/h)	30	439	61	128	375	78	45	33	179	172	27	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	90	52	38	206	126	132	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	851	910	404	705	511	106	96	100	712	195	170	30
Arrive On Green	0.48	0.26	0.26	0.79	0.35	0.35	0.05	0.05	0.05	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1579	1781	2931	607	1781	1870	1576	1781	1549	270
Grp Volume(v), veh/h	34	505	70	147	260	261	52	38	206	126	0	155
Grp Sat Flow(s),veh/h/ln	1781	1777	1579	1781	1777	1761	1781	1870	1576	1781	0	1819
Q Serve(g_s), s	1.1	12.9	3.6	2.2	14.1	14.4	3.0	2.1	0.0	7.1	0.0	8.7
Cycle Q Clear(g_c), s	1.1	12.9	3.6	2.2	14.1	14.4	3.0	2.1	0.0	7.1	0.0	8.7
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	851	910	404	705	310	307	96	100	712	195	0	199
V/C Ratio(X)	0.04	0.55	0.17	0.21	0.84	0.85	0.54	0.38	0.29	0.65	0.00	0.78
Avail Cap(c_a), veh/h	851	910	404	705	641	636	329	346	919	346	0	353
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	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	33.9	30.4	6.8	32.8	32.9	48.4	48.0	18.3	44.8	0.0	45.5
Incr Delay (d2), s/veh	0.0	2.4	0.9	0.0	21.5	22.8	1.8	0.9	0.1	1.3	0.0	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	0.4	5.8	1.5	0.8	6.7	6.8	1.4	1.0	3.1	3.2	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	36.3	31.3	6.9	54.3	55.7	50.2	48.9	18.4	46.1	0.0	48.0
LnGrp LOS	B	D	C	A	D	E	D	D	B	D	A	D
Approach Vol, veh/h		609			668			296			281	
Approach Delay, s/veh		34.5			44.4			27.9			47.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.7	32.0		16.1	55.3	23.4		10.2				
Change Period (Y+Rc), s	5.1	5.1		4.6	5.1	5.1		4.6				
Max Green Setting (Gmax), s	18.9	26.9		20.4	7.9	37.9		19.4				
Max Q Clear Time (g_c+I1), s	4.2	14.9		10.7	3.1	16.4		5.0				
Green Ext Time (p_c), s	0.1	1.9		0.5	0.0	1.9		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		38.9	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

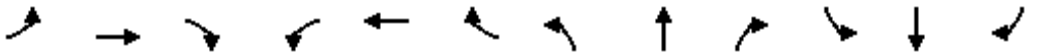


Lane Group	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	1002	81	515	476	159	264
v/c Ratio	0.94	0.88	0.37	1.21	0.39	0.48
Control Delay	47.8	118.0	8.7	152.8	37.0	7.1
Queue Delay	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	118.0	8.7	152.9	37.0	7.1
Queue Length 50th (ft)	357	54	81	~420	88	0
Queue Length 95th (ft)	#472	#148	93	#609	146	61
Internal Link Dist (ft)	421		23	468	407	
Turn Bay Length (ft)						450
Base Capacity (vph)	1066	92	1405	393	448	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	27	0	0	2	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.88	0.37	1.22	0.35	0.45

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	882	10	72	458	0	14	0	409	77	64	235
Future Volume (vph)	0	882	10	72	458	0	14	0	409	77	64	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Lane Util. Factor		0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	1.00
Frt		1.00		1.00	1.00			0.87			1.00	0.85
Flt Protected		1.00		0.95	1.00			1.00			0.97	1.00
Satd. Flow (prot)		3532		1770	3539			1617			1813	1562
Flt Permitted		1.00		0.95	1.00			1.00			0.97	1.00
Satd. Flow (perm)		3532		1770	3539			1617			1813	1562
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)	0	991	11	81	515	0	16	0	460	87	72	264
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	205
Lane Group Flow (vph)	0	1002	0	81	515	0	0	476	0	0	159	59
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	6		7	7		8	8	
Permitted Phases												8
Actuated Green, G (s)		31.7		5.5	41.7			25.6			23.4	23.4
Effective Green, g (s)		31.7		5.5	41.7			25.6			23.4	23.4
Actuated g/C Ratio		0.30		0.05	0.40			0.24			0.22	0.22
Clearance Time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Vehicle Extension (s)		1.5		1.5	1.5			1.5			1.5	1.5
Lane Grp Cap (vph)		1066		92	1405			394			404	348
v/s Ratio Prot		c0.28		c0.05	0.15			c0.29			c0.09	
v/s Ratio Perm												0.04
v/c Ratio		0.94		0.88	0.37			1.21			0.39	0.17
Uniform Delay, d1		35.7		49.4	22.3			39.7			34.8	32.9
Progression Factor		0.86		1.05	0.35			1.00			1.00	1.00
Incremental Delay, d2		16.1		55.3	0.7			115.2			0.2	0.1
Delay (s)		46.9		107.0	8.6			154.9			35.0	33.0
Level of Service		D		F	A			F			C	C
Approach Delay (s)		46.9			22.0			154.9			33.8	
Approach LOS		D			C			F			C	

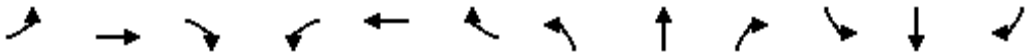
Intersection Summary			
HCM 2000 Control Delay	59.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	629	497	396	226	227	211
v/c Ratio	0.63	0.19	0.34	0.35	0.80	0.61
Control Delay	13.3	2.8	29.9	6.0	62.0	28.4
Queue Delay	0.6	0.3	0.0	0.0	0.0	0.0
Total Delay	13.9	3.0	29.9	6.0	62.0	28.4
Queue Length 50th (ft)	143	33	109	0	155	73
Queue Length 95th (ft)	377	63	168	60	227	144
Internal Link Dist (ft)		187	384			246
Turn Bay Length (ft)				250	125	
Base Capacity (vph)	1035	2678	1157	649	453	492
Starvation Cap Reductn	140	1461	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.41	0.34	0.35	0.50	0.43

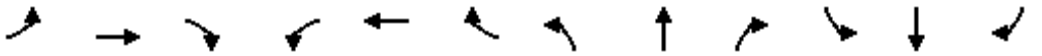
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	572	452	0	0	360	206	268	1	129	0	0	0
Future Volume (vph)	572	452	0	0	360	206	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frpb, ped/bikes	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				
Frt	1.00	1.00			1.00	0.85	1.00	0.90				
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (prot)	1764	3539			3539	1523	1681	1566				
Flt Permitted	0.46	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (perm)	847	3539			3539	1523	1681	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)	629	497	0	0	396	226	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	152	0	81	0	0	0	0
Lane Group Flow (vph)	629	497	0	0	396	74	227	130	0	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6						
Actuated Green, G (s)	79.5	79.5			34.3	34.3	17.7	17.7				
Effective Green, g (s)	79.5	79.5			34.3	34.3	17.7	17.7				
Actuated g/C Ratio	0.76	0.76			0.33	0.33	0.17	0.17				
Clearance Time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Vehicle Extension (s)	2.0	1.0			1.0	1.0	1.0	1.0				
Lane Grp Cap (vph)	995	2679			1156	497	283	263				
v/s Ratio Prot	c0.24	0.14			0.11		c0.14	0.08				
v/s Ratio Perm	c0.23					0.05						
v/c Ratio	0.63	0.19			0.34	0.15	0.80	0.50				
Uniform Delay, d1	9.8	3.6			26.8	25.0	42.0	39.6				
Progression Factor	0.93	0.64			1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.8	0.1			0.8	0.6	14.2	0.5				
Delay (s)	10.0	2.4			27.6	25.6	56.2	40.1				
Level of Service	A	A			C	C	E	D				
Approach Delay (s)		6.6			26.9			48.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	66.9%	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)	572	452	0	0	360	206	268	1	129	0	0	0
Future Volume (veh/h)	572	452	0	0	360	206	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	629	497	0	0	396	226	219	107	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1047	2695	0	0	724	312	298	122	162			
Arrive On Green	0.85	1.00	0.00	0.00	0.20	0.20	0.17	0.17	0.17			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	1781	729	967			
Grp Volume(v), veh/h	629	497	0	0	396	226	219	0	249			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1696			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	10.5	14.5	12.3	0.0	15.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	10.5	14.5	12.3	0.0	15.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.57			
Lane Grp Cap(c), veh/h	1047	2695	0	0	724	312	298	0	284			
V/C Ratio(X)	0.60	0.18	0.00	0.00	0.55	0.72	0.74	0.00	0.88			
Avail Cap(c_a), veh/h	1047	2695	0	0	724	312	480	0	457			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.84	0.84	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.3	0.0	0.0	0.0	37.5	39.0	41.5	0.0	42.7			
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	3.0	13.6	1.3	0.0	6.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.0	4.8	6.5	5.5	0.0	6.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	0.1	0.0	0.0	40.4	52.6	42.8	0.0	49.3			
LnGrp LOS	A	A	A	A	D	D	D	A	D			
Approach Vol, veh/h		1126			622			468				
Approach Delay, s/veh		2.2			44.9			46.3				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		83.7		21.3	57.7	26.0						
Change Period (Y+Rc), s		4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		68.9		28.3	42.9	21.4						
Max Q Clear Time (g_c+I1), s		2.0		17.0	2.0	16.5						
Green Ext Time (p_c), s		1.2		0.5	1.0	0.6						

Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1537	96	596
v/c Ratio	0.53	1.04	0.17
Control Delay	1.4	151.3	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	1.4	151.3	0.1
Queue Length 50th (ft)	8	~60	0
Queue Length 95th (ft)	m0	#177	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2905	92	3522
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	96	0	982
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	1.04	0.23

Intersection Summary

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

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

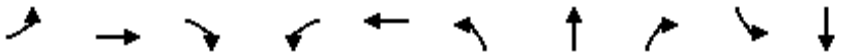
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1028	340	85	530	0	0
Future Volume (vph)	1028	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		3.5	4.6		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3384		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3384		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1155	382	96	596	0	0
RTOR Reduction (vph)	17	0	0	0	0	0
Lane Group Flow (vph)	1520	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 8		1	6 7 8		
Permitted Phases						
Actuated Green, G (s)	92.0		5.5	105.0		
Effective Green, g (s)	86.3		5.5	95.3		
Actuated g/C Ratio	0.82		0.05	0.91		
Clearance Time (s)			3.5			
Vehicle Extension (s)			1.5			
Lane Grp Cap (vph)	2781		92	3212		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.55		1.04	0.19		
Uniform Delay, d1	3.0		49.8	0.5		
Progression Factor	0.69		0.96	1.00		
Incremental Delay, d2	0.0		102.8	0.0		
Delay (s)	2.1		150.8	0.5		
Level of Service	A		F	A		
Approach Delay (s)	2.1			21.4	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

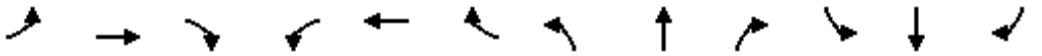
HCM 6th Edition methodology does not support clustered intersections.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	723	100	55	83	188	188
v/c Ratio	0.23	0.27	0.10	0.79	0.55	0.61	0.32	0.20	0.77	0.75
Control Delay	42.8	23.1	4.4	69.0	17.7	71.7	58.5	4.8	73.2	67.5
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	23.1	4.4	69.0	17.9	71.7	58.5	4.8	73.2	67.5
Queue Length 50th (ft)	65	119	0	161	108	83	44	0	163	152
Queue Length 95th (ft)	122	205	29	m236	275	137	84	22	236	227
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	422	1727	801	316	1326	280	295	482	370	376
Starvation Cap Reductn	0	0	0	0	121	0	0	0	0	0
Spillback Cap Reductn	0	150	0	0	0	0	0	3	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.30	0.10	0.58	0.60	0.36	0.19	0.17	0.51	0.50

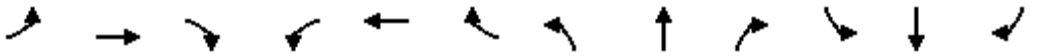
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	107	98	54	81	253	72	44
Future Volume (vph)	94	457	81	180	602	107	98	54	81	253	72	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	0.99	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1558	1787	3480		1787	1881	1587	1698	1682	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1558	1787	3480		1787	1881	1587	1698	1682	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	109	100	55	83	258	73	45
RTOR Reduction (vph)	0	0	43	0	10	0	0	0	64	0	9	0
Lane Group Flow (vph)	96	466	40	184	713	0	100	55	19	188	179	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	30.7	62.8	62.8	17.1	49.2		11.9	11.9	29.0	18.8	18.8	
Effective Green, g (s)	30.7	62.8	62.8	17.1	49.2		11.9	11.9	29.0	18.8	18.8	
Actuated g/C Ratio	0.24	0.48	0.48	0.13	0.38		0.09	0.09	0.22	0.14	0.14	
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	422	1726	752	235	1317		163	172	354	245	243	
v/s Ratio Prot	0.05	c0.13		c0.10	c0.20		c0.06	0.03	0.01	c0.11	0.11	
v/s Ratio Perm			0.03						0.00			
v/c Ratio	0.23	0.27	0.05	0.78	0.54		0.61	0.32	0.05	0.77	0.73	
Uniform Delay, d1	40.1	20.0	17.8	54.7	31.6		56.8	55.3	39.7	53.5	53.2	
Progression Factor	1.00	1.00	1.00	0.91	0.50		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.4	0.1	12.6	1.4		4.7	0.4	0.0	12.2	9.5	
Delay (s)	40.2	20.4	18.0	62.2	17.3		61.6	55.7	39.7	65.7	62.7	
Level of Service	D	C	B	E	B		E	E	D	E	E	
Approach Delay (s)		23.0			26.4			52.6			64.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



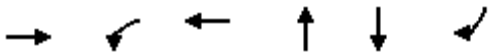
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	457	81	180	602	107	98	54	81	253	72	44
Future Volume (veh/h)	94	457	81	180	602	107	98	54	81	253	72	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	109	100	55	83	188	171	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	744	1069	466	607	676	120	136	143	660	248	198	52
Arrive On Green	0.41	0.30	0.30	0.68	0.44	0.44	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1561	1795	3039	538	1795	1885	1579	1795	1435	378
Grp Volume(v), veh/h	96	466	83	184	361	362	100	55	83	188	0	216
Grp Sat Flow(s),veh/h/ln	1795	1791	1561	1795	1791	1787	1795	1885	1579	1795	0	1812
Q Serve(g_s), s	4.3	13.6	5.1	5.4	24.4	24.6	7.1	3.6	0.0	13.1	0.0	15.2
Cycle Q Clear(g_c), s	4.3	13.6	5.1	5.4	24.4	24.6	7.1	3.6	0.0	13.1	0.0	15.2
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	744	1069	466	607	398	397	136	143	660	248	0	251
V/C Ratio(X)	0.13	0.44	0.18	0.30	0.91	0.91	0.73	0.38	0.13	0.76	0.00	0.86
Avail Cap(c_a), veh/h	744	1069	466	607	535	533	282	296	788	392	0	396
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	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	36.8	33.8	14.8	34.8	34.9	58.8	57.2	23.5	53.9	0.0	54.8
Incr Delay (d2), s/veh	0.0	1.3	0.8	0.1	23.9	24.4	2.8	0.6	0.0	1.8	0.0	6.7
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	1.8	6.1	2.1	2.0	11.0	11.1	3.3	1.7	1.6	6.0	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	38.1	34.6	14.9	58.7	59.2	61.6	57.8	23.6	55.7	0.0	61.5
LnGrp LOS	C	D	C	B	E	E	E	E	C	E	A	E
Approach Vol, veh/h		645			907			238			404	
Approach Delay, s/veh		35.5			50.0			47.5			58.8	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	49.0	43.9		22.6	58.9	34.0		14.5				
Change Period (Y+Rc), s	5.1	5.1		4.6	5.1	5.1		4.6				
Max Green Setting (Gmax), s	23.0	38.8		28.4	23.0	38.8		20.4				
Max Q Clear Time (g_c+I1), s	7.4	15.6		17.2	6.3	26.6		9.1				
Green Ext Time (p_c), s	0.1	2.1		0.8	0.1	2.4		0.3				

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

Notes

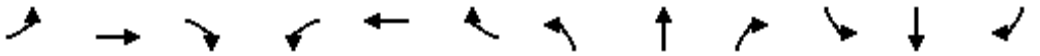
User approved volume balancing among the lanes for turning movement.



Lane Group	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	917	146	707	325	321	414
v/c Ratio	0.84	0.82	0.45	0.85	0.80	0.63
Control Delay	45.3	83.5	14.9	68.3	64.5	9.1
Queue Delay	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	83.5	14.9	68.3	64.5	9.1
Queue Length 50th (ft)	404	105	173	261	260	5
Queue Length 95th (ft)	#502	#226	180	#414	#405	100
Internal Link Dist (ft)	421		23	468	491	
Turn Bay Length (ft)						450
Base Capacity (vph)	1088	196	1574	393	400	661
Starvation Cap Reductn	56	0	0	0	0	0
Spillback Cap Reductn	5	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.74	0.45	0.83	0.80	0.63

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	836	26	137	665	0	39	0	267	111	191	389
Future Volume (vph)	0	836	26	137	665	0	39	0	267	111	191	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Lane Util. Factor		0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	1.00
Frt		1.00		1.00	1.00			0.88			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			0.98	1.00
Satd. Flow (prot)		3555		1787	3574			1649			1847	1577
Flt Permitted		1.00		0.95	1.00			0.99			0.98	1.00
Satd. Flow (perm)		3555		1787	3574			1649			1847	1577
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	889	28	146	707	0	41	0	284	118	203	414
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	319
Lane Group Flow (vph)	0	917	0	146	707	0	0	325	0	0	321	95
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	6		7	7		8	8	
Permitted Phases												8
Actuated Green, G (s)		39.9		12.9	57.3			30.2			28.2	28.2
Effective Green, g (s)		39.9		12.9	57.3			30.2			28.2	28.2
Actuated g/C Ratio		0.31		0.10	0.44			0.23			0.22	0.22
Clearance Time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Vehicle Extension (s)		1.5		1.5	1.5			1.5			1.5	1.5
Lane Grp Cap (vph)		1091		177	1575			383			400	342
v/s Ratio Prot		c0.26		c0.08	0.20			c0.20			c0.17	
v/s Ratio Perm												0.06
v/c Ratio		0.84		0.82	0.45			0.85			0.80	0.28
Uniform Delay, d1		42.1		57.4	25.3			47.7			48.3	42.4
Progression Factor		0.87		0.88	0.55			1.00			1.00	1.00
Incremental Delay, d2		7.6		24.3	0.9			15.3			10.5	0.2
Delay (s)		44.3		74.9	14.7			63.0			58.7	42.6
Level of Service		D		E	B			E			E	D
Approach Delay (s)		44.3			25.0			63.0			49.6	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

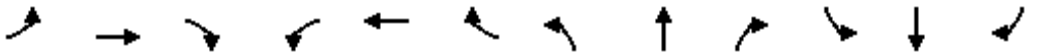
HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	363	492	467	102	342	318
v/c Ratio	0.46	0.20	0.30	0.14	0.85	0.75
Control Delay	6.8	2.8	27.2	6.2	65.7	46.8
Queue Delay	0.6	0.3	0.0	0.0	0.0	0.0
Total Delay	7.4	3.1	27.2	6.2	65.7	46.8
Queue Length 50th (ft)	36	25	134	0	292	214
Queue Length 95th (ft)	57	33	215	41	371	294
Internal Link Dist (ft)		187	384			486
Turn Bay Length (ft)				250	125	
Base Capacity (vph)	870	2510	1557	722	630	632
Starvation Cap Reductn	219	1388	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.44	0.30	0.14	0.54	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	467	0	0	444	97	446	5	177	0	0	0
Future Volume (vph)	345	467	0	0	444	97	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frpb, ped/bikes	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				
Frt	1.00	1.00			1.00	0.85	1.00	0.91				
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (prot)	1780	3574			3574	1527	1698	1598				
Flt Permitted	0.43	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (perm)	803	3574			3574	1527	1698	1598				
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)	363	492	0	0	467	102	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	58	0	47	0	0	0	0
Lane Group Flow (vph)	363	492	0	0	467	44	342	271	0	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6						
Actuated Green, G (s)	91.3	91.3			56.7	56.7	30.9	30.9				
Effective Green, g (s)	91.3	91.3			56.7	56.7	30.9	30.9				
Actuated g/C Ratio	0.70	0.70			0.44	0.44	0.24	0.24				
Clearance Time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Vehicle Extension (s)	2.0	1.0			1.0	1.0	1.0	1.0				
Lane Grp Cap (vph)	789	2510			1558	666	403	379				
v/s Ratio Prot	c0.11	0.14			0.13		c0.20	0.17				
v/s Ratio Perm	c0.22					0.03						
v/c Ratio	0.46	0.20			0.30	0.07	0.85	0.71				
Uniform Delay, d1	13.4	6.7			23.8	21.3	47.3	45.5				
Progression Factor	0.38	0.35			1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.5	0.2	14.7	5.2				
Delay (s)	5.3	2.5			24.3	21.5	62.0	50.7				
Level of Service	A	A			C	C	E	D				
Approach Delay (s)		3.7			23.8			56.6			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	467	0	0	444	97	446	5	177	0	0	0
Future Volume (veh/h)	345	467	0	0	444	97	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	363	492	0	0	467	102	330	200	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	898	2507	0	0	920	398	431	216	201			
Arrive On Green	0.13	0.23	0.00	0.00	0.26	0.26	0.24	0.24	0.24			
Sat Flow, veh/h	1795	3676	0	0	3676	1548	1795	899	836			
Grp Volume(v), veh/h	363	492	0	0	467	102	330	0	386			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1548	1795	0	1735			
Q Serve(g_s), s	11.5	14.4	0.0	0.0	14.5	6.8	22.2	0.0	28.3			
Cycle Q Clear(g_c), s	11.5	14.4	0.0	0.0	14.5	6.8	22.2	0.0	28.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.48			
Lane Grp Cap(c), veh/h	898	2507	0	0	920	398	431	0	416			
V/C Ratio(X)	0.40	0.20	0.00	0.00	0.51	0.26	0.77	0.00	0.93			
Avail Cap(c_a), veh/h	898	2507	0	0	920	398	667	0	645			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.89	0.89	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.1	20.5	0.0	0.0	41.3	38.4	46.0	0.0	48.3			
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.0	2.0	1.6	1.1	0.0	10.8			
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	11.3	6.9	0.0	0.0	6.6	2.8	10.1	0.0	13.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	20.7	0.0	0.0	43.3	40.0	47.1	0.0	59.1			
LnGrp LOS	C	C	A	A	D	D	D	A	E			
Approach Vol, veh/h		855			569			716				
Approach Delay, s/veh		26.0			42.7			53.6				
Approach LOS		C			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		95.1		34.9	57.1	38.0						
Change Period (Y+Rc), s		4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		73.9		48.3	35.9	33.4						
Max Q Clear Time (g_c+I1), s		16.4		30.3	13.5	16.5						
Green Ext Time (p_c), s		1.2		0.9	0.5	1.1						

Intersection Summary												
HCM 6th Ctrl Delay			39.7									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1292	90	853
v/c Ratio	0.46	0.51	0.24
Control Delay	0.7	59.1	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.7	59.1	0.2
Queue Length 50th (ft)	8	59	0
Queue Length 95th (ft)	3	130	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2829	196	3570
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	917
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.46	0.46	0.32

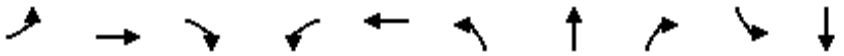
Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	811	403	85	802	0	0
Future Volume (vph)	811	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		3.5	4.6		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3365		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3365		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	863	429	90	853	0	0
RTOR Reduction (vph)	53	0	0	0	0	0
Lane Group Flow (vph)	1239	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 8		1	6 7 8		
Permitted Phases						
Actuated Green, G (s)	107.9		12.9	130.0		
Effective Green, g (s)	103.9		12.9	120.3		
Actuated g/C Ratio	0.80		0.10	0.93		
Clearance Time (s)			3.5			
Vehicle Extension (s)			1.5			
Lane Grp Cap (vph)	2689		177	3307		
v/s Ratio Prot	c0.37		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.46		0.51	0.26		
Uniform Delay, d1	4.1		55.5	0.5		
Progression Factor	0.19		0.90	1.00		
Incremental Delay, d2	0.0		0.8	0.0		
Delay (s)	0.8		50.7	0.5		
Level of Service	A		D	A		
Approach Delay (s)	0.8			5.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

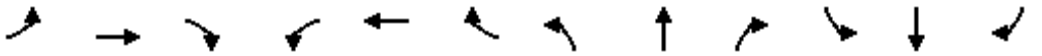


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	409	88	238	819	61	84	76	256	257
v/c Ratio	0.32	0.27	0.12	0.87	0.61	0.41	0.54	0.18	0.82	0.82
Control Delay	48.2	27.1	5.6	67.5	15.7	63.0	68.3	4.6	71.4	70.2
Queue Delay	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	27.2	5.6	67.5	15.8	63.0	68.3	4.6	71.4	70.2
Queue Length 50th (ft)	85	117	0	206	62	50	69	0	218	215
Queue Length 95th (ft)	149	187	34	m#313	215	91	117	19	312	309
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	364	1532	721	316	1332	299	315	464	378	380
Starvation Cap Reductn	0	0	0	0	53	0	0	0	0	0
Spillback Cap Reductn	0	348	0	0	0	0	0	7	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.35	0.12	0.75	0.64	0.20	0.27	0.17	0.68	0.68

Intersection Summary

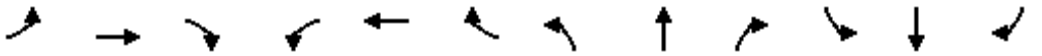
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	389	84	226	461	317	58	80	72	434	31	22
Future Volume (vph)	111	389	84	226	461	317	58	80	72	434	31	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.98		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1787	3574	1558	1787	3295		1787	1881	1587	1698	1693	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1787	3574	1558	1787	3295		1787	1881	1587	1698	1693	
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)	117	409	88	238	485	334	61	84	76	457	33	23
RTOR Reduction (vph)	0	0	50	0	83	0	0	0	58	0	3	0
Lane Group Flow (vph)	117	409	38	238	736	0	61	84	18	256	254	0
Confl. Peds. (#/hr)			1			5			4			6
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	26.5	55.7	55.7	20.1	49.3		10.9	10.9	31.0	23.9	23.9	
Effective Green, g (s)	26.5	55.7	55.7	20.1	49.3		10.9	10.9	31.0	23.9	23.9	
Actuated g/C Ratio	0.20	0.43	0.43	0.15	0.38		0.08	0.08	0.24	0.18	0.18	
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		4.6	4.6	5.1	4.6	4.6	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	364	1531	667	276	1249		149	157	378	312	311	
v/s Ratio Prot	c0.07	0.11		c0.13	c0.22		0.03	c0.04	0.01	c0.15	0.15	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.32	0.27	0.06	0.86	0.59		0.41	0.54	0.05	0.82	0.82	
Uniform Delay, d1	44.1	24.0	21.8	53.6	32.3		56.5	57.1	38.1	51.0	50.9	
Progression Factor	1.00	1.00	1.00	0.76	0.49		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4	0.2	21.0	1.9		0.7	1.8	0.0	15.0	14.4	
Delay (s)	44.3	24.4	21.9	61.6	17.6		57.2	58.9	38.2	66.0	65.3	
Level of Service	D	C	C	E	B		E	E	D	E	E	
Approach Delay (s)		27.8			27.5			51.3			65.7	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



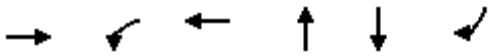
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	389	84	226	461	317	58	80	72	434	31	22
Future Volume (veh/h)	111	389	84	226	461	317	58	80	72	434	31	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	409	88	238	485	334	61	84	76	502	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	639	1014	442	615	545	374	121	127	653	567	298	0
Arrive On Green	0.36	0.28	0.28	0.57	0.45	0.45	0.07	0.07	0.07	0.16	0.00	0.00
Sat Flow, veh/h	1795	3582	1561	1795	2022	1388	1795	1885	1569	3591	1885	0
Grp Volume(v), veh/h	117	409	88	238	429	390	61	84	76	502	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1561	1795	1791	1620	1795	1885	1569	1795	1885	0
Q Serve(g_s), s	5.8	12.0	5.6	9.5	28.6	28.8	4.3	5.7	0.0	17.8	0.0	0.0
Cycle Q Clear(g_c), s	5.8	12.0	5.6	9.5	28.6	28.8	4.3	5.7	0.0	17.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.86	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	639	1014	442	615	483	436	121	127	653	567	298	0
V/C Ratio(X)	0.18	0.40	0.20	0.39	0.89	0.89	0.51	0.66	0.12	0.88	0.00	0.00
Avail Cap(c_a), veh/h	639	1014	442	615	507	459	301	316	810	801	421	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.8	37.7	35.4	20.3	34.0	34.0	58.5	59.2	23.8	53.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.2	1.0	0.1	19.3	21.2	1.2	2.2	0.0	6.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	5.4	2.2	3.5	13.1	12.1	2.0	2.8	1.5	8.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	38.9	36.4	20.5	53.3	55.2	59.8	61.4	23.8	60.3	0.0	0.0
LnGrp LOS	C	D	D	C	D	E	E	E	C	E	A	A
Approach Vol, veh/h		614			1057			221			502	
Approach Delay, s/veh		36.6			46.6			48.0			60.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	49.6	41.9		25.1	51.4	40.1		13.3				
Change Period (Y+Rc), s	5.1	5.1		4.6	5.1	5.1		4.6				
Max Green Setting (Gmax), s	23.0	36.8		29.0	23.0	36.8		21.8				
Max Q Clear Time (g_c+I1), s	11.5	14.0		19.8	7.8	30.8		7.7				
Green Ext Time (p_c), s	0.2	1.8		0.7	0.1	4.3		0.4				

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

Notes

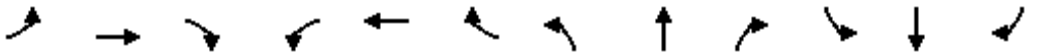
User approved volume balancing among the lanes for turning movement.



Lane Group	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	984	77	741	288	234	235
v/c Ratio	0.82	0.52	0.45	0.84	0.54	0.43
Control Delay	41.4	60.1	15.5	71.2	49.4	7.5
Queue Delay	2.7	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	60.1	15.5	71.2	49.4	7.5
Queue Length 50th (ft)	436	67	232	237	174	0
Queue Length 95th (ft)	515	121	243	#406	261	67
Internal Link Dist (ft)	421		23	468	407	
Turn Bay Length (ft)						450
Base Capacity (vph)	1205	173	1685	344	432	547
Starvation Cap Reductn	126	0	0	0	0	0
Spillback Cap Reductn	57	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.45	0.44	0.84	0.54	0.43

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	919	26	74	711	0	35	0	242	63	161	226
Future Volume (vph)	0	919	26	74	711	0	35	0	242	63	161	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Lane Util. Factor		0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00			1.00	1.00
Frt		1.00		1.00	1.00			0.88			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)		3587		1805	3610			1665			1874	1591
Flt Permitted		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)		3587		1805	3610			1665			1874	1591
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)	0	957	27	77	741	0	36	0	252	66	168	235
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	181
Lane Group Flow (vph)	0	984	0	77	741	0	0	288	0	0	234	54
Confl. Peds. (#/hr)			16									2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	6		7	7		8	8	
Permitted Phases												8
Actuated Green, G (s)		43.7		10.6	58.8			26.9			30.0	30.0
Effective Green, g (s)		43.7		10.6	58.8			26.9			30.0	30.0
Actuated g/C Ratio		0.34		0.08	0.45			0.21			0.23	0.23
Clearance Time (s)		5.6		3.5	4.6			4.0			5.7	5.7
Vehicle Extension (s)		1.5		1.5	1.5			1.5			1.5	1.5
Lane Grp Cap (vph)		1205		147	1632			344			432	367
v/s Ratio Prot		c0.27		c0.04	0.21			c0.17			c0.12	
v/s Ratio Perm												0.03
v/c Ratio		0.82		0.52	0.45			0.84			0.54	0.15
Uniform Delay, d1		39.5		57.3	24.5			49.4			44.0	39.8
Progression Factor		0.90		0.83	0.60			1.00			1.00	1.00
Incremental Delay, d2		5.7		1.5	0.9			15.4			0.7	0.1
Delay (s)		41.1		49.2	15.6			64.9			44.7	39.9
Level of Service		D		D	B			E			D	D
Approach Delay (s)		41.1			18.7			64.9			42.3	
Approach LOS		D			B			E			D	

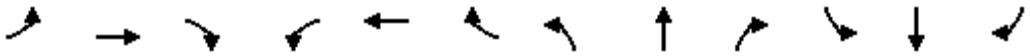
Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT
Lane Group Flow (vph)	350	351	399	111	335	317
v/c Ratio	0.43	0.14	0.26	0.15	0.77	0.72
Control Delay	10.7	3.1	27.4	6.2	55.8	48.5
Queue Delay	1.1	0.4	0.0	0.0	0.0	0.0
Total Delay	11.8	3.5	27.4	6.2	55.8	48.5
Queue Length 50th (ft)	16	8	114	0	276	235
Queue Length 95th (ft)	157	70	187	44	344	304
Internal Link Dist (ft)		187	384			402
Turn Bay Length (ft)				250	125	
Base Capacity (vph)	928	2473	1549	756	663	650
Starvation Cap Reductn	358	1633	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.42	0.26	0.15	0.51	0.49

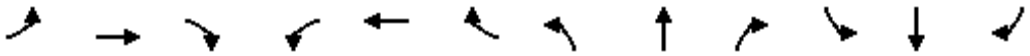
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	337	0	0	383	107	503	1	122	0	0	0
Future Volume (vph)	336	337	0	0	383	107	503	1	122	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.94				
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.97				
Satd. Flow (prot)	1805	3610			3610	1615	1715	1634				
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.97				
Satd. Flow (perm)	898	3610			3610	1615	1715	1634				
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)	350	351	0	0	399	111	524	1	127	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	63	0	22	0	0	0	0
Lane Group Flow (vph)	350	351	0	0	399	48	335	295	0	0	0	0
Confl. Peds. (#/hr)									6			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6						
Actuated Green, G (s)	89.1	89.1			55.8	55.8	33.1	33.1				
Effective Green, g (s)	89.1	89.1			55.8	55.8	33.1	33.1				
Actuated g/C Ratio	0.69	0.69			0.43	0.43	0.25	0.25				
Clearance Time (s)	4.1	4.1			4.6	4.6	3.7	3.7				
Vehicle Extension (s)	2.0	1.0			1.0	1.0	1.0	1.0				
Lane Grp Cap (vph)	815	2474			1549	693	436	416				
v/s Ratio Prot	c0.09	0.10			0.11		c0.20	0.18				
v/s Ratio Perm	c0.20					0.03						
v/c Ratio	0.43	0.14			0.26	0.07	0.77	0.71				
Uniform Delay, d1	12.7	7.1			23.8	21.8	44.9	44.1				
Progression Factor	0.68	0.36			1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.1	0.1			0.4	0.2	7.2	4.5				
Delay (s)	8.8	2.7			24.2	22.0	52.1	48.5				
Level of Service	A	A			C	C	D	D				
Approach Delay (s)		5.7			23.7			50.3			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.4
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)	336	337	0	0	383	107	503	1	122	0	0	0
Future Volume (veh/h)	336	337	0	0	383	107	503	1	122	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		0.99			
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	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	350	351	0	0	399	111	326	278	127			
Peak Hour Factor	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	0	0			
Cap, veh/h	918	2470	0	0	844	377	463	315	144			
Arrive On Green	0.83	1.00	0.00	0.00	0.23	0.23	0.26	0.26	0.26			
Sat Flow, veh/h	1810	3705	0	0	3705	1610	1810	1231	563			
Grp Volume(v), veh/h	350	351	0	0	399	111	326	0	405			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1610	1810	0	1794			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	12.4	7.4	21.3	0.0	28.2			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	12.4	7.4	21.3	0.0	28.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.31			
Lane Grp Cap(c), veh/h	918	2470	0	0	844	377	463	0	459			
V/C Ratio(X)	0.38	0.14	0.00	0.00	0.47	0.29	0.70	0.00	0.88			
Avail Cap(c_a), veh/h	918	2470	0	0	844	377	700	0	694			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.89	0.89	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	4.5	0.0	0.0	0.0	42.9	41.0	43.9	0.0	46.5			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.9	2.0	0.7	0.0	6.2			
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	1.6	0.0	0.0	0.0	5.7	3.1	9.6	0.0	13.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.6	0.1	0.0	0.0	44.8	43.0	44.6	0.0	52.7			
LnGrp LOS	A	A	A	A	D	D	D	A	D			
Approach Vol, veh/h		701			510			731				
Approach Delay, s/veh		2.4			44.4			49.1				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		93.0		37.0	58.0	35.0			
Change Period (Y+Rc), s		4.1		3.7	4.1	4.6			
Max Green Setting (Gmax), s		71.9		50.3	36.9	30.4			
Max Q Clear Time (g_c+I1), s		2.0		30.2	2.0	14.4			
Green Ext Time (p_c), s		3.4		3.0	0.5	0.9			

Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1275	107	818
v/c Ratio	0.45	0.73	0.23
Control Delay	1.4	55.9	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	1.4	55.9	0.2
Queue Length 50th (ft)	25	87	0
Queue Length 95th (ft)	0	146	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2803	173	3580
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	550
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.45	0.62	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	700	524	103	785	0	0
Future Volume (vph)	700	524	103	785	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		3.5	4.6		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.96		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.94		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3257		1805	3610		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3257		1805	3610		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	729	546	107	818	0	0
RTOR Reduction (vph)	58	0	0	0	0	0
Lane Group Flow (vph)	1217	0	107	818	0	0
Confl. Peds. (#/hr)		16				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 8		1	6 7 8		
Permitted Phases						
Actuated Green, G (s)	110.3		10.6	130.0		
Effective Green, g (s)	100.6		10.6	120.3		
Actuated g/C Ratio	0.77		0.08	0.93		
Clearance Time (s)			3.5			
Vehicle Extension (s)			1.5			
Lane Grp Cap (vph)	2520		147	3340		
v/s Ratio Prot	c0.37		c0.06	0.23		
v/s Ratio Perm						
v/c Ratio	0.48		0.73	0.24		
Uniform Delay, d1	5.3		58.3	0.5		
Progression Factor	0.57		0.50	1.00		
Incremental Delay, d2	0.0		13.9	0.0		
Delay (s)	3.0		43.2	0.5		
Level of Service	A		D	A		
Approach Delay (s)	3.0			5.4	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Existing

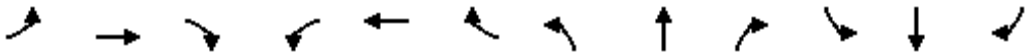
Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	165	203	51	90	132
Future Vol, veh/h	50	165	203	51	90	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	58	192	236	59	105	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	629	266	0	0	295	0
Stage 1	266	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	437	758	-	-	1233	-
Stage 1	765	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	400	758	-	-	1233	-
Mov Cap-2 Maneuver	400	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	400	758	1233	-
HCM Lane V/C Ratio	-	-	0.145	0.253	0.085	-
HCM Control Delay (s)	-	-	15.5	11.4	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	1	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	347	51	46	236	8	96	119	154	33	61	14
v/c Ratio	0.06	0.52	0.08	0.29	0.30	0.01	0.37	0.29	0.33	0.19	0.19	0.03
Control Delay	34.9	21.2	0.2	38.3	14.9	0.0	37.7	25.5	7.2	35.2	26.7	0.2
Queue Delay	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 Delay	34.9	21.2	0.2	38.3	14.9	0.0	37.7	25.5	7.2	35.2	26.7	0.2
Queue Length 50th (ft)	4	116	0	18	54	0	37	33	0	12	22	0
Queue Length 95th (ft)	19	198	0	53	133	0	#112	92	35	41	54	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	158	1105	980	158	1108	1002	263	1032	946	199	1032	946
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.31	0.05	0.29	0.21	0.01	0.37	0.12	0.16	0.17	0.06	0.01

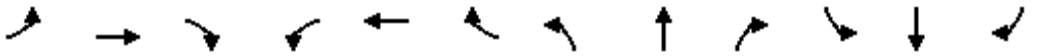
Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	288	42	38	196	7	80	99	128	27	51	12
Future Volume (vph)	8	288	42	38	196	7	80	99	128	27	51	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	10	347	51	46	236	8	96	119	154	33	61	14
RTOR Reduction (vph)	0	0	33	0	0	5	0	0	123	0	0	13
Lane Group Flow (vph)	10	347	18	46	236	3	96	119	31	33	61	1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.7	24.0	24.0	2.5	25.8	25.8	9.2	13.6	13.6	1.9	6.3	6.3
Effective Green, g (s)	0.7	24.0	24.0	2.5	25.8	25.8	9.2	13.6	13.6	1.9	6.3	6.3
Actuated g/C Ratio	0.01	0.36	0.36	0.04	0.39	0.39	0.14	0.20	0.20	0.03	0.09	0.09
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	18	653	543	64	702	596	237	370	314	49	171	145
v/s Ratio Prot	0.01	c0.19		c0.03	0.13		c0.06	c0.07		0.02	0.03	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.56	0.53	0.03	0.72	0.34	0.01	0.41	0.32	0.10	0.67	0.36	0.01
Uniform Delay, d1	32.7	16.8	13.7	31.7	14.3	12.5	26.2	22.5	21.5	32.0	28.2	27.3
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	35.1	1.5	0.1	32.8	0.6	0.0	0.4	0.9	0.2	25.0	2.2	0.0
Delay (s)	67.8	18.3	13.8	64.4	14.9	12.5	26.6	23.4	21.7	57.0	30.4	27.3
Level of Service	E	B	B	E	B	B	C	C	C	E	C	C
Approach Delay (s)		19.0			22.7			23.5			38.1	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	24.5
Intersection Capacity Utilization	46.4%	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)	8	288	42	38	196	7	80	99	128	27	51	12
Future Volume (veh/h)	8	288	42	38	196	7	80	99	128	27	51	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	10	347	51	46	236	8	96	119	154	33	61	14
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	22	511	424	81	573	485	125	308	261	63	243	206
Arrive On Green	0.01	0.28	0.28	0.05	0.31	0.31	0.07	0.17	0.17	0.04	0.13	0.13
Sat Flow, veh/h	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	10	347	51	46	236	8	96	119	154	33	61	14
Grp Sat Flow(s),veh/h/ln	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.3	8.8	1.3	1.4	5.3	0.2	2.8	3.0	4.8	1.0	1.6	0.4
Cycle Q Clear(g_c), s	0.3	8.8	1.3	1.4	5.3	0.2	2.8	3.0	4.8	1.0	1.6	0.4
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	22	511	424	81	573	485	125	308	261	63	243	206
V/C Ratio(X)	0.44	0.68	0.12	0.57	0.41	0.02	0.77	0.39	0.59	0.52	0.25	0.07
Avail Cap(c_a), veh/h	166	1159	961	166	1159	982	209	1082	917	209	1082	917
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	25.6	16.7	14.0	24.4	14.2	12.4	23.9	19.3	20.1	24.8	20.3	19.8
Incr Delay (d2), s/veh	15.7	3.4	0.3	7.3	1.0	0.0	3.7	1.4	3.6	2.5	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.2	0.4	0.6	1.8	0.1	1.1	1.1	1.6	0.4	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	20.1	14.3	31.8	15.2	12.4	27.5	20.7	23.7	27.2	21.2	20.1
LnGrp LOS	D	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		408			290			369			108	
Approach Delay, s/veh		19.9			17.7			23.7			22.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	21.7	9.1	13.8	6.0	23.5	7.2	15.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 33	6.3	* 31	5.0	* 33	6.3	* 31
Max Q Clear Time (g_c+I1), s	3.4	10.8	4.8	3.6	2.3	7.3	3.0	6.8
Green Ext Time (p_c), s	0.0	3.8	0.0	0.5	0.0	2.3	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	441	1	34	241	2	1	3	175	7	4	2
Future Vol, veh/h	4	441	1	34	241	2	1	3	175	7	4	2
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	565	1	44	309	3	1	4	224	9	5	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	312	0	0	566	0	0	978	975	565	1087	973	309
Stage 1	-	-	-	-	-	-	575	575	-	397	397	-
Stage 2	-	-	-	-	-	-	403	400	-	690	576	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1232	-	-	991	-	-	227	249	519	191	249	724
Stage 1	-	-	-	-	-	-	498	498	-	623	598	-
Stage 2	-	-	-	-	-	-	618	596	-	431	497	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1232	-	-	991	-	-	214	237	519	103	237	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	237	-	103	237	-
Stage 1	-	-	-	-	-	-	496	496	-	621	572	-
Stage 2	-	-	-	-	-	-	583	570	-	242	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.1	17.2	31.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	214	237	519	1232	-	-	991	-	-	103	237	724
HCM Lane V/C Ratio	0.006	0.016	0.432	0.004	-	-	0.044	-	-	0.087	0.022	0.004
HCM Control Delay (s)	21.9	20.4	17.1	7.9	-	-	8.8	-	-	43.3	20.5	10
HCM Lane LOS	C	C	C	A	-	-	A	-	-	E	C	B
HCM 95th %tile Q(veh)	0	0	2.2	0	-	-	0.1	-	-	0.3	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	649	0	0	296	0	0
Future Vol, veh/h	649	0	0	296	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	705	0	0	322	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1027	705
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	893	-	260	436
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	893	-	260	436
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	735	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	893	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	649	0	0	296	0	0
Future Vol, veh/h	649	0	0	296	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	705	0	0	322	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1027	705
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	893	-	260	436
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	893	-	260	436
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	735	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	893	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	472	177	23	164	0	0	0	0	25	0	132
Future Vol, veh/h	0	472	177	23	164	0	0	0	0	25	0	132
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	656	246	32	228	0	0	0	0	35	0	183

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	902	0	0			1071	1194	228
Stage 1	-	-	-	-	-	-			292	292	-
Stage 2	-	-	-	-	-	-			779	902	-
Critical Hdwy	-	-	-	4.15	-	-			6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-			5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-			3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	741	-	0			241	184	804
Stage 1	0	-	-	-	-	0			751	666	-
Stage 2	0	-	-	-	-	0			447	352	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	741	-	-			231	0	804
Mov Cap-2 Maneuver	-	-	-	-	-	-			231	0	-
Stage 1	-	-	-	-	-	-			751	0	-
Stage 2	-	-	-	-	-	-			428	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.2	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	741	-	231	804
HCM Lane V/C Ratio	-	-	0.043	-	0.15	0.228
HCM Control Delay (s)	-	-	10.1	-	23.3	10.8
HCM Lane LOS	-	-	B	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.5	0.9

Intersection	
Int Delay, s/veh	32.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	314	194	0	0	84	22	90	1	23	0	0	0
Future Vol, veh/h	314	194	0	0	84	22	90	1	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	462	285	0	0	124	32	132	1	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	156	0	-	-	-	0	1349	1365	285
Stage 1	-	-	-	-	-	-	1209	1209	-
Stage 2	-	-	-	-	-	-	140	156	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1418	-	0	0	-	-	165	147	752
Stage 1	-	-	0	0	-	-	281	255	-
Stage 2	-	-	0	0	-	-	884	767	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1418	-	-	-	-	-	~ 111	0	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 111	0	-
Stage 1	-	-	-	-	-	-	189	0	-
Stage 2	-	-	-	-	-	-	884	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.4	0	181
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	111	752	1418	-	-	-
HCM Lane V/C Ratio	1.206	0.045	0.326	-	-	-
HCM Control Delay (s)	224.2	10	8.8	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	8.7	0.1	1.4	-	-	-

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

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	202	86	259	170	18
Future Vol, veh/h	15	202	86	259	170	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	354	151	454	298	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1070	314	330	0	-	0
Stage 1	314	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	244	724	1224	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	724	1224	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	462	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1224	-	214	724	-	-
HCM Lane V/C Ratio	0.123	-	0.123	0.489	-	-
HCM Control Delay (s)	8.4	-	24.2	14.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.4	2.7	-	-

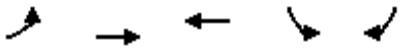
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	306	0	0	150
Future Vol, veh/h	0	0	306	0	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	333	0	0	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	496	333	0	0	333	0
Stage 1	333	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	533	709	-	-	1226	-
Stage 1	726	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	533	709	-	-	1226	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	866	-	-	-	-	-

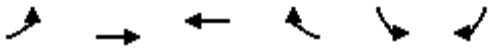
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	1226	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	187	412	445	105	99
v/c Ratio	0.57	0.18	0.32	0.39	0.31
Control Delay	25.2	8.5	14.3	29.8	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	8.5	14.3	29.8	10.0
Queue Length 50th (ft)	54	21	38	28	0
Queue Length 95th (ft)	62	114	141	101	43
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	334	2322	1517	370	410
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.18	0.29	0.28	0.24

Intersection Summary

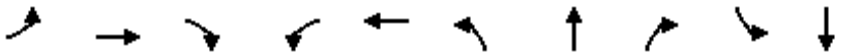


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	172	379	313	97	97	91
Future Volume (vph)	172	379	313	97	97	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3414		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3414		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	412	340	105	105	99
RTOR Reduction (vph)	0	0	29	0	0	89
Lane Group Flow (vph)	187	412	416	0	105	10
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	10.2	33.1	21.5		6.1	6.1
Effective Green, g (s)	10.2	33.1	21.5		6.1	6.1
Actuated g/C Ratio	0.17	0.56	0.36		0.10	0.10
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	306	1985	1244		183	163
v/s Ratio Prot	c0.11	0.12	c0.12			
v/s Ratio Perm					c0.06	0.01
v/c Ratio	0.61	0.21	0.33		0.57	0.06
Uniform Delay, d1	22.6	6.4	13.6		25.2	23.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.0	0.1		2.7	0.1
Delay (s)	25.1	6.5	13.6		27.9	23.9
Level of Service	C	A	B		C	C
Approach Delay (s)		12.3	13.6		26.0	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

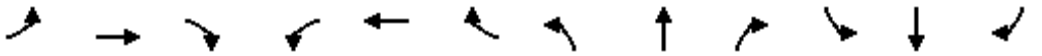
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



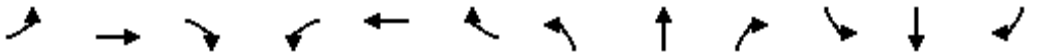
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	521	68	38	206	127	125
v/c Ratio	0.20	0.31	0.09	0.68	0.27	0.36	0.19	0.42	0.57	0.54
Control Delay	35.6	18.9	1.1	44.5	7.0	38.5	34.2	4.8	43.6	38.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	18.9	1.1	44.5	7.0	38.5	34.2	4.8	43.6	38.7
Queue Length 50th (ft)	18	86	0	83	15	35	19	2	68	60
Queue Length 95th (ft)	41	174	5	140	105	62	40	19	110	102
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	265	1622	777	270	1908	374	394	529	375	381
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.31	0.09	0.54	0.27	0.18	0.10	0.39	0.34	0.33

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	78	59	33	179	172	27	20
Future Volume (vph)	30	439	61	128	375	78	59	33	179	172	27	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1544	1770	3448		1770	1863	1575	1681	1668	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1544	1770	3448		1770	1863	1575	1681	1668	
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)	34	505	70	147	431	90	68	38	206	198	31	23
RTOR Reduction (vph)	0	0	41	0	13	0	0	0	148	0	10	0
Lane Group Flow (vph)	34	505	29	147	508	0	68	38	58	127	115	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.6	35.1	35.1	13.4	42.9		8.2	8.2	21.6	11.3	11.3	
Effective Green, g (s)	5.6	35.1	35.1	13.4	42.9		8.2	8.2	21.6	11.3	11.3	
Actuated g/C Ratio	0.07	0.41	0.41	0.16	0.50		0.10	0.10	0.25	0.13	0.13	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	116	1461	637	279	1740		170	179	400	223	221	
v/s Ratio Prot	0.02	c0.14		c0.08	0.15		c0.04	0.02	0.02	c0.08	0.07	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.29	0.35	0.05	0.53	0.29		0.40	0.21	0.14	0.57	0.52	
Uniform Delay, d1	37.8	17.1	14.9	32.9	12.2		36.1	35.4	24.5	34.6	34.3	
Progression Factor	1.00	1.00	1.00	0.82	0.44		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.1	0.8	0.4		0.6	0.2	0.1	2.0	0.9	
Delay (s)	38.3	17.7	15.1	27.7	5.8		36.7	35.6	24.6	36.6	35.2	
Level of Service	D	B	B	C	A		D	D	C	D	D	
Approach Delay (s)		18.6			10.6			28.6			35.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.9%	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)	30	439	61	128	375	78	59	33	179	172	27	20
Future Volume (veh/h)	30	439	61	128	375	78	59	33	179	172	27	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	90	68	38	206	126	132	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	790	753	334	722	509	105	121	127	749	205	178	31
Arrive On Green	0.44	0.21	0.21	0.81	0.35	0.35	0.07	0.07	0.07	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1578	1781	2931	607	1781	1870	1578	1781	1549	270
Grp Volume(v), veh/h	34	505	70	147	260	261	68	38	206	126	0	155
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1781	1777	1761	1781	1870	1578	1781	0	1819
Q Serve(g_s), s	0.9	11.1	3.1	1.6	11.5	11.7	3.1	1.6	0.0	5.7	0.0	7.0
Cycle Q Clear(g_c), s	0.9	11.1	3.1	1.6	11.5	11.7	3.1	1.6	0.0	5.7	0.0	7.0
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	790	753	334	722	309	306	121	127	749	205	0	210
V/C Ratio(X)	0.04	0.67	0.21	0.20	0.84	0.85	0.56	0.30	0.27	0.61	0.00	0.74
Avail Cap(c_a), veh/h	790	753	334	722	397	394	377	396	977	398	0	407
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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	30.8	27.6	4.9	26.7	26.7	38.4	37.7	13.6	35.8	0.0	36.4
Incr Delay (d2), s/veh	0.0	4.7	1.4	0.0	22.7	24.1	1.5	0.5	0.1	1.1	0.0	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	0.4	5.1	1.3	0.5	5.8	5.9	1.4	0.8	2.2	2.5	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	35.5	29.1	5.0	49.3	50.8	39.9	38.2	13.6	36.9	0.0	38.3
LnGrp LOS	B	D	C	A	D	D	D	D	B	D	A	D
Approach Vol, veh/h		609			668			312			281	
Approach Delay, s/veh		33.5			40.1			22.4			37.7	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.4	22.0		13.8	42.7	18.8		9.8				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	18.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.6	13.1		9.0	2.9	13.7		5.1				
Green Ext Time (p_c), s	0.1	1.1		0.5	0.0	1.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		34.7	
HCM 6th LOS		C	

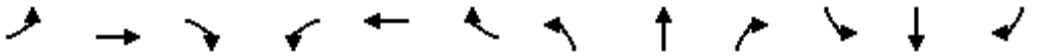
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1002	81	515	460	87	72	264
v/c Ratio	0.83	0.65	0.32	0.87	0.70	0.09	0.32
Control Delay	27.7	56.2	10.3	45.7	69.1	14.7	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	56.2	10.3	45.7	69.1	14.7	3.6
Queue Length 50th (ft)	270	28	89	228	46	22	3
Queue Length 95th (ft)	168	#104	89	#393	#117	46	44
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1204	124	1623	530	124	806	820
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.65	0.32	0.87	0.70	0.09	0.32

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	882	10	72	458	0	0	0	409	77	64	235
Future Volume (vph)	0	882	10	72	458	0	0	0	409	77	64	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3532		1770	3539				1611	1770	1863	1563
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3532		1770	3539				1611	1770	1863	1563
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)	0	991	11	81	515	0	0	0	460	87	72	264
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	143
Lane Group Flow (vph)	0	1002	0	81	515	0	0	0	460	87	72	121
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Effective Green, g (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Actuated g/C Ratio		0.34		0.07	0.46				0.33	0.07	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1205		124	1623				530	124	806	676
v/s Ratio Prot		c0.28		c0.05	0.15				c0.29	c0.05	0.04	
v/s Ratio Perm												0.08
v/c Ratio		0.83		0.65	0.32				0.87	0.70	0.09	0.18
Uniform Delay, d1		25.8		38.5	14.6				26.8	38.6	14.2	14.8
Progression Factor		0.79		0.78	0.67				1.00	1.00	1.00	1.00
Incremental Delay, d2		6.6		11.6	0.5				14.0	28.2	0.2	0.6
Delay (s)		27.0		41.5	10.2				40.8	66.8	14.4	15.4
Level of Service		C		D	B				D	E	B	B
Approach Delay (s)		27.0			14.5			40.8			25.8	
Approach LOS		C			B			D			C	

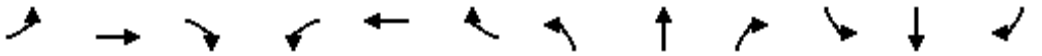
Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	629	497	396	226	147	149	142
v/c Ratio	0.66	0.19	0.31	0.32	0.60	0.61	0.40
Control Delay	9.0	2.4	21.2	4.7	43.6	43.9	9.2
Queue Delay	0.7	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	2.7	21.2	4.7	43.6	43.9	9.2
Queue Length 50th (ft)	77	23	79	0	77	80	0
Queue Length 95th (ft)	139	44	127	49	131	133	46
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	965	2639	1297	703	514	515	582
Starvation Cap Reductn	114	1436	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.41	0.31	0.32	0.29	0.29	0.24

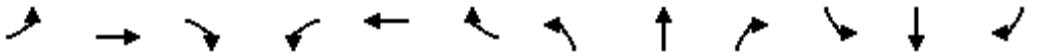
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	572	452	0	0	360	206	268	1	129	0	0	0
Future Volume (vph)	572	452	0	0	360	206	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1765	3539			3539	1532	1681	1686	1583			
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	880	3539			3539	1532	1681	1686	1583			
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)	629	497	0	0	396	226	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	143	0	0	121	0	0	0
Lane Group Flow (vph)	629	497	0	0	396	83	147	149	21	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	63.4	63.4			31.2	31.2	12.4	12.4	12.4			
Effective Green, g (s)	63.4	63.4			31.2	31.2	12.4	12.4	12.4			
Actuated g/C Ratio	0.75	0.75			0.37	0.37	0.15	0.15	0.15			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	948	2639			1299	562	245	245	230			
v/s Ratio Prot	c0.22	0.14			0.11		0.09	c0.09				
v/s Ratio Perm	c0.28					0.05			0.01			
v/c Ratio	0.66	0.19			0.30	0.15	0.60	0.61	0.09			
Uniform Delay, d1	8.6	3.2			19.2	18.0	34.0	34.0	31.4			
Progression Factor	0.57	0.64			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.2	0.1			0.6	0.6	3.3	3.6	0.1			
Delay (s)	6.0	2.2			19.8	18.6	37.3	37.6	31.5			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		4.3			19.3			35.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.6%	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)	572	452	0	0	360	206	268	1	129	0	0	0
Future Volume (veh/h)	572	452	0	0	360	206	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	629	497	0	0	396	226	296	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1076	2730	0	0	702	303	436	0	194			
Arrive On Green	0.87	1.00	0.00	0.00	0.20	0.20	0.12	0.00	0.12			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	3563	0	1585			
Grp Volume(v), veh/h	629	497	0	0	396	226	296	0	142			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.6	11.8	6.8	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.6	11.8	6.8	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1076	2730	0	0	702	303	436	0	194			
V/C Ratio(X)	0.58	0.18	0.00	0.00	0.56	0.75	0.68	0.00	0.73			
Avail Cap(c_a), veh/h	1076	2730	0	0	702	303	1090	0	485			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.83	0.83	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.3	0.0	0.0	0.0	30.8	32.1	35.7	0.0	36.0			
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.0	3.3	15.4	1.4	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	1.5	0.0	0.0	0.0	3.8	5.5	3.0	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.7	0.1	0.0	0.0	34.0	47.5	37.1	0.0	39.9			
LnGrp LOS	A	A	A	A	C	D	D	A	D			
Approach Vol, veh/h		1126			622			438				
Approach Delay, s/veh		1.6			38.9			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		69.4		15.6	48.6	20.8						
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0						
Max Green Setting (Gmax), s		* 50		* 26	28.9	16.8						
Max Q Clear Time (g_c+I1), s		2.0		9.3	2.0	13.8						
Green Ext Time (p_c), s		3.6		1.1	1.0	1.0						

Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1537	96	596
v/c Ratio	0.54	0.77	0.17
Control Delay	0.7	66.1	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.7	66.1	0.2
Queue Length 50th (ft)	6	32	0
Queue Length 95th (ft)	0	#119	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2858	124	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	492
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.54	0.77	0.20

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1028	340	85	530	0	0
Future Volume (vph)	1028	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3385		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3385		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1155	382	96	596	0	0
RTOR Reduction (vph)	30	0	0	0	0	0
Lane Group Flow (vph)	1507	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	71.0		6.0	85.0		
Effective Green, g (s)	71.0		6.0	79.8		
Actuated g/C Ratio	0.84		0.07	0.94		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2827		124	3322		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.53		0.77	0.18		
Uniform Delay, d1	2.1		38.8	0.2		
Progression Factor	0.20		0.67	1.00		
Incremental Delay, d2	0.1		24.8	0.1		
Delay (s)	0.5		50.9	0.3		
Level of Service	A		D	A		
Approach Delay (s)	0.5			7.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

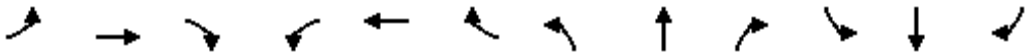
Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	103	197	72	213	213
Future Vol, veh/h	37	103	197	72	213	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	108	207	76	224	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	917	245	0	0	283	0
Stage 1	245	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	301	791	-	-	1274	-
Stage 1	793	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	248	791	-	-	1274	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	417	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	248	791	1274	-
HCM Lane V/C Ratio	-	-	0.157	0.137	0.176	-
HCM Control Delay (s)	-	-	22.2	10.3	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.5	0.6	-



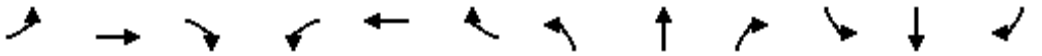
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	19	337	119	88	276	31	104	49	48	14	84	17
v/c Ratio	0.14	0.53	0.18	0.65	0.31	0.04	0.60	0.10	0.09	0.10	0.30	0.05
Control Delay	33.9	22.1	2.3	56.3	14.2	0.1	49.2	21.0	0.3	33.5	28.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	22.1	2.3	56.3	14.2	0.1	49.2	21.0	0.3	33.5	28.8	0.2
Queue Length 50th (ft)	7	112	0	34	65	0	40	13	0	5	30	0
Queue Length 95th (ft)	29	197	19	#119	159	0	#133	48	0	24	73	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	139	972	901	136	989	914	173	912	856	136	892	825
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.35	0.13	0.65	0.28	0.03	0.60	0.05	0.06	0.10	0.09	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	303	107	79	248	28	94	44	43	13	76	15
Future Volume (vph)	17	303	107	79	248	28	94	44	43	13	76	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1548
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1548
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)	19	337	119	88	276	31	104	49	48	14	84	17
RTOR Reduction (vph)	0	0	76	0	0	18	0	0	37	0	0	14
Lane Group Flow (vph)	19	337	43	88	276	13	104	49	11	14	84	3
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	26.9	26.9	5.1	31.1	31.1	6.4	16.8	16.8	0.9	11.3	11.3
Effective Green, g (s)	0.9	26.9	26.9	5.1	31.1	31.1	6.4	16.8	16.8	0.9	11.3	11.3
Actuated g/C Ratio	0.01	0.36	0.36	0.07	0.42	0.42	0.09	0.23	0.23	0.01	0.15	0.15
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	675	573	121	780	663	152	421	358	21	283	235
v/s Ratio Prot	0.01	c0.18		c0.05	c0.15		c0.06	0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.90	0.50	0.08	0.73	0.35	0.02	0.68	0.12	0.03	0.67	0.30	0.01
Uniform Delay, d1	36.6	18.4	15.5	33.9	14.7	12.6	32.9	22.8	22.4	36.5	27.9	26.7
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	153.1	1.2	0.1	20.1	0.6	0.0	9.7	0.2	0.1	47.8	1.0	0.0
Delay (s)	189.7	19.6	15.6	53.9	15.3	12.6	42.6	23.0	22.4	84.3	28.9	26.7
Level of Service	F	B	B	D	B	B	D	C	C	F	C	C
Approach Delay (s)		25.4			23.7			33.0			35.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	303	107	79	248	28	94	44	43	13	76	15
Future Volume (veh/h)	17	303	107	79	248	28	94	44	43	13	76	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	337	119	88	276	31	104	49	48	14	84	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	516	437	121	601	509	133	340	288	31	234	193
Arrive On Green	0.02	0.28	0.28	0.07	0.32	0.32	0.07	0.18	0.18	0.02	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Grp Volume(v), veh/h	19	337	119	88	276	31	104	49	48	14	84	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Q Serve(g_s), s	0.6	8.5	3.2	2.6	6.3	0.7	3.1	1.2	1.4	0.4	2.2	0.5
Cycle Q Clear(g_c), s	0.6	8.5	3.2	2.6	6.3	0.7	3.1	1.2	1.4	0.4	2.2	0.5
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	41	516	437	121	601	509	133	340	288	31	234	193
V/C Ratio(X)	0.46	0.65	0.27	0.73	0.46	0.06	0.78	0.14	0.17	0.45	0.36	0.09
Avail Cap(c_a), veh/h	169	1178	998	166	1174	995	189	1104	936	166	1080	894
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	25.9	17.2	15.2	24.5	14.5	12.6	24.4	18.4	18.5	26.1	21.5	20.8
Incr Delay (d2), s/veh	9.6	3.0	0.7	11.0	1.2	0.1	7.7	0.3	0.5	3.7	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.2	1.0	1.3	2.2	0.2	1.4	0.4	0.4	0.2	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	20.1	15.9	35.6	15.7	12.7	32.1	18.8	19.0	29.8	23.1	21.1
LnGrp LOS	D	C	B	D	B	B	C	B	B	C	C	C
Approach Vol, veh/h		475			395			201			115	
Approach Delay, s/veh		19.7			19.9			25.7			23.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	21.9	9.3	13.5	6.5	24.3	6.2	16.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 34	5.7	* 31	5.1	* 34	5.0	* 32
Max Q Clear Time (g_c+I1), s	4.6	10.5	5.1	4.2	2.6	8.3	2.4	3.4
Green Ext Time (p_c), s	0.0	4.3	0.0	0.7	0.0	3.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	355	2	68	341	14	1	3	40	10	8	6
Future Vol, veh/h	6	355	2	68	341	14	1	3	40	10	8	6
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	366	2	70	352	14	1	3	41	10	8	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	368	0	0	884	884	366	893	872	352
Stage 1	-	-	-	-	-	-	378	378	-	492	492	-
Stage 2	-	-	-	-	-	-	506	506	-	401	380	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1187	-	-	1185	-	-	265	283	677	261	288	689
Stage 1	-	-	-	-	-	-	642	613	-	557	546	-
Stage 2	-	-	-	-	-	-	547	538	-	624	612	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1187	-	-	1185	-	-	244	265	677	231	270	689
Mov Cap-2 Maneuver	-	-	-	-	-	-	244	265	-	231	270	-
Stage 1	-	-	-	-	-	-	639	610	-	554	514	-
Stage 2	-	-	-	-	-	-	502	506	-	580	609	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.3	11.5	17.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	244	265	677	1187	-	-	1185	-	-	231	270	689
HCM Lane V/C Ratio	0.004	0.012	0.061	0.005	-	-	0.059	-	-	0.045	0.031	0.009
HCM Control Delay (s)	19.8	18.7	10.7	8	-	-	8.2	-	-	21.3	18.8	10.3
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0	0	0.2	0	-	-	0.2	-	-	0.1	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	417	0	0	543	0	0
Future Vol, veh/h	417	0	0	543	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	0	0	590	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	453	0	1043	453
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	590	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1108	-	254	607
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	254	607
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	554	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1108	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	417	0	0	543	0	0
Future Vol, veh/h	417	0	0	543	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	0	0	590	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	453	0	1043	453
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	590	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1108	-	254	607
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	254	607
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	554	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1108	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	219	198	18	237	0	0	0	0	41	0	306
Future Vol, veh/h	0	219	198	18	237	0	0	0	0	41	0	306
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	226	204	19	244	0	0	0	0	42	0	315

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	430	0	0			610	712	244
Stage 1	-	-	-	-	-	-			282	282	-
Stage 2	-	-	-	-	-	-			328	430	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1129	-	0			458	358	795
Stage 1	0	-	-	-	-	0			766	678	-
Stage 2	0	-	-	-	-	0			730	583	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1129	-	-			450	0	795
Mov Cap-2 Maneuver	-	-	-	-	-	-			450	0	-
Stage 1	-	-	-	-	-	-			766	0	-
Stage 2	-	-	-	-	-	-			718	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.6	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1129	-	450	795
HCM Lane V/C Ratio	-	-	0.016	-	0.094	0.397
HCM Control Delay (s)	-	-	8.2	-	13.8	12.5
HCM Lane LOS	-	-	A	-	B	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3	1.9

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	157	126	0	0	73	14	171	1	21	0	0	0
Future Vol, veh/h	157	126	0	0	73	14	171	1	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	173	138	0	0	80	15	188	1	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	95	0	-	-	-	0	572	579	138
Stage 1	-	-	-	-	-	-	484	484	-
Stage 2	-	-	-	-	-	-	88	95	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1493	-	0	0	-	-	480	425	908
Stage 1	-	-	0	0	-	-	618	550	-
Stage 2	-	-	0	0	-	-	933	814	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1493	-	-	-	-	-	424	0	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	424	0	-
Stage 1	-	-	-	-	-	-	546	0	-
Stage 2	-	-	-	-	-	-	933	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.3	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	424	908	1493	-	-	-
HCM Lane V/C Ratio	0.446	0.025	0.116	-	-	-
HCM Control Delay (s)	20.1	9.1	7.7	-	-	-
HCM Lane LOS	C	A	A	-	-	-
HCM 95th %tile Q(veh)	2.2	0.1	0.4	-	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	121	66	102	251	17
Future Vol, veh/h	15	121	66	102	251	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	134	73	113	279	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	548	289	298	0	-	0
Stage 1	289	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	497	750	1263	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	468	750	1263	-	-	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	3.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1263	-	468	750	-	-
HCM Lane V/C Ratio	0.058	-	0.036	0.179	-	-
HCM Control Delay (s)	8	-	13	10.8	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.7	-	-

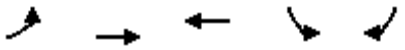
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	196	0	0	316
Future Vol, veh/h	0	0	196	0	0	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	213	0	0	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	556	213	0	0	213	0
Stage 1	213	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	492	827	-	-	1357	-
Stage 1	823	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	492	827	-	-	1357	-
Mov Cap-2 Maneuver	492	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	719	-	-	-	-	-

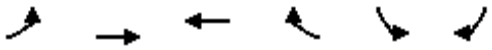
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	1357	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	142	426	684	140	152
v/c Ratio	0.50	0.22	0.49	0.48	0.39
Control Delay	24.5	9.3	15.9	31.4	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	9.3	15.9	31.4	9.3
Queue Length 50th (ft)	41	23	66	38	0
Queue Length 95th (ft)	57	122	230	134	52
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	288	2454	1707	460	524
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.17	0.40	0.30	0.29

Intersection Summary

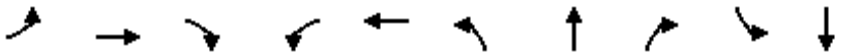


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	135	405	485	164	133	144
Future Volume (vph)	135	405	485	164	133	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3420		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3420		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	142	426	511	173	140	152
RTOR Reduction (vph)	0	0	32	0	0	129
Lane Group Flow (vph)	142	426	652	0	140	23
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	7.4	31.2	22.3		9.0	9.0
Effective Green, g (s)	7.4	31.2	22.3		9.0	9.0
Actuated g/C Ratio	0.12	0.52	0.37		0.15	0.15
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	220	1861	1273		268	240
v/s Ratio Prot	c0.08	0.12	c0.19			
v/s Ratio Perm					c0.08	0.01
v/c Ratio	0.65	0.23	0.51		0.52	0.10
Uniform Delay, d1	25.0	7.8	14.6		23.5	21.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.8	0.0	0.1		0.8	0.1
Delay (s)	29.8	7.8	14.7		24.3	22.0
Level of Service	C	A	B		C	C
Approach Delay (s)		13.3	14.7		23.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	21.2
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

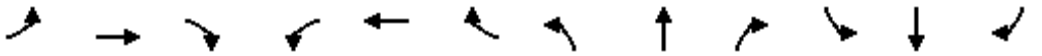
HCM 6th Edition methodology expects strict NEMA phasing.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	723	140	55	83	188	188
v/c Ratio	0.43	0.35	0.12	0.80	0.51	0.58	0.22	0.18	0.69	0.66
Control Delay	39.6	22.5	2.3	59.3	16.1	43.3	32.8	3.5	46.4	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	22.5	2.3	59.3	16.1	43.3	32.8	3.5	46.4	41.2
Queue Length 50th (ft)	47	93	0	104	77	72	27	0	101	91
Queue Length 95th (ft)	94	166	15	#198	#291	117	55	13	161	151
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	257	1342	666	252	1407	378	398	480	379	389
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.35	0.12	0.73	0.51	0.37	0.14	0.17	0.50	0.48

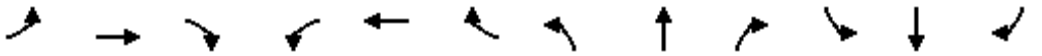
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	107	137	54	81	253	72	44
Future Volume (vph)	94	457	81	180	602	107	137	54	81	253	72	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1562	1787	3482		1787	1881	1586	1698	1684	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1562	1787	3482		1787	1881	1586	1698	1684	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	109	140	55	83	258	73	45
RTOR Reduction (vph)	0	0	53	0	13	0	0	0	60	0	14	0
Lane Group Flow (vph)	96	466	30	184	710	0	140	55	23	188	174	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	9.8	30.9	30.9	12.0	33.1		11.5	11.5	23.5	13.6	13.6	
Effective Green, g (s)	9.8	30.9	30.9	12.0	33.1		11.5	11.5	23.5	13.6	13.6	
Actuated g/C Ratio	0.12	0.36	0.36	0.14	0.39		0.14	0.14	0.28	0.16	0.16	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	206	1299	567	252	1355		241	254	438	271	269	
v/s Ratio Prot	0.05	0.13		c0.10	c0.20		c0.08	0.03	0.01	c0.11	0.10	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.47	0.36	0.05	0.73	0.52		0.58	0.22	0.05	0.69	0.65	
Uniform Delay, d1	35.2	19.8	17.6	34.9	19.9		34.5	32.7	22.6	33.7	33.4	
Progression Factor	1.00	1.00	1.00	0.99	0.60		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.2	8.2	1.3		2.3	0.2	0.0	6.1	4.0	
Delay (s)	35.8	20.6	17.7	42.7	13.4		36.8	32.9	22.6	39.8	37.4	
Level of Service	D	C	B	D	B		D	C	C	D	D	
Approach Delay (s)		22.5			19.3			31.8			38.6	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
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 (veh/h)	94	457	81	180	602	107	137	54	81	253	72	44
Future Volume (veh/h)	94	457	81	180	602	107	137	54	81	253	72	44
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		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	109	140	55	83	188	171	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	583	801	349	574	663	118	192	202	680	269	215	57
Arrive On Green	0.32	0.22	0.22	0.64	0.44	0.44	0.11	0.11	0.11	0.15	0.15	0.15
Sat Flow, veh/h	1795	3582	1560	1795	3039	538	1795	1885	1584	1795	1435	378
Grp Volume(v), veh/h	96	466	83	184	361	362	140	55	83	188	0	216
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1787	1795	1885	1584	1795	0	1813
Q Serve(g_s), s	3.2	9.9	3.7	4.0	16.2	16.3	6.4	2.3	0.0	8.5	0.0	9.8
Cycle Q Clear(g_c), s	3.2	9.9	3.7	4.0	16.2	16.3	6.4	2.3	0.0	8.5	0.0	9.8
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	583	801	349	574	391	390	192	202	680	269	0	272
V/C Ratio(X)	0.16	0.58	0.24	0.32	0.92	0.93	0.73	0.27	0.12	0.70	0.00	0.79
Avail Cap(c_a), veh/h	583	801	349	574	400	399	380	399	846	401	0	405
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	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	29.5	27.1	11.2	23.3	23.3	36.8	34.9	14.7	34.3	0.0	34.9
Incr Delay (d2), s/veh	0.0	3.1	1.6	0.1	27.6	28.2	2.0	0.3	0.0	1.2	0.0	3.5
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	1.3	4.4	1.5	1.4	7.7	7.7	2.8	1.0	0.9	3.7	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	32.5	28.7	11.3	50.9	51.5	38.7	35.2	14.8	35.5	0.0	38.3
LnGrp LOS	C	C	C	B	D	D	D	D	B	D	A	D
Approach Vol, veh/h		645			907			278			404	
Approach Delay, s/veh		30.3			43.1			30.9			37.0	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.2	23.0		16.8	32.6	22.5		13.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	19.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	6.0	11.9		11.8	5.2	18.3		8.4				
Green Ext Time (p_c), s	0.1	1.3		0.7	0.0	0.3		0.4				

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

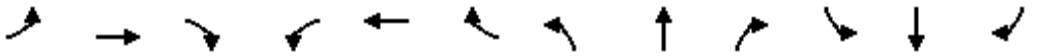
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	917	146	707	284	118	203	414
v/c Ratio	0.76	0.68	0.39	0.72	0.64	0.27	0.57
Control Delay	23.4	48.0	8.3	42.0	53.6	18.5	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	48.0	8.3	42.0	53.6	18.5	14.6
Queue Length 50th (ft)	249	68	108	140	62	71	93
Queue Length 95th (ft)	167	141	127	#250	#133	121	183
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1203	252	1799	392	185	747	731
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.58	0.39	0.72	0.64	0.27	0.57

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	836	26	137	665	0	0	0	267	111	191	389
Future Volume (vph)	0	836	26	137	665	0	0	0	267	111	191	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3555		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3555		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	889	28	146	707	0	0	0	284	118	203	414
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	917	0	146	707	0	0	0	284	118	203	310
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Effective Green, g (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Actuated g/C Ratio		0.34		0.12	0.50				0.24	0.10	0.40	0.40
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1204		214	1799				392	185	747	627
v/s Ratio Prot		c0.26		c0.08	0.20				c0.17	c0.07	0.11	
v/s Ratio Perm												0.20
v/c Ratio		0.76		0.68	0.39				0.72	0.64	0.27	0.49
Uniform Delay, d1		25.0		35.8	13.1				29.7	36.6	17.3	19.2
Progression Factor		0.72		0.90	0.58				1.00	1.00	1.00	1.00
Incremental Delay, d2		4.4		6.8	0.6				6.5	15.6	0.9	2.8
Delay (s)		22.5		39.0	8.2				36.2	52.2	18.2	22.0
Level of Service		C		D	A				D	D	B	C
Approach Delay (s)		22.5			13.5			36.2			25.8	
Approach LOS		C			B			D			C	

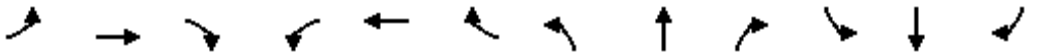
Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

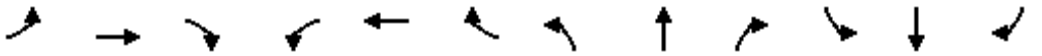
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	363	492	467	102	239	235	186
v/c Ratio	0.46	0.20	0.30	0.14	0.67	0.66	0.39
Control Delay	6.6	3.4	18.2	5.0	39.6	39.0	6.4
Queue Delay	0.6	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	3.6	18.2	5.0	39.6	39.0	6.4
Queue Length 50th (ft)	46	31	86	0	124	122	0
Queue Length 95th (ft)	78	50	144	33	182	177	45
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	829	2514	1553	728	585	587	673
Starvation Cap Reductn	192	1220	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.38	0.30	0.14	0.41	0.40	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	467	0	0	444	97	446	5	177	0	0	0
Future Volume (vph)	345	467	0	0	444	97	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1782	3574			3574	1545	1698	1704	1599			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	843	3574			3574	1545	1698	1704	1599			
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)	363	492	0	0	467	102	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	147	0	0	0
Lane Group Flow (vph)	363	492	0	0	467	44	239	235	39	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	59.8	59.8			37.0	37.0	17.8	17.8	17.8			
Effective Green, g (s)	59.8	59.8			37.0	37.0	17.8	17.8	17.8			
Actuated g/C Ratio	0.70	0.70			0.44	0.44	0.21	0.21	0.21			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	789	2514			1555	672	355	356	334			
v/s Ratio Prot	c0.10	0.14			0.13		c0.14	0.14				
v/s Ratio Perm	c0.23					0.03			0.02			
v/c Ratio	0.46	0.20			0.30	0.07	0.67	0.66	0.12			
Uniform Delay, d1	7.8	4.3			15.6	14.0	30.9	30.8	27.2			
Progression Factor	0.53	0.63			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.2			0.5	0.2	4.5	4.1	0.1			
Delay (s)	4.2	2.9			16.1	14.1	35.4	34.9	27.3			
Level of Service	A	A			B	B	D	C	C			
Approach Delay (s)		3.5			15.7			33.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	71.7%	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 (veh/h)	345	467	0	0	444	97	446	5	177	0	0	0
Future Volume (veh/h)	345	467	0	0	444	97	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	363	492	0	0	467	102	473	0	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	941	2647	0	0	986	427	608	0	271			
Arrive On Green	0.82	1.00	0.00	0.00	0.28	0.28	0.17	0.00	0.17			
Sat Flow, veh/h	1795	3676	0	0	3676	1549	3591	0	1598			
Grp Volume(v), veh/h	363	492	0	0	467	102	473	0	186			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1549	1795	0	1598			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.2	4.3	10.7	0.0	9.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.2	4.3	10.7	0.0	9.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	941	2647	0	0	986	427	608	0	271			
V/C Ratio(X)	0.39	0.19	0.00	0.00	0.47	0.24	0.78	0.00	0.69			
Avail Cap(c_a), veh/h	941	2647	0	0	986	427	1238	0	551			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.0	0.0	0.0	0.0	25.7	23.9	33.8	0.0	33.2			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.6	1.3	1.6	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	1.0	0.1	0.0	0.0	4.0	1.7	4.7	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.1	0.0	0.0	27.3	25.2	35.4	0.0	35.5			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		855			569			659				
Approach Delay, s/veh		1.4			26.9			35.4				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		66.9		18.1	38.9	28.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 48		29.3	19.9	23.4						
Max Q Clear Time (g_c+I1), s		2.0		12.7	2.0	11.2						
Green Ext Time (p_c), s		2.9		1.7	0.5	1.8						

Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1292	90	853
v/c Ratio	0.48	0.42	0.24
Control Delay	0.6	35.9	0.2
Queue Delay	0.0	0.0	0.0
Total Delay	0.6	35.9	0.2
Queue Length 50th (ft)	4	37	0
Queue Length 95th (ft)	0	0	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2712	252	3574
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	763
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.48	0.36	0.30

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	811	403	85	802	0	0
Future Volume (vph)	811	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3368		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3368		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	863	429	90	853	0	0
RTOR Reduction (vph)	67	0	0	0	0	0
Lane Group Flow (vph)	1225	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	66.6		10.2	85.0		
Effective Green, g (s)	66.6		10.2	76.5		
Actuated g/C Ratio	0.78		0.12	0.90		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2638		214	3216		
v/s Ratio Prot	c0.36		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.46		0.42	0.27		
Uniform Delay, d1	3.1		34.7	0.6		
Progression Factor	0.09		0.88	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.4		31.0	0.6		
Level of Service	A		C	A		
Approach Delay (s)	0.4			3.5	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	1.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

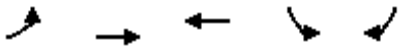
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	314	0	0	304	0	0
Future Vol, veh/h	314	0	0	304	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	341	0	0	330	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	341	0	671	341
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	330	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1218	-	422	701
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1218	-	422	701
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	728	-

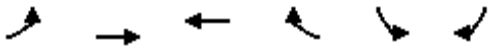
Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1218	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	187	391	519	162	246
v/c Ratio	0.48	0.22	0.46	0.60	0.55
Control Delay	15.9	10.4	15.6	36.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	10.4	15.6	36.0	9.0
Queue Length 50th (ft)	35	42	61	61	0
Queue Length 95th (ft)	64	81	122	122	56
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	1011	2485	1584	637	728
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.16	0.33	0.25	0.34

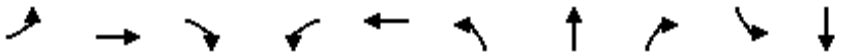
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	178	371	297	196	154	234
Future Volume (vph)	178	371	297	196	154	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3361		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3361		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	187	391	313	206	162	246
RTOR Reduction (vph)	0	0	95	0	0	208
Lane Group Flow (vph)	187	391	424	0	162	38
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	14.1	32.3	20.1		10.0	10.0
Effective Green, g (s)	14.1	32.3	20.1		10.0	10.0
Actuated g/C Ratio	0.22	0.49	0.31		0.15	0.15
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	385	1765	1032		273	244
v/s Ratio Prot	c0.10	0.11	c0.13			
v/s Ratio Perm					c0.09	0.02
v/c Ratio	0.49	0.22	0.41		0.59	0.15
Uniform Delay, d1	22.5	9.4	18.0		25.8	24.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1		2.3	0.1
Delay (s)	22.8	9.4	18.1		28.1	24.1
Level of Service	C	A	B		C	C
Approach Delay (s)		13.8	18.1		25.7	
Approach LOS		B	B		C	

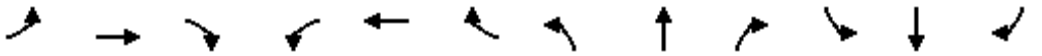
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	21.2
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology expects strict NEMA phasing.



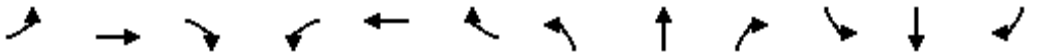
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	409	88	238	819	98	84	76	256	257
v/c Ratio	0.51	0.31	0.13	0.78	0.56	0.53	0.43	0.16	0.78	0.78
Control Delay	52.0	27.7	1.4	50.1	9.6	54.0	49.7	3.4	56.5	55.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	27.7	1.4	50.1	9.7	54.0	49.7	3.4	56.5	55.5
Queue Length 50th (ft)	77	101	0	157	38	64	54	0	171	169
Queue Length 95th (ft)	134	180	8	228	65	109	95	14	255	252
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	238	1326	670	391	1468	306	322	549	404	406
Starvation Cap Reductn	0	0	0	0	44	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.13	0.61	0.58	0.32	0.26	0.14	0.63	0.63

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	389	84	226	461	317	93	80	72	434	31	22
Future Volume (vph)	111	389	84	226	461	317	93	80	72	434	31	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1787	3574	1561	1787	3309		1787	1881	1588	1698	1693	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1787	3574	1561	1787	3309		1787	1881	1588	1698	1693	
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)	117	409	88	238	485	334	98	84	76	457	33	23
RTOR Reduction (vph)	0	0	55	0	100	0	0	0	55	0	3	0
Lane Group Flow (vph)	117	409	33	238	719	0	98	84	21	256	254	0
Confl. Peds. (#/hr)			1			5			4			6
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	13.5	39.0	39.0	17.9	43.4		10.8	10.8	28.7	20.3	20.3	
Effective Green, g (s)	13.5	39.0	39.0	17.9	43.4		10.8	10.8	28.7	20.3	20.3	
Actuated g/C Ratio	0.13	0.37	0.37	0.17	0.41		0.10	0.10	0.27	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	229	1327	579	304	1367		183	193	434	328	327	
v/s Ratio Prot	0.07	0.11		c0.13	c0.22		c0.05	0.04	0.01	c0.15	0.15	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.51	0.31	0.06	0.78	0.53		0.54	0.44	0.05	0.78	0.78	
Uniform Delay, d1	42.7	23.4	21.2	41.7	23.1		44.7	44.2	28.1	40.2	40.2	
Progression Factor	1.00	1.00	1.00	0.80	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.6	0.2	10.9	1.4		1.5	0.6	0.0	10.6	10.1	
Delay (s)	43.5	24.0	21.4	44.4	10.9		46.2	44.8	28.1	50.8	50.3	
Level of Service	D	C	C	D	B		D	D	C	D	D	
Approach Delay (s)		27.4			18.4			40.4			50.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.3%	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)	111	389	84	226	461	317	93	80	72	434	31	22
Future Volume (veh/h)	111	389	84	226	461	317	93	80	72	434	31	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	409	88	238	485	334	98	84	76	502	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	560	750	327	690	570	392	146	153	742	585	307	0
Arrive On Green	0.31	0.21	0.21	0.64	0.47	0.47	0.08	0.08	0.08	0.16	0.00	0.00
Sat Flow, veh/h	1795	3582	1559	1795	2023	1389	1795	1885	1574	3591	1885	0
Grp Volume(v), veh/h	117	409	88	238	429	390	98	84	76	502	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1559	1795	1791	1621	1795	1885	1574	1795	1885	0
Q Serve(g_s), s	5.0	10.7	5.0	6.4	22.2	22.3	5.6	4.5	0.0	14.3	0.0	0.0
Cycle Q Clear(g_c), s	5.0	10.7	5.0	6.4	22.2	22.3	5.6	4.5	0.0	14.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.86	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	560	750	327	690	505	457	146	153	742	585	307	0
V/C Ratio(X)	0.21	0.54	0.27	0.34	0.85	0.85	0.67	0.55	0.10	0.86	0.00	0.00
Avail Cap(c_a), veh/h	560	750	327	690	546	494	308	323	884	855	449	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.6	37.0	34.8	12.7	25.8	25.9	46.9	46.4	15.7	42.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.8	2.0	0.1	15.2	16.8	2.0	1.1	0.0	4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.9	2.0	2.2	9.5	8.8	2.5	2.1	1.0	6.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	39.9	36.8	12.8	41.0	42.6	48.9	47.5	15.8	47.0	0.0	0.0
LnGrp LOS	C	D	D	B	D	D	D	D	B	D	A	A
Approach Vol, veh/h		614			1057			258			502	
Approach Delay, s/veh		36.9			35.3			38.7			47.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	45.4	26.0		21.1	37.8	33.6		12.5				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	23.0	22.0		25.0	13.0	32.0		18.0				
Max Q Clear Time (g_c+I1), s	8.4	12.7		16.3	7.0	24.3		7.6				
Green Ext Time (p_c), s	0.2	1.3		0.7	0.0	5.3		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		38.5	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	984	77	741	252	66	168	235
v/c Ratio	0.82	0.45	0.44	0.79	0.17	0.20	0.31
Control Delay	35.6	60.5	4.8	57.8	32.7	16.2	11.0
Queue Delay	4.3	0.0	0.0	61.4	0.0	0.0	0.0
Total Delay	39.8	60.5	4.8	119.2	32.7	16.2	11.0
Queue Length 50th (ft)	359	36	22	162	35	61	56
Queue Length 95th (ft)	#519	71	33	238	71	91	95
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1205	207	1685	407	446	1016	891
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	154	0	0	180	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.37	0.44	1.11	0.15	0.17	0.26

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	919	26	74	711	0	0	0	242	63	161	226
Future Volume (vph)	0	919	26	74	711	0	0	0	242	63	161	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3588		1805	3610				1644	1805	1900	1592
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3588		1805	3610				1644	1805	1900	1592
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)	0	957	27	77	741	0	0	0	252	66	168	235
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	46
Lane Group Flow (vph)	0	984	0	77	741	0	0	0	252	66	168	189
Confl. Peds. (#/hr)			16									2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		35.2		10.0	49.0				20.4	23.0	47.6	47.6
Effective Green, g (s)		35.2		10.0	49.0				20.4	23.0	47.6	47.6
Actuated g/C Ratio		0.34		0.10	0.47				0.19	0.22	0.45	0.45
Clearance Time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		1202		171	1684				319	395	861	721
v/s Ratio Prot		c0.27		0.04	c0.21				c0.15	0.04	0.09	
v/s Ratio Perm												c0.12
v/c Ratio		0.82		0.45	0.44				0.79	0.17	0.20	0.26
Uniform Delay, d1		32.0		44.9	18.8				40.3	33.2	17.2	17.8
Progression Factor		0.81		1.18	0.19				1.00	1.00	1.00	1.00
Incremental Delay, d2		5.8		0.7	0.8				11.8	0.1	0.1	0.1
Delay (s)		31.8		53.6	4.5				52.1	33.4	17.3	17.9
Level of Service		C		D	A				D	C	B	B
Approach Delay (s)		31.8			9.1			52.1			19.9	
Approach LOS		C			A			D			B	

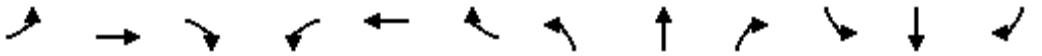
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	350	351	399	111	262	263	127
v/c Ratio	0.43	0.14	0.24	0.14	0.68	0.68	0.28
Control Delay	4.3	1.2	20.6	5.2	45.0	45.1	6.5
Queue Delay	0.7	0.2	0.0	0.0	0.5	0.5	0.0
Total Delay	5.0	1.5	20.6	5.2	45.5	45.6	6.5
Queue Length 50th (ft)	14	7	87	0	170	171	0
Queue Length 95th (ft)	49	11	148	38	229	229	41
Internal Link Dist (ft)		187	384			402	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	883	2513	1644	796	552	553	596
Starvation Cap Reductn	261	1481	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	77	77	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.34	0.24	0.14	0.55	0.55	0.21

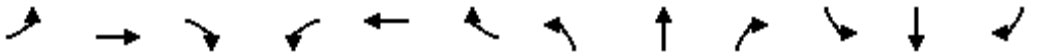
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	337	0	0	383	107	503	1	122	0	0	0
Future Volume (vph)	336	337	0	0	383	107	503	1	122	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1805	3610			3610	1615	1715	1719	1584			
Flt Permitted	0.48	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	919	3610			3610	1615	1715	1719	1584			
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)	350	351	0	0	399	111	524	1	127	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	98	0	0	0
Lane Group Flow (vph)	350	351	0	0	399	51	262	263	29	0	0	0
Confl. Peds. (#/hr)									6			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	73.1	73.1			47.8	47.8	23.7	23.7	23.7			
Effective Green, g (s)	73.1	73.1			47.8	47.8	23.7	23.7	23.7			
Actuated g/C Ratio	0.70	0.70			0.46	0.46	0.23	0.23	0.23			
Clearance Time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Vehicle Extension (s)	2.0	2.5			2.5	2.5	2.5	2.5	2.5			
Lane Grp Cap (vph)	816	2513			1643	735	387	388	357			
v/s Ratio Prot	c0.09	0.10			0.11		0.15	c0.15				
v/s Ratio Perm	c0.21					0.03			0.02			
v/c Ratio	0.43	0.14			0.24	0.07	0.68	0.68	0.08			
Uniform Delay, d1	9.2	5.4			17.5	16.1	37.2	37.2	32.1			
Progression Factor	0.28	0.18			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.1			0.4	0.2	4.2	4.2	0.1			
Delay (s)	2.7	1.1			17.9	16.3	41.4	41.4	32.1			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		1.9			17.5			39.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	73.1%	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)	336	337	0	0	383	107	503	1	122	0	0	0
Future Volume (veh/h)	336	337	0	0	383	107	503	1	122	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		0.99			
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	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	350	351	0	0	399	111	525	0	127			
Peak Hour Factor	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	0	0			
Cap, veh/h	951	2673	0	0	1162	518	653	0	288			
Arrive On Green	0.76	1.00	0.00	0.00	0.32	0.32	0.18	0.00	0.18			
Sat Flow, veh/h	1810	3705	0	0	3705	1610	3619	0	1594			
Grp Volume(v), veh/h	350	351	0	0	399	111	525	0	127			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1610	1810	0	1594			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.8	5.3	14.6	0.0	7.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.8	5.3	14.6	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	951	2673	0	0	1162	518	653	0	288			
V/C Ratio(X)	0.37	0.13	0.00	0.00	0.34	0.21	0.80	0.00	0.44			
Avail Cap(c_a), veh/h	951	2673	0	0	1162	518	1165	0	513			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.9	0.0	0.0	0.0	27.1	25.9	41.2	0.0	38.3			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.8	0.9	1.8	0.0	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			
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.0	3.9	2.1	6.6	0.0	6.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	0.1	0.0	0.0	27.9	26.9	43.0	0.0	39.1			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		701			510			652				
Approach Delay, s/veh		2.0			27.7			42.3				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		81.8		23.2	43.8	38.0			
Change Period (Y+Rc), s		* 4.1		* 4.2	* 4.1	4.2			
Max Green Setting (Gmax), s		* 63		* 34	* 25	33.8			
Max Q Clear Time (g_c+I1), s		2.0		16.6	2.0	10.8			
Green Ext Time (p_c), s		5.4		1.7	0.5	2.3			

Intersection Summary									
HCM 6th Ctrl Delay			23.1						
HCM 6th LOS			C						

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	67	141	359	105	142	356
Future Vol, veh/h	67	141	359	105	142	356
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	72	152	386	113	153	383
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	13.1	23.5	16.7
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	100%	0%
Vol Thru, %	0%	0%	32%	0%	100%
Vol Right, %	0%	100%	68%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	356	208	359	105
LT Vol	142	0	0	359	0
Through Vol	0	0	67	0	105
RT Vol	0	356	141	0	0
Lane Flow Rate	153	383	224	386	113
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.302	0.627	0.385	0.743	0.201
Departure Headway (Hd)	7.118	5.9	6.201	6.926	6.418
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	504	609	577	521	558
Service Time	4.883	3.664	4.267	4.686	4.177
HCM Lane V/C Ratio	0.304	0.629	0.388	0.741	0.203
HCM Control Delay	13	18.2	13.1	27.2	10.8
HCM Lane LOS	B	C	B	D	B
HCM 95th-tile Q	1.3	4.4	1.8	6.3	0.7

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1275	107	818
v/c Ratio	0.62	0.63	0.31
Control Delay	10.1	90.3	4.3
Queue Delay	0.0	0.0	0.5
Total Delay	10.1	90.3	4.8
Queue Length 50th (ft)	76	77	186
Queue Length 95th (ft)	193	131	213
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2147	207	2724
Starvation Cap Reductn	0	0	1370
Spillback Cap Reductn	0	0	571
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.59	0.52	0.60

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	700	524	103	785	0	0
Future Volume (vph)	700	524	103	785	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.97		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.94		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3279		1805	3610		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3279		1805	3610		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	729	546	107	818	0	0
RTOR Reduction (vph)	110	0	0	0	0	0
Lane Group Flow (vph)	1165	0	107	818	0	0
Confl. Peds. (#/hr)		16				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Prot	NA		
Protected Phases	2 8		1	6 2 8		
Permitted Phases						
Actuated Green, G (s)	62.2		10.0	76.2		
Effective Green, g (s)	62.2		10.0	72.2		
Actuated g/C Ratio	0.59		0.10	0.69		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	1942		171	2482		
v/s Ratio Prot	c0.36		c0.06	0.23		
v/s Ratio Perm						
v/c Ratio	0.60		0.63	0.33		
Uniform Delay, d1	13.5		45.7	6.6		
Progression Factor	0.80		1.64	0.71		
Incremental Delay, d2	0.3		5.0	0.1		
Delay (s)	11.1		79.9	4.8		
Level of Service	B		E	A		
Approach Delay (s)	11.1			13.5	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Existing Plus Project

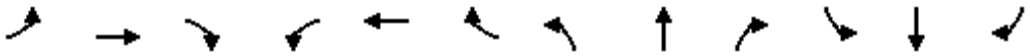
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	173	203	55	94	132
Future Vol, veh/h	58	173	203	55	94	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	67	201	236	64	109	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	639	268	0	0	300	0
Stage 1	268	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	431	756	-	-	1228	-
Stage 1	763	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	756	-	-	1228	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	3.4
HCM LOS	B		

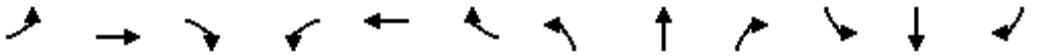
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	756	1228	-
HCM Lane V/C Ratio	-	-	0.172	0.266	0.089	-
HCM Control Delay (s)	-	-	16	11.5	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.1	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	371	55	46	282	18	106	119	154	37	61	14
v/c Ratio	0.06	0.54	0.08	0.30	0.36	0.02	0.41	0.34	0.36	0.22	0.18	0.03
Control Delay	35.9	21.6	0.2	39.7	15.4	0.1	39.9	28.8	7.8	36.5	27.2	0.2
Queue Delay	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 Delay	35.9	21.6	0.2	39.7	15.4	0.1	39.9	28.8	7.8	36.5	27.2	0.2
Queue Length 50th (ft)	4	133	0	19	71	0	44	45	0	15	22	0
Queue Length 95th (ft)	19	212	0	54	158	0	#130	94	35	45	55	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	155	1151	1015	155	1160	1042	260	1016	933	196	1016	933
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.32	0.05	0.30	0.24	0.02	0.41	0.12	0.17	0.19	0.06	0.02

Intersection Summary

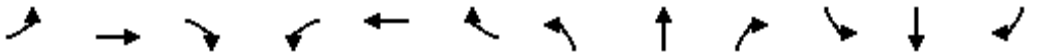
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	308	46	38	234	15	88	99	128	31	51	12
Future Volume (vph)	8	308	46	38	234	15	88	99	128	31	51	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	10	371	55	46	282	18	106	119	154	37	61	14
RTOR Reduction (vph)	0	0	35	0	0	11	0	0	125	0	0	13
Lane Group Flow (vph)	10	371	20	46	282	7	106	119	29	37	61	1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.7	25.0	25.0	2.4	26.7	26.7	9.3	13.0	13.0	3.0	6.7	6.7
Effective Green, g (s)	0.7	25.0	25.0	2.4	26.7	26.7	9.3	13.0	13.0	3.0	6.7	6.7
Actuated g/C Ratio	0.01	0.37	0.37	0.04	0.39	0.39	0.14	0.19	0.19	0.04	0.10	0.10
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	17	666	554	60	711	604	235	346	294	75	178	151
v/s Ratio Prot	0.01	c0.21		c0.03	0.16		c0.06	c0.07		0.02	0.03	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.59	0.56	0.04	0.77	0.40	0.01	0.45	0.34	0.10	0.49	0.34	0.01
Uniform Delay, d1	33.5	17.0	13.7	32.5	14.8	12.6	27.0	23.8	22.6	31.7	28.5	27.6
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	45.2	1.7	0.1	44.6	0.8	0.0	0.5	1.0	0.3	1.9	2.0	0.0
Delay (s)	78.7	18.8	13.8	77.0	15.6	12.6	27.5	24.8	22.9	33.6	30.5	27.6
Level of Service	E	B	B	E	B	B	C	C	C	C	C	C
Approach Delay (s)		19.5			23.6			24.8			31.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	47.9%	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)	8	308	46	38	234	15	88	99	128	31	51	12
Future Volume (veh/h)	8	308	46	38	234	15	88	99	128	31	51	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	10	371	55	46	282	18	106	119	154	37	61	14
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	22	535	443	80	595	505	134	305	259	69	236	200
Arrive On Green	0.01	0.29	0.29	0.05	0.33	0.33	0.08	0.17	0.17	0.04	0.13	0.13
Sat Flow, veh/h	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	10	371	55	46	282	18	106	119	154	37	61	14
Grp Sat Flow(s),veh/h/ln	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.3	9.7	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
Cycle Q Clear(g_c), s	0.3	9.7	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
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	22	535	443	80	595	505	134	305	259	69	236	200
V/C Ratio(X)	0.45	0.69	0.12	0.57	0.47	0.04	0.79	0.39	0.59	0.54	0.26	0.07
Avail Cap(c_a), veh/h	161	1124	932	161	1124	953	203	1050	890	203	1050	890
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	26.4	16.9	14.0	25.2	14.5	12.4	24.4	20.0	20.8	25.4	21.1	20.6
Incr Delay (d2), s/veh	15.8	3.4	0.3	7.5	1.3	0.1	5.7	1.4	3.7	2.4	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.4	0.7	2.2	0.1	1.3	1.2	1.7	0.4	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	20.4	14.3	32.7	15.7	12.5	30.1	21.4	24.5	27.9	22.1	20.9
LnGrp LOS	D	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		436			346			379			112	
Approach Delay, s/veh		20.1			17.8			25.1			23.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	22.9	9.5	13.8	6.0	24.7	7.4	15.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 33	6.3	* 31	5.0	* 33	6.3	* 31
Max Q Clear Time (g_c+I1), s	3.4	11.7	5.2	3.6	2.3	8.6	3.1	7.0
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	0.0	2.9	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	465	1	18	286	10	1	3	141	11	4	2
Future Vol, veh/h	4	465	1	18	286	10	1	3	141	11	4	2
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	596	1	23	367	13	1	4	181	14	5	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	597	0	0	1030	1032	596	1112	1020	367
Stage 1	-	-	-	-	-	-	606	606	-	413	413	-
Stage 2	-	-	-	-	-	-	424	426	-	699	607	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1162	-	-	965	-	-	209	230	498	184	234	672
Stage 1	-	-	-	-	-	-	479	482	-	610	588	-
Stage 2	-	-	-	-	-	-	602	581	-	426	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1162	-	-	965	-	-	200	224	498	113	227	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	224	-	113	227	-
Stage 1	-	-	-	-	-	-	477	480	-	608	574	-
Stage 2	-	-	-	-	-	-	580	567	-	268	480	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	16.5	33
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	200	224	498	1162	-	-	965	-	-	113	227	672
HCM Lane V/C Ratio	0.006	0.017	0.363	0.004	-	-	0.024	-	-	0.125	0.023	0.004
HCM Control Delay (s)	23.1	21.4	16.3	8.1	-	-	8.8	-	-	41.4	21.2	10.4
HCM Lane LOS	C	C	C	A	-	-	A	-	-	E	C	B
HCM 95th %tile Q(veh)	0	0.1	1.6	0	-	-	0.1	-	-	0.4	0.1	0

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	632	12	105	310	23	199
Future Vol, veh/h	632	12	105	310	23	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	687	13	114	337	25	216

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	700	0	1252	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	565	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	897	-	190	447
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	897	-	166	447
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	497	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	21.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	166	447	-	-	897	-
HCM Lane V/C Ratio	0.151	0.484	-	-	0.127	-
HCM Control Delay (s)	30.5	20.4	-	-	9.6	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	2.6	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	886	17	171	418	33	298
v/c Ratio	0.82	0.02	0.46	0.26	0.18	0.67
Control Delay	20.8	4.8	9.2	3.0	39.2	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	4.8	9.2	3.0	39.2	25.3
Queue Length 50th (ft)	342	1	19	53	16	81
Queue Length 95th (ft)	552	9	63	91	46	177
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1432	1220	377	1623	616	447
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.01	0.45	0.26	0.05	0.67

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	815	16	157	385	30	274
Future Volume (vph)	815	16	157	385	30	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.12	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	221	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	886	17	171	418	33	298
RTOR Reduction (vph)	0	5	0	0	0	93
Lane Group Flow (vph)	886	12	171	418	33	205
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	42.3	42.3	57.8	57.8	4.0	13.0
Effective Green, g (s)	42.3	42.3	57.8	57.8	4.0	13.0
Actuated g/C Ratio	0.57	0.57	0.77	0.77	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1053	895	357	1439	94	412
v/s Ratio Prot	c0.48		0.06	0.22	0.02	c0.06
v/s Ratio Perm		0.01	0.31			0.07
v/c Ratio	0.84	0.01	0.48	0.29	0.35	0.50
Uniform Delay, d1	13.5	7.1	11.3	2.5	34.1	28.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.0	1.0	0.1	2.3	1.0
Delay (s)	19.7	7.1	12.3	2.6	36.4	28.9
Level of Service	B	A	B	A	D	C
Approach Delay (s)	19.4			5.4	29.7	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	19.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	815	16	157	385	30	274
Future Volume (veh/h)	815	16	157	385	30	274
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	886	17	171	418	33	298
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	962	815	245	1221	356	420
Arrive On Green	0.51	0.51	0.07	0.65	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	886	17	171	418	33	298
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	38.6	0.5	3.7	8.8	1.3	15.0
Cycle Q Clear(g_c), s	38.6	0.5	3.7	8.8	1.3	15.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	962	815	245	1221	356	420
V/C Ratio(X)	0.92	0.02	0.70	0.34	0.09	0.71
Avail Cap(c_a), veh/h	1145	970	301	1463	464	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	10.5	19.5	6.8	28.8	29.4
Incr Delay (d2), s/veh	10.8	0.0	5.3	0.2	0.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	0.1	1.9	2.5	0.6	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.6	10.5	24.8	7.0	28.9	32.8
LnGrp LOS	C	B	C	A	C	C
Approach Vol, veh/h	903			589	331	
Approach Delay, s/veh	30.2			12.2	32.4	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.2	51.9				64.1	24.1
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	54.0				69.0	23.0
Max Q Clear Time (g_c+I1), s	5.7	40.6				10.8	17.0
Green Ext Time (p_c), s	0.1	4.8				2.3	0.6

Intersection Summary							
HCM 6th Ctrl Delay			24.8				
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	0	716	373	23	309	0	0	0	0	25	0	233
Future Vol, veh/h	0	716	373	23	309	0	0	0	0	25	0	233
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	994	518	32	429	0	0	0	0	35	0	324

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	1512	0	0			1746	2005	429
Stage 1	-	-	-	-	-	-			493	493	-
Stage 2	-	-	-	-	-	-			1253	1512	-
Critical Hdwy	-	-	-	4.15	-	-			6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-			5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-			3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	433	-	0			93	58	620
Stage 1	0	-	-	-	-	0			608	542	-
Stage 2	0	-	-	-	-	0			265	180	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	433	-	-			86	0	620
Mov Cap-2 Maneuver	-	-	-	-	-	-			86	0	-
Stage 1	-	-	-	-	-	-			608	0	-
Stage 2	-	-	-	-	-	-			245	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	22.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	433	-	86	620
HCM Lane V/C Ratio	-	-	0.074	-	0.404	0.522
HCM Control Delay (s)	-	-	14	-	72.7	17
HCM Lane LOS	-	-	B	-	F	C
HCM 95th %tile Q(veh)	-	-	0.2	-	1.6	3

Intersection	
Int Delay, s/veh	729.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	483	269	0	0	124	22	195	1	23	0	0	0
Future Vol, veh/h	483	269	0	0	124	22	195	1	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	710	396	0	0	182	32	287	1	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	214	0	-	-	-	0	2014	2030	396
Stage 1	-	-	-	-	-	-	1816	1816	-
Stage 2	-	-	-	-	-	-	198	214	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1350	-	0	0	-	-	~ 64	57	651
Stage 1	-	-	0	0	-	-	~ 141	128	-
Stage 2	-	-	0	0	-	-	833	724	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1350	-	-	-	-	-	~ 30	0	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 30	0	-
Stage 1	-	-	-	-	-	-	~ 67	0	-
Stage 2	-	-	-	-	-	-	833	0	-

Approach	EB	WB	NB
HCM Control Delay, s	6.8	0	$ 3695.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	30	651	1350	-	-	-
HCM Lane V/C Ratio	9.608	0.052	0.526	-	-	-
HCM Control Delay (s)	$ 4128.1	10.8	10.6	-	-	-
HCM Lane LOS	F	B	B	-	-	-
HCM 95th %tile Q(veh)	35.3	0.2	3.2	-	-	-

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

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	270	122	259	170	22
Future Vol, veh/h	23	270	122	259	170	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	40	474	214	454	298	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1200	318	337	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	204	720	1217	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	720	1217	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.2	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1217	-	168	720	-	-
HCM Lane V/C Ratio	0.176	-	0.24	0.658	-	-
HCM Control Delay (s)	8.6	-	33.1	19.1	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.9	5	-	-

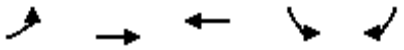
Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	189	53	272	127	28	134
Future Vol, veh/h	189	53	272	127	28	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	205	58	296	138	30	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	502	296	0	0	434	0
Stage 1	296	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	529	743	-	-	1126	-
Stage 1	755	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	515	743	-	-	1126	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	515	743	1126	-
HCM Lane V/C Ratio	-	-	0.399	0.078	0.027	-
HCM Control Delay (s)	-	-	16.6	10.3	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.3	0.1	-

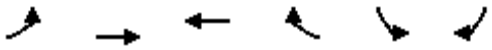


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	226	412	467	147	173
v/c Ratio	0.72	0.21	0.37	0.55	0.45
Control Delay	34.6	9.1	14.8	34.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	9.1	14.8	34.0	9.5
Queue Length 50th (ft)	~71	23	42	41	0
Queue Length 95th (ft)	74	114	144	#152	55
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	314	2119	1389	338	442
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.72	0.19	0.34	0.43	0.39

Intersection Summary

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

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

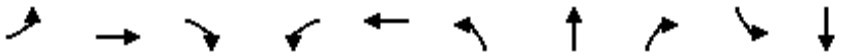


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	208	379	313	117	135	159
Future Volume (vph)	208	379	313	117	135	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3395		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3395		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	412	340	127	147	173
RTOR Reduction (vph)	0	0	40	0	0	148
Lane Group Flow (vph)	226	412	427	0	147	25
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	10.3	32.3	20.8		8.7	8.7
Effective Green, g (s)	10.3	32.3	20.8		8.7	8.7
Actuated g/C Ratio	0.17	0.53	0.34		0.14	0.14
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	298	1873	1157		252	225
v/s Ratio Prot	c0.13	0.12	c0.13			
v/s Ratio Perm					c0.08	0.02
v/c Ratio	0.76	0.22	0.37		0.58	0.11
Uniform Delay, d1	24.2	7.6	15.2		24.5	22.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.4	0.0	0.1		2.2	0.1
Delay (s)	33.6	7.7	15.2		26.7	22.9
Level of Service	C	A	B		C	C
Approach Delay (s)		16.8	15.2		24.6	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

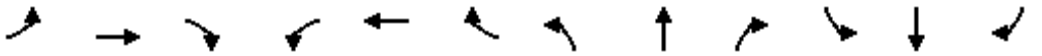


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	493	68	43	206	116	115
v/c Ratio	0.19	0.31	0.09	0.68	0.26	0.36	0.22	0.42	0.54	0.51
Control Delay	35.4	18.7	1.1	43.9	6.7	38.5	34.8	4.4	42.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	18.7	1.1	43.9	6.7	38.5	34.8	4.4	42.7	36.8
Queue Length 50th (ft)	18	85	0	82	12	35	22	0	63	53
Queue Length 95th (ft)	41	174	5	140	87	62	44	18	102	93
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	267	1636	782	270	1926	374	394	534	375	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.31	0.09	0.54	0.26	0.18	0.11	0.39	0.31	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
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)	34	505	70	147	431	62	68	43	206	168	40	23
RTOR Reduction (vph)	0	0	41	0	8	0	0	0	154	0	12	0
Lane Group Flow (vph)	34	505	29	147	485	0	68	43	52	116	103	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Effective Green, g (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Actuated g/C Ratio	0.07	0.42	0.42	0.16	0.51		0.10	0.10	0.25	0.13	0.13	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	118	1478	644	279	1764		170	179	400	215	214	
v/s Ratio Prot	0.02	c0.14		c0.08	0.14		c0.04	0.02	0.02	c0.07	0.06	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.29	0.34	0.05	0.53	0.27		0.40	0.24	0.13	0.54	0.48	
Uniform Delay, d1	37.7	16.8	14.7	32.9	11.9		36.1	35.5	24.5	34.7	34.4	
Progression Factor	1.00	1.00	1.00	0.80	0.43		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.1	0.8	0.4		0.6	0.3	0.1	1.3	0.6	
Delay (s)	38.2	17.4	14.8	27.1	5.5		36.7	35.8	24.5	36.0	35.0	
Level of Service	D	B	B	C	A		D	D	C	D	D	
Approach Delay (s)		18.3			10.4			28.6			35.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.5%	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)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (veh/h)	30	439	61	128	375	54	59	37	179	146	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	62	68	43	206	116	113	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	822	753	334	740	516	74	121	127	765	187	158	32
Arrive On Green	0.46	0.21	0.21	0.83	0.33	0.33	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1578	1781	3121	446	1781	1870	1578	1781	1506	306
Grp Volume(v), veh/h	34	505	70	147	244	249	68	43	206	116	0	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1781	1777	1790	1781	1870	1578	1781	0	1812
Q Serve(g_s), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Cycle Q Clear(g_c), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	822	753	334	740	294	296	121	127	765	187	0	190
V/C Ratio(X)	0.04	0.67	0.21	0.20	0.83	0.84	0.56	0.34	0.27	0.62	0.00	0.71
Avail Cap(c_a), veh/h	822	753	334	740	397	400	377	396	992	398	0	405
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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	30.8	27.6	4.3	27.3	27.4	38.4	37.8	13.0	36.4	0.0	36.8
Incr Delay (d2), s/veh	0.0	4.7	1.4	0.0	22.4	23.2	1.5	0.6	0.1	1.2	0.0	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	0.3	5.1	1.3	0.5	5.5	5.6	1.4	0.9	2.2	2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	35.5	29.1	4.4	49.7	50.6	39.9	38.4	13.1	37.7	0.0	38.7
LnGrp LOS	B	D	C	A	D	D	D	D	B	D	A	D
Approach Vol, veh/h		609			640			317			252	
Approach Delay, s/veh		33.5			39.6			22.3			38.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.3	22.0		12.9	44.2	18.1		9.8				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	18.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	13.1		8.2	2.9	12.9		5.1				
Green Ext Time (p_c), s	0.1	1.1		0.4	0.0	1.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		34.4	
HCM 6th LOS		C	

Notes

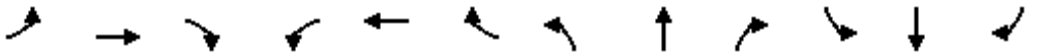
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	973	81	515	460	137	72	237
v/c Ratio	0.81	0.65	0.32	0.87	1.10	0.09	0.29
Control Delay	25.8	56.2	10.5	45.7	152.1	14.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	56.2	10.5	45.7	152.1	14.7	3.2
Queue Length 50th (ft)	257	28	89	228	~84	22	0
Queue Length 95th (ft)	156	#104	89	#393	#192	46	38
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1204	124	1623	530	124	806	811
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.65	0.32	0.87	1.10	0.09	0.29

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	856	10	72	458	0	0	0	409	122	64	211
Future Volume (vph)	0	856	10	72	458	0	0	0	409	122	64	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3532		1770	3539				1611	1770	1863	1563
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3532		1770	3539				1611	1770	1863	1563
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)	0	962	11	81	515	0	0	0	460	137	72	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	134
Lane Group Flow (vph)	0	973	0	81	515	0	0	0	460	137	72	103
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Effective Green, g (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Actuated g/C Ratio		0.34		0.07	0.46				0.33	0.07	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1205		124	1623				530	124	806	676
v/s Ratio Prot		c0.28		c0.05	0.15				c0.29	c0.08	0.04	
v/s Ratio Perm												0.07
v/c Ratio		0.81		0.65	0.32				0.87	1.10	0.09	0.15
Uniform Delay, d1		25.5		38.5	14.6				26.8	39.5	14.2	14.6
Progression Factor		0.77		0.78	0.68				1.00	1.00	1.00	1.00
Incremental Delay, d2		5.7		11.6	0.5				14.0	111.8	0.2	0.5
Delay (s)		25.2		41.6	10.4				40.8	151.3	14.4	15.1
Level of Service		C		D	B				D	F	B	B
Approach Delay (s)		25.2			14.6			40.8			56.8	
Approach LOS		C			B			D			E	

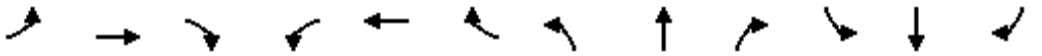
Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	600	546	396	253	147	149	142
v/c Ratio	0.63	0.21	0.30	0.35	0.60	0.61	0.40
Control Delay	8.5	2.7	21.1	4.6	43.6	43.9	9.2
Queue Delay	0.8	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	3.0	21.1	4.6	43.6	43.9	9.2
Queue Length 50th (ft)	80	28	79	0	77	80	0
Queue Length 95th (ft)	135	49	127	52	131	133	46
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	969	2639	1313	726	514	515	582
Starvation Cap Reductn	142	1394	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.44	0.30	0.35	0.29	0.29	0.24

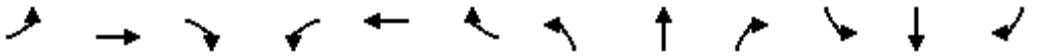
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	546	497	0	0	360	230	268	1	129	0	0	0
Future Volume (vph)	546	497	0	0	360	230	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1765	3539			3539	1532	1681	1686	1583			
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	882	3539			3539	1532	1681	1686	1583			
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)	600	546	0	0	396	253	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	0	121	0	0	0
Lane Group Flow (vph)	600	546	0	0	396	94	147	149	21	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Effective Green, g (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Actuated g/C Ratio	0.75	0.75			0.37	0.37	0.15	0.15	0.15			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	946	2639			1311	567	245	245	230			
v/s Ratio Prot	c0.21	0.15			0.11		0.09	c0.09				
v/s Ratio Perm	c0.27					0.06			0.01			
v/c Ratio	0.63	0.21			0.30	0.17	0.60	0.61	0.09			
Uniform Delay, d1	8.5	3.2			19.0	17.9	34.0	34.0	31.4			
Progression Factor	0.58	0.70			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.2			0.6	0.6	3.3	3.6	0.1			
Delay (s)	5.9	2.4			19.6	18.6	37.3	37.6	31.5			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		4.2			19.2			35.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.5%	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 (veh/h)	546	497	0	0	360	230	268	1	129	0	0	0
Future Volume (veh/h)	546	497	0	0	360	230	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	600	546	0	0	396	253	296	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1075	2730	0	0	702	303	436	0	194			
Arrive On Green	0.87	1.00	0.00	0.00	0.20	0.20	0.12	0.00	0.12			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	3563	0	1585			
Grp Volume(v), veh/h	600	546	0	0	396	253	296	0	142			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.6	13.5	6.8	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.6	13.5	6.8	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1075	2730	0	0	702	303	436	0	194			
V/C Ratio(X)	0.56	0.20	0.00	0.00	0.56	0.84	0.68	0.00	0.73			
Avail Cap(c_a), veh/h	1075	2730	0	0	702	303	1090	0	485			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.2	0.0	0.0	0.0	30.8	32.8	35.7	0.0	36.0			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	3.3	23.1	1.4	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	1.4	0.1	0.0	0.0	3.8	6.7	3.0	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.1	0.0	0.0	34.0	55.8	37.1	0.0	39.9			
LnGrp LOS	A	A	A	A	C	E	D	A	D			
Approach Vol, veh/h		1146			649			438				
Approach Delay, s/veh		1.4			42.5			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		69.4		15.6	48.6	20.8						
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0						
Max Green Setting (Gmax), s		* 50		* 26	28.9	16.8						
Max Q Clear Time (g_c+I1), s		2.0		9.3	2.0	15.5						
Green Ext Time (p_c), s		4.0		1.1	0.9	0.5						

Intersection Summary												
HCM 6th Ctrl Delay			20.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1558	96	596
v/c Ratio	0.55	0.77	0.17
Control Delay	0.7	66.2	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.7	66.2	0.2
Queue Length 50th (ft)	6	32	0
Queue Length 95th (ft)	m0	#119	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2858	124	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	11	0	492
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.77	0.20

Intersection Summary

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1047	340	85	530	0	0
Future Volume (vph)	1047	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3388		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3388		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1176	382	96	596	0	0
RTOR Reduction (vph)	30	0	0	0	0	0
Lane Group Flow (vph)	1528	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	71.0		6.0	85.0		
Effective Green, g (s)	71.0		6.0	79.8		
Actuated g/C Ratio	0.84		0.07	0.94		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2829		124	3322		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.54		0.77	0.18		
Uniform Delay, d1	2.1		38.8	0.2		
Progression Factor	0.16		0.67	1.00		
Incremental Delay, d2	0.1		24.8	0.1		
Delay (s)	0.4		51.0	0.3		
Level of Service	A		D	A		
Approach Delay (s)	0.4			7.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

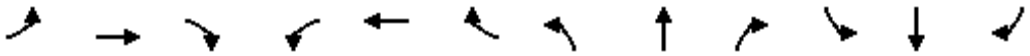
Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	109	197	80	221	213
Future Vol, veh/h	43	109	197	80	221	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	45	115	207	84	233	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	939	249	0	0	291	0
Stage 1	249	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	292	787	-	-	1265	-
Stage 1	790	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	787	-	-	1265	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	405	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	4.3
HCM LOS	B		

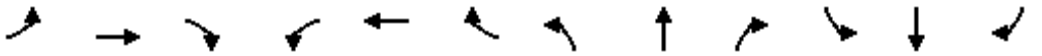
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	238	787	1265	-
HCM Lane V/C Ratio	-	-	0.19	0.146	0.184	-
HCM Control Delay (s)	-	-	23.6	10.4	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.5	0.7	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	19	382	128	88	307	38	111	49	48	23	84	17
v/c Ratio	0.14	0.57	0.19	0.67	0.34	0.04	0.66	0.12	0.10	0.17	0.30	0.05
Control Delay	35.3	22.4	2.7	59.8	14.1	0.1	55.2	24.7	0.4	36.0	30.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	22.4	2.7	59.8	14.1	0.1	55.2	24.7	0.4	36.0	30.1	0.3
Queue Length 50th (ft)	7	131	0	35	74	0	45	14	0	9	31	0
Queue Length 95th (ft)	30	224	22	#123	176	0	#149	50	0	34	77	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	135	943	879	132	972	901	168	884	835	132	865	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.41	0.15	0.67	0.32	0.04	0.66	0.06	0.06	0.17	0.10	0.02

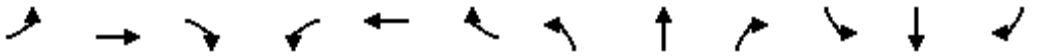
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	344	115	79	276	34	100	44	43	21	76	15
Future Volume (vph)	17	344	115	79	276	34	100	44	43	21	76	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	19	382	128	88	307	38	111	49	48	23	84	17
RTOR Reduction (vph)	0	0	79	0	0	21	0	0	38	0	0	15
Lane Group Flow (vph)	19	382	49	88	307	17	111	49	10	23	84	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	28.9	28.9	5.1	33.1	33.1	6.4	14.9	14.9	1.8	10.3	10.3
Effective Green, g (s)	0.9	28.9	28.9	5.1	33.1	33.1	6.4	14.9	14.9	1.8	10.3	10.3
Actuated g/C Ratio	0.01	0.38	0.38	0.07	0.44	0.44	0.09	0.20	0.20	0.02	0.14	0.14
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	715	608	120	820	696	150	369	313	42	255	211
v/s Ratio Prot	0.01	c0.21		c0.05	c0.16		c0.06	c0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.90	0.53	0.08	0.73	0.37	0.02	0.74	0.13	0.03	0.55	0.33	0.01
Uniform Delay, d1	37.1	17.9	14.7	34.4	14.1	11.9	33.6	24.8	24.3	36.3	29.3	28.0
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	153.1	1.4	0.1	21.1	0.6	0.0	15.1	0.3	0.1	7.6	1.3	0.0
Delay (s)	190.2	19.3	14.8	55.5	14.7	11.9	48.7	25.1	24.4	43.9	30.6	28.1
Level of Service	F	B	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		24.4			22.8			37.5			32.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	50.7%	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)	17	344	115	79	276	34	100	44	43	21	76	15
Future Volume (veh/h)	17	344	115	79	276	34	100	44	43	21	76	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	382	128	88	307	38	111	49	48	23	84	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	560	475	118	642	544	142	324	274	48	225	186
Arrive On Green	0.02	0.30	0.30	0.07	0.34	0.34	0.08	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Grp Volume(v), veh/h	19	382	128	88	307	38	111	49	48	23	84	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Q Serve(g_s), s	0.6	10.1	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
Cycle Q Clear(g_c), s	0.6	10.1	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
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	41	560	475	118	642	544	142	324	274	48	225	186
V/C Ratio(X)	0.47	0.68	0.27	0.75	0.48	0.07	0.78	0.15	0.18	0.48	0.37	0.09
Avail Cap(c_a), veh/h	161	1120	949	158	1117	947	180	1051	890	158	1028	851
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	27.2	17.4	15.1	25.9	14.6	12.5	25.5	19.8	19.9	27.1	22.9	22.1
Incr Delay (d2), s/veh	9.7	3.1	0.6	13.8	1.2	0.1	12.0	0.4	0.5	2.8	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	1.1	1.4	2.5	0.3	1.7	0.5	0.5	0.3	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	20.5	15.7	39.6	15.7	12.6	37.5	20.2	20.4	29.8	24.6	22.4
LnGrp LOS	D	C	B	D	B	B	D	C	C	C	C	C
Approach Vol, veh/h		529			433			208			124	
Approach Delay, s/veh		19.9			20.3			29.5			25.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	24.0	9.8	13.6	6.6	26.5	6.8	16.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 34	5.7	* 31	5.1	* 34	5.0	* 32
Max Q Clear Time (g_c+I1), s	4.7	12.1	5.5	4.3	2.6	9.3	2.7	3.5
Green Ext Time (p_c), s	0.0	4.8	0.0	0.7	0.0	3.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	404	2	40	375	20	1	3	18	18	8	6
Future Vol, veh/h	6	404	2	40	375	20	1	3	18	18	8	6
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	416	2	41	387	21	1	3	19	19	8	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	418	0	0	915	918	416	909	899	387
Stage 1	-	-	-	-	-	-	428	428	-	469	469	-
Stage 2	-	-	-	-	-	-	487	490	-	440	430	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1145	-	-	1136	-	-	252	271	634	255	278	659
Stage 1	-	-	-	-	-	-	603	583	-	573	559	-
Stage 2	-	-	-	-	-	-	560	547	-	594	582	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1145	-	-	1136	-	-	236	260	634	238	267	659
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	260	-	238	267	-
Stage 1	-	-	-	-	-	-	600	580	-	570	539	-
Stage 2	-	-	-	-	-	-	527	527	-	571	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	12.4	18.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	236	260	634	1145	-	-	1136	-	-	238	267	659
HCM Lane V/C Ratio	0.004	0.012	0.029	0.005	-	-	0.036	-	-	0.078	0.031	0.009
HCM Control Delay (s)	20.3	19	10.8	8.2	-	-	8.3	-	-	21.4	18.9	10.5
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0	0	0.1	0	-	-	0.1	-	-	0.3	0.1	0

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	428	25	208	537	17	145
Future Vol, veh/h	428	25	208	537	17	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	465	27	226	584	18	158

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	492	0	1501	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	1036	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	134	597
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	342	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	106	597
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	597	-	-	1071	-
HCM Lane V/C Ratio	0.174	0.264	-	-	0.211	-
HCM Control Delay (s)	46	13.2	-	-	9.3	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1.1	-	-	0.8	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	552	71	372	737	73	262
v/c Ratio	0.75	0.11	0.65	0.52	0.30	0.38
Control Delay	25.9	4.8	12.5	6.9	34.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	4.8	12.5	6.9	34.5	8.5
Queue Length 50th (ft)	200	1	51	132	30	30
Queue Length 95th (ft)	356	24	143	242	75	86
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1086	952	711	1590	702	839
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.07	0.52	0.46	0.10	0.31

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	65	342	678	67	241
Future Volume (vph)	508	65	342	678	67	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.22	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	405	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	71	372	737	73	262
RTOR Reduction (vph)	0	41	0	0	0	103
Lane Group Flow (vph)	552	30	372	737	73	159
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	26.8	26.8	46.7	46.7	6.6	20.0
Effective Green, g (s)	26.8	26.8	46.7	46.7	6.6	20.0
Actuated g/C Ratio	0.40	0.40	0.70	0.70	0.10	0.30
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	753	639	561	1312	176	632
v/s Ratio Prot	c0.30		0.13	c0.40	c0.04	0.05
v/s Ratio Perm		0.02	0.33			0.05
v/c Ratio	0.73	0.05	0.66	0.56	0.41	0.25
Uniform Delay, d1	16.7	12.0	7.8	4.8	28.0	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.0	2.9	0.6	1.6	0.2
Delay (s)	20.4	12.0	10.7	5.3	29.6	17.7
Level of Service	C	B	B	A	C	B
Approach Delay (s)	19.5			7.1	20.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	19.5
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	65	342	678	67	241
Future Volume (veh/h)	508	65	342	678	67	241
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	71	372	737	73	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	654	555	467	1153	314	538
Arrive On Green	0.35	0.35	0.16	0.62	0.18	0.18
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	552	71	372	737	73	262
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	17.1	1.9	7.5	15.7	2.2	8.2
Cycle Q Clear(g_c), s	17.1	1.9	7.5	15.7	2.2	8.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	654	555	467	1153	314	538
V/C Ratio(X)	0.84	0.13	0.80	0.64	0.23	0.49
Avail Cap(c_a), veh/h	1030	873	685	1757	652	839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	13.9	12.4	7.6	22.2	16.4
Incr Delay (d2), s/veh	3.8	0.1	4.1	0.6	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.6	2.4	3.4	0.9	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	14.0	16.5	8.2	22.6	17.1
LnGrp LOS	C	B	B	A	C	B
Approach Vol, veh/h	623			1109	335	
Approach Delay, s/veh	21.7			11.0	18.3	
Approach LOS	C			B	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.7	28.5				45.2	17.6
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	17.9	34.6				59.0	23.0
Max Q Clear Time (g_c+I1), s	9.5	19.1				17.7	10.2
Green Ext Time (p_c), s	0.7	2.9				5.0	0.9

Intersection Summary			
HCM 6th Ctrl Delay		15.4	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	14.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	405	344	18	532	0	0	0	0	41	0	488
Future Vol, veh/h	0	405	344	18	532	0	0	0	0	41	0	488
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	418	355	19	548	0	0	0	0	42	0	503

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	-	0	0	773	0	0		1182	1359	548
Stage 1	-	-	-	-	-	-		586	586	-
Stage 2	-	-	-	-	-	-		596	773	-
Critical Hdwy	-	-	-	4.12	-	-		6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-		3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	842	-	0		210	149	536
Stage 1	0	-	-	-	-	0		556	497	-
Stage 2	0	-	-	-	-	0		550	409	-
Platoon blocked, %		-	-		-					
Mov Cap-1 Maneuver	-	-	-	842	-	-		205	0	536
Mov Cap-2 Maneuver	-	-	-	-	-	-		205	0	-
Stage 1	-	-	-	-	-	-		556	0	-
Stage 2	-	-	-	-	-	-		537	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.3	50.9
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	842	-	205	536
HCM Lane V/C Ratio	-	-	0.022	-	0.206	0.939
HCM Control Delay (s)	-	-	9.4	-	27.1	52.9
HCM Lane LOS	-	-	A	-	D	F
HCM 95th %tile Q(veh)	-	-	0.1	-	0.8	11.8

Intersection	
Int Delay, s/veh	199.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	287	182	0	0	155	14	384	1	21	0	0	0
Future Vol, veh/h	287	182	0	0	155	14	384	1	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	315	200	0	0	170	15	422	1	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	185	0	-	-	-	0	1008	1015	200
Stage 1	-	-	-	-	-	-	830	830	-
Stage 2	-	-	-	-	-	-	178	185	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1384	-	0	0	-	-	~ 265	237	838
Stage 1	-	-	0	0	-	-	426	383	-
Stage 2	-	-	0	0	-	-	850	745	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1384	-	-	-	-	-	~ 205	0	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 205	0	-
Stage 1	-	-	-	-	-	-	~ 329	0	-
Stage 2	-	-	-	-	-	-	850	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.1	0	$ 506.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	205	838	1384	-	-	-
HCM Lane V/C Ratio	2.064	0.028	0.228	-	-	-
HCM Control Delay (s)	$ 533.2	9.4	8.4	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	32.2	0.1	0.9	-	-	-

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

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	171	140	102	251	25
Future Vol, veh/h	21	171	140	102	251	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	190	156	113	279	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	718	293	307	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	425	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	396	746	1254	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	347	746	1254	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1254	-	347	746	-	-
HCM Lane V/C Ratio	0.124	-	0.067	0.255	-	-
HCM Control Delay (s)	8.3	-	16.1	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	1	-	-

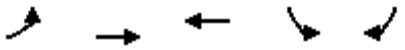
Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	157	39	174	210	57	288
Future Vol, veh/h	157	39	174	210	57	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	42	189	228	62	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	626	189	0	0	417	0
Stage 1	189	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	448	853	-	-	1142	-
Stage 1	843	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	424	853	-	-	1142	-
Mov Cap-2 Maneuver	424	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	424	853	1142	-
HCM Lane V/C Ratio	-	-	0.402	0.05	0.054	-
HCM Control Delay (s)	-	-	19.1	9.4	8.3	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	0.2	-

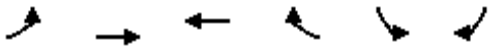


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	220	426	727	169	204
v/c Ratio	0.80	0.21	0.55	0.58	0.47
Control Delay	45.9	9.3	16.8	33.9	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	9.3	16.8	33.9	9.0
Queue Length 50th (ft)	~80	25	72	46	0
Queue Length 95th (ft)	86	122	242	#171	60
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	276	2291	1595	429	539
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.19	0.46	0.39	0.38

Intersection Summary

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

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

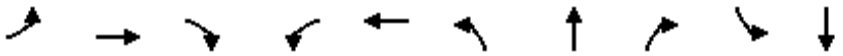


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	405	485	205	161	194
Future Volume (vph)	209	405	485	205	161	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3393		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3393		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	426	511	216	169	204
RTOR Reduction (vph)	0	0	47	0	0	173
Lane Group Flow (vph)	220	426	680	0	169	31
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	9.2	32.4	21.8		9.5	9.5
Effective Green, g (s)	9.2	32.4	21.8		9.5	9.5
Actuated g/C Ratio	0.15	0.53	0.35		0.15	0.15
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	266	1876	1198		275	246
v/s Ratio Prot	c0.12	0.12	c0.20			
v/s Ratio Perm					c0.09	0.02
v/c Ratio	0.83	0.23	0.57		0.61	0.13
Uniform Delay, d1	25.5	7.9	16.1		24.4	22.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.8	0.0	0.4		2.9	0.1
Delay (s)	43.3	7.9	16.5		27.2	22.6
Level of Service	D	A	B		C	C
Approach Delay (s)		20.0	16.5		24.7	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	21.2
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

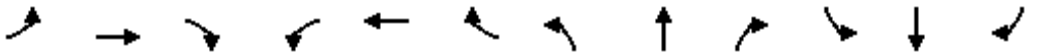
HCM 6th Edition methodology expects strict NEMA phasing.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	697	140	63	83	180	179
v/c Ratio	0.42	0.34	0.12	0.80	0.49	0.58	0.25	0.18	0.68	0.64
Control Delay	39.2	22.2	2.3	58.9	15.2	43.3	33.4	3.5	46.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	22.2	2.3	58.9	15.2	43.3	33.4	3.5	46.2	40.3
Queue Length 50th (ft)	47	92	0	103	72	72	31	0	96	85
Queue Length 95th (ft)	94	165	15	#199	#271	117	61	13	155	144
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	262	1357	672	252	1416	378	398	480	379	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.34	0.12	0.73	0.49	0.37	0.16	0.17	0.47	0.46

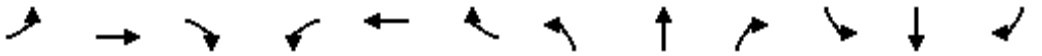
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	83	140	63	83	234	80	45
RTOR Reduction (vph)	0	0	53	0	10	0	0	0	60	0	15	0
Lane Group Flow (vph)	96	466	30	184	687	0	140	63	23	180	164	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Effective Green, g (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Actuated g/C Ratio	0.12	0.37	0.37	0.14	0.39		0.14	0.14	0.28	0.16	0.16	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	212	1311	573	252	1363		241	254	438	265	263	
v/s Ratio Prot	0.05	0.13		c0.10	c0.20		c0.08	0.03	0.01	c0.11	0.10	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.45	0.36	0.05	0.73	0.50		0.58	0.25	0.05	0.68	0.62	
Uniform Delay, d1	34.9	19.6	17.4	34.9	19.7		34.5	32.9	22.6	33.8	33.5	
Progression Factor	1.00	1.00	1.00	0.97	0.59		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.2	8.3	1.2		2.3	0.2	0.0	5.4	3.3	
Delay (s)	35.4	20.3	17.5	42.1	12.8		36.8	33.1	22.6	39.2	36.8	
Level of Service	D	C	B	D	B		D	C	C	D	D	
Approach Delay (s)		22.2			18.9			31.8			38.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
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)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (veh/h)	94	457	81	180	602	81	137	62	81	229	78	44
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		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	83	140	63	83	180	156	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	607	801	349	587	672	91	193	202	692	256	200	58
Arrive On Green	0.34	0.22	0.22	0.65	0.42	0.42	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1560	1795	3170	428	1795	1885	1584	1795	1403	405
Grp Volume(v), veh/h	96	466	83	184	346	351	140	63	83	180	0	201
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1807	1795	1885	1584	1795	0	1807
Q Serve(g_s), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Cycle Q Clear(g_c), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	607	801	349	587	380	383	193	202	692	256	0	258
V/C Ratio(X)	0.16	0.58	0.24	0.31	0.91	0.92	0.73	0.31	0.12	0.70	0.00	0.78
Avail Cap(c_a), veh/h	607	801	349	587	400	404	380	399	857	401	0	404
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	29.5	27.1	10.6	23.7	23.8	36.7	35.0	14.4	34.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	3.1	1.6	0.1	26.6	26.9	2.0	0.3	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.4	1.5	1.3	7.4	7.5	2.8	1.2	0.9	3.5	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	32.5	28.7	10.7	50.3	50.6	38.7	35.4	14.4	36.1	0.0	37.1
LnGrp LOS	B	C	C	B	D	D	D	D	B	D	A	D
Approach Vol, veh/h		645			881			286			381	
Approach Delay, s/veh		30.1			42.2			30.9			36.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	23.0		16.1	33.8	22.0		13.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	19.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	5.8	11.9		11.1	5.2	17.5		8.4				
Green Ext Time (p_c), s	0.1	1.3		0.6	0.0	0.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		36.2	
HCM 6th LOS		D	

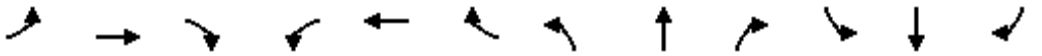
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	892	146	707	284	154	203	386
v/c Ratio	0.74	0.68	0.39	0.72	0.83	0.27	0.53
Control Delay	22.1	47.7	8.8	42.0	73.3	18.5	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	47.7	8.8	42.0	73.3	18.5	13.3
Queue Length 50th (ft)	240	65	110	140	82	71	79
Queue Length 95th (ft)	156	141	127	#250	#186	121	162
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1203	252	1799	392	185	747	731
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.58	0.39	0.72	0.83	0.27	0.53

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	812	26	137	665	0	0	0	267	145	191	363
Future Volume (vph)	0	812	26	137	665	0	0	0	267	145	191	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3555		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3555		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	864	28	146	707	0	0	0	284	154	203	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	892	0	146	707	0	0	0	284	154	203	282
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Effective Green, g (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Actuated g/C Ratio		0.34		0.12	0.50				0.24	0.10	0.40	0.40
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1204		214	1799				392	185	747	627
v/s Ratio Prot		c0.25		c0.08	0.20				c0.17	c0.09	0.11	
v/s Ratio Perm												0.18
v/c Ratio		0.74		0.68	0.39				0.72	0.83	0.27	0.45
Uniform Delay, d1		24.8		35.8	13.1				29.7	37.4	17.3	18.8
Progression Factor		0.70		0.89	0.61				1.00	1.00	1.00	1.00
Incremental Delay, d2		4.0		6.8	0.6				6.5	33.5	0.9	2.3
Delay (s)		21.4		38.7	8.7				36.2	70.9	18.2	21.1
Level of Service		C		D	A				D	E	B	C
Approach Delay (s)		21.4			13.8			36.2			30.6	
Approach LOS		C			B			D			C	

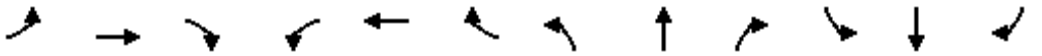
Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

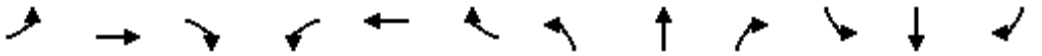
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	338	527	467	154	239	235	186
v/c Ratio	0.43	0.21	0.30	0.20	0.67	0.66	0.39
Control Delay	6.9	4.0	17.9	4.4	39.6	39.0	6.4
Queue Delay	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	4.2	17.9	4.4	39.6	39.0	6.4
Queue Length 50th (ft)	50	40	84	0	124	122	0
Queue Length 95th (ft)	76	55	144	40	182	177	45
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	837	2514	1583	769	585	587	673
Starvation Cap Reductn	200	1187	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.40	0.30	0.20	0.41	0.40	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	501	0	0	444	146	446	5	177	0	0	0
Future Volume (vph)	321	501	0	0	444	146	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1782	3574			3574	1545	1698	1704	1599			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	847	3574			3574	1545	1698	1704	1599			
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)	338	527	0	0	467	154	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	86	0	0	147	0	0	0
Lane Group Flow (vph)	338	527	0	0	467	68	239	235	39	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	59.8	59.8			37.7	37.7	17.8	17.8	17.8			
Effective Green, g (s)	59.8	59.8			37.7	37.7	17.8	17.8	17.8			
Actuated g/C Ratio	0.70	0.70			0.44	0.44	0.21	0.21	0.21			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	783	2514			1585	685	355	356	334			
v/s Ratio Prot	c0.09	0.15			0.13		c0.14	0.14				
v/s Ratio Perm	c0.22					0.04			0.02			
v/c Ratio	0.43	0.21			0.29	0.10	0.67	0.66	0.12			
Uniform Delay, d1	7.4	4.4			15.1	13.8	30.9	30.8	27.2			
Progression Factor	0.60	0.74			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.2			0.5	0.3	4.5	4.1	0.1			
Delay (s)	4.6	3.4			15.6	14.1	35.4	34.9	27.3			
Level of Service	A	A			B	B	D	C	C			
Approach Delay (s)		3.9			15.2			33.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	72.0%	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)	321	501	0	0	444	146	446	5	177	0	0	0
Future Volume (veh/h)	321	501	0	0	444	146	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	338	527	0	0	467	154	473	0	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	935	2647	0	0	986	427	608	0	271			
Arrive On Green	0.82	1.00	0.00	0.00	0.28	0.28	0.17	0.00	0.17			
Sat Flow, veh/h	1795	3676	0	0	3676	1549	3591	0	1598			
Grp Volume(v), veh/h	338	527	0	0	467	154	473	0	186			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1549	1795	0	1598			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.2	6.8	10.7	0.0	9.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.2	6.8	10.7	0.0	9.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	935	2647	0	0	986	427	608	0	271			
V/C Ratio(X)	0.36	0.20	0.00	0.00	0.47	0.36	0.78	0.00	0.69			
Avail Cap(c_a), veh/h	935	2647	0	0	986	427	1238	0	551			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.0	0.0	0.0	0.0	25.7	24.8	33.8	0.0	33.2			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.6	2.4	1.6	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	0.9	0.1	0.0	0.0	4.0	2.7	4.7	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.1	0.0	0.0	27.3	27.1	35.4	0.0	35.5			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		865			621			659				
Approach Delay, s/veh		1.3			27.3			35.4				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		66.9		18.1	38.9	28.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 48		29.3	19.9	23.4						
Max Q Clear Time (g_c+I1), s		2.0		12.7	2.0	11.2						
Green Ext Time (p_c), s		3.1		1.7	0.4	1.9						

Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1302	90	853
v/c Ratio	0.48	0.42	0.24
Control Delay	0.5	35.5	0.2
Queue Delay	0.0	0.0	0.0
Total Delay	0.5	35.5	0.2
Queue Length 50th (ft)	4	36	0
Queue Length 95th (ft)	0	0	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2713	252	3574
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	469
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.48	0.36	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	821	403	85	802	0	0
Future Volume (vph)	821	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3370		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3370		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	873	429	90	853	0	0
RTOR Reduction (vph)	65	0	0	0	0	0
Lane Group Flow (vph)	1237	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	66.6		10.2	85.0		
Effective Green, g (s)	66.6		10.2	76.5		
Actuated g/C Ratio	0.78		0.12	0.90		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2640		214	3216		
v/s Ratio Prot	c0.37		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.47		0.42	0.27		
Uniform Delay, d1	3.1		34.7	0.6		
Progression Factor	0.06		0.87	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.3		30.7	0.6		
Level of Service	A		C	A		
Approach Delay (s)	0.3			3.5	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	1.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	470	39	264	462	41	249
v/c Ratio	0.65	0.06	0.43	0.29	0.14	0.45
Control Delay	16.9	4.9	5.4	3.5	21.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	4.9	5.4	3.5	21.9	8.0
Queue Length 50th (ft)	66	0	1	0	7	14
Queue Length 95th (ft)	223	15	60	112	38	63
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1134	979	651	1604	1110	604
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.04	0.41	0.29	0.04	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	432	36	243	425	38	229
Future Volume (vph)	432	36	243	425	38	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.28	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	517	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	470	39	264	462	41	249
RTOR Reduction (vph)	0	25	0	0	0	124
Lane Group Flow (vph)	470	14	264	462	41	125
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	17.5	17.5	31.9	31.9	2.3	10.2
Effective Green, g (s)	17.5	17.5	31.9	31.9	2.3	10.2
Actuated g/C Ratio	0.37	0.37	0.68	0.68	0.05	0.22
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	690	586	559	1259	86	560
v/s Ratio Prot	c0.25		0.08	c0.25	0.02	c0.04
v/s Ratio Perm		0.01	0.24			0.04
v/c Ratio	0.68	0.02	0.47	0.37	0.48	0.22
Uniform Delay, d1	12.5	9.4	4.6	3.3	21.9	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.0	0.6	0.2	4.1	0.2
Delay (s)	15.3	9.4	5.2	3.5	26.0	15.4
Level of Service	B	A	A	A	C	B
Approach Delay (s)	14.8			4.1	16.9	
Approach LOS	B			A	B	

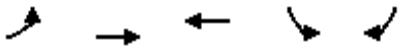
Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	432	36	243	425	38	229
Future Volume (veh/h)	432	36	243	425	38	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	470	39	264	462	41	249
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	576	488	440	1057	322	492
Arrive On Green	0.31	0.31	0.13	0.57	0.18	0.18
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	470	39	264	462	41	249
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	11.9	0.9	4.7	7.3	1.0	6.6
Cycle Q Clear(g_c), s	11.9	0.9	4.7	7.3	1.0	6.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	576	488	440	1057	322	492
V/C Ratio(X)	0.82	0.08	0.60	0.44	0.13	0.51
Avail Cap(c_a), veh/h	878	744	505	1427	802	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	12.5	10.8	6.4	17.6	14.4
Incr Delay (d2), s/veh	3.6	0.1	1.5	0.3	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.2	1.2	1.4	0.4	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	12.6	12.3	6.7	17.7	15.2
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	509			726	290	
Approach Delay, s/veh	19.4			8.7	15.6	
Approach LOS	B			A	B	

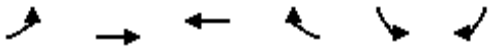
Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.1	22.2				35.4	15.7
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	24.0				39.0	23.0
Max Q Clear Time (g_c+I1), s	6.7	13.9				9.3	8.6
Green Ext Time (p_c), s	0.1	1.9				2.5	0.8

Intersection Summary			
HCM 6th Ctrl Delay		13.6	
HCM 6th LOS		B	



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	245	391	552	193	302
v/c Ratio	0.57	0.23	0.50	0.66	0.59
Control Delay	17.6	11.7	16.8	39.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	11.7	16.8	39.2	9.0
Queue Length 50th (ft)	48	46	66	77	1
Queue Length 95th (ft)	80	92	138	151	63
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	958	2354	1521	604	738
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.17	0.36	0.32	0.41

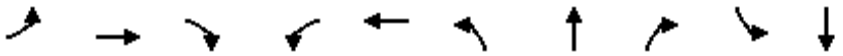
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	233	371	297	227	183	287
Future Volume (vph)	233	371	297	227	183	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3342		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3342		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	245	391	313	239	193	302
RTOR Reduction (vph)	0	0	122	0	0	250
Lane Group Flow (vph)	245	391	430	0	193	52
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	16.4	33.6	20.2		11.4	11.4
Effective Green, g (s)	16.4	33.6	20.2		11.4	11.4
Actuated g/C Ratio	0.24	0.49	0.29		0.16	0.16
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	423	1735	975		294	263
v/s Ratio Prot	c0.14	0.11	c0.13			
v/s Ratio Perm					c0.11	0.03
v/c Ratio	0.58	0.23	0.44		0.66	0.20
Uniform Delay, d1	23.3	10.3	19.9		27.1	25.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.0	0.1		4.0	0.1
Delay (s)	24.5	10.3	20.0		31.1	25.1
Level of Service	C	B	C		C	C
Approach Delay (s)		15.8	20.0		27.4	
Approach LOS		B	C		C	

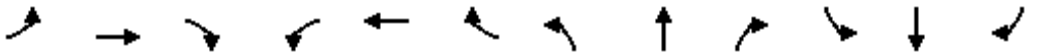
Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	21.2
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology expects strict NEMA phasing.



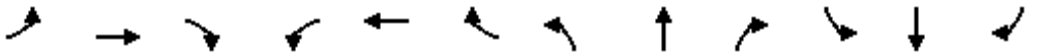
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	409	88	238	792	98	91	76	246	247
v/c Ratio	0.50	0.30	0.13	0.79	0.54	0.53	0.47	0.16	0.78	0.77
Control Delay	50.9	27.2	1.4	49.9	9.3	54.0	51.0	3.4	56.6	55.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	27.2	1.4	49.9	9.3	54.0	51.0	3.4	56.6	55.1
Queue Length 50th (ft)	76	98	0	159	37	64	59	0	165	162
Queue Length 95th (ft)	134	180	8	231	260	109	102	14	244	242
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	242	1350	679	391	1460	306	322	549	404	407
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.30	0.13	0.61	0.54	0.32	0.28	0.14	0.61	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	389	84	226	461	292	93	86	72	409	37	22
Future Volume (vph)	111	389	84	226	461	292	93	86	72	409	37	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1787	3574	1561	1787	3322		1787	1881	1588	1698	1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1787	3574	1561	1787	3322		1787	1881	1588	1698	1695	
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)	117	409	88	238	485	307	98	91	76	431	39	23
RTOR Reduction (vph)	0	0	55	0	81	0	0	0	55	0	4	0
Lane Group Flow (vph)	117	409	33	238	711	0	98	91	21	246	243	0
Confl. Peds. (#/hr)			1			5			4			6
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	13.9	39.7	39.7	17.8	43.6		10.8	10.8	28.6	19.7	19.7	
Effective Green, g (s)	13.9	39.7	39.7	17.8	43.6		10.8	10.8	28.6	19.7	19.7	
Actuated g/C Ratio	0.13	0.38	0.38	0.17	0.42		0.10	0.10	0.27	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	236	1351	590	302	1379		183	193	432	318	318	
v/s Ratio Prot	0.07	0.11		c0.13	c0.21		c0.05	0.05	0.01	c0.14	0.14	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.50	0.30	0.06	0.79	0.52		0.54	0.47	0.05	0.77	0.76	
Uniform Delay, d1	42.3	22.9	20.7	41.8	22.8		44.7	44.4	28.2	40.5	40.4	
Progression Factor	1.00	1.00	1.00	0.79	0.39		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.6	0.2	11.3	1.3		1.5	0.7	0.0	10.2	9.4	
Delay (s)	42.9	23.5	20.9	44.2	10.2		46.2	45.1	28.2	50.7	49.9	
Level of Service	D	C	C	D	B		D	D	C	D	D	
Approach Delay (s)		26.8			18.0			40.7			50.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	59.0%	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)	111	389	84	226	461	292	93	86	72	409	37	22
Future Volume (veh/h)	111	389	84	226	461	292	93	86	72	409	37	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	409	88	238	485	307	98	91	76	480	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	579	750	327	700	581	366	146	153	751	564	296	0
Arrive On Green	0.32	0.21	0.21	0.65	0.46	0.46	0.08	0.08	0.08	0.16	0.00	0.00
Sat Flow, veh/h	1795	3582	1559	1795	2100	1324	1795	1885	1574	3591	1885	0
Grp Volume(v), veh/h	117	409	88	238	413	379	98	91	76	480	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1559	1795	1791	1633	1795	1885	1574	1795	1885	0
Q Serve(g_s), s	5.0	10.7	5.0	6.2	21.2	21.4	5.6	4.9	0.0	13.7	0.0	0.0
Cycle Q Clear(g_c), s	5.0	10.7	5.0	6.2	21.2	21.4	5.6	4.9	0.0	13.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	579	750	327	700	496	452	146	153	751	564	296	0
V/C Ratio(X)	0.20	0.54	0.27	0.34	0.83	0.84	0.67	0.59	0.10	0.85	0.00	0.00
Avail Cap(c_a), veh/h	579	750	327	700	546	498	308	323	893	855	449	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	37.0	34.8	12.3	26.1	26.2	46.9	46.5	15.4	43.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.8	2.0	0.1	14.1	15.6	2.0	1.4	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.9	2.0	2.2	9.0	8.4	2.5	2.3	1.0	6.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	39.9	36.8	12.4	40.2	41.8	48.8	47.9	15.4	46.4	0.0	0.0
LnGrp LOS	C	D	D	B	D	D	D	D	B	D	A	A
Approach Vol, veh/h		614			1030			265			480	
Approach Delay, s/veh		36.7			34.4			38.9			46.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	45.9	26.0		20.5	38.9	33.1		12.5				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	23.0	22.0		25.0	13.0	32.0		18.0				
Max Q Clear Time (g_c+I1), s	8.2	12.7		15.7	7.0	23.4		7.6				
Green Ext Time (p_c), s	0.2	1.3		0.7	0.0	5.7		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		37.9	
HCM 6th LOS		D	

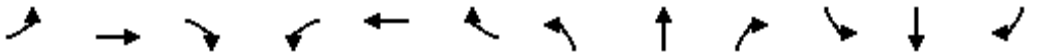
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	958	77	741	252	102	168	209
v/c Ratio	0.81	0.45	0.45	0.79	0.25	0.19	0.27
Control Delay	35.7	60.6	4.9	57.8	34.0	15.9	9.6
Queue Delay	3.7	0.0	0.0	61.4	0.0	0.0	0.0
Total Delay	39.4	60.6	4.9	119.2	34.0	15.9	9.6
Queue Length 50th (ft)	347	36	21	162	55	61	45
Queue Length 95th (ft)	#498	71	33	238	101	91	81
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1181	207	1661	407	446	1016	891
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	147	0	0	180	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.37	0.45	1.11	0.23	0.17	0.23

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	894	26	74	711	0	0	0	242	98	161	201
Future Volume (vph)	0	894	26	74	711	0	0	0	242	98	161	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3588		1805	3610				1644	1805	1900	1592
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3588		1805	3610				1644	1805	1900	1592
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)	0	931	27	77	741	0	0	0	252	102	168	209
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	958	0	77	741	0	0	0	252	102	168	164
Confl. Peds. (#/hr)			16									2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		34.5		10.0	48.3				20.4	23.7	48.3	48.3
Effective Green, g (s)		34.5		10.0	48.3				20.4	23.7	48.3	48.3
Actuated g/C Ratio		0.33		0.10	0.46				0.19	0.23	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		1178		171	1660				319	407	874	732
v/s Ratio Prot		c0.27		0.04	c0.21				c0.15	c0.06	0.09	
v/s Ratio Perm												0.10
v/c Ratio		0.81		0.45	0.45				0.79	0.25	0.19	0.22
Uniform Delay, d1		32.3		44.9	19.3				40.3	33.4	16.8	17.1
Progression Factor		0.82		1.18	0.19				1.00	1.00	1.00	1.00
Incremental Delay, d2		5.8		0.7	0.8				11.8	0.2	0.1	0.1
Delay (s)		32.1		53.7	4.6				52.1	33.6	16.9	17.2
Level of Service		C		D	A				D	C	B	B
Approach Delay (s)		32.1			9.2			52.1			20.6	
Approach LOS		C			A			D			C	

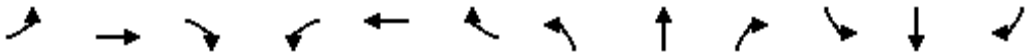
Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	324	388	399	150	262	263	127
v/c Ratio	0.40	0.15	0.24	0.18	0.68	0.68	0.28
Control Delay	3.4	1.2	20.1	4.7	45.0	45.1	6.5
Queue Delay	0.5	0.2	0.0	0.0	0.7	0.7	0.0
Total Delay	3.9	1.4	20.1	4.7	45.7	45.7	6.5
Queue Length 50th (ft)	12	7	84	0	170	171	0
Queue Length 95th (ft)	27	12	148	44	229	229	41
Internal Link Dist (ft)		187	384			402	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	895	2513	1681	832	552	553	596
Starvation Cap Reductn	261	1429	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	93	93	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.36	0.24	0.18	0.57	0.57	0.21

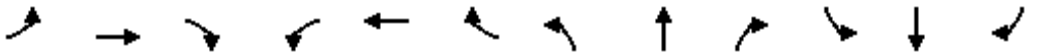
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	372	0	0	383	144	503	1	122	0	0	0
Future Volume (vph)	311	372	0	0	383	144	503	1	122	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1805	3610			3610	1615	1715	1719	1584			
Flt Permitted	0.49	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	923	3610			3610	1615	1715	1719	1584			
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)	324	388	0	0	399	150	524	1	127	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	80	0	0	98	0	0	0
Lane Group Flow (vph)	324	388	0	0	399	70	262	263	29	0	0	0
Confl. Peds. (#/hr)									6			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	73.1	73.1			48.9	48.9	23.7	23.7	23.7			
Effective Green, g (s)	73.1	73.1			48.9	48.9	23.7	23.7	23.7			
Actuated g/C Ratio	0.70	0.70			0.47	0.47	0.23	0.23	0.23			
Clearance Time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Vehicle Extension (s)	2.0	2.5			2.5	2.5	2.5	2.5	2.5			
Lane Grp Cap (vph)	809	2513			1681	752	387	388	357			
v/s Ratio Prot	c0.08	0.11			0.11		0.15	c0.15				
v/s Ratio Perm	c0.20					0.04			0.02			
v/c Ratio	0.40	0.15			0.24	0.09	0.68	0.68	0.08			
Uniform Delay, d1	8.8	5.4			16.8	15.7	37.2	37.2	32.1			
Progression Factor	0.22	0.16			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.1			0.3	0.2	4.2	4.2	0.1			
Delay (s)	2.0	1.0			17.2	15.9	41.4	41.4	32.1			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		1.5			16.8			39.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	372	0	0	383	144	503	1	122	0	0	0
Future Volume (veh/h)	311	372	0	0	383	144	503	1	122	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		0.99			
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	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	324	388	0	0	399	150	525	0	127			
Peak Hour Factor	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	0	0			
Cap, veh/h	944	2673	0	0	1162	518	653	0	288			
Arrive On Green	0.76	1.00	0.00	0.00	0.32	0.32	0.18	0.00	0.18			
Sat Flow, veh/h	1810	3705	0	0	3705	1610	3619	0	1594			
Grp Volume(v), veh/h	324	388	0	0	399	150	525	0	127			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1610	1810	0	1594			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.8	7.3	14.6	0.0	7.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.8	7.3	14.6	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	944	2673	0	0	1162	518	653	0	288			
V/C Ratio(X)	0.34	0.15	0.00	0.00	0.34	0.29	0.80	0.00	0.44			
Avail Cap(c_a), veh/h	944	2673	0	0	1162	518	1165	0	513			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.9	0.0	0.0	0.0	27.1	26.6	41.2	0.0	38.3			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.8	1.4	1.8	0.0	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			
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.0	3.9	3.0	6.6	0.0	6.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	0.1	0.0	0.0	27.9	28.0	43.0	0.0	39.1			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		712			549			652				
Approach Delay, s/veh		1.8			28.0			42.3				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		81.8		23.2	43.8	38.0			
Change Period (Y+Rc), s		* 4.1		* 4.2	* 4.1	4.2			
Max Green Setting (Gmax), s		* 63		* 34	* 25	33.8			
Max Q Clear Time (g_c+I1), s		2.0		16.6	2.0	10.8			
Green Ext Time (p_c), s		6.0		1.7	0.4	2.4			

Intersection Summary		
HCM 6th Ctrl Delay	23.1	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	141	357	111	142	356
Future Vol, veh/h	73	141	357	111	142	356
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	78	152	384	119	153	383
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	13.4	23.3	16.8
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	100%	0%
Vol Thru, %	0%	0%	34%	0%	100%
Vol Right, %	0%	100%	66%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	356	214	357	111
LT Vol	142	0	0	357	0
Through Vol	0	0	73	0	111
RT Vol	0	356	141	0	0
Lane Flow Rate	153	383	230	384	119
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.303	0.63	0.398	0.74	0.213
Departure Headway (Hd)	7.142	5.923	6.219	6.943	6.434
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	502	609	575	518	556
Service Time	4.907	3.687	4.285	4.705	4.197
HCM Lane V/C Ratio	0.305	0.629	0.4	0.741	0.214
HCM Control Delay	13	18.3	13.4	27.1	10.9
HCM Lane LOS	B	C	B	D	B
HCM 95th-tile Q	1.3	4.4	1.9	6.2	0.8

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1286	107	818
v/c Ratio	0.62	0.63	0.31
Control Delay	9.9	91.3	5.3
Queue Delay	0.0	0.0	0.6
Total Delay	9.9	91.3	5.9
Queue Length 50th (ft)	77	77	191
Queue Length 95th (ft)	179	131	213
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2125	207	2699
Starvation Cap Reductn	0	0	1416
Spillback Cap Reductn	0	0	587
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.52	0.64

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	524	103	785	0	0
Future Volume (vph)	710	524	103	785	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.97		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.94		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3282		1805	3610		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3282		1805	3610		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	740	546	107	818	0	0
RTOR Reduction (vph)	108	0	0	0	0	0
Lane Group Flow (vph)	1178	0	107	818	0	0
Confl. Peds. (#/hr)		16				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Prot	NA		
Protected Phases	2 8		1	6 2 8		
Permitted Phases						
Actuated Green, G (s)	62.2		10.0	76.2		
Effective Green, g (s)	62.2		10.0	72.2		
Actuated g/C Ratio	0.59		0.10	0.69		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	1944		171	2482		
v/s Ratio Prot	c0.36		c0.06	0.23		
v/s Ratio Perm						
v/c Ratio	0.61		0.63	0.33		
Uniform Delay, d1	13.6		45.7	6.6		
Progression Factor	0.77		1.66	0.89		
Incremental Delay, d2	0.3		5.0	0.1		
Delay (s)	10.7		80.9	5.9		
Level of Service	B		F	A		
Approach Delay (s)	10.7			14.6	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Mitigated Existing Plus Project

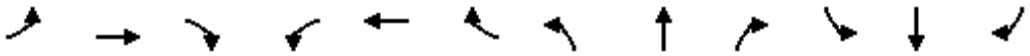
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	173	203	55	94	132
Future Vol, veh/h	58	173	203	55	94	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	67	201	236	64	109	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	639	268	0	0	300	0
Stage 1	268	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	431	756	-	-	1228	-
Stage 1	763	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	756	-	-	1228	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	624	-	-	-	-	-

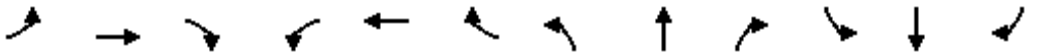
Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	756	1228	-
HCM Lane V/C Ratio	-	-	0.172	0.266	0.089	-
HCM Control Delay (s)	-	-	16	11.5	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.1	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	371	55	46	282	18	106	119	154	37	61	14
v/c Ratio	0.06	0.56	0.08	0.26	0.36	0.02	0.39	0.33	0.36	0.21	0.20	0.04
Control Delay	36.6	22.4	0.3	38.2	15.5	0.1	35.2	29.2	8.4	36.9	30.4	0.2
Queue Delay	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 Delay	36.6	22.4	0.3	38.2	15.5	0.1	35.2	29.2	8.4	36.9	30.4	0.2
Queue Length 50th (ft)	4	140	0	19	74	0	44	46	0	15	24	0
Queue Length 95th (ft)	20	216	0	53	159	0	97	95	39	45	59	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	156	1187	1039	178	1153	1034	313	1125	1013	207	1022	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.31	0.05	0.26	0.24	0.02	0.34	0.11	0.15	0.18	0.06	0.01

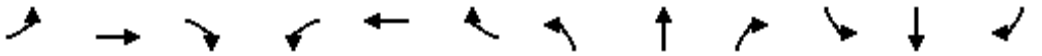
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	308	46	38	234	15	88	99	128	31	51	12
Future Volume (vph)	8	308	46	38	234	15	88	99	128	31	51	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	10	371	55	46	282	18	106	119	154	37	61	14
RTOR Reduction (vph)	0	0	35	0	0	11	0	0	124	0	0	12
Lane Group Flow (vph)	10	371	20	46	282	7	106	119	30	37	61	2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.7	24.5	24.5	2.8	26.6	26.6	7.9	12.9	12.9	3.1	8.1	8.1
Effective Green, g (s)	0.7	24.5	24.5	2.8	26.6	26.6	7.9	12.9	12.9	3.1	8.1	8.1
Actuated g/C Ratio	0.01	0.36	0.36	0.04	0.39	0.39	0.12	0.19	0.19	0.05	0.12	0.12
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	17	654	544	70	710	603	200	344	292	78	216	183
v/s Ratio Prot	0.01	c0.21		c0.03	0.16		c0.06	c0.07		0.02	0.03	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.59	0.57	0.04	0.66	0.40	0.01	0.53	0.35	0.10	0.47	0.28	0.01
Uniform Delay, d1	33.4	17.4	14.0	32.0	14.8	12.6	28.2	23.8	22.7	31.6	27.2	26.3
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	45.2	1.9	0.1	20.8	0.8	0.0	1.4	1.0	0.3	1.7	1.2	0.0
Delay (s)	78.6	19.3	14.1	52.9	15.6	12.6	29.6	24.8	22.9	33.2	28.4	26.3
Level of Service	E	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		20.0			20.4			25.4			29.8	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	47.9%	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)	8	308	46	38	234	15	88	99	128	31	51	12
Future Volume (veh/h)	8	308	46	38	234	15	88	99	128	31	51	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	10	371	55	46	282	18	106	119	154	37	61	14
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	22	536	445	80	597	506	135	306	259	69	236	200
Arrive On Green	0.01	0.29	0.29	0.05	0.33	0.33	0.08	0.17	0.17	0.04	0.13	0.13
Sat Flow, veh/h	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	10	371	55	46	282	18	106	119	154	37	61	14
Grp Sat Flow(s),veh/h/ln	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.3	9.7	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
Cycle Q Clear(g_c), s	0.3	9.7	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
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	22	536	445	80	597	506	135	306	259	69	236	200
V/C Ratio(X)	0.45	0.69	0.12	0.57	0.47	0.04	0.78	0.39	0.59	0.54	0.26	0.07
Avail Cap(c_a), veh/h	161	1152	956	183	1176	997	312	1152	977	212	1048	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	26.5	16.9	14.0	25.2	14.5	12.4	24.5	20.0	20.8	25.5	21.2	20.7
Incr Delay (d2), s/veh	15.8	3.4	0.3	7.6	1.2	0.1	3.7	1.4	3.7	2.4	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.4	0.7	2.2	0.1	1.3	1.2	1.7	0.4	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	20.3	14.3	32.8	15.7	12.4	28.2	21.4	24.5	27.9	22.2	20.9
LnGrp LOS	D	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		436			346			379			112	
Approach Delay, s/veh		20.1			17.8			24.6			23.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	23.0	9.5	13.8	6.0	24.8	7.4	15.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 34	9.7	* 31	5.0	* 35	6.6	* 34
Max Q Clear Time (g_c+I1), s	3.4	11.7	5.2	3.6	2.3	8.6	3.1	7.0
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	0.0	3.0	0.0	1.9

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	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	465	1	18	286	10	1	3	141	11	4	2
Future Vol, veh/h	4	465	1	18	286	10	1	3	141	11	4	2
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	596	1	23	367	13	1	4	181	14	5	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	597	0	0	1030	1032	596	1112	1020	367
Stage 1	-	-	-	-	-	-	606	606	-	413	413	-
Stage 2	-	-	-	-	-	-	424	426	-	699	607	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1162	-	-	965	-	-	209	230	498	184	234	672
Stage 1	-	-	-	-	-	-	479	482	-	610	588	-
Stage 2	-	-	-	-	-	-	602	581	-	426	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1162	-	-	965	-	-	200	224	498	113	227	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	224	-	113	227	-
Stage 1	-	-	-	-	-	-	477	480	-	608	574	-
Stage 2	-	-	-	-	-	-	580	567	-	268	480	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	16.5	33
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	200	224	498	1162	-	-	965	-	-	113	227	672
HCM Lane V/C Ratio	0.006	0.017	0.363	0.004	-	-	0.024	-	-	0.125	0.023	0.004
HCM Control Delay (s)	23.1	21.4	16.3	8.1	-	-	8.8	-	-	41.4	21.2	10.4
HCM Lane LOS	C	C	C	A	-	-	A	-	-	E	C	B
HCM 95th %tile Q(veh)	0	0.1	1.6	0	-	-	0.1	-	-	0.4	0.1	0

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	632	12	105	310	23	199
Future Vol, veh/h	632	12	105	310	23	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	687	13	114	337	25	216

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	700	0	1252	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	565	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	897	-	190	447
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	897	-	166	447
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	497	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	21.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	166	447	-	-	897	-
HCM Lane V/C Ratio	0.151	0.484	-	-	0.127	-
HCM Control Delay (s)	30.5	20.4	-	-	9.6	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	2.6	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	886	17	171	418	33	298
v/c Ratio	0.70	0.02	0.37	0.25	0.27	0.71
Control Delay	17.3	5.5	7.7	1.7	53.5	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	5.5	7.7	1.7	53.5	31.5
Queue Length 50th (ft)	378	1	24	79	23	112
Queue Length 95th (ft)	691	11	50	22	53	184
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1263	1077	458	1642	370	419
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.02	0.37	0.25	0.09	0.71

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	815	16	157	385	30	274
Future Volume (vph)	815	16	157	385	30	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.18	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	331	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	886	17	171	418	33	298
RTOR Reduction (vph)	0	4	0	0	0	102
Lane Group Flow (vph)	886	13	171	418	33	196
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	72.0	72.0	91.8	91.8	5.2	18.5
Effective Green, g (s)	72.0	72.0	91.8	91.8	5.2	18.5
Actuated g/C Ratio	0.65	0.65	0.83	0.83	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1219	1036	450	1554	83	359
v/s Ratio Prot	c0.48		0.05	0.22	0.02	c0.07
v/s Ratio Perm		0.01	0.27			0.06
v/c Ratio	0.73	0.01	0.38	0.27	0.40	0.55
Uniform Delay, d1	12.5	6.6	10.2	1.9	50.9	41.9
Progression Factor	1.00	1.00	2.82	0.64	1.00	1.00
Incremental Delay, d2	3.8	0.0	0.5	0.4	3.1	1.7
Delay (s)	16.3	6.6	29.2	1.6	54.0	43.6
Level of Service	B	A	C	A	D	D
Approach Delay (s)	16.1			9.6	44.6	
Approach LOS	B			A	D	

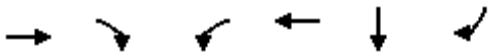
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	815	16	157	385	30	274
Future Volume (veh/h)	815	16	157	385	30	274
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	886	17	171	418	33	298
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1068	905	283	1287	345	399
Arrive On Green	0.57	0.57	0.12	1.00	0.19	0.19
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	886	17	171	418	33	298
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	42.5	0.5	4.3	0.0	1.7	19.1
Cycle Q Clear(g_c), s	42.5	0.5	4.3	0.0	1.7	19.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1068	905	283	1287	345	399
V/C Ratio(X)	0.83	0.02	0.60	0.32	0.10	0.75
Avail Cap(c_a), veh/h	1068	905	317	1287	372	423
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.86	0.86	1.00	1.00
Uniform Delay (d), s/veh	19.2	10.2	18.5	0.0	36.4	37.9
Incr Delay (d2), s/veh	7.5	0.0	2.3	0.6	0.1	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	0.2	2.0	0.2	0.7	8.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	10.3	20.8	0.6	36.6	44.7
LnGrp LOS	C	B	C	A	D	D
Approach Vol, veh/h	903			589	331	
Approach Delay, s/veh	26.4			6.5	43.9	
Approach LOS	C			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.9	69.3				82.2	27.8
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	59.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	6.3	44.5				2.0	21.1
Green Ext Time (p_c), s	0.1	5.0				2.3	0.2

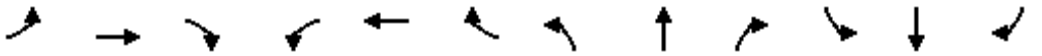
Intersection Summary							
HCM 6th Ctrl Delay			23.1				
HCM 6th LOS			C				



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	994	518	32	429	35	324
v/c Ratio	0.74	0.43	0.10	0.29	0.23	0.76
Control Delay	12.0	2.8	4.4	6.1	48.1	16.7
Queue Delay	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	12.0	2.8	4.4	7.1	48.1	16.7
Queue Length 50th (ft)	484	0	1	13	24	0
Queue Length 95th (ft)	270	27	m17	253	41	19
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1350	1214	327	1475	500	677
Starvation Cap Reductn	0	0	0	770	0	0
Spillback Cap Reductn	10	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.43	0.10	0.61	0.07	0.48

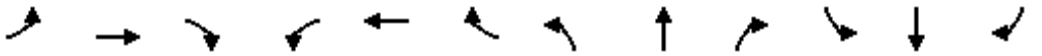
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	716	373	23	309	0	0	0	0	25	0	233
Future Volume (vph)	0	716	373	23	309	0	0	0	0	25	0	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1810	1538	1719	1810						1719	1538
Flt Permitted		1.00	1.00	0.17	1.00						0.95	1.00
Satd. Flow (perm)		1810	1538	308	1810						1719	1538
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	0	994	518	32	429	0	0	0	0	35	0	324
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	296
Lane Group Flow (vph)	0	994	445	32	429	0	0	0	0	0	35	28
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		79.5	79.5	89.7	89.7						9.6	9.6
Effective Green, g (s)		79.5	79.5	89.7	89.7						9.6	9.6
Actuated g/C Ratio		0.72	0.72	0.82	0.82						0.09	0.09
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1308	1111	298	1475						150	134
v/s Ratio Prot		c0.55		0.00	c0.24						c0.02	
v/s Ratio Perm			0.29	0.08								0.02
v/c Ratio		0.76	0.40	0.11	0.29						0.23	0.21
Uniform Delay, d1		9.4	6.0	8.7	2.5						46.8	46.7
Progression Factor		0.75	0.52	1.43	1.88						1.00	1.00
Incremental Delay, d2		3.6	0.9	0.1	0.5						0.8	0.8
Delay (s)		10.5	4.0	12.6	5.1						47.6	47.5
Level of Service		B	A	B	A						D	D
Approach Delay (s)		8.3			5.6			0.0			47.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.4%	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 (veh/h)	0	716	373	23	309	0	0	0	0	25	0	233
Future Volume (veh/h)	0	716	373	23	309	0	0	0	0	25	0	233
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	1826	1826	1826	1826	0				1826	1826	1826
Adj Flow Rate, veh/h	0	994	518	32	429	0				35	0	324
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72				0.72	0.72	0.72
Percent Heavy Veh, %	0	5	5	5	5	0				5	5	5
Cap, veh/h	0	1069	906	313	1229	0				399	0	355
Arrive On Green	0.00	1.00	1.00	0.06	1.00	0.00				0.23	0.00	0.23
Sat Flow, veh/h	0	1826	1547	1739	1826	0				1739	0	1547
Grp Volume(v), veh/h	0	994	518	32	429	0				35	0	324
Grp Sat Flow(s),veh/h/ln	0	1826	1547	1739	1826	0				1739	0	1547
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0				1.7	0.0	22.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.8	0.0	0.0				1.7	0.0	22.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1069	906	313	1229	0				399	0	355
V/C Ratio(X)	0.00	0.93	0.57	0.10	0.35	0.00				0.09	0.00	0.91
Avail Cap(c_a), veh/h	0	1069	906	342	1229	0				506	0	450
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.64	0.64	0.97	0.97	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	7.4	0.0	0.0				33.3	0.0	41.3
Incr Delay (d2), s/veh	0.0	10.7	1.7	0.1	0.8	0.0				0.1	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	3.2	0.4	0.2	0.3	0.0				0.7	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.7	1.7	7.5	0.8	0.0				33.4	0.0	60.9
LnGrp LOS	A	B	A	A	A	A				C	A	E
Approach Vol, veh/h		1512			461						359	
Approach Delay, s/veh		7.6			1.2						58.2	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	70.9		29.5		80.5
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.0	55.8		* 32		67.3
Max Q Clear Time (g_c+I1), s	2.8	2.0		24.4		2.0
Green Ext Time (p_c), s	0.0	12.0		0.8		2.4

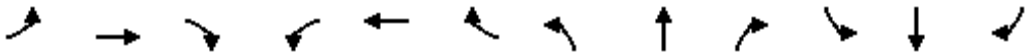
Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

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

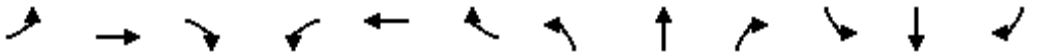
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	710	396	182	32	288	34
v/c Ratio	0.80	0.31	0.28	0.05	0.77	0.08
Control Delay	10.3	2.9	32.3	0.2	54.3	0.4
Queue Delay	0.4	0.4	0.0	0.0	0.2	0.0
Total Delay	10.7	3.3	32.3	0.2	54.6	0.4
Queue Length 50th (ft)	30	17	93	0	193	0
Queue Length 95th (ft)	92	36	135	0	186	0
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	929	1273	654	605	511	526
Starvation Cap Reductn	33	457	0	0	0	0
Spillback Cap Reductn	0	0	0	0	25	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.49	0.28	0.05	0.59	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	483	269	0	0	124	22	195	1	23	0	0	0
Future Volume (vph)	483	269	0	0	124	22	195	1	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1757	1568			
Flt Permitted	0.53	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	970	1845			1845	1568		1757	1568			
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Adj. Flow (vph)	710	396	0	0	182	32	287	1	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	27	0	0	0
Lane Group Flow (vph)	710	396	0	0	182	11	0	288	7	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	75.9	75.9			38.1	38.1		23.4	23.4			
Effective Green, g (s)	75.9	75.9			38.1	38.1		23.4	23.4			
Actuated g/C Ratio	0.69	0.69			0.35	0.35		0.21	0.21			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	891	1273			639	543		373	333			
v/s Ratio Prot	c0.23	0.21			0.10			c0.16				
v/s Ratio Perm	c0.32					0.01			0.00			
v/c Ratio	0.80	0.31			0.28	0.02		0.77	0.02			
Uniform Delay, d1	9.6	6.7			26.1	23.7		40.8	34.2			
Progression Factor	0.43	0.31			1.00	1.00		1.00	1.00			
Incremental Delay, d2	3.8	0.5			1.1	0.1		9.5	0.0			
Delay (s)	7.9	2.6			27.2	23.7		50.3	34.3			
Level of Service	A	A			C	C		D	C			
Approach Delay (s)		6.0			26.7			48.6			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.4%	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 (veh/h)	483	269	0	0	124	22	195	1	23	0	0	0
Future Volume (veh/h)	483	269	0	0	124	22	195	1	23	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	710	396	0	0	182	32	287	1	34			
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	913	1324	0	0	701	594	333	1	298			
Arrive On Green	0.37	0.95	0.00	0.00	0.38	0.38	0.19	0.19	0.19			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1761	6	1572			
Grp Volume(v), veh/h	710	396	0	0	182	32	288	0	34			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1767	0	1572			
Q Serve(g_s), s	27.2	1.7	0.0	0.0	7.4	1.4	17.4	0.0	2.0			
Cycle Q Clear(g_c), s	27.2	1.7	0.0	0.0	7.4	1.4	17.4	0.0	2.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	913	1324	0	0	701	594	334	0	298			
V/C Ratio(X)	0.78	0.30	0.00	0.00	0.26	0.05	0.86	0.00	0.11			
Avail Cap(c_a), veh/h	979	1324	0	0	701	594	514	0	457			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.60	0.60	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.8	0.8	0.0	0.0	23.6	21.7	43.2	0.0	37.0			
Incr Delay (d2), s/veh	2.3	0.3	0.0	0.0	0.9	0.2	9.0	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.3	0.5	0.0	0.0	3.2	0.5	8.4	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	1.2	0.0	0.0	24.5	21.9	52.2	0.0	37.1			
LnGrp LOS	B	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		1106			214			322				
Approach Delay, s/veh		8.2			24.1			50.6				
Approach LOS		A			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		85.0			36.9	48.0		25.0				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		67.3			34.5	26.3		32.0				
Max Q Clear Time (g_c+I1), s		3.7			29.2	9.4		19.4				
Green Ext Time (p_c), s		2.2			1.3	0.8		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	270	122	259	170	22
Future Vol, veh/h	23	270	122	259	170	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	40	474	214	454	298	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1200	318	337	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	204	720	1217	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	720	1217	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.2	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1217	-	168	720	-	-
HCM Lane V/C Ratio	0.176	-	0.24	0.658	-	-
HCM Control Delay (s)	8.6	-	33.1	19.1	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.9	5	-	-

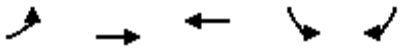
Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	189	53	272	127	28	134
Future Vol, veh/h	189	53	272	127	28	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	205	58	296	138	30	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	502	296	0	0	434	0
Stage 1	296	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	529	743	-	-	1126	-
Stage 1	755	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	515	743	-	-	1126	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	807	-	-	-	-	-

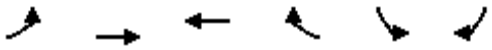
Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	515	743	1126	-
HCM Lane V/C Ratio	-	-	0.399	0.078	0.027	-
HCM Control Delay (s)	-	-	16.6	10.3	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.3	0.1	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	226	412	467	147	173
v/c Ratio	0.51	0.25	0.45	0.59	0.46
Control Delay	15.4	13.0	20.6	39.1	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	13.0	20.6	39.1	9.9
Queue Length 50th (ft)	44	45	67	56	0
Queue Length 95th (ft)	73	123	158	136	54
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	878	1767	1097	389	483
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.43	0.38	0.36

Intersection Summary

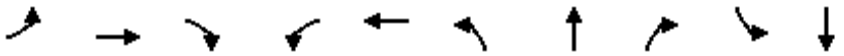


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	208	379	313	117	135	159
Future Volume (vph)	208	379	313	117	135	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3395		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3395		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	412	340	127	147	173
RTOR Reduction (vph)	0	0	39	0	0	148
Lane Group Flow (vph)	226	412	428	0	147	25
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	17.0	32.6	20.4		9.8	9.8
Effective Green, g (s)	17.0	32.6	20.4		9.8	9.8
Actuated g/C Ratio	0.25	0.48	0.30		0.14	0.14
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	439	1686	1012		253	226
v/s Ratio Prot	c0.13	0.12	c0.13			
v/s Ratio Perm					c0.08	0.02
v/c Ratio	0.51	0.24	0.42		0.58	0.11
Uniform Delay, d1	22.1	10.6	19.3		27.4	25.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1		2.2	0.1
Delay (s)	22.6	10.6	19.4		29.6	25.6
Level of Service	C	B	B		C	C
Approach Delay (s)		14.9	19.4		27.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	21.2
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

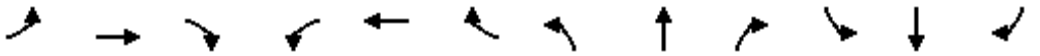
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



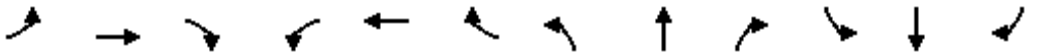
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	493	68	43	206	116	115
v/c Ratio	0.19	0.31	0.09	0.68	0.26	0.36	0.22	0.42	0.54	0.51
Control Delay	35.4	18.7	1.1	41.2	6.5	38.5	34.8	4.4	42.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	18.7	1.1	41.2	6.5	38.5	34.8	4.4	42.7	36.8
Queue Length 50th (ft)	18	85	0	81	13	35	22	0	63	53
Queue Length 95th (ft)	41	174	5	139	57	62	44	18	102	93
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	267	1636	782	270	1926	374	394	534	375	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.31	0.09	0.54	0.26	0.18	0.11	0.39	0.31	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
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)	34	505	70	147	431	62	68	43	206	168	40	23
RTOR Reduction (vph)	0	0	41	0	8	0	0	0	154	0	12	0
Lane Group Flow (vph)	34	505	29	147	485	0	68	43	52	116	103	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Effective Green, g (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Actuated g/C Ratio	0.07	0.42	0.42	0.16	0.51		0.10	0.10	0.25	0.13	0.13	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	118	1478	644	279	1764		170	179	400	215	214	
v/s Ratio Prot	0.02	c0.14		c0.08	0.14		c0.04	0.02	0.02	c0.07	0.06	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.29	0.34	0.05	0.53	0.27		0.40	0.24	0.13	0.54	0.48	
Uniform Delay, d1	37.7	16.8	14.7	32.9	11.9		36.1	35.5	24.5	34.7	34.4	
Progression Factor	1.00	1.00	1.00	0.72	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.1	0.8	0.4		0.6	0.3	0.1	1.3	0.6	
Delay (s)	38.2	17.4	14.8	24.5	5.3		36.7	35.8	24.5	36.0	35.0	
Level of Service	D	B	B	C	A		D	D	C	D	D	
Approach Delay (s)		18.3			9.7			28.6			35.5	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.5%	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)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (veh/h)	30	439	61	128	375	54	59	37	179	146	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	62	68	43	206	116	113	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	822	753	334	740	516	74	121	127	765	187	158	32
Arrive On Green	0.46	0.21	0.21	0.83	0.33	0.33	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1578	1781	3121	446	1781	1870	1578	1781	1506	306
Grp Volume(v), veh/h	34	505	70	147	244	249	68	43	206	116	0	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1781	1777	1790	1781	1870	1578	1781	0	1812
Q Serve(g_s), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Cycle Q Clear(g_c), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	822	753	334	740	294	296	121	127	765	187	0	190
V/C Ratio(X)	0.04	0.67	0.21	0.20	0.83	0.84	0.56	0.34	0.27	0.62	0.00	0.71
Avail Cap(c_a), veh/h	822	753	334	740	397	400	377	396	992	398	0	405
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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	30.8	27.6	4.3	27.3	27.4	38.4	37.8	13.0	36.4	0.0	36.8
Incr Delay (d2), s/veh	0.0	4.7	1.4	0.0	22.4	23.2	1.5	0.6	0.1	1.2	0.0	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	0.3	5.1	1.3	0.5	5.5	5.6	1.4	0.9	2.2	2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	35.5	29.1	4.4	49.7	50.6	39.9	38.4	13.1	37.7	0.0	38.7
LnGrp LOS	B	D	C	A	D	D	D	D	B	D	A	D
Approach Vol, veh/h		609			640			317			252	
Approach Delay, s/veh		33.5			39.6			22.3			38.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.3	22.0		12.9	44.2	18.1		9.8				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	18.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	13.1		8.2	2.9	12.9		5.1				
Green Ext Time (p_c), s	0.1	1.1		0.4	0.0	1.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		34.4	
HCM 6th LOS		C	

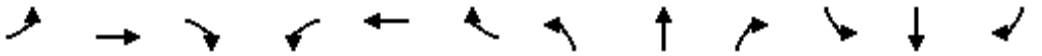
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	973	81	515	460	137	72	237
v/c Ratio	0.87	0.65	0.33	0.87	0.83	0.08	0.28
Control Delay	31.7	56.2	10.6	45.7	75.8	13.5	3.1
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	56.2	10.6	45.7	75.8	13.5	3.1
Queue Length 50th (ft)	265	28	89	228	73	21	1
Queue Length 95th (ft)	#168	#104	90	#393	#169	44	38
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1121	124	1540	530	166	850	840
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	3	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.65	0.33	0.87	0.83	0.08	0.28

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	856	10	72	458	0	0	0	409	122	64	211
Future Volume (vph)	0	856	10	72	458	0	0	0	409	122	64	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3532		1770	3539				1611	1770	1863	1563
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3532		1770	3539				1611	1770	1863	1563
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)	0	962	11	81	515	0	0	0	460	137	72	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	973	0	81	515	0	0	0	460	137	72	110
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		27.0		6.0	37.0				28.0	8.0	38.8	38.8
Effective Green, g (s)		27.0		6.0	37.0				28.0	8.0	38.8	38.8
Actuated g/C Ratio		0.32		0.07	0.44				0.33	0.09	0.46	0.46
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1121		124	1540				530	166	850	713
v/s Ratio Prot		c0.28		c0.05	0.15				c0.29	c0.08	0.04	
v/s Ratio Perm												0.07
v/c Ratio		0.87		0.65	0.33				0.87	0.83	0.08	0.15
Uniform Delay, d1		27.3		38.5	15.9				26.8	37.8	13.1	13.5
Progression Factor		0.80		0.78	0.62				1.00	1.00	1.00	1.00
Incremental Delay, d2		8.9		11.6	0.6				14.0	35.3	0.2	0.5
Delay (s)		30.8		41.6	10.5				40.8	73.2	13.3	14.0
Level of Service		C		D	B				D	E	B	B
Approach Delay (s)		30.8			14.7			40.8			32.0	
Approach LOS		C			B			D			C	

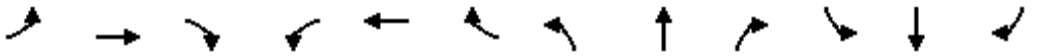
Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	600	546	396	253	147	149	142
v/c Ratio	0.63	0.21	0.30	0.35	0.60	0.61	0.40
Control Delay	8.1	2.5	21.1	4.6	43.6	43.9	9.2
Queue Delay	0.8	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	2.8	21.1	4.6	43.6	43.9	9.2
Queue Length 50th (ft)	70	25	79	0	77	80	0
Queue Length 95th (ft)	133	48	127	52	131	133	46
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	969	2639	1313	726	514	515	582
Starvation Cap Reductn	142	1394	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.44	0.30	0.35	0.29	0.29	0.24

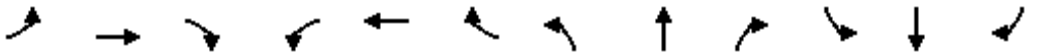
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	546	497	0	0	360	230	268	1	129	0	0	0
Future Volume (vph)	546	497	0	0	360	230	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1765	3539			3539	1532	1681	1686	1583			
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	882	3539			3539	1532	1681	1686	1583			
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)	600	546	0	0	396	253	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	0	121	0	0	0
Lane Group Flow (vph)	600	546	0	0	396	94	147	149	21	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Effective Green, g (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Actuated g/C Ratio	0.75	0.75			0.37	0.37	0.15	0.15	0.15			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	946	2639			1311	567	245	245	230			
v/s Ratio Prot	c0.21	0.15			0.11		0.09	c0.09				
v/s Ratio Perm	c0.27					0.06			0.01			
v/c Ratio	0.63	0.21			0.30	0.17	0.60	0.61	0.09			
Uniform Delay, d1	8.5	3.2			19.0	17.9	34.0	34.0	31.4			
Progression Factor	0.54	0.64			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.2			0.6	0.6	3.3	3.6	0.1			
Delay (s)	5.5	2.2			19.6	18.6	37.3	37.6	31.5			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		4.0			19.2			35.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.5%	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 (veh/h)	546	497	0	0	360	230	268	1	129	0	0	0
Future Volume (veh/h)	546	497	0	0	360	230	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	600	546	0	0	396	253	296	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1075	2730	0	0	702	303	436	0	194			
Arrive On Green	0.87	1.00	0.00	0.00	0.20	0.20	0.12	0.00	0.12			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	3563	0	1585			
Grp Volume(v), veh/h	600	546	0	0	396	253	296	0	142			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.6	13.5	6.8	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.6	13.5	6.8	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1075	2730	0	0	702	303	436	0	194			
V/C Ratio(X)	0.56	0.20	0.00	0.00	0.56	0.84	0.68	0.00	0.73			
Avail Cap(c_a), veh/h	1075	2730	0	0	702	303	1090	0	485			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.2	0.0	0.0	0.0	30.8	32.8	35.7	0.0	36.0			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	3.3	23.1	1.4	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	1.4	0.1	0.0	0.0	3.8	6.7	3.0	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.1	0.0	0.0	34.0	55.8	37.1	0.0	39.9			
LnGrp LOS	A	A	A	A	C	E	D	A	D			
Approach Vol, veh/h		1146			649			438				
Approach Delay, s/veh		1.4			42.5			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		69.4		15.6	48.6	20.8						
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0						
Max Green Setting (Gmax), s		* 50		* 26	28.9	16.8						
Max Q Clear Time (g_c+I1), s		2.0		9.3	2.0	15.5						
Green Ext Time (p_c), s		4.0		1.1	0.9	0.5						

Intersection Summary												
HCM 6th Ctrl Delay			20.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1558	96	596
v/c Ratio	0.55	0.77	0.17
Control Delay	0.8	66.2	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.8	66.2	0.2
Queue Length 50th (ft)	6	32	0
Queue Length 95th (ft)	3	#119	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2858	124	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	10	0	492
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.77	0.20

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1047	340	85	530	0	0
Future Volume (vph)	1047	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3388		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3388		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1176	382	96	596	0	0
RTOR Reduction (vph)	30	0	0	0	0	0
Lane Group Flow (vph)	1528	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	71.0		6.0	85.0		
Effective Green, g (s)	71.0		6.0	79.8		
Actuated g/C Ratio	0.84		0.07	0.94		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2829		124	3322		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.54		0.77	0.18		
Uniform Delay, d1	2.1		38.8	0.2		
Progression Factor	0.24		0.67	1.00		
Incremental Delay, d2	0.1		24.8	0.1		
Delay (s)	0.6		51.0	0.3		
Level of Service	A		D	A		
Approach Delay (s)	0.6			7.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

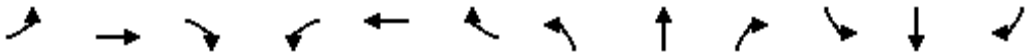
Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	109	197	80	221	213
Future Vol, veh/h	43	109	197	80	221	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	45	115	207	84	233	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	939	249	0	0	291	0
Stage 1	249	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	292	787	-	-	1265	-
Stage 1	790	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	787	-	-	1265	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	405	-	-	-	-	-

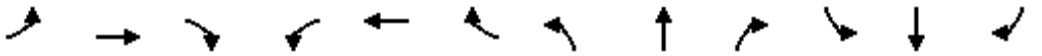
Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	238	787	1265	-
HCM Lane V/C Ratio	-	-	0.19	0.146	0.184	-
HCM Control Delay (s)	-	-	23.6	10.4	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.5	0.7	-



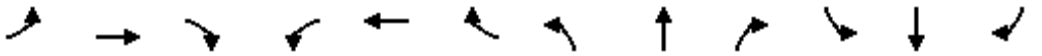
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	19	382	128	88	307	38	111	49	48	23	84	17
v/c Ratio	0.12	0.45	0.16	0.38	0.30	0.04	0.48	0.10	0.09	0.15	0.29	0.05
Control Delay	41.0	24.3	3.7	40.5	16.7	0.1	42.8	26.8	0.4	41.3	35.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	24.3	3.7	40.5	16.7	0.1	42.8	26.8	0.4	41.3	35.7	0.3
Queue Length 50th (ft)	9	162	0	40	85	0	51	16	0	11	38	0
Queue Length 95th (ft)	34	268	30	99	193	0	118	55	0	38	89	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	152	1002	917	274	1082	979	302	1037	946	161	922	841
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.38	0.14	0.32	0.28	0.04	0.37	0.05	0.05	0.14	0.09	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	344	115	79	276	34	100	44	43	21	76	15
Future Volume (vph)	17	344	115	79	276	34	100	44	43	21	76	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	19	382	128	88	307	38	111	49	48	23	84	17
RTOR Reduction (vph)	0	0	77	0	0	21	0	0	39	0	0	15
Lane Group Flow (vph)	19	382	51	88	307	17	111	49	9	23	84	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.7	31.7	31.7	6.7	36.7	36.7	6.9	15.2	15.2	1.8	10.1	10.1
Effective Green, g (s)	1.7	31.7	31.7	6.7	36.7	36.7	6.9	15.2	15.2	1.8	10.1	10.1
Actuated g/C Ratio	0.02	0.40	0.40	0.08	0.46	0.46	0.09	0.19	0.19	0.02	0.13	0.13
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	37	739	628	148	855	727	152	354	301	39	235	195
v/s Ratio Prot	0.01	c0.21		c0.05	c0.16		c0.06	c0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.51	0.52	0.08	0.59	0.36	0.02	0.73	0.14	0.03	0.59	0.36	0.01
Uniform Delay, d1	38.7	18.3	15.0	35.3	14.0	11.8	35.6	26.9	26.3	38.7	31.9	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	13.3	1.2	0.1	6.6	0.5	0.0	14.3	0.3	0.1	13.8	1.6	0.0
Delay (s)	52.0	19.5	15.1	41.9	14.5	11.8	49.9	27.2	26.4	52.5	33.5	30.6
Level of Service	D	B	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		19.6			19.9			39.2			36.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	50.7%	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)	17	344	115	79	276	34	100	44	43	21	76	15
Future Volume (veh/h)	17	344	115	79	276	34	100	44	43	21	76	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	382	128	88	307	38	111	49	48	23	84	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	561	475	118	642	544	143	325	275	48	224	186
Arrive On Green	0.02	0.30	0.30	0.07	0.34	0.34	0.08	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Grp Volume(v), veh/h	19	382	128	88	307	38	111	49	48	23	84	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Q Serve(g_s), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
Cycle Q Clear(g_c), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
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	41	561	475	118	642	544	143	325	275	48	224	186
V/C Ratio(X)	0.47	0.68	0.27	0.75	0.48	0.07	0.78	0.15	0.17	0.48	0.37	0.09
Avail Cap(c_a), veh/h	170	1129	957	306	1271	1077	337	1192	1010	180	1026	850
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	27.3	17.4	15.1	25.9	14.6	12.5	25.5	19.8	19.9	27.1	22.9	22.1
Incr Delay (d2), s/veh	9.7	3.1	0.6	10.7	1.2	0.1	3.4	0.4	0.5	2.8	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	1.1	1.3	2.5	0.3	1.4	0.5	0.5	0.3	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	20.5	15.7	36.6	15.8	12.6	28.9	20.2	20.4	29.9	24.7	22.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		529			433			208			124	
Approach Delay, s/veh		19.9			19.7			24.9			25.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	24.0	9.8	13.6	6.6	26.5	6.8	16.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 34	10.7	* 31	5.4	* 38	5.7	* 36
Max Q Clear Time (g_c+I1), s	4.7	12.2	5.5	4.3	2.6	9.3	2.7	3.5
Green Ext Time (p_c), s	0.1	4.8	0.0	0.7	0.0	3.5	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	404	2	40	375	20	1	3	18	18	8	6
Future Vol, veh/h	6	404	2	40	375	20	1	3	18	18	8	6
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	416	2	41	387	21	1	3	19	19	8	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	418	0	0	915	918	416	909	899	387
Stage 1	-	-	-	-	-	-	428	428	-	469	469	-
Stage 2	-	-	-	-	-	-	487	490	-	440	430	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1145	-	-	1136	-	-	252	271	634	255	278	659
Stage 1	-	-	-	-	-	-	603	583	-	573	559	-
Stage 2	-	-	-	-	-	-	560	547	-	594	582	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1145	-	-	1136	-	-	236	260	634	238	267	659
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	260	-	238	267	-
Stage 1	-	-	-	-	-	-	600	580	-	570	539	-
Stage 2	-	-	-	-	-	-	527	527	-	571	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	12.4	18.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	236	260	634	1145	-	-	1136	-	-	238	267	659
HCM Lane V/C Ratio	0.004	0.012	0.029	0.005	-	-	0.036	-	-	0.078	0.031	0.009
HCM Control Delay (s)	20.3	19	10.8	8.2	-	-	8.3	-	-	21.4	18.9	10.5
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0	0	0.1	0	-	-	0.1	-	-	0.3	0.1	0

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	428	25	208	537	17	145
Future Vol, veh/h	428	25	208	537	17	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	465	27	226	584	18	158

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	492	0	1501	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	1036	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	134	597
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	342	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	106	597
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	597	-	-	1071	-
HCM Lane V/C Ratio	0.174	0.264	-	-	0.211	-
HCM Control Delay (s)	46	13.2	-	-	9.3	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1.1	-	-	0.8	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	552	71	372	737	73	262
v/c Ratio	0.50	0.07	0.54	0.48	0.46	0.44
Control Delay	17.5	4.3	5.8	2.7	56.0	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	4.3	5.8	2.7	56.0	9.7
Queue Length 50th (ft)	229	2	24	79	50	34
Queue Length 95th (ft)	390	26	77	138	94	88
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1102	962	723	1540	370	645
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.07	0.51	0.48	0.20	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	65	342	678	67	241
Future Volume (vph)	508	65	342	678	67	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.32	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	604	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	71	372	737	73	262
RTOR Reduction (vph)	0	27	0	0	0	147
Lane Group Flow (vph)	552	44	372	737	73	115
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	63.7	63.7	88.3	88.3	8.7	26.8
Effective Green, g (s)	63.7	63.7	88.3	88.3	8.7	26.8
Actuated g/C Ratio	0.58	0.58	0.80	0.80	0.08	0.24
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1078	916	676	1495	139	479
v/s Ratio Prot	0.30		0.09	c0.40	c0.04	0.04
v/s Ratio Perm		0.03	c0.35			0.03
v/c Ratio	0.51	0.05	0.55	0.49	0.53	0.24
Uniform Delay, d1	13.9	10.0	6.1	3.5	48.7	33.4
Progression Factor	1.00	1.00	0.98	0.42	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.9	1.0	3.6	0.3
Delay (s)	15.6	10.1	6.8	2.5	52.2	33.7
Level of Service	B	B	A	A	D	C
Approach Delay (s)	15.0			4.0	37.7	
Approach LOS	B			A	D	

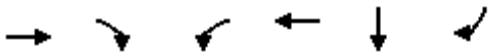
Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	65	342	678	67	241
Future Volume (veh/h)	508	65	342	678	67	241
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	71	372	737	73	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	999	847	559	1342	292	457
Arrive On Green	0.53	0.53	0.25	1.00	0.16	0.16
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	552	71	372	737	73	262
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	21.4	2.4	10.9	0.0	3.9	15.5
Cycle Q Clear(g_c), s	21.4	2.4	10.9	0.0	3.9	15.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	999	847	559	1342	292	457
V/C Ratio(X)	0.55	0.08	0.67	0.55	0.25	0.57
Avail Cap(c_a), veh/h	999	847	686	1342	372	528
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.71	0.71	1.00	1.00
Uniform Delay (d), s/veh	16.9	12.5	10.0	0.0	40.1	33.4
Incr Delay (d2), s/veh	2.2	0.2	1.3	1.2	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.8	2.5	0.4	1.8	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	12.7	11.3	1.2	40.5	34.5
LnGrp LOS	B	B	B	A	D	C
Approach Vol, veh/h	623			1109	335	
Approach Delay, s/veh	18.4			4.6	35.8	
Approach LOS	B			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	20.2	65.3				85.4	24.6
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	21.5	46.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	12.9	23.4				2.0	17.5
Green Ext Time (p_c), s	0.7	3.2				5.0	0.6

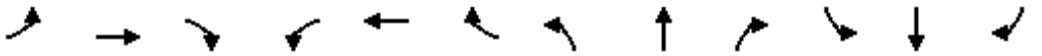
Intersection Summary							
HCM 6th Ctrl Delay			13.8				
HCM 6th LOS			B				



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	418	355	19	548	42	503
v/c Ratio	0.37	0.32	0.03	0.45	0.10	0.87
Control Delay	10.0	1.1	5.5	7.5	28.1	34.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	10.0	1.1	5.5	7.8	28.1	34.1
Queue Length 50th (ft)	77	0	3	96	23	176
Queue Length 95th (ft)	151	11	m8	237	43	267
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1142	1103	564	1231	720	797
Starvation Cap Reductn	0	0	0	236	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.32	0.03	0.55	0.06	0.63

Intersection Summary

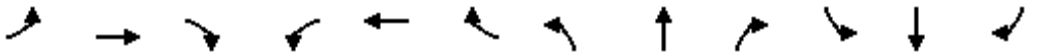
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	405	344	18	532	0	0	0	0	41	0	488
Future Volume (vph)	0	405	344	18	532	0	0	0	0	41	0	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.41	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	771	1863						1770	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	418	355	19	548	0	0	0	0	42	0	503
RTOR Reduction (vph)	0	0	145	0	0	0	0	0	0	0	0	196
Lane Group Flow (vph)	0	418	210	19	548	0	0	0	0	0	42	307
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		63.6	63.6	72.7	72.7						26.6	26.6
Effective Green, g (s)		63.6	63.6	72.7	72.7						26.6	26.6
Actuated g/C Ratio		0.58	0.58	0.66	0.66						0.24	0.24
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1077	915	533	1231						428	382
v/s Ratio Prot		0.22		0.00	c0.29						0.02	
v/s Ratio Perm			0.13	0.02								c0.19
v/c Ratio		0.39	0.23	0.04	0.45						0.10	0.80
Uniform Delay, d1		12.6	11.3	7.3	9.0						32.4	39.3
Progression Factor		0.62	0.17	0.55	0.57						1.00	1.00
Incremental Delay, d2		0.9	0.5	0.0	1.0						0.1	11.7
Delay (s)		8.7	2.5	4.0	6.1						32.5	50.9
Level of Service		A	A	A	A						C	D
Approach Delay (s)		5.9			6.0			0.0			49.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	88.9%	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 (veh/h)	0	405	344	18	532	0	0	0	0	41	0	488
Future Volume (veh/h)	0	405	344	18	532	0	0	0	0	41	0	488
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	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	418	355	19	548	0				42	0	503
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	906	768	335	1054	0				604	0	538
Arrive On Green	0.00	0.48	0.48	0.04	1.00	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	1870	1585	1781	1870	0				1781	0	1585
Grp Volume(v), veh/h	0	418	355	19	548	0				42	0	503
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1781	1870	0				1781	0	1585
Q Serve(g_s), s	0.0	16.3	16.4	0.6	0.0	0.0				1.8	0.0	33.8
Cycle Q Clear(g_c), s	0.0	16.3	16.4	0.6	0.0	0.0				1.8	0.0	33.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	906	768	335	1054	0				604	0	538
V/C Ratio(X)	0.00	0.46	0.46	0.06	0.52	0.00				0.07	0.00	0.94
Avail Cap(c_a), veh/h	0	906	768	389	1054	0				725	0	646
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.8	18.8	14.0	0.0	0.0				24.6	0.0	35.2
Incr Delay (d2), s/veh	0.0	1.5	1.7	0.1	1.8	0.0				0.0	0.0	19.1
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	6.7	5.7	0.2	0.5	0.0				0.8	0.0	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.3	20.6	14.0	1.8	0.0				24.6	0.0	54.3
LnGrp LOS	A	C	C	B	A	A				C	A	D
Approach Vol, veh/h		773			567						545	
Approach Delay, s/veh		20.4			2.2						52.0	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.7	59.8		41.5		68.5
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.5	42.5		* 45		54.5
Max Q Clear Time (g_c+I1), s	2.6	18.4		35.8		2.0
Green Ext Time (p_c), s	0.0	3.4		1.5		3.3

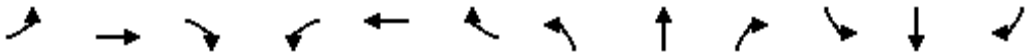
Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

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

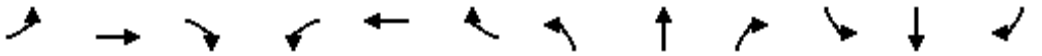
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	315	200	170	15	423	23
v/c Ratio	0.43	0.18	0.23	0.02	0.82	0.04
Control Delay	17.3	13.8	26.3	0.1	48.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	17.3	13.8	26.3	0.1	48.4	0.1
Queue Length 50th (ft)	133	79	76	0	277	0
Queue Length 95th (ft)	285	159	163	0	351	0
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	767	1120	751	683	699	683
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	12	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.18	0.23	0.02	0.62	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	182	0	0	155	14	384	1	21	0	0	0
Future Volume (vph)	287	182	0	0	155	14	384	1	21	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1757	1568			
Flt Permitted	0.56	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1039	1845			1845	1568		1757	1568			
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)	315	200	0	0	170	15	422	1	23	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	16	0	0	0
Lane Group Flow (vph)	315	200	0	0	170	6	0	423	7	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	66.8	66.8			44.7	44.7		32.5	32.5			
Effective Green, g (s)	66.8	66.8			44.7	44.7		32.5	32.5			
Actuated g/C Ratio	0.61	0.61			0.41	0.41		0.30	0.30			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	732	1120			749	637		519	463			
v/s Ratio Prot	c0.06	0.11			0.09			c0.24				
v/s Ratio Perm	c0.20					0.00			0.00			
v/c Ratio	0.43	0.18			0.23	0.01		0.82	0.01			
Uniform Delay, d1	10.6	9.5			21.4	19.5		36.0	27.4			
Progression Factor	1.31	1.21			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.4	0.3			0.7	0.0		9.5	0.0			
Delay (s)	14.3	11.9			22.1	19.5		45.5	27.4			
Level of Service	B	B			C	B		D	C			
Approach Delay (s)		13.4			21.8			44.6			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	88.9%	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 (veh/h)	287	182	0	0	155	14	384	1	21	0	0	0
Future Volume (veh/h)	287	182	0	0	155	14	384	1	21	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	315	200	0	0	170	15	422	1	23			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	745	1173	0	0	864	732	477	1	426			
Arrive On Green	0.04	0.21	0.00	0.00	0.47	0.47	0.27	0.27	0.27			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1763	4	1572			
Grp Volume(v), veh/h	315	200	0	0	170	15	423	0	23			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1767	0	1572			
Q Serve(g_s), s	9.2	9.7	0.0	0.0	5.9	0.6	25.2	0.0	1.2			
Cycle Q Clear(g_c), s	9.2	9.7	0.0	0.0	5.9	0.6	25.2	0.0	1.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	745	1173	0	0	864	732	479	0	426			
V/C Ratio(X)	0.42	0.17	0.00	0.00	0.20	0.02	0.88	0.00	0.05			
Avail Cap(c_a), veh/h	884	1173	0	0	864	732	704	0	626			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.94	0.94	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.4	19.9	0.0	0.0	17.3	15.9	38.4	0.0	29.7			
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	0.5	0.1	9.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.6	4.1	0.0	0.0	2.4	0.2	12.0	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	20.2	0.0	0.0	17.8	15.9	47.6	0.0	29.7			
LnGrp LOS	B	C	A	A	B	B	D	A	C			
Approach Vol, veh/h		515			185			446				
Approach Delay, s/veh		15.6			17.7			46.7				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.0			18.3	57.7		34.0				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		55.5			20.5	28.5		43.8				
Max Q Clear Time (g_c+I1), s		11.7			11.2	7.9		27.2				
Green Ext Time (p_c), s		1.0			0.6	0.7		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	171	140	102	251	25
Future Vol, veh/h	21	171	140	102	251	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	190	156	113	279	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	718	293	307	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	425	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	396	746	1254	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	347	746	1254	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1254	-	347	746	-	-
HCM Lane V/C Ratio	0.124	-	0.067	0.255	-	-
HCM Control Delay (s)	8.3	-	16.1	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	1	-	-

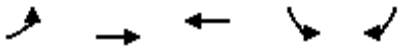
Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	157	39	174	210	57	288
Future Vol, veh/h	157	39	174	210	57	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	42	189	228	62	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	626	189	0	0	417	0
Stage 1	189	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	448	853	-	-	1142	-
Stage 1	843	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	424	853	-	-	1142	-
Mov Cap-2 Maneuver	424	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	1.4
HCM LOS	C		

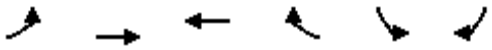
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	424	853	1142	-
HCM Lane V/C Ratio	-	-	0.402	0.05	0.054	-
HCM Control Delay (s)	-	-	19.1	9.4	8.3	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	0.2	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	220	426	727	169	204
v/c Ratio	0.53	0.25	0.66	0.64	0.50
Control Delay	18.3	13.0	23.3	41.7	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	13.0	23.3	41.7	9.8
Queue Length 50th (ft)	43	48	115	63	0
Queue Length 95th (ft)	93	124	249	#169	61
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	837	2065	1450	374	495
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.21	0.50	0.45	0.41

Intersection Summary

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

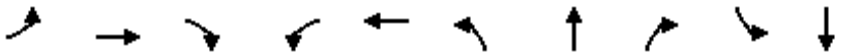


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	405	485	205	161	194
Future Volume (vph)	209	405	485	205	161	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3393		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3393		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	426	511	216	169	204
RTOR Reduction (vph)	0	0	48	0	0	173
Lane Group Flow (vph)	220	426	679	0	169	31
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	16.0	33.0	21.8		10.4	10.4
Effective Green, g (s)	16.0	33.0	21.8		10.4	10.4
Actuated g/C Ratio	0.23	0.48	0.31		0.15	0.15
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	411	1699	1065		267	239
v/s Ratio Prot	c0.12	0.12	c0.20			
v/s Ratio Perm					c0.09	0.02
v/c Ratio	0.54	0.25	0.64		0.63	0.13
Uniform Delay, d1	23.4	10.8	20.4		27.7	25.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.0	0.9		3.6	0.1
Delay (s)	24.1	10.9	21.3		31.3	25.7
Level of Service	C	B	C		C	C
Approach Delay (s)		15.4	21.3		28.2	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	21.2
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

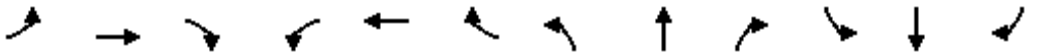
HCM 6th Edition methodology expects strict NEMA phasing.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	697	140	63	83	180	179
v/c Ratio	0.42	0.34	0.12	0.80	0.49	0.58	0.25	0.18	0.68	0.64
Control Delay	39.2	22.2	2.3	58.4	15.2	43.3	33.4	3.5	46.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	22.2	2.3	58.4	15.2	43.3	33.4	3.5	46.2	40.3
Queue Length 50th (ft)	47	92	0	103	73	72	31	0	96	85
Queue Length 95th (ft)	94	165	15	#198	#270	117	61	13	155	144
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	262	1357	672	252	1416	378	398	480	379	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.34	0.12	0.73	0.49	0.37	0.16	0.17	0.47	0.46

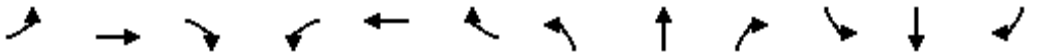
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	83	140	63	83	234	80	45
RTOR Reduction (vph)	0	0	53	0	10	0	0	0	60	0	15	0
Lane Group Flow (vph)	96	466	30	184	687	0	140	63	23	180	164	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Effective Green, g (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Actuated g/C Ratio	0.12	0.37	0.37	0.14	0.39		0.14	0.14	0.28	0.16	0.16	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	212	1311	573	252	1363		241	254	438	265	263	
v/s Ratio Prot	0.05	0.13		c0.10	c0.20		c0.08	0.03	0.01	c0.11	0.10	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.45	0.36	0.05	0.73	0.50		0.58	0.25	0.05	0.68	0.62	
Uniform Delay, d1	34.9	19.6	17.4	34.9	19.7		34.5	32.9	22.6	33.8	33.5	
Progression Factor	1.00	1.00	1.00	0.96	0.59		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.2	8.3	1.2		2.3	0.2	0.0	5.4	3.3	
Delay (s)	35.4	20.3	17.5	41.7	12.8		36.8	33.1	22.6	39.2	36.8	
Level of Service	D	C	B	D	B		D	C	C	D	D	
Approach Delay (s)		22.2			18.8			31.8			38.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
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)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (veh/h)	94	457	81	180	602	81	137	62	81	229	78	44
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		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	83	140	63	83	180	156	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	607	801	349	587	672	91	193	202	692	256	200	58
Arrive On Green	0.34	0.22	0.22	0.65	0.42	0.42	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1560	1795	3170	428	1795	1885	1584	1795	1403	405
Grp Volume(v), veh/h	96	466	83	184	346	351	140	63	83	180	0	201
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1807	1795	1885	1584	1795	0	1807
Q Serve(g_s), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Cycle Q Clear(g_c), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	607	801	349	587	380	383	193	202	692	256	0	258
V/C Ratio(X)	0.16	0.58	0.24	0.31	0.91	0.92	0.73	0.31	0.12	0.70	0.00	0.78
Avail Cap(c_a), veh/h	607	801	349	587	400	404	380	399	857	401	0	404
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	29.5	27.1	10.6	23.7	23.8	36.7	35.0	14.4	34.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	3.1	1.6	0.1	26.6	26.9	2.0	0.3	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.4	1.5	1.3	7.4	7.5	2.8	1.2	0.9	3.5	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	32.5	28.7	10.7	50.3	50.6	38.7	35.4	14.4	36.1	0.0	37.1
LnGrp LOS	B	C	C	B	D	D	D	D	B	D	A	D
Approach Vol, veh/h		645			881			286			381	
Approach Delay, s/veh		30.1			42.2			30.9			36.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	23.0		16.1	33.8	22.0		13.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	19.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	5.8	11.9		11.1	5.2	17.5		8.4				
Green Ext Time (p_c), s	0.1	1.3		0.6	0.0	0.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		36.2	
HCM 6th LOS		D	

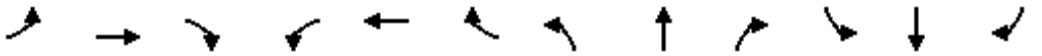
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	892	146	707	284	154	203	386
v/c Ratio	0.77	0.68	0.40	0.76	0.68	0.26	0.52
Control Delay	24.1	48.0	8.8	45.7	52.0	17.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	48.0	8.8	45.7	52.0	17.8	13.2
Queue Length 50th (ft)	243	68	111	142	80	70	81
Queue Length 95th (ft)	#158	141	129	#261	#163	118	162
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1162	252	1757	373	227	770	743
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.58	0.40	0.76	0.68	0.26	0.52

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	812	26	137	665	0	0	0	267	145	191	363
Future Volume (vph)	0	812	26	137	665	0	0	0	267	145	191	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3555		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3555		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	864	28	146	707	0	0	0	284	154	203	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	892	0	146	707	0	0	0	284	154	203	289
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		27.8		10.2	41.8				19.5	10.8	34.8	34.8
Effective Green, g (s)		27.8		10.2	41.8				19.5	10.8	34.8	34.8
Actuated g/C Ratio		0.33		0.12	0.49				0.23	0.13	0.41	0.41
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1162		214	1757				373	227	770	646
v/s Ratio Prot		c0.25		c0.08	0.20				c0.17	c0.09	0.11	
v/s Ratio Perm												0.18
v/c Ratio		0.77		0.68	0.40				0.76	0.68	0.26	0.45
Uniform Delay, d1		25.7		35.8	13.7				30.6	35.4	16.6	18.1
Progression Factor		0.71		0.90	0.59				1.00	1.00	1.00	1.00
Incremental Delay, d2		4.7		6.8	0.7				8.9	15.1	0.8	2.2
Delay (s)		23.1		39.0	8.7				39.5	50.6	17.5	20.4
Level of Service		C		D	A				D	D	B	C
Approach Delay (s)		23.1			13.9			39.5			25.8	
Approach LOS		C			B			D			C	

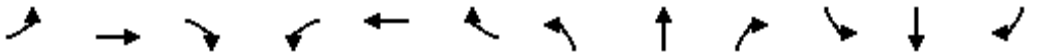
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

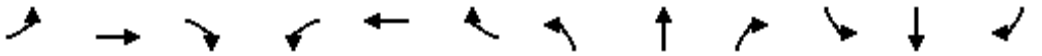
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	338	527	467	154	239	235	186
v/c Ratio	0.44	0.21	0.29	0.20	0.67	0.66	0.39
Control Delay	6.4	3.6	17.4	4.2	39.6	39.0	6.4
Queue Delay	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	3.8	17.4	4.2	39.6	39.0	6.4
Queue Length 50th (ft)	45	33	84	0	124	122	0
Queue Length 95th (ft)	76	56	141	39	182	177	45
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	822	2514	1603	777	585	587	673
Starvation Cap Reductn	196	1179	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.39	0.29	0.20	0.41	0.40	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	501	0	0	444	146	446	5	177	0	0	0
Future Volume (vph)	321	501	0	0	444	146	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1782	3574			3574	1545	1698	1704	1599			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	849	3574			3574	1545	1698	1704	1599			
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)	338	527	0	0	467	154	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	147	0	0	0
Lane Group Flow (vph)	338	527	0	0	467	69	239	235	39	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	59.8	59.8			38.1	38.1	17.8	17.8	17.8			
Effective Green, g (s)	59.8	59.8			38.1	38.1	17.8	17.8	17.8			
Actuated g/C Ratio	0.70	0.70			0.45	0.45	0.21	0.21	0.21			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	780	2514			1601	692	355	356	334			
v/s Ratio Prot	c0.09	0.15			0.13		c0.14	0.14				
v/s Ratio Perm	c0.22					0.04			0.02			
v/c Ratio	0.43	0.21			0.29	0.10	0.67	0.66	0.12			
Uniform Delay, d1	7.4	4.4			14.9	13.5	30.9	30.8	27.2			
Progression Factor	0.55	0.66			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.2			0.5	0.3	4.5	4.1	0.1			
Delay (s)	4.2	3.1			15.3	13.8	35.4	34.9	27.3			
Level of Service	A	A			B	B	D	C	C			
Approach Delay (s)		3.5			15.0			33.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	72.0%	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)	321	501	0	0	444	146	446	5	177	0	0	0
Future Volume (veh/h)	321	501	0	0	444	146	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	338	527	0	0	467	154	473	0	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	925	2647	0	0	1028	445	608	0	271			
Arrive On Green	0.80	1.00	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1795	3676	0	0	3676	1550	3591	0	1598			
Grp Volume(v), veh/h	338	527	0	0	467	154	473	0	186			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1550	1795	0	1598			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.1	6.7	10.7	0.0	9.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.1	6.7	10.7	0.0	9.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	925	2647	0	0	1028	445	608	0	271			
V/C Ratio(X)	0.37	0.20	0.00	0.00	0.45	0.35	0.78	0.00	0.69			
Avail Cap(c_a), veh/h	925	2647	0	0	1028	445	1238	0	551			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.3	0.0	0.0	0.0	24.8	24.0	33.8	0.0	33.2			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.4	2.1	1.6	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	1.0	0.1	0.0	0.0	3.9	2.6	4.7	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.1	0.0	0.0	26.3	26.1	35.4	0.0	35.5			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		865			621			659				
Approach Delay, s/veh		1.4			26.2			35.4				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		66.9		18.1	37.9	29.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 48		29.3	18.9	24.4						
Max Q Clear Time (g_c+I1), s		2.0		12.7	2.0	11.1						
Green Ext Time (p_c), s		3.1		1.7	0.4	1.9						

Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1302	90	853
v/c Ratio	0.48	0.42	0.24
Control Delay	0.6	35.8	0.2
Queue Delay	0.0	0.0	0.0
Total Delay	0.6	35.8	0.2
Queue Length 50th (ft)	3	37	0
Queue Length 95th (ft)	0	0	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2713	252	3574
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	755
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.48	0.36	0.30

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	821	403	85	802	0	0
Future Volume (vph)	821	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3370		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3370		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	873	429	90	853	0	0
RTOR Reduction (vph)	65	0	0	0	0	0
Lane Group Flow (vph)	1237	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	66.6		10.2	85.0		
Effective Green, g (s)	66.6		10.2	76.5		
Actuated g/C Ratio	0.78		0.12	0.90		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2640		214	3216		
v/s Ratio Prot	c0.37		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.47		0.42	0.27		
Uniform Delay, d1	3.1		34.7	0.6		
Progression Factor	0.09		0.88	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.4		31.0	0.6		
Level of Service	A		C	A		
Approach Delay (s)	0.4			3.5	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	1.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	470	39	264	462	41	249
v/c Ratio	0.65	0.06	0.43	0.29	0.14	0.45
Control Delay	16.9	4.9	5.4	3.5	21.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	4.9	5.4	3.5	21.9	8.0
Queue Length 50th (ft)	66	0	1	0	7	14
Queue Length 95th (ft)	223	15	60	112	38	63
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1134	979	651	1604	1110	604
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.04	0.41	0.29	0.04	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	432	36	243	425	38	229
Future Volume (vph)	432	36	243	425	38	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.28	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	517	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	470	39	264	462	41	249
RTOR Reduction (vph)	0	25	0	0	0	124
Lane Group Flow (vph)	470	14	264	462	41	125
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	17.5	17.5	31.9	31.9	2.3	10.2
Effective Green, g (s)	17.5	17.5	31.9	31.9	2.3	10.2
Actuated g/C Ratio	0.37	0.37	0.68	0.68	0.05	0.22
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	690	586	559	1259	86	560
v/s Ratio Prot	c0.25		0.08	c0.25	0.02	c0.04
v/s Ratio Perm		0.01	0.24			0.04
v/c Ratio	0.68	0.02	0.47	0.37	0.48	0.22
Uniform Delay, d1	12.5	9.4	4.6	3.3	21.9	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.0	0.6	0.2	4.1	0.2
Delay (s)	15.3	9.4	5.2	3.5	26.0	15.4
Level of Service	B	A	A	A	C	B
Approach Delay (s)	14.8			4.1	16.9	
Approach LOS	B			A	B	

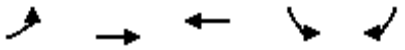
Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	432	36	243	425	38	229
Future Volume (veh/h)	432	36	243	425	38	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	470	39	264	462	41	249
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	576	488	440	1057	322	492
Arrive On Green	0.31	0.31	0.13	0.57	0.18	0.18
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	470	39	264	462	41	249
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	11.9	0.9	4.7	7.3	1.0	6.6
Cycle Q Clear(g_c), s	11.9	0.9	4.7	7.3	1.0	6.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	576	488	440	1057	322	492
V/C Ratio(X)	0.82	0.08	0.60	0.44	0.13	0.51
Avail Cap(c_a), veh/h	878	744	505	1427	802	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	12.5	10.8	6.4	17.6	14.4
Incr Delay (d2), s/veh	3.6	0.1	1.5	0.3	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.2	1.2	1.4	0.4	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	12.6	12.3	6.7	17.7	15.2
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	509			726	290	
Approach Delay, s/veh	19.4			8.7	15.6	
Approach LOS	B			A	B	

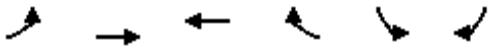
Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.1	22.2				35.4	15.7
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	24.0				39.0	23.0
Max Q Clear Time (g_c+I1), s	6.7	13.9				9.3	8.6
Green Ext Time (p_c), s	0.1	1.9				2.5	0.8

Intersection Summary			
HCM 6th Ctrl Delay		13.6	
HCM 6th LOS		B	



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	245	391	552	193	302
v/c Ratio	0.62	0.24	0.48	0.66	0.59
Control Delay	20.5	12.4	14.4	37.8	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	12.4	14.4	37.8	8.7
Queue Length 50th (ft)	48	46	56	74	0
Queue Length 95th (ft)	86	95	121	145	61
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	853	1728	1202	434	617
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.23	0.46	0.44	0.49

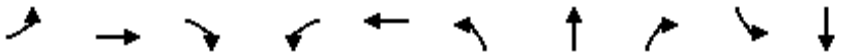
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	233	371	297	227	183	287
Future Volume (vph)	233	371	297	227	183	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3342		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3342		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	245	391	313	239	193	302
RTOR Reduction (vph)	0	0	141	0	0	252
Lane Group Flow (vph)	245	391	411	0	193	50
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	14.5	31.2	20.2		11.1	11.1
Effective Green, g (s)	14.5	31.2	20.2		11.1	11.1
Actuated g/C Ratio	0.22	0.47	0.30		0.17	0.17
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	386	1664	1007		296	264
v/s Ratio Prot	c0.14	0.11	c0.12			
v/s Ratio Perm					c0.11	0.03
v/c Ratio	0.63	0.23	0.41		0.65	0.19
Uniform Delay, d1	23.8	10.7	18.6		26.1	24.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.0	0.1		3.9	0.1
Delay (s)	26.4	10.8	18.7		30.0	24.2
Level of Service	C	B	B		C	C
Approach Delay (s)		16.8	18.7		26.5	
Approach LOS		B	B		C	

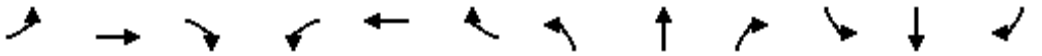
Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology expects strict NEMA phasing.



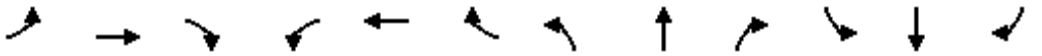
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	409	88	238	792	98	91	76	246	247
v/c Ratio	0.50	0.30	0.13	0.79	0.54	0.53	0.47	0.16	0.78	0.77
Control Delay	50.9	27.2	1.4	49.6	9.5	54.0	51.0	3.4	56.6	55.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	27.2	1.4	49.6	9.5	54.0	51.0	3.4	56.6	55.1
Queue Length 50th (ft)	76	98	0	160	37	64	59	0	165	162
Queue Length 95th (ft)	134	180	8	230	68	109	102	14	244	242
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	242	1350	679	391	1460	306	322	549	404	407
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.30	0.13	0.61	0.54	0.32	0.28	0.14	0.61	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	389	84	226	461	292	93	86	72	409	37	22
Future Volume (vph)	111	389	84	226	461	292	93	86	72	409	37	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1787	3574	1561	1787	3322		1787	1881	1588	1698	1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1787	3574	1561	1787	3322		1787	1881	1588	1698	1695	
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)	117	409	88	238	485	307	98	91	76	431	39	23
RTOR Reduction (vph)	0	0	55	0	81	0	0	0	55	0	4	0
Lane Group Flow (vph)	117	409	33	238	711	0	98	91	21	246	243	0
Confl. Peds. (#/hr)			1			5			4			6
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	13.9	39.7	39.7	17.8	43.6		10.8	10.8	28.6	19.7	19.7	
Effective Green, g (s)	13.9	39.7	39.7	17.8	43.6		10.8	10.8	28.6	19.7	19.7	
Actuated g/C Ratio	0.13	0.38	0.38	0.17	0.42		0.10	0.10	0.27	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	236	1351	590	302	1379		183	193	432	318	318	
v/s Ratio Prot	0.07	0.11		c0.13	c0.21		c0.05	0.05	0.01	c0.14	0.14	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.50	0.30	0.06	0.79	0.52		0.54	0.47	0.05	0.77	0.76	
Uniform Delay, d1	42.3	22.9	20.7	41.8	22.8		44.7	44.4	28.2	40.5	40.4	
Progression Factor	1.00	1.00	1.00	0.78	0.40		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.6	0.2	11.3	1.3		1.5	0.7	0.0	10.2	9.4	
Delay (s)	42.9	23.5	20.9	43.9	10.4		46.2	45.1	28.2	50.7	49.9	
Level of Service	D	C	C	D	B		D	D	C	D	D	
Approach Delay (s)		26.8			18.2			40.7			50.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	59.0%	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)	111	389	84	226	461	292	93	86	72	409	37	22
Future Volume (veh/h)	111	389	84	226	461	292	93	86	72	409	37	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	409	88	238	485	307	98	91	76	480	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	579	750	327	700	581	366	146	153	751	564	296	0
Arrive On Green	0.32	0.21	0.21	0.65	0.46	0.46	0.08	0.08	0.08	0.16	0.00	0.00
Sat Flow, veh/h	1795	3582	1559	1795	2100	1324	1795	1885	1574	3591	1885	0
Grp Volume(v), veh/h	117	409	88	238	413	379	98	91	76	480	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1559	1795	1791	1633	1795	1885	1574	1795	1885	0
Q Serve(g_s), s	5.0	10.7	5.0	6.2	21.2	21.4	5.6	4.9	0.0	13.7	0.0	0.0
Cycle Q Clear(g_c), s	5.0	10.7	5.0	6.2	21.2	21.4	5.6	4.9	0.0	13.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	579	750	327	700	496	452	146	153	751	564	296	0
V/C Ratio(X)	0.20	0.54	0.27	0.34	0.83	0.84	0.67	0.59	0.10	0.85	0.00	0.00
Avail Cap(c_a), veh/h	579	750	327	700	546	498	308	323	893	855	449	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	37.0	34.8	12.3	26.1	26.2	46.9	46.5	15.4	43.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.8	2.0	0.1	14.1	15.6	2.0	1.4	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.9	2.0	2.2	9.0	8.4	2.5	2.3	1.0	6.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	39.9	36.8	12.4	40.2	41.8	48.8	47.9	15.4	46.4	0.0	0.0
LnGrp LOS	C	D	D	B	D	D	D	D	B	D	A	A
Approach Vol, veh/h		614			1030			265			480	
Approach Delay, s/veh		36.7			34.4			38.9			46.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	45.9	26.0		20.5	38.9	33.1		12.5				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	23.0	22.0		25.0	13.0	32.0		18.0				
Max Q Clear Time (g_c+I1), s	8.2	12.7		15.7	7.0	23.4		7.6				
Green Ext Time (p_c), s	0.2	1.3		0.7	0.0	5.7		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		37.9	
HCM 6th LOS		D	

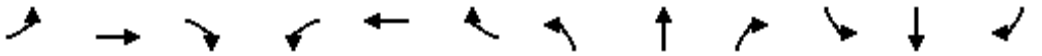
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	958	77	741	252	102	168	209
v/c Ratio	0.81	0.45	0.45	0.79	0.25	0.19	0.27
Control Delay	35.7	60.1	5.6	57.8	34.0	15.9	9.6
Queue Delay	3.7	0.0	0.0	61.4	0.0	0.0	0.0
Total Delay	39.4	60.1	5.6	119.2	34.0	15.9	9.6
Queue Length 50th (ft)	347	36	23	162	55	61	45
Queue Length 95th (ft)	#498	71	44	238	101	91	81
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1181	207	1661	407	446	1016	891
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	147	0	0	180	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.37	0.45	1.11	0.23	0.17	0.23

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	894	26	74	711	0	0	0	242	98	161	201
Future Volume (vph)	0	894	26	74	711	0	0	0	242	98	161	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3588		1805	3610				1644	1805	1900	1592
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3588		1805	3610				1644	1805	1900	1592
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)	0	931	27	77	741	0	0	0	252	102	168	209
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	958	0	77	741	0	0	0	252	102	168	164
Confl. Peds. (#/hr)			16									2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		34.5		10.0	48.3				20.4	23.7	48.3	48.3
Effective Green, g (s)		34.5		10.0	48.3				20.4	23.7	48.3	48.3
Actuated g/C Ratio		0.33		0.10	0.46				0.19	0.23	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.2	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		1178		171	1660				319	407	874	732
v/s Ratio Prot		c0.27		0.04	c0.21				c0.15	c0.06	0.09	
v/s Ratio Perm												0.10
v/c Ratio		0.81		0.45	0.45				0.79	0.25	0.19	0.22
Uniform Delay, d1		32.3		44.9	19.3				40.3	33.4	16.8	17.1
Progression Factor		0.82		1.17	0.23				1.00	1.00	1.00	1.00
Incremental Delay, d2		5.8		0.7	0.8				11.8	0.2	0.1	0.1
Delay (s)		32.1		53.2	5.3				52.1	33.6	16.9	17.2
Level of Service		C		D	A				D	C	B	B
Approach Delay (s)		32.1			9.8			52.1			20.6	
Approach LOS		C			A			D			C	

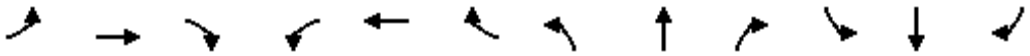
Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	324	388	399	150	262	263	127
v/c Ratio	0.40	0.15	0.24	0.18	0.68	0.68	0.28
Control Delay	3.8	1.2	19.8	4.6	44.8	44.8	6.5
Queue Delay	0.6	0.2	0.0	0.0	0.4	0.4	0.0
Total Delay	4.5	1.5	19.8	4.6	45.2	45.2	6.5
Queue Length 50th (ft)	12	7	84	0	170	171	0
Queue Length 95th (ft)	36	12	147	43	228	228	40
Internal Link Dist (ft)		187	384			402	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	880	2509	1692	836	568	570	609
Starvation Cap Reductn	271	1440	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	75	75	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.36	0.24	0.18	0.53	0.53	0.21

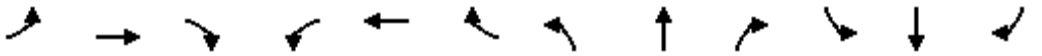
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	372	0	0	383	144	503	1	122	0	0	0
Future Volume (vph)	311	372	0	0	383	144	503	1	122	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1805	3610			3610	1615	1715	1719	1584			
Flt Permitted	0.49	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	924	3610			3610	1615	1715	1719	1584			
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)	324	388	0	0	399	150	524	1	127	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	80	0	0	98	0	0	0
Lane Group Flow (vph)	324	388	0	0	399	70	262	263	29	0	0	0
Confl. Peds. (#/hr)									6			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	73.0	73.0			49.2	49.2	23.8	23.8	23.8			
Effective Green, g (s)	73.0	73.0			49.2	49.2	23.8	23.8	23.8			
Actuated g/C Ratio	0.70	0.70			0.47	0.47	0.23	0.23	0.23			
Clearance Time (s)	4.1	4.0			4.2	4.2	4.2	4.2	4.2			
Vehicle Extension (s)	2.0	2.5			2.5	2.5	2.5	2.5	2.5			
Lane Grp Cap (vph)	806	2509			1691	756	388	389	359			
v/s Ratio Prot	c0.07	0.11			0.11		0.15	c0.15				
v/s Ratio Perm	c0.20					0.04			0.02			
v/c Ratio	0.40	0.15			0.24	0.09	0.68	0.68	0.08			
Uniform Delay, d1	8.8	5.5			16.7	15.5	37.1	37.1	32.0			
Progression Factor	0.26	0.17			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.1			0.3	0.2	4.2	4.2	0.1			
Delay (s)	2.4	1.1			17.0	15.7	41.3	41.3	32.0			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		1.7			16.7			39.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	372	0	0	383	144	503	1	122	0	0	0
Future Volume (veh/h)	311	372	0	0	383	144	503	1	122	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		0.99			
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	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	324	388	0	0	399	150	525	0	127			
Peak Hour Factor	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	0	0			
Cap, veh/h	944	2673	0	0	1162	518	654	0	288			
Arrive On Green	0.76	1.00	0.00	0.00	0.32	0.32	0.18	0.00	0.18			
Sat Flow, veh/h	1810	3705	0	0	3705	1610	3619	0	1594			
Grp Volume(v), veh/h	324	388	0	0	399	150	525	0	127			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1610	1810	0	1594			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.8	7.3	14.6	0.0	7.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.8	7.3	14.6	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	944	2673	0	0	1162	518	654	0	288			
V/C Ratio(X)	0.34	0.15	0.00	0.00	0.34	0.29	0.80	0.00	0.44			
Avail Cap(c_a), veh/h	944	2673	0	0	1162	518	1199	0	528			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.9	0.0	0.0	0.0	27.1	26.6	41.2	0.0	38.3			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.8	1.4	1.8	0.0	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			
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.0	3.9	3.0	6.6	0.0	6.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	0.1	0.0	0.0	27.9	28.0	43.0	0.0	39.1			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		712			549			652				
Approach Delay, s/veh		1.8			28.0			42.2				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		81.8		23.2	43.8	38.0			
Change Period (Y+Rc), s		* 4.1		* 4.2	* 4.1	4.2			
Max Green Setting (Gmax), s		* 62		* 35	* 24	33.8			
Max Q Clear Time (g_c+I1), s		2.0		16.6	2.0	10.8			
Green Ext Time (p_c), s		6.0		1.7	0.4	2.4			

Intersection Summary									
HCM 6th Ctrl Delay			23.1						
HCM 6th LOS			C						

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	141	357	111	142	356
Future Vol, veh/h	73	141	357	111	142	356
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	78	152	384	119	153	383
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	13.4	23.3	16.8
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	100%	0%
Vol Thru, %	0%	0%	34%	0%	100%
Vol Right, %	0%	100%	66%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	356	214	357	111
LT Vol	142	0	0	357	0
Through Vol	0	0	73	0	111
RT Vol	0	356	141	0	0
Lane Flow Rate	153	383	230	384	119
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.303	0.63	0.398	0.74	0.213
Departure Headway (Hd)	7.142	5.923	6.219	6.943	6.434
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	502	609	575	518	556
Service Time	4.907	3.687	4.285	4.705	4.197
HCM Lane V/C Ratio	0.305	0.629	0.4	0.741	0.214
HCM Control Delay	13	18.3	13.4	27.1	10.9
HCM Lane LOS	B	C	B	D	B
HCM 95th-tile Q	1.3	4.4	1.9	6.2	0.8

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1286	107	818
v/c Ratio	0.62	0.63	0.31
Control Delay	9.9	89.6	4.4
Queue Delay	0.0	0.0	0.5
Total Delay	9.9	89.6	4.9
Queue Length 50th (ft)	77	77	186
Queue Length 95th (ft)	179	131	199
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2125	207	2699
Starvation Cap Reductn	0	0	1363
Spillback Cap Reductn	0	0	571
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.52	0.61

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	524	103	785	0	0
Future Volume (vph)	710	524	103	785	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.97		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.94		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3282		1805	3610		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3282		1805	3610		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	740	546	107	818	0	0
RTOR Reduction (vph)	108	0	0	0	0	0
Lane Group Flow (vph)	1178	0	107	818	0	0
Confl. Peds. (#/hr)		16				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Prot	NA		
Protected Phases	2 8		1	6 2 8		
Permitted Phases						
Actuated Green, G (s)	62.2		10.0	76.2		
Effective Green, g (s)	62.2		10.0	72.2		
Actuated g/C Ratio	0.59		0.10	0.69		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	1944		171	2482		
v/s Ratio Prot	c0.36		c0.06	0.23		
v/s Ratio Perm						
v/c Ratio	0.61		0.63	0.33		
Uniform Delay, d1	13.6		45.7	6.6		
Progression Factor	0.77		1.62	0.72		
Incremental Delay, d2	0.3		5.0	0.1		
Delay (s)	10.7		79.2	4.8		
Level of Service	B		E	A		
Approach Delay (s)	10.7			13.4	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Cumulative

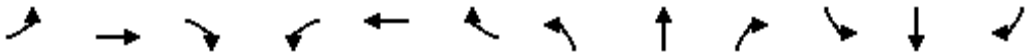
Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	180	210	70	140	160
Future Vol, veh/h	80	180	210	70	140	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	87	196	228	76	152	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	744	266	0	0	304	0
Stage 1	266	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	373	758	-	-	1223	-
Stage 1	765	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	327	758	-	-	1223	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	535	-	-	-	-	-

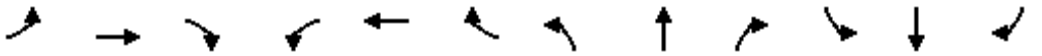
Approach	WB	NB	SB
HCM Control Delay, s	14	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	327	758	1223	-
HCM Lane V/C Ratio	-	-	0.266	0.258	0.124	-
HCM Control Delay (s)	-	-	20	11.4	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.1	1	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	478	54	43	359	11	109	109	141	33	65	22
v/c Ratio	0.14	0.67	0.08	0.28	0.47	0.01	0.47	0.26	0.31	0.21	0.24	0.06
Control Delay	42.2	25.3	0.2	44.5	19.3	0.0	42.1	31.1	8.7	42.4	36.4	0.2
Queue Delay	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 Delay	42.2	25.3	0.2	44.5	19.3	0.0	42.1	31.1	8.7	42.4	36.4	0.2
Queue Length 50th (ft)	10	198	0	20	102	0	50	47	1	15	29	0
Queue Length 95th (ft)	38	335	0	62	238	0	118	108	51	50	76	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	156	1127	1008	153	1125	1027	342	1047	948	183	879	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.42	0.05	0.28	0.32	0.01	0.32	0.10	0.15	0.18	0.07	0.03

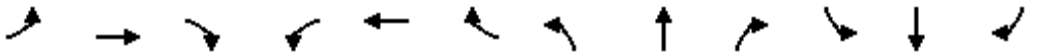
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	440	50	40	330	10	100	100	130	30	60	20
Future Volume (vph)	20	440	50	40	330	10	100	100	130	30	60	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	22	478	54	43	359	11	109	109	141	33	65	22
RTOR Reduction (vph)	0	0	33	0	0	7	0	0	109	0	0	19
Lane Group Flow (vph)	22	478	21	43	359	4	109	109	32	33	65	3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.8	29.4	29.4	2.8	30.4	30.4	7.6	16.4	16.4	3.2	12.0	12.0
Effective Green, g (s)	1.8	29.4	29.4	2.8	30.4	30.4	7.6	16.4	16.4	3.2	12.0	12.0
Actuated g/C Ratio	0.02	0.39	0.39	0.04	0.40	0.40	0.10	0.21	0.21	0.04	0.16	0.16
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	40	697	580	63	721	612	171	389	330	72	284	241
v/s Ratio Prot	0.01	c0.26		c0.03	0.20		c0.06	c0.06		0.02	0.04	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.55	0.69	0.04	0.68	0.50	0.01	0.64	0.28	0.10	0.46	0.23	0.01
Uniform Delay, d1	36.8	19.6	14.6	36.3	17.2	13.8	33.0	25.0	24.0	35.7	28.1	27.2
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	16.8	3.6	0.1	27.2	1.1	0.0	5.6	0.7	0.2	1.7	0.7	0.0
Delay (s)	53.6	23.2	14.7	63.6	18.4	13.9	38.6	25.7	24.2	37.4	28.8	27.2
Level of Service	D	C	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		23.6			22.9			29.1			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	24.5
Intersection Capacity Utilization	55.5%	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 (veh/h)	20	440	50	40	330	10	100	100	130	30	60	20
Future Volume (veh/h)	20	440	50	40	330	10	100	100	130	30	60	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	22	478	54	43	359	11	109	109	141	33	65	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	44	650	540	74	681	578	140	293	249	61	211	179
Arrive On Green	0.03	0.36	0.36	0.04	0.37	0.37	0.08	0.16	0.16	0.04	0.12	0.12
Sat Flow, veh/h	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	22	478	54	43	359	11	109	109	141	33	65	22
Grp Sat Flow(s),veh/h/ln	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.8	13.8	1.4	1.5	9.3	0.3	3.7	3.2	5.1	1.1	2.0	0.8
Cycle Q Clear(g_c), s	0.8	13.8	1.4	1.5	9.3	0.3	3.7	3.2	5.1	1.1	2.0	0.8
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	44	650	540	74	681	578	140	293	249	61	211	179
V/C Ratio(X)	0.50	0.73	0.10	0.58	0.53	0.02	0.78	0.37	0.57	0.54	0.31	0.12
Avail Cap(c_a), veh/h	167	1242	1030	164	1239	1050	365	1115	945	196	937	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	17.0	13.0	28.4	14.8	12.0	27.3	22.6	23.4	28.7	24.5	24.0
Incr Delay (d2), s/veh	9.9	3.4	0.2	8.4	1.4	0.0	3.6	1.3	3.5	2.7	1.4	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	0.4	5.0	0.4	0.7	3.2	0.1	1.5	1.3	1.8	0.5	0.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	20.4	13.2	36.8	16.1	12.0	30.8	24.0	26.9	31.4	25.9	24.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		554			413			359			120	
Approach Delay, s/veh		20.4			18.2			27.2			27.2	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	28.6	10.1	13.8	6.8	29.7	7.4	16.5
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 41	12.7	* 31	5.8	* 41	6.8	* 37
Max Q Clear Time (g_c+I1), s	3.5	15.8	5.7	4.0	2.8	11.3	3.1	7.1
Green Ext Time (p_c), s	0.0	5.7	0.1	0.5	0.0	4.0	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	560	20	60	350	20	10	10	180	20	20	20
Future Vol, veh/h	20	560	20	60	350	20	10	10	180	20	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	22	609	22	65	380	22	11	11	196	22	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	402	0	0	631	0	0	1196	1185	609	1278	1185	380
Stage 1	-	-	-	-	-	-	653	653	-	510	510	-
Stage 2	-	-	-	-	-	-	543	532	-	768	675	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1141	-	-	937	-	-	161	186	490	141	186	660
Stage 1	-	-	-	-	-	-	451	459	-	541	533	-
Stage 2	-	-	-	-	-	-	519	521	-	390	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	937	-	-	131	170	490	75	170	660
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	170	-	75	170	-
Stage 1	-	-	-	-	-	-	442	450	-	531	496	-
Stage 2	-	-	-	-	-	-	447	485	-	224	440	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	18.5	37.1
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	131	170	490	1141	-	-	937	-	-	75	170	660
HCM Lane V/C Ratio	0.083	0.064	0.399	0.019	-	-	0.07	-	-	0.29	0.128	0.033
HCM Control Delay (s)	35	27.6	17.1	8.2	-	-	9.1	-	-	71.5	29.3	10.6
HCM Lane LOS	E	D	C	A	-	-	A	-	-	F	D	B
HCM 95th %tile Q(veh)	0.3	0.2	1.9	0.1	-	-	0.2	-	-	1.1	0.4	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	0	0	360	0	0
Future Vol, veh/h	690	0	0	360	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	750	0	0	391	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	750	0	1141	750
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	859	-	222	411
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	859	-	222	411
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	683	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	859	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	0	0	360	0	0
Future Vol, veh/h	690	0	0	360	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	750	0	0	391	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	750	0	1141	750
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	859	-	222	411
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	859	-	222	411
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	683	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	859	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	480	210	60	170	0	0	0	0	60	0	190
Future Vol, veh/h	0	480	210	60	170	0	0	0	0	60	0	190
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	522	228	65	185	0	0	0	0	65	0	207

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	750	0	0			951	1065	185
Stage 1	-	-	-	-	-	-			315	315	-
Stage 2	-	-	-	-	-	-			636	750	-
Critical Hdwy	-	-	-	4.15	-	-			6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-			5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-			3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	846	-	0			285	220	850
Stage 1	0	-	-	-	-	0			733	650	-
Stage 2	0	-	-	-	-	0			522	414	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	846	-	-			263	0	850
Mov Cap-2 Maneuver	-	-	-	-	-	-			263	0	-
Stage 1	-	-	-	-	-	-			733	0	-
Stage 2	-	-	-	-	-	-			482	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	846	-	263	850
HCM Lane V/C Ratio	-	-	0.077	-	0.248	0.243
HCM Control Delay (s)	-	-	9.6	-	23.1	10.6
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	-	1	1

Intersection	
Int Delay, s/veh	14.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	320	230	0	0	110	30	120	10	80	0	0	0
Future Vol, veh/h	320	230	0	0	110	30	120	10	80	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	348	250	0	0	120	33	130	11	87	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	153	0	-	-	-	0	1083	1099	250
Stage 1	-	-	-	-	-	-	946	946	-
Stage 2	-	-	-	-	-	-	137	153	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1421	-	0	0	-	-	239	212	786
Stage 1	-	-	0	0	-	-	376	339	-
Stage 2	-	-	0	0	-	-	887	769	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1421	-	-	-	-	-	180	0	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	0	-
Stage 1	-	-	-	-	-	-	284	0	-
Stage 2	-	-	-	-	-	-	887	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.9	0	49.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	180	786	1421	-	-	-
HCM Lane V/C Ratio	0.785	0.111	0.245	-	-	-
HCM Control Delay (s)	73.6	10.1	8.4	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	5.3	0.4	1	-	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	270	90	320	230	30
Future Vol, veh/h	40	270	90	320	230	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	43	293	98	348	250	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	811	267	283	0	-	0
Stage 1	267	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	348	769	1274	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	321	769	1274	-	-	-
Mov Cap-2 Maneuver	321	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	580	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	1.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1274	-	321	769	-	-
HCM Lane V/C Ratio	0.077	-	0.135	0.382	-	-
HCM Control Delay (s)	8.1	-	18	12.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	1.8	-	-

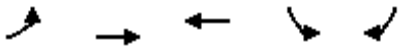
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	320	0	0	230
Future Vol, veh/h	0	0	320	0	0	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	348	0	0	250

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	598	348	0	0	348	0
Stage 1	348	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	465	695	-	-	1211	-
Stage 1	715	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	465	695	-	-	1211	-
Mov Cap-2 Maneuver	465	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	792	-	-	-	-	-

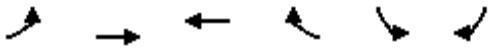
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	1211	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	196	446	457	174	109
v/c Ratio	0.58	0.22	0.38	0.59	0.31
Control Delay	25.3	10.1	17.6	33.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	10.1	17.6	33.8	8.9
Queue Length 50th (ft)	60	27	47	52	0
Queue Length 95th (ft)	63	141	167	158	43
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	354	2165	1341	560	575
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.21	0.34	0.31	0.19

Intersection Summary

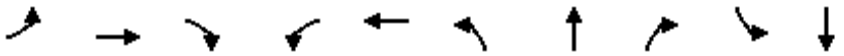


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	410	320	100	160	100
Future Volume (vph)	180	410	320	100	160	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3413		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3413		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	446	348	109	174	109
RTOR Reduction (vph)	0	0	28	0	0	92
Lane Group Flow (vph)	196	446	429	0	174	17
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	11.9	34.3	21.1		10.2	10.2
Effective Green, g (s)	11.9	34.3	21.1		10.2	10.2
Actuated g/C Ratio	0.18	0.53	0.33		0.16	0.16
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	327	1884	1118		280	250
v/s Ratio Prot	c0.11	0.13	c0.13			
v/s Ratio Perm					c0.10	0.01
v/c Ratio	0.60	0.24	0.38		0.62	0.07
Uniform Delay, d1	24.1	8.0	16.7		25.3	23.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.0	0.1		3.1	0.0
Delay (s)	26.0	8.1	16.7		28.4	23.1
Level of Service	C	A	B		C	C
Approach Delay (s)		13.6	16.7		26.3	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	21.2
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

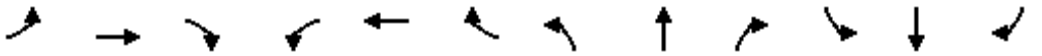


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	641	76	196	729	65	43	217	185	184
v/c Ratio	0.17	0.38	0.09	0.76	0.41	0.42	0.27	0.53	0.76	0.74
Control Delay	39.5	22.2	0.3	58.0	9.5	54.0	48.6	15.9	64.0	59.5
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	39.5	23.0	0.3	58.0	9.5	54.0	48.6	16.0	64.0	59.5
Queue Length 50th (ft)	24	148	0	139	65	45	29	52	132	125
Queue Length 95th (ft)	59	267	2	202	229	82	60	65	205	197
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	299	1709	816	354	1850	289	304	494	320	325
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	712	0	0	0	0	0	18	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.64	0.09	0.55	0.39	0.22	0.14	0.46	0.58	0.57

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	590	70	180	480	190	60	40	200	270	40	30
Future Volume (vph)	40	590	70	180	480	190	60	40	200	270	40	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	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	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1542	1770	3388		1770	1863	1576	1681	1668	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1542	1770	3388		1770	1863	1576	1681	1668	
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)	43	641	76	196	522	207	65	43	217	293	43	33
RTOR Reduction (vph)	0	0	41	0	31	0	0	0	69	0	8	0
Lane Group Flow (vph)	43	641	35	196	698	0	65	43	148	185	176	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	13.8	50.3	50.3	18.0	54.5		8.7	8.7	26.7	16.0	16.0	
Effective Green, g (s)	13.8	50.3	50.3	18.0	54.5		8.7	8.7	26.7	16.0	16.0	
Actuated g/C Ratio	0.13	0.46	0.46	0.16	0.50		0.08	0.08	0.24	0.15	0.15	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	222	1618	705	289	1678		139	147	382	244	242	
v/s Ratio Prot	0.02	0.18		c0.11	c0.21		c0.04	0.02	0.06	c0.11	0.11	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.19	0.40	0.05	0.68	0.42		0.47	0.29	0.39	0.76	0.73	
Uniform Delay, d1	43.1	19.8	16.6	43.3	17.6		48.4	47.7	34.8	45.1	44.9	
Progression Factor	1.00	1.00	1.00	0.91	0.44		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.7	0.1	4.5	0.7		0.9	0.4	0.2	11.3	8.9	
Delay (s)	43.3	20.5	16.7	43.8	8.5		49.3	48.2	35.1	56.5	53.9	
Level of Service	D	C	B	D	A		D	D	D	E	D	
Approach Delay (s)		21.4			16.0			39.6			55.2	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	53.3%	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)	40	590	70	180	480	190	60	40	200	270	40	30
Future Volume (veh/h)	40	590	70	180	480	190	60	40	200	270	40	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	641	76	196	522	207	65	43	217	184	195	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	718	1034	460	620	587	232	107	112	646	261	228	39
Arrive On Green	0.40	0.29	0.29	0.70	0.47	0.47	0.06	0.06	0.06	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1580	1781	2488	982	1781	1870	1577	1781	1557	264
Grp Volume(v), veh/h	43	641	76	196	372	357	65	43	217	184	0	228
Grp Sat Flow(s),veh/h/ln	1781	1777	1580	1781	1777	1694	1781	1870	1577	1781	0	1821
Q Serve(g_s), s	1.6	17.2	3.9	4.7	20.9	21.2	3.9	2.4	0.0	10.8	0.0	13.4
Cycle Q Clear(g_c), s	1.6	17.2	3.9	4.7	20.9	21.2	3.9	2.4	0.0	10.8	0.0	13.4
Prop In Lane	1.00		1.00	1.00		0.58	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	718	1034	460	620	419	400	107	112	646	261	0	267
V/C Ratio(X)	0.06	0.62	0.17	0.32	0.89	0.89	0.61	0.38	0.34	0.71	0.00	0.86
Avail Cap(c_a), veh/h	718	1034	460	620	678	647	291	306	810	340	0	348
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	33.7	29.1	11.6	27.7	27.8	50.5	49.8	22.3	44.7	0.0	45.8
Incr Delay (d2), s/veh	0.0	2.8	0.8	0.1	21.4	22.9	2.1	0.8	0.1	2.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.7	1.6	1.6	8.8	8.7	1.8	1.2	3.8	4.9	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	36.5	29.8	11.7	49.1	50.7	52.5	50.6	22.4	47.2	0.0	58.1
LnGrp LOS	C	D	C	B	D	D	D	D	C	D	A	E
Approach Vol, veh/h		760			925			325			412	
Approach Delay, s/veh		34.9			41.8			32.2			53.3	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	43.3	36.0		20.1	49.3	30.0		10.6				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	32.0		21.0	12.0	42.0		18.0				
Max Q Clear Time (g_c+I1), s	6.7	19.2		15.4	3.6	23.2		5.9				
Green Ext Time (p_c), s	0.1	2.5		0.6	0.0	2.8		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		40.3	
HCM 6th LOS		D	

Notes

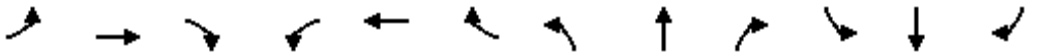
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBR
Lane Group Flow (vph)	1370	217	772	598	261	98	304
v/c Ratio	1.13	1.23	0.45	1.32	1.16	0.12	0.40
Control Delay	98.5	182.1	6.9	191.4	153.2	19.1	13.4
Queue Delay	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.0	182.1	6.9	191.4	153.2	19.1	13.4
Queue Length 50th (ft)	~600	~179	85	~546	~219	40	77
Queue Length 95th (ft)	#705	#335	93	#763	#382	74	147
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1217	177	1705	454	225	809	753
Starvation Cap Reductn	16	0	0	0	0	0	0
Spillback Cap Reductn	132	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	1.23	0.45	1.32	1.16	0.12	0.40

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1230	30	200	710	0	0	0	550	240	90	280
Future Volume (vph)	0	1230	30	200	710	0	0	0	550	240	90	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3524		1770	3539				1611	1770	1863	1562
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3524		1770	3539				1611	1770	1863	1562
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)	0	1337	33	217	772	0	0	0	598	261	98	304
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	1370	0	217	772	0	0	0	598	261	98	229
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Effective Green, g (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Actuated g/C Ratio		0.35		0.10	0.48				0.28	0.13	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1217		177	1705				454	225	809	678
v/s Ratio Prot		c0.39		c0.12	0.22				c0.37	c0.15	0.05	
v/s Ratio Perm												0.15
v/c Ratio		1.13		1.23	0.45				1.32	1.16	0.12	0.34
Uniform Delay, d1		36.0		49.5	18.9				39.5	48.0	18.6	20.6
Progression Factor		0.89		0.97	0.32				1.00	1.00	1.00	1.00
Incremental Delay, d2		67.1		140.6	0.8				157.6	110.0	0.3	1.4
Delay (s)		99.1		188.7	6.9				197.1	158.0	18.9	22.0
Level of Service		F		F	A				F	F	B	C
Approach Delay (s)		99.1			46.8			197.1			75.1	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	96.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

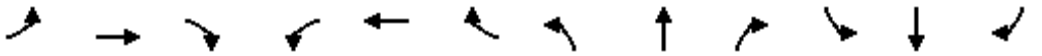
c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	707	1098	935	370	158	157	228
v/c Ratio	0.94	0.40	0.68	0.45	0.68	0.67	0.69
Control Delay	34.9	3.6	32.2	4.7	58.7	58.1	29.8
Queue Delay	1.8	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	4.6	32.2	4.7	58.7	58.1	29.8
Queue Length 50th (ft)	353	80	285	0	113	112	64
Queue Length 95th (ft)	#636	151	397	66	174	174	140
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	755	2750	1366	816	397	399	473
Starvation Cap Reductn	13	1307	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.76	0.68	0.45	0.40	0.39	0.48

Intersection Summary

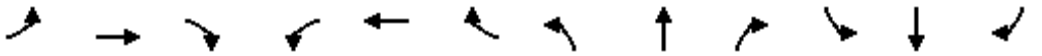
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	1010	0	0	860	340	280	10	210	0	0	0
Future Volume (vph)	650	1010	0	0	860	340	280	10	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3539	1527	1681	1691	1583			
Flt Permitted	0.17	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	308	3539			3539	1527	1681	1691	1583			
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)	707	1098	0	0	935	370	304	11	228	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	227	0	0	112	0	0	0
Lane Group Flow (vph)	707	1098	0	0	935	143	158	157	116	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	85.5	85.5			42.5	42.5	15.3	15.3	15.3			
Effective Green, g (s)	85.5	85.5			42.5	42.5	15.3	15.3	15.3			
Actuated g/C Ratio	0.78	0.78			0.39	0.39	0.14	0.14	0.14			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	756	2750			1367	589	233	235	220			
v/s Ratio Prot	c0.33	0.31			0.26		c0.09	0.09				
v/s Ratio Perm	c0.40					0.09			0.07			
v/c Ratio	0.94	0.40			0.68	0.24	0.68	0.67	0.53			
Uniform Delay, d1	22.8	4.0			28.1	22.9	45.0	44.9	44.0			
Progression Factor	0.69	0.75			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	13.1	0.3			2.8	1.0	6.9	6.3	1.7			
Delay (s)	28.8	3.2			30.9	23.8	51.9	51.3	45.7			
Level of Service	C	A			C	C	D	D	D			
Approach Delay (s)		13.2			28.9			49.1			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	78.9%	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)	650	1010	0	0	860	340	280	10	210	0	0	0
Future Volume (veh/h)	650	1010	0	0	860	340	280	10	210	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	707	1098	0	0	935	370	312	0	228			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	825	2658	0	0	1027	445	597	0	266			
Arrive On Green	0.56	0.99	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1781	3647	0	0	3647	1539	3563	0	1585			
Grp Volume(v), veh/h	707	1098	0	0	935	370	312	0	228			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1539	1781	0	1585			
Q Serve(g_s), s	31.0	0.3	0.0	0.0	27.9	24.8	8.8	0.0	15.4			
Cycle Q Clear(g_c), s	31.0	0.3	0.0	0.0	27.9	24.8	8.8	0.0	15.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	825	2658	0	0	1027	445	597	0	266			
V/C Ratio(X)	0.86	0.41	0.00	0.00	0.91	0.83	0.52	0.00	0.86			
Avail Cap(c_a), veh/h	825	2658	0	0	1027	445	842	0	375			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.55	0.55	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.1	0.1	0.0	0.0	37.7	36.6	41.8	0.0	44.5			
Incr Delay (d2), s/veh	4.9	0.3	0.0	0.0	13.3	16.4	0.5	0.0	11.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.5	0.2	0.0	0.0	13.7	11.1	3.9	0.0	13.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.3	0.0	0.0	51.1	53.0	42.3	0.0	56.4			
LnGrp LOS	C	A	A	A	D	D	D	A	E			
Approach Vol, veh/h		1805			1305			540				
Approach Delay, s/veh		9.6			51.6			48.2				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		86.4		23.6	50.6	35.8			
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0			
Max Green Setting (Gmax), s		* 75		* 26	38.9	31.8			
Max Q Clear Time (g_c+I1), s		2.3		17.4	33.0	29.9			
Green Ext Time (p_c), s		10.5		1.1	0.8	1.3			

Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2185	261	978
v/c Ratio	0.77	1.47	0.28
Control Delay	2.4	269.9	0.2
Queue Delay	0.3	0.0	0.1
Total Delay	2.7	269.9	0.3
Queue Length 50th (ft)	58	~244	0
Queue Length 95th (ft)	m0	#410	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2836	177	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	172	0	1023
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	1.47	0.39

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1630	380	240	900	0	0
Future Volume (vph)	1630	380	240	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3421		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3421		1770	3539		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1772	413	261	978	0	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	2179	0	261	978	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	91.0		11.0	110.0		
Effective Green, g (s)	91.0		11.0	104.8		
Actuated g/C Ratio	0.83		0.10	0.95		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2830		177	3371		
v/s Ratio Prot	c0.64		c0.15	0.28		
v/s Ratio Perm						
v/c Ratio	0.77		1.47	0.29		
Uniform Delay, d1	4.5		49.5	0.2		
Progression Factor	0.47		0.90	1.00		
Incremental Delay, d2	0.1		236.2	0.2		
Delay (s)	2.3		280.5	0.3		
Level of Service	A		F	A		
Approach Delay (s)	2.3			59.4	0.0	
Approach LOS	A			E	A	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

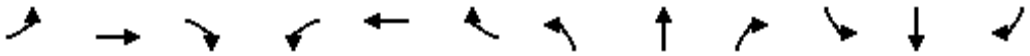
Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	170	230	80	220	220
Future Vol, veh/h	90	170	230	80	220	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	95	179	242	84	232	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	980	284	0	0	326	0
Stage 1	284	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	276	753	-	-	1228	-
Stage 1	762	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	224	753	-	-	1228	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	400	-	-	-	-	-

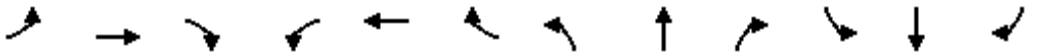
Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	4.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	224	753	1228	-
HCM Lane V/C Ratio	-	-	0.423	0.238	0.189	-
HCM Control Delay (s)	-	-	32.4	11.3	8.6	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	2	0.9	0.7	-



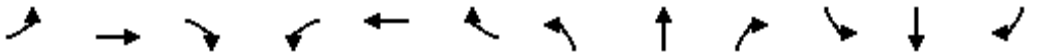
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	489	120	87	446	33	109	65	65	22	87	22
v/c Ratio	0.21	0.53	0.14	0.41	0.43	0.03	0.50	0.15	0.14	0.16	0.32	0.06
Control Delay	46.1	25.1	1.1	46.5	19.9	0.1	48.0	30.8	0.6	46.1	40.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	25.1	1.1	46.5	19.9	0.1	48.0	30.8	0.6	46.1	40.5	0.3
Queue Length 50th (ft)	17	229	0	45	189	0	57	25	0	12	44	0
Queue Length 95th (ft)	53	366	9	107	307	0	127	75	0	40	100	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	164	1091	1002	245	1145	1042	295	969	887	159	825	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.12	0.36	0.39	0.03	0.37	0.07	0.07	0.14	0.11	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	450	110	80	410	30	100	60	60	20	80	20
Future Volume (vph)	30	450	110	80	410	30	100	60	60	20	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	33	489	120	87	446	33	109	65	65	22	87	22
RTOR Reduction (vph)	0	0	68	0	0	17	0	0	53	0	0	19
Lane Group Flow (vph)	33	489	52	87	446	16	109	65	12	22	87	3
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.3	37.7	37.7	6.8	41.2	41.2	7.4	16.0	16.0	2.0	10.6	10.6
Effective Green, g (s)	3.3	37.7	37.7	6.8	41.2	41.2	7.4	16.0	16.0	2.0	10.6	10.6
Actuated g/C Ratio	0.04	0.43	0.43	0.08	0.47	0.47	0.09	0.18	0.18	0.02	0.12	0.12
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	67	807	685	138	882	749	150	342	291	40	226	188
v/s Ratio Prot	0.02	c0.26		c0.05	c0.24		c0.06	0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.49	0.61	0.08	0.63	0.51	0.02	0.73	0.19	0.04	0.55	0.38	0.01
Uniform Delay, d1	41.0	18.9	14.4	38.9	15.9	12.2	38.8	30.0	29.2	42.1	35.2	33.6
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	6.6	1.9	0.1	9.4	1.0	0.0	13.8	0.5	0.1	9.0	1.9	0.1
Delay (s)	47.6	20.8	14.5	48.3	16.8	12.2	52.6	30.5	29.3	51.0	37.1	33.7
Level of Service	D	C	B	D	B	B	D	C	C	D	D	C
Approach Delay (s)		21.0			21.4			40.2			38.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	56.3%	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)	30	450	110	80	410	30	100	60	60	20	80	20
Future Volume (veh/h)	30	450	110	80	410	30	100	60	60	20	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	489	120	87	446	33	109	65	65	22	87	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	676	573	113	729	618	140	305	258	45	205	169
Arrive On Green	0.03	0.36	0.36	0.06	0.39	0.39	0.08	0.16	0.16	0.03	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Grp Volume(v), veh/h	33	489	120	87	446	33	109	65	65	22	87	22
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Q Serve(g_s), s	1.2	14.3	3.3	3.0	12.1	0.8	3.8	1.9	2.3	0.8	2.7	0.8
Cycle Q Clear(g_c), s	1.2	14.3	3.3	3.0	12.1	0.8	3.8	1.9	2.3	0.8	2.7	0.8
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	62	676	573	113	729	618	140	305	258	45	205	169
V/C Ratio(X)	0.53	0.72	0.21	0.77	0.61	0.05	0.78	0.21	0.25	0.49	0.42	0.13
Avail Cap(c_a), veh/h	183	1274	1079	273	1368	1160	329	1076	912	177	916	758
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	30.0	17.5	14.0	29.2	15.5	12.0	28.6	23.0	23.1	30.4	26.3	25.5
Incr Delay (d2), s/veh	8.3	3.1	0.4	12.5	1.8	0.1	3.4	0.6	0.9	3.0	2.4	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	0.6	5.4	1.0	1.5	4.3	0.2	1.6	0.8	0.8	0.3	1.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.6	14.4	41.7	17.3	12.1	32.0	23.6	24.0	33.4	28.7	26.0
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		642			566			239			131	
Approach Delay, s/veh		20.4			20.7			27.5			29.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	30.0	10.3	13.7	7.5	31.8	6.9	17.1
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 43	11.7	* 31	6.5	* 46	6.3	* 36
Max Q Clear Time (g_c+I1), s	5.0	16.3	5.8	4.7	3.2	14.1	2.8	4.3
Green Ext Time (p_c), s	0.1	6.5	0.1	0.7	0.0	5.5	0.0	0.9

Intersection Summary		
HCM 6th Ctrl Delay		22.3
HCM 6th LOS		C

Notes

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

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	490	20	90	490	30	10	10	40	20	20	20
Future Vol, veh/h	20	490	20	90	490	30	10	10	40	20	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	505	21	93	505	31	10	10	41	21	21	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	0	526	0	0	1275	1269	505	1274	1259	505
Stage 1	-	-	-	-	-	-	547	547	-	691	691	-
Stage 2	-	-	-	-	-	-	728	722	-	583	568	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1027	-	-	1036	-	-	143	168	565	143	170	565
Stage 1	-	-	-	-	-	-	519	516	-	433	444	-
Stage 2	-	-	-	-	-	-	413	430	-	496	505	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1027	-	-	1036	-	-	113	150	565	115	152	565
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	150	-	115	152	-
Stage 1	-	-	-	-	-	-	509	506	-	424	404	-
Stage 2	-	-	-	-	-	-	344	391	-	441	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	19.7	29
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	113	150	565	1027	-	-	1036	-	-	115	152	565
HCM Lane V/C Ratio	0.091	0.069	0.073	0.02	-	-	0.09	-	-	0.179	0.136	0.036
HCM Control Delay (s)	40	30.8	11.9	8.6	-	-	8.8	-	-	43	32.4	11.6
HCM Lane LOS	E	D	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	0.3	0.2	0.2	0.1	-	-	0.3	-	-	0.6	0.5	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	510	0	0	550	0	0
Future Vol, veh/h	510	0	0	550	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	554	0	0	598	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	554	0	1152	554
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	598	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1016	-	219	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1016	-	219	532
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	549	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1016	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	510	0	0	550	0	0
Future Vol, veh/h	510	0	0	550	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	125	280	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	554	0	0	598	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	554	0	1152	554
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	598	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1016	-	219	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1016	-	219	532
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	549	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1016	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	310	200	70	240	0	0	0	0	70	10	310
Future Vol, veh/h	0	310	200	70	240	0	0	0	0	70	10	310
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	320	206	72	247	0	0	0	0	72	10	320

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	526	0	0			814	917	247
Stage 1	-	-	-	-	-	-			391	391	-
Stage 2	-	-	-	-	-	-			423	526	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1041	-	0			347	272	792
Stage 1	0	-	-	-	-	0			683	607	-
Stage 2	0	-	-	-	-	0			661	529	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1041	-	-			323	0	792
Mov Cap-2 Maneuver	-	-	-	-	-	-			323	0	-
Stage 1	-	-	-	-	-	-			683	0	-
Stage 2	-	-	-	-	-	-			615	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1041	-	323	792
HCM Lane V/C Ratio	-	-	0.069	-	0.255	0.404
HCM Control Delay (s)	-	-	8.7	-	19.9	12.6
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	-	1	2

Intersection	
Int Delay, s/veh	13.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	230	150	0	0	120	20	180	10	60	0	0	0
Future Vol, veh/h	230	150	0	0	120	20	180	10	60	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	250	163	0	0	130	22	196	11	65	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	152	0	-	-	-	0	804	815	163
Stage 1	-	-	-	-	-	-	663	663	-
Stage 2	-	-	-	-	-	-	141	152	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1423	-	0	0	-	-	351	311	879
Stage 1	-	-	0	0	-	-	511	457	-
Stage 2	-	-	0	0	-	-	883	770	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1423	-	-	-	-	-	289	0	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	289	0	-
Stage 1	-	-	-	-	-	-	421	0	-
Stage 2	-	-	-	-	-	-	883	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.9	0	35.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	289	879	1423	-	-	-
HCM Lane V/C Ratio	0.715	0.074	0.176	-	-	-
HCM Control Delay (s)	43.4	9.4	8.1	-	-	-
HCM Lane LOS	E	A	A	-	-	-
HCM 95th %tile Q(veh)	5	0.2	0.6	-	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	170	100	230	260	60
Future Vol, veh/h	50	170	100	230	260	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	185	109	250	283	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	784	316	348	0	-	0
Stage 1	316	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	362	724	1211	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	329	724	1211	-	-	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1211	-	329	724	-	-
HCM Lane V/C Ratio	0.09	-	0.165	0.255	-	-
HCM Control Delay (s)	8.3	-	18.1	11.7	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.6	1	-	-

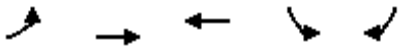
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	220	0	0	380
Future Vol, veh/h	0	0	220	0	0	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	239	0	0	413

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	652	239	0	0	239	0
Stage 1	239	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	433	800	-	-	1328	-
Stage 1	801	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	433	800	-	-	1328	-
Mov Cap-2 Maneuver	433	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	668	-	-	-	-	-

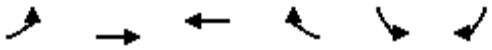
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	1328	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	147	432	705	200	158
v/c Ratio	0.47	0.21	0.56	0.62	0.38
Control Delay	24.7	10.1	19.7	35.5	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	10.1	19.7	35.5	9.5
Queue Length 50th (ft)	45	28	85	60	2
Queue Length 95th (ft)	69	141	279	203	60
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	337	2877	1939	671	694
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.15	0.36	0.30	0.23

Intersection Summary

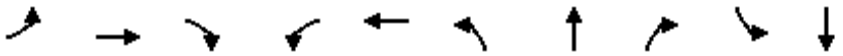


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	140	410	490	180	190	150
Future Volume (vph)	140	410	490	180	190	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3411		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3411		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	432	516	189	200	158
RTOR Reduction (vph)	0	0	32	0	0	123
Lane Group Flow (vph)	147	432	673	0	200	35
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	11.5	36.4	23.2		11.7	11.7
Effective Green, g (s)	11.5	36.4	23.2		11.7	11.7
Actuated g/C Ratio	0.17	0.54	0.34		0.17	0.17
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	304	1924	1170		309	276
v/s Ratio Prot	c0.08	0.12	c0.20			
v/s Ratio Perm					c0.11	0.02
v/c Ratio	0.48	0.22	0.58		0.65	0.13
Uniform Delay, d1	25.4	8.2	18.2		26.0	23.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.0	0.4		3.5	0.1
Delay (s)	25.8	8.2	18.6		29.5	23.7
Level of Service	C	A	B		C	C
Approach Delay (s)		12.7	18.6		26.9	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	21.2
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



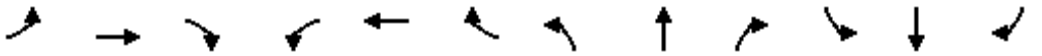
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	633	92	276	1030	143	82	143	277	274
v/c Ratio	0.41	0.48	0.14	0.85	0.72	0.70	0.38	0.28	0.84	0.82
Control Delay	54.3	33.4	2.8	67.2	25.7	69.3	53.4	9.2	68.6	63.9
Queue Delay	0.0	2.7	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	36.1	2.8	67.2	26.2	69.3	53.4	9.2	68.6	63.9
Queue Length 50th (ft)	73	200	0	211	363	108	60	24	217	206
Queue Length 95th (ft)	137	303	20	m299	473	172	107	40	311	300
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	251	1321	656	402	1432	268	282	572	396	400
Starvation Cap Reductn	0	0	0	0	120	0	0	0	0	0
Spillback Cap Reductn	0	548	0	0	0	0	0	10	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.82	0.14	0.69	0.79	0.53	0.29	0.25	0.70	0.69

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	620	90	270	800	210	140	80	140	400	80	60
Future Volume (vph)	100	620	90	270	800	210	140	80	140	400	80	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1560	1787	3446		1787	1881	1588	1698	1679	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1560	1787	3446		1787	1881	1588	1698	1679	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	633	92	276	816	214	143	82	143	408	82	61
RTOR Reduction (vph)	0	0	58	0	18	0	0	0	49	0	9	0
Lane Group Flow (vph)	102	633	34	276	1012	0	143	82	94	277	265	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	17.0	44.4	44.4	21.8	49.2		13.6	13.6	35.4	23.2	23.2	
Effective Green, g (s)	17.0	44.4	44.4	21.8	49.2		13.6	13.6	35.4	23.2	23.2	
Actuated g/C Ratio	0.14	0.37	0.37	0.18	0.41		0.11	0.11	0.29	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	253	1322	577	324	1412		202	213	468	328	324	
v/s Ratio Prot	0.06	0.18		c0.15	c0.29		c0.08	0.04	0.04	c0.16	0.16	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.40	0.48	0.06	0.85	0.72		0.71	0.38	0.20	0.84	0.82	
Uniform Delay, d1	46.9	28.9	24.3	47.5	29.6		51.3	49.3	31.7	46.7	46.4	
Progression Factor	1.00	1.00	1.00	1.02	0.78		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	1.2	0.2	14.9	2.5		8.9	0.4	0.1	17.1	14.0	
Delay (s)	47.3	30.2	24.5	63.2	25.6		60.2	49.7	31.8	63.7	60.4	
Level of Service	D	C	C	E	C		E	D	C	E	E	
Approach Delay (s)		31.7			33.5			46.8			62.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	72.1%	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)	100	620	90	270	800	210	140	80	140	400	80	60
Future Volume (veh/h)	100	620	90	270	800	210	140	80	140	400	80	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	102	633	92	276	816	214	143	82	143	276	267	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	445	895	390	553	870	228	181	190	652	358	296	68
Arrive On Green	0.25	0.25	0.25	0.62	0.62	0.62	0.10	0.10	0.10	0.20	0.20	0.20
Sat Flow, veh/h	1795	3582	1560	1795	2806	736	1795	1885	1583	1795	1482	339
Grp Volume(v), veh/h	102	633	92	276	521	509	143	82	143	276	0	328
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1751	1795	1885	1583	1795	0	1821
Q Serve(g_s), s	5.4	19.3	5.6	10.2	31.7	31.7	9.3	4.9	0.0	17.4	0.0	21.1
Cycle Q Clear(g_c), s	5.4	19.3	5.6	10.2	31.7	31.7	9.3	4.9	0.0	17.4	0.0	21.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	445	895	390	553	555	543	181	190	652	358	0	363
V/C Ratio(X)	0.23	0.71	0.24	0.50	0.94	0.94	0.79	0.43	0.22	0.77	0.00	0.90
Avail Cap(c_a), veh/h	445	895	390	553	672	657	269	283	730	419	0	425
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	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	41.0	35.9	17.9	21.8	21.8	52.7	50.7	23.0	45.4	0.0	46.9
Incr Delay (d2), s/veh	0.1	4.7	1.4	0.2	21.0	21.4	4.9	0.6	0.1	5.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.0	2.3	3.4	11.3	11.1	4.4	2.3	2.6	8.3	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	45.7	37.3	18.1	42.8	43.1	57.6	51.3	23.1	51.4	0.0	65.6
LnGrp LOS	D	D	D	B	D	D	E	D	C	D	A	E
Approach Vol, veh/h		827			1306			368			604	
Approach Delay, s/veh		43.6			37.7			42.8			59.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.0	34.0		27.9	34.8	41.2		16.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0	30.0		28.0	12.0	45.0		18.0				
Max Q Clear Time (g_c+I1), s	12.2	21.3		23.1	7.4	33.7		11.3				
Green Ext Time (p_c), s	0.2	2.1		0.8	0.0	3.5		0.4				

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

Notes

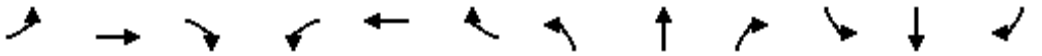
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1224	309	947	500	351	245	553
v/c Ratio	1.15	1.22	0.56	1.25	1.14	0.29	0.73
Control Delay	108.6	170.1	9.4	171.5	138.0	21.5	29.2
Queue Delay	0.6	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	109.3	170.1	9.5	171.5	138.0	21.5	29.3
Queue Length 50th (ft)	~596	~285	126	~484	~316	116	297
Queue Length 95th (ft)	#700	#466	147	#695	#505	175	442
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1065	253	1691	399	309	858	761
Starvation Cap Reductn	1	0	0	0	0	0	0
Spillback Cap Reductn	131	0	157	0	0	0	3
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.31	1.22	0.62	1.25	1.14	0.29	0.73

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1110	40	290	890	0	0	0	470	330	230	520
Future Volume (vph)	0	1110	40	290	890	0	0	0	470	330	230	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		0.99		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3552		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3552		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1181	43	309	947	0	0	0	500	351	245	553
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1224	0	309	947	0	0	0	500	351	245	512
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Effective Green, g (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Actuated g/C Ratio		0.30		0.14	0.47				0.25	0.17	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1065		253	1691				399	309	858	720
v/s Ratio Prot		c0.34		c0.17	0.26				c0.31	c0.20	0.13	
v/s Ratio Perm												0.32
v/c Ratio		1.15		1.22	0.56				1.25	1.14	0.29	0.71
Uniform Delay, d1		42.0		51.5	22.6				45.2	49.6	20.4	26.2
Progression Factor		0.77		0.94	0.35				1.00	1.00	1.00	1.00
Incremental Delay, d2		77.1		128.6	1.3				133.0	93.1	0.8	5.9
Delay (s)		109.6		176.9	9.3				178.3	142.7	21.2	32.1
Level of Service		F		F	A				F	F	C	C
Approach Delay (s)		109.6			50.5			178.3			63.6	
Approach LOS		F			D			F			E	

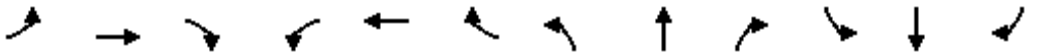
Intersection Summary			
HCM 2000 Control Delay	87.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

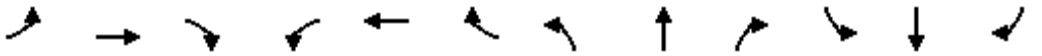
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	442	1211	1084	326	242	243	274
v/c Ratio	0.75	0.45	0.65	0.37	0.78	0.78	0.71
Control Delay	24.1	4.8	28.5	4.2	63.0	63.0	35.9
Queue Delay	0.2	1.2	0.1	0.0	1.1	1.1	0.0
Total Delay	24.3	5.9	28.6	4.2	64.1	64.1	35.9
Queue Length 50th (ft)	153	134	346	4	188	189	116
Queue Length 95th (ft)	279	168	457	62	273	274	204
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	621	2695	1661	883	386	387	452
Starvation Cap Reductn	15	1170	0	0	0	0	0
Spillback Cap Reductn	0	0	66	0	37	37	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.79	0.68	0.37	0.69	0.69	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	1150	0	0	1030	310	450	10	260	0	0	0
Future Volume (vph)	420	1150	0	0	1030	310	450	10	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1787	3574			3574	1536	1698	1706	1599			
Flt Permitted	0.15	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	290	3574			3574	1536	1698	1706	1599			
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)	442	1211	0	0	1084	326	474	11	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	94	0	0	0
Lane Group Flow (vph)	442	1211	0	0	1084	157	242	243	180	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	90.5	90.5			55.8	55.8	22.1	22.1	22.1			
Effective Green, g (s)	90.5	90.5			55.8	55.8	22.1	22.1	22.1			
Actuated g/C Ratio	0.75	0.75			0.46	0.46	0.18	0.18	0.18			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	589	2695			1661	714	312	314	294			
v/s Ratio Prot	c0.19	0.34			0.30		c0.14	0.14				
v/s Ratio Perm	c0.38					0.10			0.11			
v/c Ratio	0.75	0.45			0.65	0.22	0.78	0.77	0.61			
Uniform Delay, d1	24.2	5.5			24.7	19.1	46.6	46.6	45.0			
Progression Factor	0.65	0.73			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	3.3	0.4			2.0	0.7	11.0	10.9	3.2			
Delay (s)	19.1	4.3			26.7	19.8	57.6	57.4	48.2			
Level of Service	B	A			C	B	E	E	D			
Approach Delay (s)		8.3			25.1			54.2			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	109.9%	ICU Level of Service	H
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)	420	1150	0	0	1030	310	450	10	260	0	0	0
Future Volume (veh/h)	420	1150	0	0	1030	310	450	10	260	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	442	1211	0	0	1084	326	482	0	274			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	648	2656	0	0	1445	627	695	0	309			
Arrive On Green	0.30	0.74	0.00	0.00	0.40	0.40	0.19	0.00	0.19			
Sat Flow, veh/h	1795	3676	0	0	3676	1554	3591	0	1598			
Grp Volume(v), veh/h	442	1211	0	0	1084	326	482	0	274			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1554	1795	0	1598			
Q Serve(g_s), s	17.8	15.8	0.0	0.0	31.1	19.0	15.0	0.0	20.0			
Cycle Q Clear(g_c), s	17.8	15.8	0.0	0.0	31.1	19.0	15.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	648	2656	0	0	1445	627	695	0	309			
V/C Ratio(X)	0.68	0.46	0.00	0.00	0.75	0.52	0.69	0.00	0.89			
Avail Cap(c_a), veh/h	648	2656	0	0	1445	627	817	0	363			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.59	0.59	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.6	6.1	0.0	0.0	30.6	27.0	45.1	0.0	47.1			
Incr Delay (d2), s/veh	1.5	0.3	0.0	0.0	3.6	3.1	1.8	0.0	19.4			
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	10.9	5.2	0.0	0.0	13.8	7.5	6.8	0.0	18.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	6.4	0.0	0.0	34.3	30.1	46.9	0.0	66.5			
LnGrp LOS	C	A	A	A	C	C	D	A	E			
Approach Vol, veh/h		1653			1410			756				
Approach Delay, s/veh		13.8			33.3			54.0				
Approach LOS		B			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		93.1		26.9	40.1	53.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 85		27.3	31.9	48.4						
Max Q Clear Time (g_c+I1), s		17.8		22.0	19.8	33.1						
Green Ext Time (p_c), s		9.5		1.2	0.6	5.4						

Intersection Summary												
HCM 6th Ctrl Delay			28.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2042	255	1255
v/c Ratio	0.74	1.01	0.35
Control Delay	2.4	99.2	0.2
Queue Delay	0.1	30.7	0.0
Total Delay	2.5	129.9	0.3
Queue Length 50th (ft)	66	~180	0
Queue Length 95th (ft)	m0	#369	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2743	253	3574
Starvation Cap Reductn	0	28	0
Spillback Cap Reductn	72	0	590
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.76	1.13	0.42

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1510	410	240	1180	0	0
Future Volume (vph)	1510	410	240	1180	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3440		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3440		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1606	436	255	1255	0	0
RTOR Reduction (vph)	21	0	0	0	0	0
Lane Group Flow (vph)	2021	0	255	1255	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	94.8		17.0	120.0		
Effective Green, g (s)	94.8		17.0	111.5		
Actuated g/C Ratio	0.79		0.14	0.93		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2717		253	3320		
v/s Ratio Prot	c0.59		c0.14	0.35		
v/s Ratio Perm						
v/c Ratio	0.74		1.01	0.38		
Uniform Delay, d1	6.4		51.5	0.5		
Progression Factor	0.36		0.92	1.00		
Incremental Delay, d2	0.1		51.3	0.1		
Delay (s)	2.4		98.5	0.5		
Level of Service	A		F	A		
Approach Delay (s)	2.4			17.1	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Cumulative Plus Project

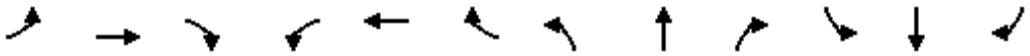
Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	188	210	74	144	160
Future Vol, veh/h	88	188	210	74	144	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	96	204	228	80	157	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	756	268	0	0	308	0
Stage 1	268	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	367	756	-	-	1219	-
Stage 1	763	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	756	-	-	1219	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	527	-	-	-	-	-

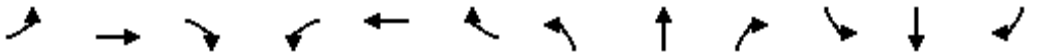
Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	320	756	1219	-
HCM Lane V/C Ratio	-	-	0.299	0.27	0.128	-
HCM Control Delay (s)	-	-	21	11.5	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	1.1	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	500	59	43	400	20	117	109	141	37	65	22
v/c Ratio	0.14	0.69	0.08	0.28	0.51	0.03	0.50	0.26	0.31	0.24	0.24	0.06
Control Delay	43.0	25.9	0.2	45.5	20.1	0.1	43.2	31.6	8.7	43.6	37.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	25.9	0.2	45.5	20.1	0.1	43.2	31.6	8.7	43.6	37.3	0.3
Queue Length 50th (ft)	11	215	0	21	120	0	57	49	1	18	31	0
Queue Length 95th (ft)	38	356	0	62	269	0	126	108	51	54	76	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	153	1105	992	151	1107	1013	336	1029	934	180	864	834
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.06	0.28	0.36	0.02	0.35	0.11	0.15	0.21	0.08	0.03

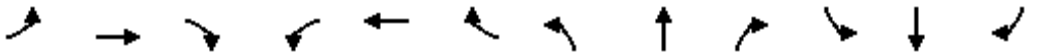
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	460	54	40	368	18	108	100	130	34	60	20
Future Volume (vph)	20	460	54	40	368	18	108	100	130	34	60	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	22	500	59	43	400	20	117	109	141	37	65	22
RTOR Reduction (vph)	0	0	36	0	0	12	0	0	109	0	0	19
Lane Group Flow (vph)	22	500	23	43	400	8	117	109	32	37	65	3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.8	30.5	30.5	2.8	31.5	31.5	7.9	16.7	16.7	3.3	12.1	12.1
Effective Green, g (s)	1.8	30.5	30.5	2.8	31.5	31.5	7.9	16.7	16.7	3.3	12.1	12.1
Actuated g/C Ratio	0.02	0.39	0.39	0.04	0.40	0.40	0.10	0.21	0.21	0.04	0.16	0.16
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	39	709	590	61	732	622	174	388	330	72	281	239
v/s Ratio Prot	0.01	c0.28		c0.03	0.22		c0.07	c0.06		0.02	0.04	
v/s Ratio Perm			0.02			0.01			0.02			0.00
v/c Ratio	0.56	0.71	0.04	0.70	0.55	0.01	0.67	0.28	0.10	0.51	0.23	0.01
Uniform Delay, d1	37.6	19.9	14.6	37.1	17.7	13.8	33.7	25.5	24.5	36.5	28.8	27.8
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	18.8	4.0	0.1	31.8	1.5	0.0	7.8	0.7	0.2	2.6	0.7	0.0
Delay (s)	56.4	23.9	14.7	68.9	19.2	13.9	41.5	26.2	24.7	39.0	29.5	27.8
Level of Service	E	C	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		24.2			23.6			30.5			32.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	57.0%	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)	20	460	54	40	368	18	108	100	130	34	60	20
Future Volume (veh/h)	20	460	54	40	368	18	108	100	130	34	60	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	22	500	59	43	400	20	117	109	141	37	65	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	44	670	556	73	700	593	149	292	248	66	205	173
Arrive On Green	0.03	0.37	0.37	0.04	0.38	0.38	0.09	0.16	0.16	0.04	0.11	0.11
Sat Flow, veh/h	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	22	500	59	43	400	20	117	109	141	37	65	22
Grp Sat Flow(s),veh/h/ln	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.2	1.3	2.0	0.8
Cycle Q Clear(g_c), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.2	1.3	2.0	0.8
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	44	670	556	73	700	593	149	292	248	66	205	173
V/C Ratio(X)	0.50	0.75	0.11	0.59	0.57	0.03	0.78	0.37	0.57	0.56	0.32	0.13
Avail Cap(c_a), veh/h	162	1204	999	159	1201	1018	354	1081	916	190	908	769
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	30.0	17.2	13.0	29.3	15.2	12.0	27.9	23.4	24.2	29.5	25.5	24.9
Incr Delay (d2), s/veh	10.1	3.5	0.2	8.7	1.6	0.0	3.4	1.4	3.5	2.8	1.5	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	0.4	5.4	0.5	0.7	3.7	0.1	1.6	1.3	1.9	0.5	0.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	20.8	13.2	38.0	16.7	12.0	31.3	24.7	27.7	32.2	27.0	25.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		581			463			367			124	
Approach Delay, s/veh		20.7			18.5			28.0			28.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	30.0	10.7	13.8	6.9	31.0	7.7	16.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 41	12.7	* 31	5.8	* 41	6.8	* 37
Max Q Clear Time (g_c+I1), s	3.5	16.9	6.1	4.0	2.8	12.8	3.3	7.2
Green Ext Time (p_c), s	0.0	6.0	0.1	0.5	0.0	4.6	0.0	1.8

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	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	584	20	43	395	28	10	10	147	24	20	20
Future Vol, veh/h	20	584	20	43	395	28	10	10	147	24	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	22	635	22	47	429	30	11	11	160	26	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	459	0	0	657	0	0	1239	1232	635	1299	1224	429
Stage 1	-	-	-	-	-	-	679	679	-	523	523	-
Stage 2	-	-	-	-	-	-	560	553	-	776	701	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1086	-	-	916	-	-	150	175	473	136	177	620
Stage 1	-	-	-	-	-	-	437	447	-	532	526	-
Stage 2	-	-	-	-	-	-	508	509	-	386	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1086	-	-	916	-	-	123	163	473	81	165	620
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	163	-	81	165	-
Stage 1	-	-	-	-	-	-	428	438	-	521	499	-
Stage 2	-	-	-	-	-	-	445	483	-	244	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.8	18.4	38.8
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	123	163	473	1086	-	-	916	-	-	81	165	620
HCM Lane V/C Ratio	0.088	0.067	0.338	0.02	-	-	0.051	-	-	0.322	0.132	0.035
HCM Control Delay (s)	37.1	28.7	16.4	8.4	-	-	9.1	-	-	69.3	30.1	11
HCM Lane LOS	E	D	C	A	-	-	A	-	-	F	D	B
HCM 95th %tile Q(veh)	0.3	0.2	1.5	0.1	-	-	0.2	-	-	1.2	0.4	0.1

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	674	12	106	373	23	198
Future Vol, veh/h	674	12	106	373	23	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	733	13	115	405	25	215

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	746	0	1368	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	635	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	862	-	162	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	862	-	140	421
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	458	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	140	421	-	-	862	-
HCM Lane V/C Ratio	0.179	0.511	-	-	0.134	-
HCM Control Delay (s)	36.2	22.2	-	-	9.8	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	2.8	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	930	17	171	488	33	298
v/c Ratio	0.83	0.02	0.49	0.30	0.19	0.70
Control Delay	21.1	4.6	11.2	3.1	41.7	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	4.6	11.2	3.1	41.7	28.1
Queue Length 50th (ft)	377	1	19	65	17	89
Queue Length 95th (ft)	604	9	74	111	48	191
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1456	1240	355	1637	582	429
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.01	0.48	0.30	0.06	0.69

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	856	16	157	449	30	274
Future Volume (vph)	856	16	157	449	30	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	204	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	930	17	171	488	33	298
RTOR Reduction (vph)	0	5	0	0	0	92
Lane Group Flow (vph)	930	12	171	488	33	206
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	46.3	46.3	61.9	61.9	4.0	13.1
Effective Green, g (s)	46.3	46.3	61.9	61.9	4.0	13.1
Actuated g/C Ratio	0.59	0.59	0.78	0.78	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1093	928	340	1461	89	393
v/s Ratio Prot	c0.50		0.06	0.26	0.02	c0.06
v/s Ratio Perm		0.01	0.34			0.07
v/c Ratio	0.85	0.01	0.50	0.33	0.37	0.52
Uniform Delay, d1	13.5	6.8	12.8	2.5	36.2	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.0	1.2	0.1	2.6	1.3
Delay (s)	20.0	6.8	14.0	2.6	38.8	31.3
Level of Service	B	A	B	A	D	C
Approach Delay (s)	19.7			5.6	32.1	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	856	16	157	449	30	274
Future Volume (veh/h)	856	16	157	449	30	274
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	930	17	171	488	33	298
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1000	848	231	1244	352	412
Arrive On Green	0.53	0.53	0.06	0.67	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	930	17	171	488	33	298
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	43.7	0.5	3.9	11.2	1.4	16.3
Cycle Q Clear(g_c), s	43.7	0.5	3.9	11.2	1.4	16.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1000	848	231	1244	352	412
V/C Ratio(X)	0.93	0.02	0.74	0.39	0.09	0.72
Avail Cap(c_a), veh/h	1162	985	280	1458	431	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	10.4	21.4	7.2	31.1	32.0
Incr Delay (d2), s/veh	11.9	0.0	8.2	0.2	0.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	0.1	2.3	3.2	0.6	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	10.4	29.6	7.4	31.2	36.5
LnGrp LOS	C	B	C	A	C	D
Approach Vol, veh/h	947			659	331	
Approach Delay, s/veh	31.9			13.2	36.0	
Approach LOS	C			B	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.4	57.3				69.7	25.3
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	59.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	5.9	45.7				13.2	18.3
Green Ext Time (p_c), s	0.1	5.1				2.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

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	0	724	406	60	315	0	0	0	0	60	0	291
Future Vol, veh/h	0	724	406	60	315	0	0	0	0	60	0	291
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	787	441	65	342	0	0	0	0	65	0	316

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	1228	0	0			1480	1700	342
Stage 1	-	-	-	-	-	-			472	472	-
Stage 2	-	-	-	-	-	-			1008	1228	-
Critical Hdwy	-	-	-	4.15	-	-			6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-			5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-			3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	557	-	0			136	91	694
Stage 1	0	-	-	-	-	0			621	554	-
Stage 2	0	-	-	-	-	0			348	247	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	557	-	-			120	0	694
Mov Cap-2 Maneuver	-	-	-	-	-	-			120	0	-
Stage 1	-	-	-	-	-	-			621	0	-
Stage 2	-	-	-	-	-	-			307	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2	23.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	557	-	120	694
HCM Lane V/C Ratio	-	-	0.117	-	0.543	0.456
HCM Control Delay (s)	-	-	12.3	-	66	14.5
HCM Lane LOS	-	-	B	-	F	B
HCM 95th %tile Q(veh)	-	-	0.4	-	2.6	2.4

Intersection	
Int Delay, s/veh	231

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	489	305	0	0	150	30	225	10	80	0	0	0
Future Vol, veh/h	489	305	0	0	150	30	225	10	80	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	532	332	0	0	163	33	245	11	87	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	196	0	-	-	-	0	1576	1592	332
Stage 1	-	-	-	-	-	-	1396	1396	-
Stage 2	-	-	-	-	-	-	180	196	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1371	-	0	0	-	-	~ 120	107	707
Stage 1	-	-	0	0	-	-	~ 228	207	-
Stage 2	-	-	0	0	-	-	849	737	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1371	-	-	-	-	-	~ 73	0	707
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 73	0	-
Stage 1	-	-	-	-	-	-	~ 140	0	-
Stage 2	-	-	-	-	-	-	849	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.7	0	$ 931
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	73	707	1371	-	-	-
HCM Lane V/C Ratio	3.499	0.123	0.388	-	-	-
HCM Control Delay (s)	$ 1244.2	10.8	9.3	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	26.4	0.4	1.9	-	-	-

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

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	338	126	320	230	34
Future Vol, veh/h	48	338	126	320	230	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	52	367	137	348	250	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	891	269	287	0	-	0
Stage 1	269	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	312	767	1269	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	278	767	1269	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1269	-	278	767	-	-
HCM Lane V/C Ratio	0.108	-	0.188	0.479	-	-
HCM Control Delay (s)	8.2	-	20.9	13.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	2.6	-	-

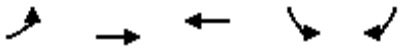
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	190	53	287	126	28	213
Future Vol, veh/h	190	53	287	126	28	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	58	312	137	30	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	604	312	0	0	449	0
Stage 1	312	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	461	728	-	-	1111	-
Stage 1	742	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	449	728	-	-	1111	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	738	-	-	-	-	-

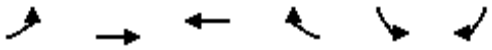
Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	449	728	1111	-
HCM Lane V/C Ratio	-	-	0.46	0.079	0.027	-
HCM Control Delay (s)	-	-	19.7	10.4	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.3	0.1	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	235	446	478	215	183
v/c Ratio	0.69	0.23	0.40	0.67	0.42
Control Delay	31.4	10.4	17.8	36.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	10.4	17.8	36.8	8.2
Queue Length 50th (ft)	77	30	51	66	0
Queue Length 95th (ft)	77	140	172	195	55
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	348	2118	1314	547	616
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.21	0.36	0.39	0.30

Intersection Summary

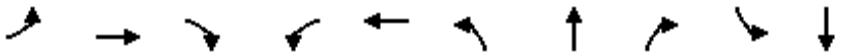


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	216	410	320	120	198	168
Future Volume (vph)	216	410	320	120	198	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3395		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3395		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	446	348	130	215	183
RTOR Reduction (vph)	0	0	36	0	0	152
Lane Group Flow (vph)	235	446	442	0	215	31
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	12.0	34.5	21.2		11.2	11.2
Effective Green, g (s)	12.0	34.5	21.2		11.2	11.2
Actuated g/C Ratio	0.18	0.53	0.32		0.17	0.17
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	323	1861	1097		302	270
v/s Ratio Prot	c0.13	0.13	c0.13			
v/s Ratio Perm					c0.12	0.02
v/c Ratio	0.73	0.24	0.40		0.71	0.12
Uniform Delay, d1	25.3	8.4	17.3		25.7	23.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.8	0.0	0.1		6.5	0.1
Delay (s)	32.0	8.5	17.4		32.1	23.1
Level of Service	C	A	B		C	C
Approach Delay (s)		16.6	17.4		28.0	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	21.2
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

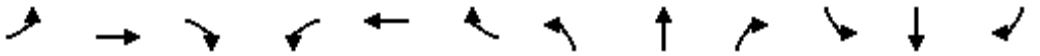
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



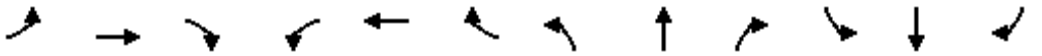
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	641	76	196	702	65	48	217	175	175
v/c Ratio	0.17	0.37	0.09	0.76	0.39	0.42	0.30	0.51	0.74	0.72
Control Delay	38.8	22.0	0.3	56.8	9.0	54.0	49.5	14.2	63.0	58.7
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	38.8	22.6	0.3	56.8	9.0	54.0	49.5	14.3	63.0	58.7
Queue Length 50th (ft)	24	146	0	138	61	45	33	48	126	118
Queue Length 95th (ft)	59	267	2	202	213	82	65	61	194	187
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	306	1724	822	354	1860	289	304	503	320	326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	695	0	0	0	0	0	19	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.62	0.09	0.55	0.38	0.22	0.16	0.45	0.55	0.54

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	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	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
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)	43	641	76	196	522	180	65	48	217	265	52	33
RTOR Reduction (vph)	0	0	41	0	25	0	0	0	78	0	8	0
Lane Group Flow (vph)	43	641	35	196	677	0	65	48	139	175	167	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Effective Green, g (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Actuated g/C Ratio	0.13	0.46	0.46	0.16	0.49		0.08	0.08	0.24	0.14	0.14	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	230	1631	710	289	1682		139	147	382	238	236	
v/s Ratio Prot	0.02	0.18		c0.11	c0.20		c0.04	0.03	0.06	c0.10	0.10	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.19	0.39	0.05	0.68	0.40		0.47	0.33	0.36	0.74	0.71	
Uniform Delay, d1	42.7	19.5	16.4	43.3	17.5		48.4	47.9	34.6	45.2	45.0	
Progression Factor	1.00	1.00	1.00	0.88	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.7	0.1	4.5	0.7		0.9	0.5	0.2	9.7	7.7	
Delay (s)	42.8	20.2	16.5	42.6	7.9		49.3	48.4	34.8	54.9	52.7	
Level of Service	D	C	B	D	A		D	D	C	D	D	
Approach Delay (s)		21.1			15.5			39.6			53.8	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	52.7%	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)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (veh/h)	40	590	70	180	480	166	60	44	200	244	48	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	641	76	196	522	180	65	48	217	175	178	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	748	1034	460	635	590	203	107	112	660	246	211	39
Arrive On Green	0.42	0.29	0.29	0.71	0.45	0.45	0.06	0.06	0.06	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1580	1781	2596	891	1781	1870	1577	1781	1533	284
Grp Volume(v), veh/h	43	641	76	196	357	345	65	48	217	175	0	211
Grp Sat Flow(s),veh/h/ln	1781	1777	1580	1781	1777	1710	1781	1870	1577	1781	0	1817
Q Serve(g_s), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Cycle Q Clear(g_c), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	748	1034	460	635	404	389	107	112	660	246	0	251
V/C Ratio(X)	0.06	0.62	0.17	0.31	0.88	0.89	0.61	0.43	0.33	0.71	0.00	0.84
Avail Cap(c_a), veh/h	748	1034	460	635	678	653	291	306	823	340	0	347
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	33.7	29.1	10.8	28.6	28.7	50.4	49.9	21.7	45.3	0.0	46.2
Incr Delay (d2), s/veh	0.0	2.8	0.8	0.1	21.4	22.8	2.1	1.0	0.1	1.9	0.0	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.7	1.6	1.5	8.6	8.5	1.8	1.3	3.7	4.6	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	36.5	29.8	10.9	50.0	51.5	52.5	50.8	21.8	47.2	0.0	55.7
LnGrp LOS	B	D	C	B	D	D	D	D	C	D	A	E
Approach Vol, veh/h		760			898			330			386	
Approach Delay, s/veh		34.9			42.0			32.1			51.8	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	44.2	36.0		19.2	51.2	29.0		10.6				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	32.0		21.0	12.0	42.0		18.0				
Max Q Clear Time (g_c+I1), s	6.5	19.2		14.5	3.6	22.3		5.9				
Green Ext Time (p_c), s	0.1	2.5		0.6	0.0	2.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		39.9	
HCM 6th LOS		D	

Notes

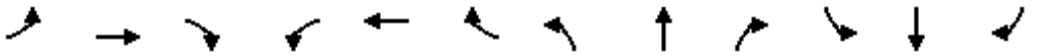
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1342	217	772	598	310	98	278
v/c Ratio	1.10	1.23	0.45	1.32	1.38	0.12	0.37
Control Delay	89.4	182.2	6.9	191.4	232.7	19.1	12.1
Queue Delay	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.8	182.2	6.9	191.4	232.7	19.1	12.1
Queue Length 50th (ft)	~576	~179	85	~546	~291	40	63
Queue Length 95th (ft)	#683	#334	93	#763	#465	74	128
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1217	177	1705	454	225	809	753
Starvation Cap Reductn	16	0	0	0	0	0	0
Spillback Cap Reductn	103	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.23	0.45	1.32	1.38	0.12	0.37

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1204	30	200	710	0	0	0	550	285	90	256
Future Volume (vph)	0	1204	30	200	710	0	0	0	550	285	90	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3524		1770	3539				1611	1770	1863	1562
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3524		1770	3539				1611	1770	1863	1562
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)	0	1309	33	217	772	0	0	0	598	310	98	278
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	1342	0	217	772	0	0	0	598	310	98	203
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Effective Green, g (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Actuated g/C Ratio		0.35		0.10	0.48				0.28	0.13	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1217		177	1705				454	225	809	678
v/s Ratio Prot		c0.38		c0.12	0.22				c0.37	c0.18	0.05	
v/s Ratio Perm												0.13
v/c Ratio		1.10		1.23	0.45				1.32	1.38	0.12	0.30
Uniform Delay, d1		36.0		49.5	18.9				39.5	48.0	18.6	20.2
Progression Factor		0.87		0.97	0.32				1.00	1.00	1.00	1.00
Incremental Delay, d2		58.2		140.6	0.8				157.6	195.4	0.3	1.1
Delay (s)		89.7		188.8	6.9				197.1	243.4	18.9	21.4
Level of Service		F		F	A				F	F	B	C
Approach Delay (s)		89.7			46.8			197.1			121.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	101.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

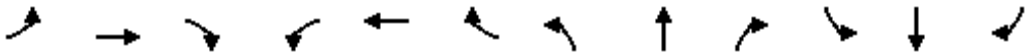
c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	678	1147	935	396	158	157	228
v/c Ratio	0.90	0.42	0.69	0.48	0.67	0.67	0.71
Control Delay	29.7	3.7	32.4	4.8	58.4	57.8	33.4
Queue Delay	1.1	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	4.9	32.4	4.8	58.4	57.8	33.4
Queue Length 50th (ft)	298	84	285	0	113	112	74
Queue Length 95th (ft)	#592	161	399	68	173	173	149
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	755	2748	1364	831	397	399	463
Starvation Cap Reductn	14	1272	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.78	0.69	0.48	0.40	0.39	0.49

Intersection Summary

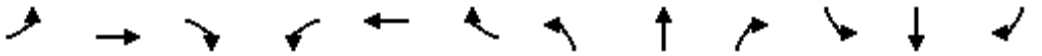
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	624	1055	0	0	860	364	280	10	210	0	0	0
Future Volume (vph)	624	1055	0	0	860	364	280	10	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3539	1527	1681	1691	1583			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	307	3539			3539	1527	1681	1691	1583			
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)	678	1147	0	0	935	396	304	11	228	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	243	0	0	101	0	0	0
Lane Group Flow (vph)	678	1147	0	0	935	153	158	157	127	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Effective Green, g (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Actuated g/C Ratio	0.78	0.78			0.39	0.39	0.14	0.14	0.14			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	755	2747			1364	588	235	236	221			
v/s Ratio Prot	c0.32	0.32			0.26		c0.09	0.09				
v/s Ratio Perm	c0.38					0.10			0.08			
v/c Ratio	0.90	0.42			0.69	0.26	0.67	0.67	0.58			
Uniform Delay, d1	22.1	4.1			28.2	23.1	44.9	44.9	44.2			
Progression Factor	0.68	0.75			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	8.8	0.3			2.8	1.1	6.7	6.2	3.0			
Delay (s)	23.8	3.4			31.1	24.2	51.6	51.1	47.2			
Level of Service	C	A			C	C	D	D	D			
Approach Delay (s)		10.9			29.0			49.6			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	77.7%	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)	624	1055	0	0	860	364	280	10	210	0	0	0
Future Volume (veh/h)	624	1055	0	0	860	364	280	10	210	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	678	1147	0	0	935	396	312	0	228			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	825	2658	0	0	1027	445	597	0	266			
Arrive On Green	0.42	0.75	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1781	3647	0	0	3647	1539	3563	0	1585			
Grp Volume(v), veh/h	678	1147	0	0	935	396	312	0	228			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1539	1781	0	1585			
Q Serve(g_s), s	31.8	13.2	0.0	0.0	27.9	27.1	8.8	0.0	15.4			
Cycle Q Clear(g_c), s	31.8	13.2	0.0	0.0	27.9	27.1	8.8	0.0	15.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	825	2658	0	0	1027	445	597	0	266			
V/C Ratio(X)	0.82	0.43	0.00	0.00	0.91	0.89	0.52	0.00	0.86			
Avail Cap(c_a), veh/h	825	2658	0	0	1027	445	842	0	375			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.54	0.54	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.8	5.2	0.0	0.0	37.7	37.4	41.8	0.0	44.5			
Incr Delay (d2), s/veh	3.5	0.3	0.0	0.0	13.3	22.5	0.5	0.0	11.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.4	4.0	0.0	0.0	13.7	12.7	3.9	0.0	13.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	5.4	0.0	0.0	51.1	60.0	42.3	0.0	56.4			
LnGrp LOS	C	A	A	A	D	E	D	A	E			
Approach Vol, veh/h		1825			1331			540				
Approach Delay, s/veh		14.3			53.7			48.2				
Approach LOS		B			D			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		86.4		23.6	50.6	35.8			
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0			
Max Green Setting (Gmax), s		* 75		* 26	38.9	31.8			
Max Q Clear Time (g_c+I1), s		15.2		17.4	33.8	29.9			
Green Ext Time (p_c), s		11.1		1.1	0.7	1.3			

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2205	261	978
v/c Ratio	0.78	1.47	0.28
Control Delay	2.1	269.9	0.2
Queue Delay	0.2	0.0	0.1
Total Delay	2.4	269.9	0.3
Queue Length 50th (ft)	45	~244	0
Queue Length 95th (ft)	m0	#409	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2837	177	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	147	0	1023
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	1.47	0.39

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1649	380	240	900	0	0
Future Volume (vph)	1649	380	240	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3422		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3422		1770	3539		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1792	413	261	978	0	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	2199	0	261	978	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	91.0		11.0	110.0		
Effective Green, g (s)	91.0		11.0	104.8		
Actuated g/C Ratio	0.83		0.10	0.95		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2830		177	3371		
v/s Ratio Prot	c0.64		c0.15	0.28		
v/s Ratio Perm						
v/c Ratio	0.78		1.47	0.29		
Uniform Delay, d1	4.6		49.5	0.2		
Progression Factor	0.40		0.90	1.00		
Incremental Delay, d2	0.1		236.1	0.2		
Delay (s)	2.0		280.6	0.3		
Level of Service	A		F	A		
Approach Delay (s)	2.0			59.4	0.0	
Approach LOS	A			E	A	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

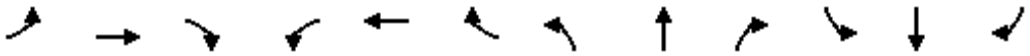
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	176	230	88	228	220
Future Vol, veh/h	96	176	230	88	228	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	185	242	93	240	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1001	289	0	0	335	0
Stage 1	289	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	268	748	-	-	1219	-
Stage 1	758	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	215	748	-	-	1219	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	389	-	-	-	-	-

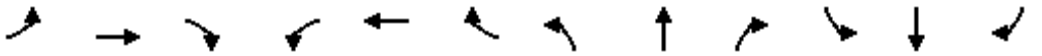
Approach	WB	NB	SB
HCM Control Delay, s	20	0	4.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	215	748	1219	-
HCM Lane V/C Ratio	-	-	0.47	0.248	0.197	-
HCM Control Delay (s)	-	-	35.8	11.4	8.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.3	1	0.7	-



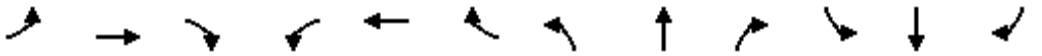
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	534	128	87	476	39	115	65	65	30	87	22
v/c Ratio	0.24	0.66	0.16	0.46	0.52	0.05	0.52	0.18	0.15	0.24	0.35	0.06
Control Delay	48.6	27.6	1.5	50.2	20.9	0.1	50.1	34.2	0.8	49.5	43.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	27.6	1.5	50.2	20.9	0.1	50.1	34.2	0.8	49.5	43.0	0.3
Queue Length 50th (ft)	19	264	0	48	211	0	64	33	0	17	47	0
Queue Length 95th (ft)	53	411	13	107	333	0	133	75	0	50	100	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	142	991	926	211	1065	982	255	837	785	137	713	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.54	0.14	0.41	0.45	0.04	0.45	0.08	0.08	0.22	0.12	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	491	118	80	438	36	106	60	60	28	80	20
Future Volume (vph)	30	491	118	80	438	36	106	60	60	28	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	33	534	128	87	476	39	115	65	65	30	87	22
RTOR Reduction (vph)	0	0	74	0	0	21	0	0	53	0	0	20
Lane Group Flow (vph)	33	534	54	87	476	18	115	65	12	30	87	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	38.4	38.4	7.0	42.0	42.0	10.7	17.0	17.0	3.3	9.6	9.6
Effective Green, g (s)	3.4	38.4	38.4	7.0	42.0	42.0	10.7	17.0	17.0	3.3	9.6	9.6
Actuated g/C Ratio	0.04	0.43	0.43	0.08	0.47	0.47	0.12	0.19	0.19	0.04	0.11	0.11
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	66	793	673	137	867	737	209	351	298	64	198	164
v/s Ratio Prot	0.02	c0.29		c0.05	c0.26		c0.06	0.03		0.02	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.50	0.67	0.08	0.64	0.55	0.02	0.55	0.19	0.04	0.47	0.44	0.01
Uniform Delay, d1	42.6	20.9	15.4	40.4	17.3	13.0	37.5	30.8	29.9	42.6	37.8	36.1
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	6.9	3.0	0.1	9.7	1.3	0.0	1.8	0.4	0.1	2.0	2.7	0.1
Delay (s)	49.4	23.8	15.5	50.0	18.6	13.1	39.3	31.2	30.0	44.6	40.5	36.1
Level of Service	D	C	B	D	B	B	D	C	C	D	D	D
Approach Delay (s)		23.5			22.7			34.7			40.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	58.8%	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)	30	491	118	80	438	36	106	60	60	28	80	20
Future Volume (veh/h)	30	491	118	80	438	36	106	60	60	28	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	534	128	87	476	39	115	65	65	30	87	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	715	606	113	770	652	148	290	246	57	195	161
Arrive On Green	0.03	0.38	0.38	0.06	0.41	0.41	0.08	0.16	0.16	0.03	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Grp Volume(v), veh/h	33	534	128	87	476	39	115	65	65	30	87	22
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Q Serve(g_s), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
Cycle Q Clear(g_c), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
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	61	715	606	113	770	652	148	290	246	57	195	161
V/C Ratio(X)	0.54	0.75	0.21	0.77	0.62	0.06	0.78	0.22	0.26	0.53	0.45	0.14
Avail Cap(c_a), veh/h	173	1208	1024	259	1297	1100	312	1020	864	168	869	719
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	31.7	17.8	13.8	30.8	15.5	11.8	30.0	24.7	24.8	31.8	28.1	27.2
Incr Delay (d2), s/veh	8.7	3.3	0.4	12.5	1.7	0.1	3.3	0.7	1.0	2.8	2.7	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	0.6	6.2	1.1	1.6	4.8	0.3	1.7	0.8	0.9	0.5	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	21.1	14.2	43.2	17.2	11.9	33.3	25.3	25.8	34.6	30.8	27.8
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		695			602			245			139	
Approach Delay, s/veh		20.8			20.6			29.2			31.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	32.6	10.8	13.8	7.6	34.6	7.4	17.2
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 43	11.7	* 31	6.5	* 46	6.3	* 36
Max Q Clear Time (g_c+I1), s	5.2	18.5	6.2	4.9	3.2	15.4	3.1	4.4
Green Ext Time (p_c), s	0.1	7.1	0.1	0.7	0.0	5.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	539	20	64	524	36	10	10	16	28	20	20
Future Vol, veh/h	20	539	20	64	524	36	10	10	16	28	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	556	21	66	540	37	10	10	16	29	21	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	577	0	0	577	0	0	1310	1307	556	1294	1291	540
Stage 1	-	-	-	-	-	-	598	598	-	672	672	-
Stage 2	-	-	-	-	-	-	712	709	-	622	619	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	992	-	-	992	-	-	135	159	529	139	162	540
Stage 1	-	-	-	-	-	-	487	489	-	444	453	-
Stage 2	-	-	-	-	-	-	422	436	-	473	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	992	-	-	992	-	-	109	145	529	119	148	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	145	-	119	148	-
Stage 1	-	-	-	-	-	-	477	479	-	435	423	-
Stage 2	-	-	-	-	-	-	360	407	-	439	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	25.6	31.7
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	109	145	529	992	-	-	992	-	-	119	148	540
HCM Lane V/C Ratio	0.095	0.071	0.031	0.021	-	-	0.067	-	-	0.243	0.139	0.038
HCM Control Delay (s)	41.4	31.7	12	8.7	-	-	8.9	-	-	44.7	33.2	11.9
HCM Lane LOS	E	D	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	0.3	0.2	0.1	0.1	-	-	0.2	-	-	0.9	0.5	0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	519	25	206	546	17	147
Future Vol, veh/h	519	25	206	546	17	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	564	27	224	593	18	160

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	591	0	1605	564
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	1041	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	985	-	116	525
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	340	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	985	-	90	525
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	263	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	19
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	90	525	-	-	985	-
HCM Lane V/C Ratio	0.205	0.304	-	-	0.227	-
HCM Control Delay (s)	55.1	14.8	-	-	9.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.3	-	-	0.9	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	653	71	372	745	73	262
v/c Ratio	0.80	0.10	0.70	0.51	0.33	0.40
Control Delay	27.8	5.6	18.3	6.3	40.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	5.6	18.3	6.3	40.2	10.8
Queue Length 50th (ft)	286	4	73	138	35	38
Queue Length 95th (ft)	454	27	194	246	83	106
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1161	1008	641	1609	614	767
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.07	0.58	0.46	0.12	0.34

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	601	65	342	685	67	241
Future Volume (vph)	601	65	342	685	67	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.17	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	316	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	653	71	372	745	73	262
RTOR Reduction (vph)	0	32	0	0	0	99
Lane Group Flow (vph)	653	39	372	745	73	163
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	33.7	33.7	55.7	55.7	6.9	22.4
Effective Green, g (s)	33.7	33.7	55.7	55.7	6.9	22.4
Actuated g/C Ratio	0.45	0.45	0.74	0.74	0.09	0.30
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	830	705	530	1372	161	605
v/s Ratio Prot	c0.35		c0.14	0.40	c0.04	0.06
v/s Ratio Perm		0.02	0.37			0.05
v/c Ratio	0.79	0.06	0.70	0.54	0.45	0.27
Uniform Delay, d1	17.9	11.9	12.4	4.4	32.6	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.0	4.2	0.4	2.0	0.2
Delay (s)	22.8	11.9	16.6	4.8	34.6	20.6
Level of Service	C	B	B	A	C	C
Approach Delay (s)	21.8			8.7	23.6	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	601	65	342	685	67	241
Future Volume (veh/h)	601	65	342	685	67	241
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	653	71	372	745	73	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	753	638	427	1203	310	512
Arrive On Green	0.40	0.40	0.15	0.64	0.17	0.17
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	653	71	372	745	73	262
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	22.8	2.0	7.9	16.8	2.5	9.5
Cycle Q Clear(g_c), s	22.8	2.0	7.9	16.8	2.5	9.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	753	638	427	1203	310	512
V/C Ratio(X)	0.87	0.11	0.87	0.62	0.24	0.51
Avail Cap(c_a), veh/h	1158	981	625	1816	576	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	13.3	14.1	7.5	25.3	19.5
Incr Delay (d2), s/veh	4.6	0.1	9.1	0.5	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.6	3.1	3.9	1.1	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	13.4	23.1	8.0	25.7	20.3
LnGrp LOS	C	B	C	A	C	C
Approach Vol, veh/h	724			1117	335	
Approach Delay, s/veh	23.0			13.1	21.5	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.1	35.1				52.2	18.9
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	18.5	44.0				69.0	23.0
Max Q Clear Time (g_c+I1), s	9.9	24.8				18.8	11.5
Green Ext Time (p_c), s	0.7	3.8				5.1	0.9

Intersection Summary							
HCM 6th Ctrl Delay			17.7				
HCM 6th LOS			B				

Intersection	
Int Delay, s/veh	16.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	496	346	70	535	0	0	0	0	70	10	492
Future Vol, veh/h	0	496	346	70	535	0	0	0	0	70	10	492
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	511	357	72	552	0	0	0	0	72	10	507

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	868	0	0			1386	1564	552
Stage 1	-	-	-	-	-	-			696	696	-
Stage 2	-	-	-	-	-	-			690	868	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	776	-	0			158	112	533
Stage 1	0	-	-	-	-	0			495	443	-
Stage 2	0	-	-	-	-	0			498	370	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	776	-	-			143	0	533
Mov Cap-2 Maneuver	-	-	-	-	-	-			143	0	-
Stage 1	-	-	-	-	-	-			495	0	-
Stage 2	-	-	-	-	-	-			452	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.2	56.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	776	-	143	533
HCM Lane V/C Ratio	-	-	0.093	-	0.577	0.952
HCM Control Delay (s)	-	-	10.1	-	59.9	55.7
HCM Lane LOS	-	-	B	-	F	F
HCM 95th %tile Q(veh)	-	-	0.3	-	2.9	12.3

Intersection	
Int Delay, s/veh	347

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	360	206	0	0	202	20	393	10	60	0	0	0
Future Vol, veh/h	360	206	0	0	202	20	393	10	60	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	391	224	0	0	220	22	427	11	65	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	242	0	-	-	-	0	1237	1248	224
Stage 1	-	-	-	-	-	-	1006	1006	-
Stage 2	-	-	-	-	-	-	231	242	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1319	-	0	0	-	-	~ 193	172	813
Stage 1	-	-	0	0	-	-	~ 352	318	-
Stage 2	-	-	0	0	-	-	805	704	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1319	-	-	-	-	-	~ 136	0	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 136	0	-
Stage 1	-	-	-	-	-	-	~ 248	0	-
Stage 2	-	-	-	-	-	-	805	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.6	0	$ 930.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	136	813	1319	-	-	-
HCM Lane V/C Ratio	3.221	0.08	0.297	-	-	-
HCM Control Delay (s)	$ 1067.9	9.8	8.9	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	41.7	0.3	1.3	-	-	-

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

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	220	174	230	260	68
Future Vol, veh/h	56	220	174	230	260	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	239	189	250	283	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	948	320	357	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	289	721	1202	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	244	721	1202	-	-	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	3.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1202	-	244	721	-	-
HCM Lane V/C Ratio	0.157	-	0.249	0.332	-	-
HCM Control Delay (s)	8.6	-	24.6	12.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	1	1.5	-	-

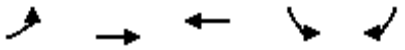
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	155	39	196	212	57	354
Future Vol, veh/h	155	39	196	212	57	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	42	213	230	62	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	722	213	0	0	443	0
Stage 1	213	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	394	827	-	-	1117	-
Stage 1	823	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	372	827	-	-	1117	-
Mov Cap-2 Maneuver	372	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	570	-	-	-	-	-

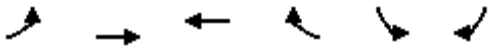
Approach	WB	NB	SB
HCM Control Delay, s	19.8	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	372	827	1117	-
HCM Lane V/C Ratio	-	-	0.453	0.051	0.055	-
HCM Control Delay (s)	-	-	22.4	9.6	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.2	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	225	432	749	229	211
v/c Ratio	0.70	0.22	0.61	0.67	0.47
Control Delay	35.0	10.3	20.5	37.2	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	10.3	20.5	37.2	11.5
Queue Length 50th (ft)	75	31	94	70	10
Queue Length 95th (ft)	105	141	294	233	89
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	329	2713	1876	651	693
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.16	0.40	0.35	0.30

Intersection Summary

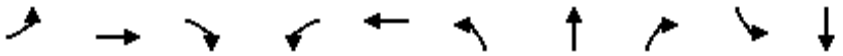


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	214	410	490	221	218	200
Future Volume (vph)	214	410	490	221	218	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3384		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3384		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	432	516	233	229	211
RTOR Reduction (vph)	0	0	45	0	0	142
Lane Group Flow (vph)	225	432	704	0	229	69
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	12.2	37.0	23.2		12.7	12.7
Effective Green, g (s)	12.2	37.0	23.2		12.7	12.7
Actuated g/C Ratio	0.18	0.53	0.33		0.18	0.18
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	314	1908	1132		327	293
v/s Ratio Prot	c0.13	0.12	c0.21			
v/s Ratio Perm					c0.13	0.04
v/c Ratio	0.72	0.23	0.62		0.70	0.24
Uniform Delay, d1	26.9	8.6	19.4		26.5	24.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.4	0.0	0.8		5.4	0.2
Delay (s)	33.3	8.6	20.1		32.0	24.3
Level of Service	C	A	C		C	C
Approach Delay (s)		17.0	20.1		28.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	21.2
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

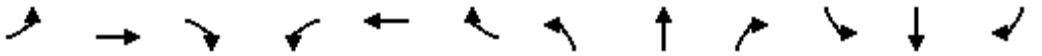


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	633	92	276	1004	143	90	143	269	264
v/c Ratio	0.39	0.47	0.14	0.85	0.70	0.70	0.42	0.28	0.84	0.81
Control Delay	53.1	32.8	2.8	67.1	24.8	69.3	54.6	8.4	69.0	63.0
Queue Delay	0.0	2.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	34.9	2.8	67.1	25.2	69.3	54.6	8.5	69.0	63.1
Queue Length 50th (ft)	72	198	0	211	353	108	66	22	212	197
Queue Length 95th (ft)	137	303	20	300	454	172	115	38	302	287
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	263	1339	663	402	1429	268	282	577	396	401
Starvation Cap Reductn	0	0	0	0	123	0	0	0	0	0
Spillback Cap Reductn	0	533	0	0	0	0	0	11	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.79	0.14	0.69	0.77	0.53	0.32	0.25	0.68	0.66

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	0.99	
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	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	633	92	276	816	188	143	90	143	384	88	61
RTOR Reduction (vph)	0	0	57	0	16	0	0	0	55	0	10	0
Lane Group Flow (vph)	102	633	35	276	988	0	143	90	88	269	254	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Effective Green, g (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Actuated g/C Ratio	0.15	0.38	0.38	0.18	0.41		0.11	0.11	0.29	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	263	1343	586	323	1415		202	213	467	319	316	
v/s Ratio Prot	0.06	0.18		c0.15	c0.29		c0.08	0.05	0.03	c0.16	0.15	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.39	0.47	0.06	0.85	0.70		0.71	0.42	0.19	0.84	0.80	
Uniform Delay, d1	46.3	28.4	23.9	47.6	29.3		51.3	49.5	31.6	47.0	46.6	
Progression Factor	1.00	1.00	1.00	1.00	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	1.2	0.2	15.4	2.3		8.9	0.5	0.1	17.3	13.1	
Delay (s)	46.6	29.6	24.1	63.2	24.5		60.2	50.0	31.7	64.3	59.7	
Level of Service	D	C	C	E	C		E	D	C	E	E	
Approach Delay (s)		31.1			32.8			46.9			62.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
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 (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	102	633	92	276	816	188	143	90	143	266	252	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	472	895	390	566	874	201	181	190	663	345	281	68
Arrive On Green	0.26	0.25	0.25	0.63	0.60	0.60	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1795	3582	1560	1795	2889	666	1795	1885	1583	1795	1464	354
Grp Volume(v), veh/h	102	633	92	276	506	498	143	90	143	266	0	313
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1764	1795	1885	1583	1795	0	1818
Q Serve(g_s), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Cycle Q Clear(g_c), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	472	895	390	566	542	533	181	190	663	345	0	349
V/C Ratio(X)	0.22	0.71	0.24	0.49	0.93	0.93	0.79	0.47	0.22	0.77	0.00	0.90
Avail Cap(c_a), veh/h	472	895	390	566	672	662	269	283	741	419	0	424
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	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	41.0	35.9	17.0	22.6	22.6	52.7	50.9	22.5	46.0	0.0	47.3
Incr Delay (d2), s/veh	0.1	4.7	1.4	0.2	21.0	21.2	4.9	0.7	0.1	5.5	0.0	16.9
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	2.3	9.0	2.3	3.2	11.2	11.1	4.4	2.6	2.6	8.0	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	45.7	37.3	17.2	43.6	43.8	57.6	51.6	22.5	51.4	0.0	64.2
LnGrp LOS	C	D	D	B	D	D	E	D	C	D	A	E
Approach Vol, veh/h		827			1280			376			579	
Approach Delay, s/veh		43.4			38.0			42.8			58.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.8	34.0		27.1	36.6	40.3		16.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0	30.0		28.0	12.0	45.0		18.0				
Max Q Clear Time (g_c+I1), s	11.8	21.3		22.2	7.3	32.8		11.3				
Green Ext Time (p_c), s	0.2	2.1		0.9	0.0	3.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		43.9	
HCM 6th LOS		D	

Notes

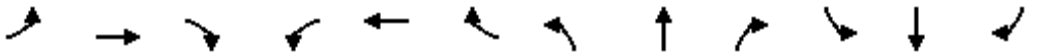
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1198	309	947	500	387	245	526
v/c Ratio	1.12	1.22	0.56	1.25	1.25	0.29	0.69
Control Delay	99.1	169.5	10.0	171.5	178.8	21.5	27.5
Queue Delay	0.5	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	99.6	169.5	10.1	171.5	178.8	21.5	27.6
Queue Length 50th (ft)	~574	~284	146	~484	~374	116	273
Queue Length 95th (ft)	#676	#466	147	#695	#569	175	408
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1065	253	1691	399	309	858	761
Starvation Cap Reductn	1	0	0	0	0	0	0
Spillback Cap Reductn	109	0	137	0	0	0	2
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.22	0.61	1.25	1.25	0.29	0.69

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1086	40	290	890	0	0	0	470	364	230	494
Future Volume (vph)	0	1086	40	290	890	0	0	0	470	364	230	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		0.99		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3552		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3552		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1155	43	309	947	0	0	0	500	387	245	526
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1198	0	309	947	0	0	0	500	387	245	485
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Effective Green, g (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Actuated g/C Ratio		0.30		0.14	0.47				0.25	0.17	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1065		253	1691				399	309	858	720
v/s Ratio Prot		c0.34		c0.17	0.26				c0.31	c0.22	0.13	
v/s Ratio Perm												0.31
v/c Ratio		1.12		1.22	0.56				1.25	1.25	0.29	0.67
Uniform Delay, d1		42.0		51.5	22.6				45.2	49.6	20.4	25.6
Progression Factor		0.77		0.92	0.38				1.00	1.00	1.00	1.00
Incremental Delay, d2		67.4		128.6	1.3				133.0	137.5	0.8	5.0
Delay (s)		99.6		176.0	9.9				178.3	187.1	21.2	30.6
Level of Service		F		F	A				F	F	C	C
Approach Delay (s)		99.6			50.7			178.3			80.9	
Approach LOS		F			D			F			F	

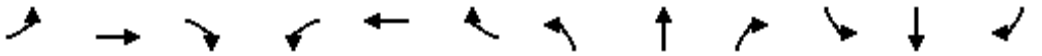
Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

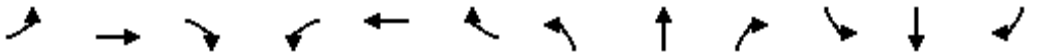
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	417	1246	1084	378	242	243	274
v/c Ratio	0.72	0.46	0.64	0.41	0.78	0.78	0.72
Control Delay	22.6	5.1	27.7	4.2	63.0	63.0	38.1
Queue Delay	0.3	1.3	0.1	0.0	1.1	1.1	0.0
Total Delay	23.0	6.4	27.8	4.2	64.1	64.1	38.1
Queue Length 50th (ft)	125	142	340	5	188	189	123
Queue Length 95th (ft)	243	175	457	67	273	274	211
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	626	2695	1691	919	386	387	446
Starvation Cap Reductn	28	1158	0	0	0	0	0
Spillback Cap Reductn	0	0	66	0	37	37	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.81	0.67	0.41	0.69	0.69	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	1184	0	0	1030	359	450	10	260	0	0	0
Future Volume (vph)	396	1184	0	0	1030	359	450	10	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1787	3574			3574	1536	1698	1706	1599			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	297	3574			3574	1536	1698	1706	1599			
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)	417	1246	0	0	1084	378	474	11	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	193	0	0	87	0	0	0
Lane Group Flow (vph)	417	1246	0	0	1084	185	242	243	187	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Effective Green, g (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Actuated g/C Ratio	0.75	0.75			0.47	0.47	0.18	0.18	0.18			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	580	2695			1691	727	312	314	294			
v/s Ratio Prot	c0.17	0.35			0.30		c0.14	0.14				
v/s Ratio Perm	c0.37					0.12			0.12			
v/c Ratio	0.72	0.46			0.64	0.25	0.78	0.77	0.64			
Uniform Delay, d1	23.6	5.6			23.9	18.9	46.6	46.6	45.2			
Progression Factor	0.66	0.77			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.4	0.4			1.9	0.8	11.0	10.9	3.9			
Delay (s)	18.0	4.7			25.8	19.8	57.6	57.4	49.1			
Level of Service	B	A			C	B	E	E	D			
Approach Delay (s)		8.0			24.2			54.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
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)	396	1184	0	0	1030	359	450	10	260	0	0	0
Future Volume (veh/h)	396	1184	0	0	1030	359	450	10	260	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	417	1246	0	0	1084	378	482	0	274			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	645	2656	0	0	1445	627	695	0	309			
Arrive On Green	0.30	0.74	0.00	0.00	0.40	0.40	0.19	0.00	0.19			
Sat Flow, veh/h	1795	3676	0	0	3676	1554	3591	0	1598			
Grp Volume(v), veh/h	417	1246	0	0	1084	378	482	0	274			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1554	1795	0	1598			
Q Serve(g_s), s	16.1	16.5	0.0	0.0	31.1	23.0	15.0	0.0	20.0			
Cycle Q Clear(g_c), s	16.1	16.5	0.0	0.0	31.1	23.0	15.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	645	2656	0	0	1445	627	695	0	309			
V/C Ratio(X)	0.65	0.47	0.00	0.00	0.75	0.60	0.69	0.00	0.89			
Avail Cap(c_a), veh/h	645	2656	0	0	1445	627	817	0	363			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.58	0.58	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.1	6.1	0.0	0.0	30.6	28.2	45.1	0.0	47.1			
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.0	3.6	4.3	1.8	0.0	19.4			
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	10.1	5.4	0.0	0.0	13.8	9.1	6.8	0.0	18.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	6.5	0.0	0.0	34.3	32.5	46.9	0.0	66.5			
LnGrp LOS	C	A	A	A	C	C	D	A	E			
Approach Vol, veh/h		1663			1462			756				
Approach Delay, s/veh		13.2			33.8			54.0				
Approach LOS		B			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		93.1		26.9	40.1	53.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 85		27.3	31.9	48.4						
Max Q Clear Time (g_c+I1), s		18.5		22.0	18.1	33.1						
Green Ext Time (p_c), s		10.0		1.2	0.5	5.5						

Intersection Summary												
HCM 6th Ctrl Delay			28.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2053	255	1255
v/c Ratio	0.75	1.01	0.35
Control Delay	2.1	98.7	0.2
Queue Delay	0.1	30.7	0.1
Total Delay	2.2	129.4	0.3
Queue Length 50th (ft)	54	~180	0
Queue Length 95th (ft)	m0	#369	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2743	253	3574
Starvation Cap Reductn	0	28	0
Spillback Cap Reductn	46	0	598
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.76	1.13	0.42

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1520	410	240	1180	0	0
Future Volume (vph)	1520	410	240	1180	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3441		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3441		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1617	436	255	1255	0	0
RTOR Reduction (vph)	20	0	0	0	0	0
Lane Group Flow (vph)	2033	0	255	1255	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	94.8		17.0	120.0		
Effective Green, g (s)	94.8		17.0	111.5		
Actuated g/C Ratio	0.79		0.14	0.93		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2718		253	3320		
v/s Ratio Prot	c0.59		c0.14	0.35		
v/s Ratio Perm						
v/c Ratio	0.75		1.01	0.38		
Uniform Delay, d1	6.5		51.5	0.5		
Progression Factor	0.31		0.90	1.00		
Incremental Delay, d2	0.1		51.6	0.1		
Delay (s)	2.1		97.9	0.5		
Level of Service	A		F	A		
Approach Delay (s)	2.1			17.0	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Mitigated Cumulative Plus Project

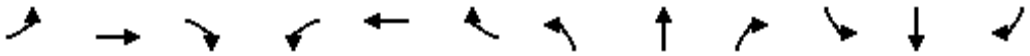
Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	188	210	74	144	160
Future Vol, veh/h	88	188	210	74	144	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	96	204	228	80	157	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	756	268	0	0	308	0
Stage 1	268	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	367	756	-	-	1219	-
Stage 1	763	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	756	-	-	1219	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	527	-	-	-	-	-

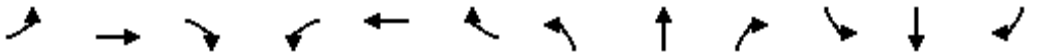
Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	320	756	1219	-
HCM Lane V/C Ratio	-	-	0.299	0.27	0.128	-
HCM Control Delay (s)	-	-	21	11.5	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	1.1	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	500	59	43	400	20	117	109	141	37	65	22
v/c Ratio	0.14	0.69	0.08	0.28	0.51	0.03	0.50	0.26	0.31	0.24	0.24	0.06
Control Delay	43.0	25.9	0.2	45.5	20.1	0.1	43.2	31.6	8.7	43.6	37.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	25.9	0.2	45.5	20.1	0.1	43.2	31.6	8.7	43.6	37.3	0.3
Queue Length 50th (ft)	11	215	0	21	120	0	57	49	1	18	31	0
Queue Length 95th (ft)	38	356	0	62	269	0	126	108	51	54	76	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	153	1105	992	151	1107	1013	336	1029	934	180	864	834
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.06	0.28	0.36	0.02	0.35	0.11	0.15	0.21	0.08	0.03

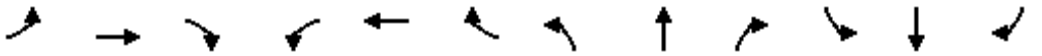
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	460	54	40	368	18	108	100	130	34	60	20
Future Volume (vph)	20	460	54	40	368	18	108	100	130	34	60	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	22	500	59	43	400	20	117	109	141	37	65	22
RTOR Reduction (vph)	0	0	36	0	0	12	0	0	109	0	0	19
Lane Group Flow (vph)	22	500	23	43	400	8	117	109	32	37	65	3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.8	30.5	30.5	2.8	31.5	31.5	7.9	16.7	16.7	3.3	12.1	12.1
Effective Green, g (s)	1.8	30.5	30.5	2.8	31.5	31.5	7.9	16.7	16.7	3.3	12.1	12.1
Actuated g/C Ratio	0.02	0.39	0.39	0.04	0.40	0.40	0.10	0.21	0.21	0.04	0.16	0.16
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	39	709	590	61	732	622	174	388	330	72	281	239
v/s Ratio Prot	0.01	c0.28		c0.03	0.22		c0.07	c0.06		0.02	0.04	
v/s Ratio Perm			0.02			0.01			0.02			0.00
v/c Ratio	0.56	0.71	0.04	0.70	0.55	0.01	0.67	0.28	0.10	0.51	0.23	0.01
Uniform Delay, d1	37.6	19.9	14.6	37.1	17.7	13.8	33.7	25.5	24.5	36.5	28.8	27.8
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	18.8	4.0	0.1	31.8	1.5	0.0	7.8	0.7	0.2	2.6	0.7	0.0
Delay (s)	56.4	23.9	14.7	68.9	19.2	13.9	41.5	26.2	24.7	39.0	29.5	27.8
Level of Service	E	C	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		24.2			23.6			30.5			32.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	57.0%	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)	20	460	54	40	368	18	108	100	130	34	60	20
Future Volume (veh/h)	20	460	54	40	368	18	108	100	130	34	60	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	22	500	59	43	400	20	117	109	141	37	65	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	44	670	556	73	700	593	149	292	248	66	205	173
Arrive On Green	0.03	0.37	0.37	0.04	0.38	0.38	0.09	0.16	0.16	0.04	0.11	0.11
Sat Flow, veh/h	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	22	500	59	43	400	20	117	109	141	37	65	22
Grp Sat Flow(s),veh/h/ln	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.2	1.3	2.0	0.8
Cycle Q Clear(g_c), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.2	1.3	2.0	0.8
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	44	670	556	73	700	593	149	292	248	66	205	173
V/C Ratio(X)	0.50	0.75	0.11	0.59	0.57	0.03	0.78	0.37	0.57	0.56	0.32	0.13
Avail Cap(c_a), veh/h	162	1204	999	159	1201	1018	354	1081	916	190	908	769
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	30.0	17.2	13.0	29.3	15.2	12.0	27.9	23.4	24.2	29.5	25.5	24.9
Incr Delay (d2), s/veh	10.1	3.5	0.2	8.7	1.6	0.0	3.4	1.4	3.5	2.8	1.5	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	0.4	5.4	0.5	0.7	3.7	0.1	1.6	1.3	1.9	0.5	0.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	20.8	13.2	38.0	16.7	12.0	31.3	24.7	27.7	32.2	27.0	25.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		581			463			367			124	
Approach Delay, s/veh		20.7			18.5			28.0			28.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	30.0	10.7	13.8	6.9	31.0	7.7	16.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 41	12.7	* 31	5.8	* 41	6.8	* 37
Max Q Clear Time (g_c+I1), s	3.5	16.9	6.1	4.0	2.8	12.8	3.3	7.2
Green Ext Time (p_c), s	0.0	6.0	0.1	0.5	0.0	4.6	0.0	1.8

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	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	584	20	43	395	28	10	10	147	24	20	20
Future Vol, veh/h	20	584	20	43	395	28	10	10	147	24	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	22	635	22	47	429	30	11	11	160	26	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	459	0	0	657	0	0	1239	1232	635	1299	1224	429
Stage 1	-	-	-	-	-	-	679	679	-	523	523	-
Stage 2	-	-	-	-	-	-	560	553	-	776	701	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1086	-	-	916	-	-	150	175	473	136	177	620
Stage 1	-	-	-	-	-	-	437	447	-	532	526	-
Stage 2	-	-	-	-	-	-	508	509	-	386	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1086	-	-	916	-	-	123	163	473	81	165	620
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	163	-	81	165	-
Stage 1	-	-	-	-	-	-	428	438	-	521	499	-
Stage 2	-	-	-	-	-	-	445	483	-	244	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.8	18.4	38.8
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	123	163	473	1086	-	-	916	-	-	81	165	620
HCM Lane V/C Ratio	0.088	0.067	0.338	0.02	-	-	0.051	-	-	0.322	0.132	0.035
HCM Control Delay (s)	37.1	28.7	16.4	8.4	-	-	9.1	-	-	69.3	30.1	11
HCM Lane LOS	E	D	C	A	-	-	A	-	-	F	D	B
HCM 95th %tile Q(veh)	0.3	0.2	1.5	0.1	-	-	0.2	-	-	1.2	0.4	0.1

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	674	12	106	373	23	198
Future Vol, veh/h	674	12	106	373	23	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	733	13	115	405	25	215

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	746	0	1368	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	635	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	862	-	162	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	862	-	140	421
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	458	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	140	421	-	-	862	-
HCM Lane V/C Ratio	0.179	0.511	-	-	0.134	-
HCM Control Delay (s)	36.2	22.2	-	-	9.8	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	2.8	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	930	17	171	488	33	298
v/c Ratio	0.76	0.02	0.41	0.30	0.26	0.70
Control Delay	20.3	5.9	9.4	2.1	50.6	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	5.9	9.4	2.1	50.6	32.0
Queue Length 50th (ft)	425	1	13	38	21	117
Queue Length 95th (ft)	#831	12	41	104	51	187
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1224	1044	422	1633	387	426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.02	0.41	0.30	0.09	0.70

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	856	16	157	449	30	274
Future Volume (vph)	856	16	157	449	30	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.14	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	261	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	930	17	171	488	33	298
RTOR Reduction (vph)	0	4	0	0	0	84
Lane Group Flow (vph)	930	13	171	488	33	214
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	66.5	66.5	86.9	86.9	5.1	19.0
Effective Green, g (s)	66.5	66.5	86.9	86.9	5.1	19.0
Actuated g/C Ratio	0.63	0.63	0.83	0.83	0.05	0.18
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1179	1002	415	1541	85	384
v/s Ratio Prot	c0.50		0.05	0.26	0.02	c0.07
v/s Ratio Perm		0.01	0.29			0.06
v/c Ratio	0.79	0.01	0.41	0.32	0.39	0.56
Uniform Delay, d1	14.1	7.1	13.0	2.1	48.4	39.2
Progression Factor	1.00	1.00	2.84	0.74	1.00	1.00
Incremental Delay, d2	5.4	0.0	0.6	0.5	2.9	1.8
Delay (s)	19.5	7.1	37.6	2.1	51.4	40.9
Level of Service	B	A	D	A	D	D
Approach Delay (s)	19.3			11.3	42.0	
Approach LOS	B			B	D	

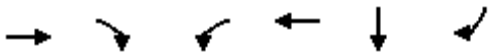
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	856	16	157	449	30	274
Future Volume (veh/h)	856	16	157	449	30	274
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	930	17	171	488	33	298
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1047	887	248	1274	347	403
Arrive On Green	0.56	0.56	0.12	1.00	0.19	0.19
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	930	17	171	488	33	298
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	45.7	0.5	4.2	0.0	1.6	18.1
Cycle Q Clear(g_c), s	45.7	0.5	4.2	0.0	1.6	18.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1047	887	248	1274	347	403
V/C Ratio(X)	0.89	0.02	0.69	0.38	0.10	0.74
Avail Cap(c_a), veh/h	1047	887	276	1274	390	442
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	20.2	10.3	20.8	0.0	34.7	35.9
Incr Delay (d2), s/veh	11.2	0.0	5.5	0.8	0.1	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.6	0.2	2.4	0.3	0.7	7.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	10.3	26.3	0.8	34.8	41.8
LnGrp LOS	C	B	C	A	C	D
Approach Vol, veh/h	947			659	331	
Approach Delay, s/veh	31.0			7.4	41.1	
Approach LOS	C			A	D	

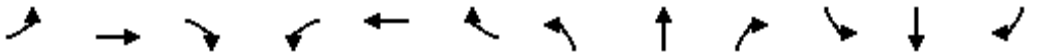
Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.7	65.3				78.0	27.0
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	7.9	54.6				69.0	23.0
Max Q Clear Time (g_c+I1), s	6.2	47.7				2.0	20.1
Green Ext Time (p_c), s	0.1	3.3				2.8	0.3

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C



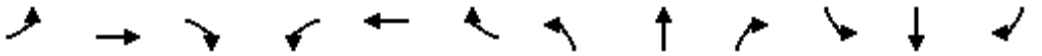
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	787	441	65	342	65	316
v/c Ratio	0.62	0.38	0.15	0.24	0.39	0.73
Control Delay	6.9	1.7	2.5	2.6	49.4	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	1.7	2.5	2.6	49.4	15.1
Queue Length 50th (ft)	149	15	3	14	42	0
Queue Length 95th (ft)	185	27	11	99	79	78
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1267	1161	437	1448	523	688
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.38	0.15	0.24	0.12	0.46

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	724	406	60	315	0	0	0	0	60	0	291
Future Volume (vph)	0	724	406	60	315	0	0	0	0	60	0	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1810	1538	1719	1810						1719	1538
Flt Permitted		1.00	1.00	0.25	1.00						0.95	1.00
Satd. Flow (perm)		1810	1538	450	1810						1719	1538
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)	0	787	441	65	342	0	0	0	0	65	0	316
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	0	0	0	285
Lane Group Flow (vph)	0	787	353	65	342	0	0	0	0	0	65	31
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		72.2	72.2	84.0	84.0						10.3	10.3
Effective Green, g (s)		72.2	72.2	84.0	84.0						10.3	10.3
Actuated g/C Ratio		0.69	0.69	0.80	0.80						0.10	0.10
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1244	1057	424	1448						168	150
v/s Ratio Prot		c0.43		0.01	c0.19						c0.04	
v/s Ratio Perm			0.23	0.11								0.02
v/c Ratio		0.63	0.33	0.15	0.24						0.39	0.21
Uniform Delay, d1		9.1	6.6	5.6	2.6						44.4	43.6
Progression Factor		0.51	0.38	0.62	0.71						1.00	1.00
Incremental Delay, d2		1.6	0.6	0.2	0.4						1.5	0.7
Delay (s)		6.2	3.1	3.6	2.2						45.9	44.3
Level of Service		A	A	A	A						D	D
Approach Delay (s)		5.1			2.4			0.0			44.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	62.3%	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	724	406	60	315	0	0	0	0	60	0	291
Future Volume (veh/h)	0	724	406	60	315	0	0	0	0	60	0	291
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	1826	1826	1826	1826	0				1826	1826	1826
Adj Flow Rate, veh/h	0	787	441	65	342	0				65	0	316
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	5	5	5	5	0				5	5	5
Cap, veh/h	0	1038	880	391	1225	0				395	0	352
Arrive On Green	0.00	1.00	1.00	0.08	1.00	0.00				0.23	0.00	0.23
Sat Flow, veh/h	0	1826	1547	1739	1826	0				1739	0	1547
Grp Volume(v), veh/h	0	787	441	65	342	0				65	0	316
Grp Sat Flow(s),veh/h/ln	0	1826	1547	1739	1826	0				1739	0	1547
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0				3.2	0.0	20.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.5	0.0	0.0				3.2	0.0	20.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1038	880	391	1225	0				395	0	352
V/C Ratio(X)	0.00	0.76	0.50	0.17	0.28	0.00				0.16	0.00	0.90
Avail Cap(c_a), veh/h	0	1038	880	403	1225	0				530	0	472
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.59	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	7.2	0.0	0.0				32.6	0.0	39.4
Incr Delay (d2), s/veh	0.0	3.1	1.2	0.2	0.6	0.0				0.2	0.0	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.3	0.5	0.2	0.0				1.3	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.1	1.2	7.4	0.6	0.0				32.8	0.0	55.6
LnGrp LOS	A	A	A	A	A	A				C	A	E
Approach Vol, veh/h		1228			407						381	
Approach Delay, s/veh		2.4			1.7						51.7	
Approach LOS		A			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	66.2		28.1		76.9
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.0	50.8		* 32		62.3
Max Q Clear Time (g_c+I1), s	3.5	2.0		22.8		2.0
Green Ext Time (p_c), s	0.0	7.7		1.0		1.8

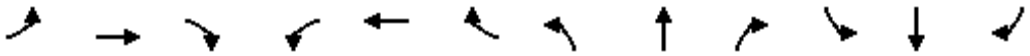
Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

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

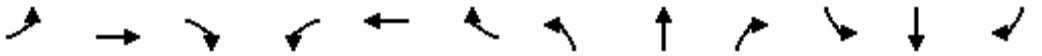
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	532	332	163	33	256	87
v/c Ratio	0.61	0.26	0.20	0.04	0.74	0.22
Control Delay	6.2	3.2	22.6	0.1	51.9	5.7
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	3.2	22.6	0.1	51.9	5.7
Queue Length 50th (ft)	69	25	63	0	163	0
Queue Length 95th (ft)	40	27	148	0	229	28
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	939	1292	821	742	536	550
Starvation Cap Reductn	64	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.26	0.20	0.04	0.48	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	489	305	0	0	150	30	225	10	80	0	0	0
Future Volume (vph)	489	305	0	0	150	30	225	10	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1760	1568			
Flt Permitted	0.57	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1059	1845			1845	1568		1760	1568			
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)	532	332	0	0	163	33	245	11	87	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	70	0	0	0
Lane Group Flow (vph)	532	332	0	0	163	15	0	256	17	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	73.6	73.6			46.8	46.8		20.7	20.7			
Effective Green, g (s)	73.6	73.6			46.8	46.8		20.7	20.7			
Actuated g/C Ratio	0.70	0.70			0.45	0.45		0.20	0.20			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	876	1293			822	698		346	309			
v/s Ratio Prot	c0.12	0.18			0.09			c0.15				
v/s Ratio Perm	c0.31					0.01			0.01			
v/c Ratio	0.61	0.26			0.20	0.02		0.74	0.06			
Uniform Delay, d1	7.1	5.7			17.7	16.3		39.6	34.2			
Progression Factor	0.47	0.43			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.0	0.4			0.5	0.1		8.1	0.1			
Delay (s)	4.3	2.8			18.2	16.3		47.7	34.3			
Level of Service	A	A			B	B		D	C			
Approach Delay (s)		3.7			17.9			44.3			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	62.3%	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)	489	305	0	0	150	30	225	10	80	0	0	0
Future Volume (veh/h)	489	305	0	0	150	30	225	10	80	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	532	332	0	0	163	33	245	11	87			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	891	1344	0	0	915	775	294	13	273			
Arrive On Green	0.17	0.72	0.00	0.00	0.49	0.49	0.17	0.17	0.17			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1695	76	1572			
Grp Volume(v), veh/h	532	332	0	0	163	33	256	0	87			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1771	0	1572			
Q Serve(g_s), s	14.4	6.3	0.0	0.0	5.1	1.1	14.7	0.0	5.1			
Cycle Q Clear(g_c), s	14.4	6.3	0.0	0.0	5.1	1.1	14.7	0.0	5.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	891	1344	0	0	915	775	308	0	273			
V/C Ratio(X)	0.60	0.25	0.00	0.00	0.18	0.04	0.83	0.00	0.32			
Avail Cap(c_a), veh/h	1088	1344	0	0	915	775	540	0	479			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.1	4.9	0.0	0.0	14.8	13.8	41.9	0.0	37.9			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	0.4	0.1	5.8	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	1.7	0.0	0.0	2.0	0.4	6.8	0.0	2.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	5.2	0.0	0.0	15.2	13.9	47.7	0.0	38.6			
LnGrp LOS	A	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		864			196			343				
Approach Delay, s/veh		7.3			15.0			45.4				
Approach LOS		A			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		82.6			24.3	58.3		22.4				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		62.3			29.5	26.3		32.0				
Max Q Clear Time (g_c+I1), s		8.3			16.4	7.1		16.7				
Green Ext Time (p_c), s		1.8			1.4	0.7		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	338	126	320	230	34
Future Vol, veh/h	48	338	126	320	230	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	52	367	137	348	250	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	891	269	287	0	-	0
Stage 1	269	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	312	767	1269	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	278	767	1269	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1269	-	278	767	-	-
HCM Lane V/C Ratio	0.108	-	0.188	0.479	-	-
HCM Control Delay (s)	8.2	-	20.9	13.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	2.6	-	-

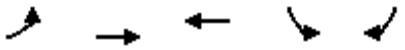
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	190	53	287	126	28	213
Future Vol, veh/h	190	53	287	126	28	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	58	312	137	30	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	604	312	0	0	449	0
Stage 1	312	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	461	728	-	-	1111	-
Stage 1	742	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	449	728	-	-	1111	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	738	-	-	-	-	-

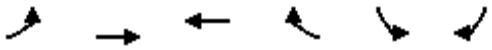
Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	449	728	1111	-
HCM Lane V/C Ratio	-	-	0.46	0.079	0.027	-
HCM Control Delay (s)	-	-	19.7	10.4	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.3	0.1	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	235	446	478	215	183
v/c Ratio	0.53	0.27	0.47	0.72	0.44
Control Delay	16.5	14.5	22.7	44.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	14.5	22.7	44.0	8.6
Queue Length 50th (ft)	46	56	76	87	0
Queue Length 95th (ft)	77	140	172	195	55
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	849	1769	1106	457	545
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.25	0.43	0.47	0.34

Intersection Summary

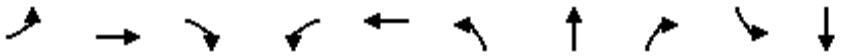


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	216	410	320	120	198	168
Future Volume (vph)	216	410	320	120	198	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3395		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3395		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	446	348	130	215	183
RTOR Reduction (vph)	0	0	38	0	0	152
Lane Group Flow (vph)	235	446	440	0	215	31
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	17.7	33.1	20.6		12.2	12.2
Effective Green, g (s)	17.7	33.1	20.6		12.2	12.2
Actuated g/C Ratio	0.25	0.46	0.29		0.17	0.17
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	436	1633	975		301	269
v/s Ratio Prot	c0.13	0.13	c0.13			
v/s Ratio Perm					c0.12	0.02
v/c Ratio	0.54	0.27	0.45		0.71	0.12
Uniform Delay, d1	23.5	11.9	20.9		28.1	25.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.0	0.1		6.5	0.1
Delay (s)	24.1	11.9	21.0		34.6	25.3
Level of Service	C	B	C		C	C
Approach Delay (s)		16.1	21.0		30.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	21.2
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

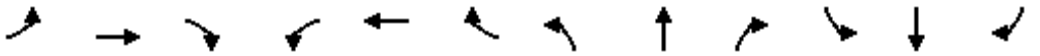
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



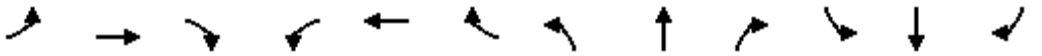
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	641	76	196	702	65	48	217	175	175
v/c Ratio	0.17	0.37	0.09	0.76	0.39	0.42	0.30	0.51	0.74	0.72
Control Delay	38.8	22.0	0.3	56.8	9.0	54.0	49.5	14.2	63.0	58.7
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	38.8	22.6	0.3	56.8	9.0	54.0	49.5	14.3	63.0	58.7
Queue Length 50th (ft)	24	146	0	138	61	45	33	48	126	118
Queue Length 95th (ft)	59	267	2	202	213	82	65	61	194	187
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	306	1724	822	354	1860	289	304	503	320	326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	695	0	0	0	0	0	19	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.62	0.09	0.55	0.38	0.22	0.16	0.45	0.55	0.54

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	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	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
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)	43	641	76	196	522	180	65	48	217	265	52	33
RTOR Reduction (vph)	0	0	41	0	25	0	0	0	78	0	8	0
Lane Group Flow (vph)	43	641	35	196	677	0	65	48	139	175	167	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Effective Green, g (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Actuated g/C Ratio	0.13	0.46	0.46	0.16	0.49		0.08	0.08	0.24	0.14	0.14	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	230	1631	710	289	1682		139	147	382	238	236	
v/s Ratio Prot	0.02	0.18		c0.11	c0.20		c0.04	0.03	0.06	c0.10	0.10	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.19	0.39	0.05	0.68	0.40		0.47	0.33	0.36	0.74	0.71	
Uniform Delay, d1	42.7	19.5	16.4	43.3	17.5		48.4	47.9	34.6	45.2	45.0	
Progression Factor	1.00	1.00	1.00	0.88	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.7	0.1	4.5	0.7		0.9	0.5	0.2	9.7	7.7	
Delay (s)	42.8	20.2	16.5	42.6	7.9		49.3	48.4	34.8	54.9	52.7	
Level of Service	D	C	B	D	A		D	D	C	D	D	
Approach Delay (s)		21.1			15.5			39.6			53.8	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	52.7%	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)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (veh/h)	40	590	70	180	480	166	60	44	200	244	48	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	641	76	196	522	180	65	48	217	175	178	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	748	1034	460	635	590	203	107	112	660	246	211	39
Arrive On Green	0.42	0.29	0.29	0.71	0.45	0.45	0.06	0.06	0.06	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1580	1781	2596	891	1781	1870	1577	1781	1533	284
Grp Volume(v), veh/h	43	641	76	196	357	345	65	48	217	175	0	211
Grp Sat Flow(s),veh/h/ln	1781	1777	1580	1781	1777	1710	1781	1870	1577	1781	0	1817
Q Serve(g_s), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Cycle Q Clear(g_c), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	748	1034	460	635	404	389	107	112	660	246	0	251
V/C Ratio(X)	0.06	0.62	0.17	0.31	0.88	0.89	0.61	0.43	0.33	0.71	0.00	0.84
Avail Cap(c_a), veh/h	748	1034	460	635	678	653	291	306	823	340	0	347
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	33.7	29.1	10.8	28.6	28.7	50.4	49.9	21.7	45.3	0.0	46.2
Incr Delay (d2), s/veh	0.0	2.8	0.8	0.1	21.4	22.8	2.1	1.0	0.1	1.9	0.0	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.7	1.6	1.5	8.6	8.5	1.8	1.3	3.7	4.6	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	36.5	29.8	10.9	50.0	51.5	52.5	50.8	21.8	47.2	0.0	55.7
LnGrp LOS	B	D	C	B	D	D	D	D	C	D	A	E
Approach Vol, veh/h		760			898			330			386	
Approach Delay, s/veh		34.9			42.0			32.1			51.8	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	44.2	36.0		19.2	51.2	29.0		10.6				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	32.0		21.0	12.0	42.0		18.0				
Max Q Clear Time (g_c+I1), s	6.5	19.2		14.5	3.6	22.3		5.9				
Green Ext Time (p_c), s	0.1	2.5		0.6	0.0	2.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		39.9	
HCM 6th LOS		D	

Notes

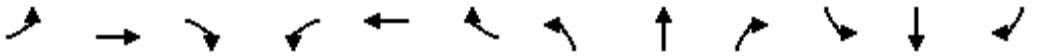
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1342	217	772	598	310	98	278
v/c Ratio	1.10	1.23	0.45	1.32	1.38	0.12	0.37
Control Delay	89.4	182.2	6.9	191.4	232.7	19.1	12.1
Queue Delay	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.8	182.2	6.9	191.4	232.7	19.1	12.1
Queue Length 50th (ft)	~576	~179	85	~546	~291	40	63
Queue Length 95th (ft)	#683	#334	93	#763	#465	74	128
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1217	177	1705	454	225	809	753
Starvation Cap Reductn	16	0	0	0	0	0	0
Spillback Cap Reductn	103	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.23	0.45	1.32	1.38	0.12	0.37

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1204	30	200	710	0	0	0	550	285	90	256
Future Volume (vph)	0	1204	30	200	710	0	0	0	550	285	90	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3524		1770	3539				1611	1770	1863	1562
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3524		1770	3539				1611	1770	1863	1562
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)	0	1309	33	217	772	0	0	0	598	310	98	278
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	1342	0	217	772	0	0	0	598	310	98	203
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Effective Green, g (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Actuated g/C Ratio		0.35		0.10	0.48				0.28	0.13	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1217		177	1705				454	225	809	678
v/s Ratio Prot		c0.38		c0.12	0.22				c0.37	c0.18	0.05	
v/s Ratio Perm												0.13
v/c Ratio		1.10		1.23	0.45				1.32	1.38	0.12	0.30
Uniform Delay, d1		36.0		49.5	18.9				39.5	48.0	18.6	20.2
Progression Factor		0.87		0.97	0.32				1.00	1.00	1.00	1.00
Incremental Delay, d2		58.2		140.6	0.8				157.6	195.4	0.3	1.1
Delay (s)		89.7		188.8	6.9				197.1	243.4	18.9	21.4
Level of Service		F		F	A				F	F	B	C
Approach Delay (s)		89.7			46.8			197.1			121.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	101.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

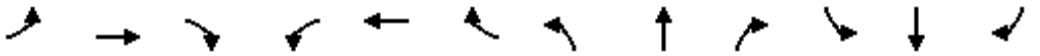
c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	678	1147	935	396	158	157	228
v/c Ratio	0.90	0.42	0.69	0.48	0.67	0.67	0.71
Control Delay	29.7	3.7	32.4	4.8	58.4	57.8	33.4
Queue Delay	1.1	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	4.9	32.4	4.8	58.4	57.8	33.4
Queue Length 50th (ft)	298	84	285	0	113	112	74
Queue Length 95th (ft)	#592	161	399	68	173	173	149
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	755	2748	1364	831	397	399	463
Starvation Cap Reductn	14	1272	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.78	0.69	0.48	0.40	0.39	0.49

Intersection Summary

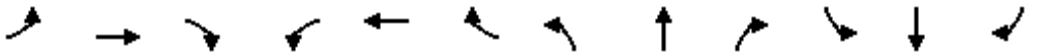
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	624	1055	0	0	860	364	280	10	210	0	0	0
Future Volume (vph)	624	1055	0	0	860	364	280	10	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3539	1527	1681	1691	1583			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	307	3539			3539	1527	1681	1691	1583			
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)	678	1147	0	0	935	396	304	11	228	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	243	0	0	101	0	0	0
Lane Group Flow (vph)	678	1147	0	0	935	153	158	157	127	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Effective Green, g (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Actuated g/C Ratio	0.78	0.78			0.39	0.39	0.14	0.14	0.14			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	755	2747			1364	588	235	236	221			
v/s Ratio Prot	c0.32	0.32			0.26		c0.09	0.09				
v/s Ratio Perm	c0.38					0.10			0.08			
v/c Ratio	0.90	0.42			0.69	0.26	0.67	0.67	0.58			
Uniform Delay, d1	22.1	4.1			28.2	23.1	44.9	44.9	44.2			
Progression Factor	0.68	0.75			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	8.8	0.3			2.8	1.1	6.7	6.2	3.0			
Delay (s)	23.8	3.4			31.1	24.2	51.6	51.1	47.2			
Level of Service	C	A			C	C	D	D	D			
Approach Delay (s)		10.9			29.0			49.6			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	77.7%	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)	624	1055	0	0	860	364	280	10	210	0	0	0
Future Volume (veh/h)	624	1055	0	0	860	364	280	10	210	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	678	1147	0	0	935	396	312	0	228			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	825	2658	0	0	1027	445	597	0	266			
Arrive On Green	0.42	0.75	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1781	3647	0	0	3647	1539	3563	0	1585			
Grp Volume(v), veh/h	678	1147	0	0	935	396	312	0	228			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1539	1781	0	1585			
Q Serve(g_s), s	31.8	13.2	0.0	0.0	27.9	27.1	8.8	0.0	15.4			
Cycle Q Clear(g_c), s	31.8	13.2	0.0	0.0	27.9	27.1	8.8	0.0	15.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	825	2658	0	0	1027	445	597	0	266			
V/C Ratio(X)	0.82	0.43	0.00	0.00	0.91	0.89	0.52	0.00	0.86			
Avail Cap(c_a), veh/h	825	2658	0	0	1027	445	842	0	375			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.54	0.54	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.8	5.2	0.0	0.0	37.7	37.4	41.8	0.0	44.5			
Incr Delay (d2), s/veh	3.5	0.3	0.0	0.0	13.3	22.5	0.5	0.0	11.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.4	4.0	0.0	0.0	13.7	12.7	3.9	0.0	13.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	5.4	0.0	0.0	51.1	60.0	42.3	0.0	56.4			
LnGrp LOS	C	A	A	A	D	E	D	A	E			
Approach Vol, veh/h		1825			1331			540				
Approach Delay, s/veh		14.3			53.7			48.2				
Approach LOS		B			D			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		86.4		23.6	50.6	35.8			
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0			
Max Green Setting (Gmax), s		* 75		* 26	38.9	31.8			
Max Q Clear Time (g_c+I1), s		15.2		17.4	33.8	29.9			
Green Ext Time (p_c), s		11.1		1.1	0.7	1.3			

Intersection Summary		
HCM 6th Ctrl Delay	33.5	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2205	261	978
v/c Ratio	0.78	1.47	0.28
Control Delay	2.1	269.9	0.2
Queue Delay	0.2	0.0	0.1
Total Delay	2.4	269.9	0.3
Queue Length 50th (ft)	45	~244	0
Queue Length 95th (ft)	m0	#409	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2837	177	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	147	0	1023
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	1.47	0.39

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1649	380	240	900	0	0
Future Volume (vph)	1649	380	240	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3422		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3422		1770	3539		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1792	413	261	978	0	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	2199	0	261	978	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	91.0		11.0	110.0		
Effective Green, g (s)	91.0		11.0	104.8		
Actuated g/C Ratio	0.83		0.10	0.95		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2830		177	3371		
v/s Ratio Prot	c0.64		c0.15	0.28		
v/s Ratio Perm						
v/c Ratio	0.78		1.47	0.29		
Uniform Delay, d1	4.6		49.5	0.2		
Progression Factor	0.40		0.90	1.00		
Incremental Delay, d2	0.1		236.1	0.2		
Delay (s)	2.0		280.6	0.3		
Level of Service	A		F	A		
Approach Delay (s)	2.0			59.4	0.0	
Approach LOS	A			E	A	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

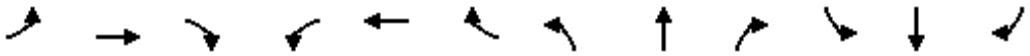
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	176	230	88	228	220
Future Vol, veh/h	96	176	230	88	228	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	185	242	93	240	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1001	289	0	0	335	0
Stage 1	289	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	268	748	-	-	1219	-
Stage 1	758	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	215	748	-	-	1219	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	389	-	-	-	-	-

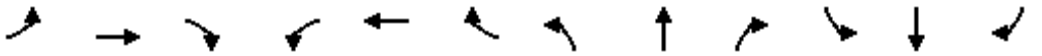
Approach	WB	NB	SB
HCM Control Delay, s	20	0	4.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	215	748	1219	-
HCM Lane V/C Ratio	-	-	0.47	0.248	0.197	-
HCM Control Delay (s)	-	-	35.8	11.4	8.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.3	1	0.7	-



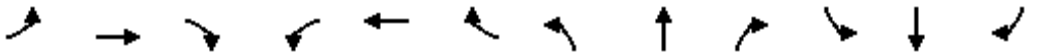
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	534	128	87	476	39	115	65	65	30	87	22
v/c Ratio	0.24	0.66	0.16	0.46	0.52	0.05	0.52	0.18	0.15	0.24	0.35	0.06
Control Delay	48.6	27.6	1.5	50.2	20.9	0.1	50.1	34.2	0.8	49.5	43.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	27.6	1.5	50.2	20.9	0.1	50.1	34.2	0.8	49.5	43.0	0.3
Queue Length 50th (ft)	19	264	0	48	211	0	64	33	0	17	47	0
Queue Length 95th (ft)	53	411	13	107	333	0	133	75	0	50	100	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	142	991	926	211	1065	982	255	837	785	137	713	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.54	0.14	0.41	0.45	0.04	0.45	0.08	0.08	0.22	0.12	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	491	118	80	438	36	106	60	60	28	80	20
Future Volume (vph)	30	491	118	80	438	36	106	60	60	28	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	33	534	128	87	476	39	115	65	65	30	87	22
RTOR Reduction (vph)	0	0	74	0	0	21	0	0	53	0	0	20
Lane Group Flow (vph)	33	534	54	87	476	18	115	65	12	30	87	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	38.4	38.4	7.0	42.0	42.0	10.7	17.0	17.0	3.3	9.6	9.6
Effective Green, g (s)	3.4	38.4	38.4	7.0	42.0	42.0	10.7	17.0	17.0	3.3	9.6	9.6
Actuated g/C Ratio	0.04	0.43	0.43	0.08	0.47	0.47	0.12	0.19	0.19	0.04	0.11	0.11
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	66	793	673	137	867	737	209	351	298	64	198	164
v/s Ratio Prot	0.02	c0.29		c0.05	c0.26		c0.06	0.03		0.02	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.50	0.67	0.08	0.64	0.55	0.02	0.55	0.19	0.04	0.47	0.44	0.01
Uniform Delay, d1	42.6	20.9	15.4	40.4	17.3	13.0	37.5	30.8	29.9	42.6	37.8	36.1
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	6.9	3.0	0.1	9.7	1.3	0.0	1.8	0.4	0.1	2.0	2.7	0.1
Delay (s)	49.4	23.8	15.5	50.0	18.6	13.1	39.3	31.2	30.0	44.6	40.5	36.1
Level of Service	D	C	B	D	B	B	D	C	C	D	D	D
Approach Delay (s)		23.5			22.7			34.7			40.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	58.8%	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)	30	491	118	80	438	36	106	60	60	28	80	20
Future Volume (veh/h)	30	491	118	80	438	36	106	60	60	28	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	534	128	87	476	39	115	65	65	30	87	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	715	606	113	770	652	148	290	246	57	195	161
Arrive On Green	0.03	0.38	0.38	0.06	0.41	0.41	0.08	0.16	0.16	0.03	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Grp Volume(v), veh/h	33	534	128	87	476	39	115	65	65	30	87	22
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Q Serve(g_s), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
Cycle Q Clear(g_c), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
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	61	715	606	113	770	652	148	290	246	57	195	161
V/C Ratio(X)	0.54	0.75	0.21	0.77	0.62	0.06	0.78	0.22	0.26	0.53	0.45	0.14
Avail Cap(c_a), veh/h	173	1208	1024	259	1297	1100	312	1020	864	168	869	719
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	31.7	17.8	13.8	30.8	15.5	11.8	30.0	24.7	24.8	31.8	28.1	27.2
Incr Delay (d2), s/veh	8.7	3.3	0.4	12.5	1.7	0.1	3.3	0.7	1.0	2.8	2.7	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	0.6	6.2	1.1	1.6	4.8	0.3	1.7	0.8	0.9	0.5	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	21.1	14.2	43.2	17.2	11.9	33.3	25.3	25.8	34.6	30.8	27.8
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		695			602			245			139	
Approach Delay, s/veh		20.8			20.6			29.2			31.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	32.6	10.8	13.8	7.6	34.6	7.4	17.2
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 43	11.7	* 31	6.5	* 46	6.3	* 36
Max Q Clear Time (g_c+I1), s	5.2	18.5	6.2	4.9	3.2	15.4	3.1	4.4
Green Ext Time (p_c), s	0.1	7.1	0.1	0.7	0.0	5.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	539	20	64	524	36	10	10	16	28	20	20
Future Vol, veh/h	20	539	20	64	524	36	10	10	16	28	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	556	21	66	540	37	10	10	16	29	21	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	577	0	0	577	0	0	1310	1307	556	1294	1291	540
Stage 1	-	-	-	-	-	-	598	598	-	672	672	-
Stage 2	-	-	-	-	-	-	712	709	-	622	619	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	992	-	-	992	-	-	135	159	529	139	162	540
Stage 1	-	-	-	-	-	-	487	489	-	444	453	-
Stage 2	-	-	-	-	-	-	422	436	-	473	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	992	-	-	992	-	-	109	145	529	119	148	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	145	-	119	148	-
Stage 1	-	-	-	-	-	-	477	479	-	435	423	-
Stage 2	-	-	-	-	-	-	360	407	-	439	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	25.6	31.7
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	109	145	529	992	-	-	992	-	-	119	148	540
HCM Lane V/C Ratio	0.095	0.071	0.031	0.021	-	-	0.067	-	-	0.243	0.139	0.038
HCM Control Delay (s)	41.4	31.7	12	8.7	-	-	8.9	-	-	44.7	33.2	11.9
HCM Lane LOS	E	D	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	0.3	0.2	0.1	0.1	-	-	0.2	-	-	0.9	0.5	0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	519	25	206	546	17	147
Future Vol, veh/h	519	25	206	546	17	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	564	27	224	593	18	160

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	591	0	1605	564
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	1041	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	985	-	116	525
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	340	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	985	-	90	525
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	263	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	19
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	90	525	-	-	985	-
HCM Lane V/C Ratio	0.205	0.304	-	-	0.227	-
HCM Control Delay (s)	55.1	14.8	-	-	9.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.3	-	-	0.9	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	653	71	372	745	73	262
v/c Ratio	0.62	0.08	0.60	0.48	0.46	0.43
Control Delay	22.7	6.2	11.6	4.2	56.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	6.2	11.6	4.2	56.0	12.6
Queue Length 50th (ft)	309	5	49	133	50	58
Queue Length 95th (ft)	549	32	140	125	94	106
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1045	913	640	1540	370	626
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.08	0.58	0.48	0.20	0.42

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	601	65	342	685	67	241
Future Volume (vph)	601	65	342	685	67	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.24	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	449	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	653	71	372	745	73	262
RTOR Reduction (vph)	0	25	0	0	0	106
Lane Group Flow (vph)	653	46	372	745	73	156
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	60.4	60.4	88.3	88.3	8.7	30.1
Effective Green, g (s)	60.4	60.4	88.3	88.3	8.7	30.1
Actuated g/C Ratio	0.55	0.55	0.80	0.80	0.08	0.27
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1022	869	617	1495	139	526
v/s Ratio Prot	c0.35		c0.12	0.40	c0.04	0.06
v/s Ratio Perm		0.03	0.37			0.04
v/c Ratio	0.64	0.05	0.60	0.50	0.53	0.30
Uniform Delay, d1	17.2	11.5	9.7	3.6	48.7	31.6
Progression Factor	1.00	1.00	1.85	0.79	1.00	1.00
Incremental Delay, d2	3.1	0.1	1.4	1.0	3.6	0.3
Delay (s)	20.3	11.6	19.3	3.8	52.2	31.9
Level of Service	C	B	B	A	D	C
Approach Delay (s)	19.4			9.0	36.3	
Approach LOS	B			A	D	

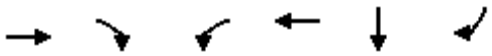
Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	601	65	342	685	67	241
Future Volume (veh/h)	601	65	342	685	67	241
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	653	71	372	745	73	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1015	860	486	1340	295	444
Arrive On Green	0.54	0.54	0.15	0.95	0.17	0.17
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	653	71	372	745	73	262
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	27.0	2.4	9.9	4.4	3.9	15.7
Cycle Q Clear(g_c), s	27.0	2.4	9.9	4.4	3.9	15.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1015	860	486	1340	295	444
V/C Ratio(X)	0.64	0.08	0.76	0.56	0.25	0.59
Avail Cap(c_a), veh/h	1015	860	614	1340	372	513
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00
Uniform Delay (d), s/veh	17.7	12.1	14.2	0.8	39.9	34.1
Incr Delay (d2), s/veh	3.1	0.2	3.2	1.2	0.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.8	3.2	1.1	1.8	6.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	12.2	17.4	2.1	40.4	35.5
LnGrp LOS	C	B	B	A	D	D
Approach Vol, veh/h	724			1117	335	
Approach Delay, s/veh	20.0			7.2	36.5	
Approach LOS	B			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	19.1	66.2				85.3	24.7
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.5	47.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	11.9	29.0				6.4	17.7
Green Ext Time (p_c), s	0.7	3.7				5.1	0.5

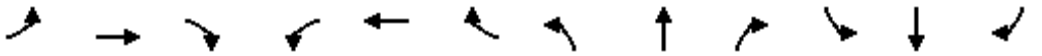
Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	511	357	72	552	82	507
v/c Ratio	0.47	0.34	0.14	0.44	0.20	0.87
Control Delay	10.3	1.3	8.8	12.0	31.9	32.2
Queue Delay	0.0	0.0	0.0	1.4	0.0	0.0
Total Delay	10.3	1.3	8.8	13.5	31.9	32.2
Queue Length 50th (ft)	100	1	5	148	47	159
Queue Length 95th (ft)	207	13	m60	411	74	252
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1079	1045	502	1259	645	757
Starvation Cap Reductn	0	0	0	490	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.34	0.14	0.72	0.13	0.67

Intersection Summary

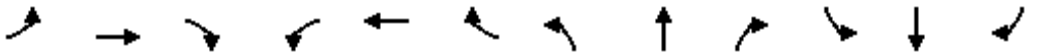
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	496	346	70	535	0	0	0	0	70	10	492
Future Volume (vph)	0	496	346	70	535	0	0	0	0	70	10	492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1784	1583
Flt Permitted		1.00	1.00	0.35	1.00						0.96	1.00
Satd. Flow (perm)		1863	1583	643	1863						1784	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	511	357	72	552	0	0	0	0	72	10	507
RTOR Reduction (vph)	0	0	132	0	0	0	0	0	0	0	0	224
Lane Group Flow (vph)	0	511	225	72	552	0	0	0	0	0	82	283
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		62.4	62.4	74.4	74.4						24.9	24.9
Effective Green, g (s)		62.4	62.4	74.4	74.4						24.9	24.9
Actuated g/C Ratio		0.57	0.57	0.68	0.68						0.23	0.23
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1056	897	491	1260						403	358
v/s Ratio Prot		c0.27		0.01	c0.30						0.05	
v/s Ratio Perm			0.14	0.09								c0.18
v/c Ratio		0.48	0.25	0.15	0.44						0.20	0.79
Uniform Delay, d1		14.2	12.0	7.8	8.2						34.5	40.1
Progression Factor		0.52	0.16	0.96	1.05						1.00	1.00
Incremental Delay, d2		1.3	0.6	0.1	0.9						0.3	11.4
Delay (s)		8.7	2.5	7.5	9.6						34.8	51.5
Level of Service		A	A	A	A						C	D
Approach Delay (s)		6.1			9.3			0.0			49.1	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	97.3%	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 (veh/h)	0	496	346	70	535	0	0	0	0	70	10	492
Future Volume (veh/h)	0	496	346	70	535	0	0	0	0	70	10	492
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	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	511	357	72	552	0				72	10	507
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	870	738	272	1057	0				531	74	536
Arrive On Green	0.00	0.15	0.15	0.08	1.00	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	1870	1585	1781	1870	0				1573	219	1585
Grp Volume(v), veh/h	0	511	357	72	552	0				82	0	507
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1781	1870	0				1792	0	1585
Q Serve(g_s), s	0.0	28.0	22.7	2.2	0.0	0.0				3.5	0.0	34.3
Cycle Q Clear(g_c), s	0.0	28.0	22.7	2.2	0.0	0.0				3.5	0.0	34.3
Prop In Lane	0.00		1.00	1.00		0.00				0.88		1.00
Lane Grp Cap(c), veh/h	0	870	738	272	1057	0				605	0	536
V/C Ratio(X)	0.00	0.59	0.48	0.26	0.52	0.00				0.14	0.00	0.95
Avail Cap(c_a), veh/h	0	870	738	289	1057	0				648	0	574
HCM Platoon Ratio	1.00	0.33	0.33	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.80	0.80	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	36.7	34.5	16.8	0.0	0.0				25.3	0.0	35.5
Incr Delay (d2), s/veh	0.0	2.3	1.8	0.5	1.8	0.0				0.1	0.0	24.3
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	14.4	9.9	0.8	0.5	0.0				1.5	0.0	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.0	36.3	17.3	1.8	0.0				25.4	0.0	59.7
LnGrp LOS	A	D	D	B	A	A				C	A	E
Approach Vol, veh/h		868			624						589	
Approach Delay, s/veh		37.9			3.6						55.0	
Approach LOS		D			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.9	57.7		41.4		68.6
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.5	47.5		* 40		59.5
Max Q Clear Time (g_c+I1), s	4.2	30.0		36.3		2.0
Green Ext Time (p_c), s	0.0	3.8		0.9		3.3

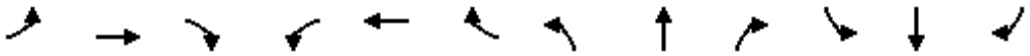
Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

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

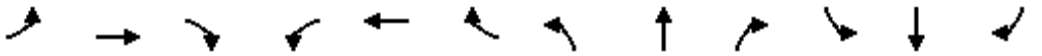
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	391	224	220	22	438	65
v/c Ratio	0.57	0.20	0.32	0.03	0.82	0.12
Control Delay	9.1	4.9	30.0	0.1	48.4	2.1
Queue Delay	0.2	0.0	0.0	0.0	0.2	0.0
Total Delay	9.3	4.9	30.0	0.1	48.6	2.1
Queue Length 50th (ft)	50	14	110	0	285	0
Queue Length 95th (ft)	66	37	217	0	362	12
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	744	1113	697	640	658	648
Starvation Cap Reductn	48	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	22	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.20	0.32	0.03	0.69	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	206	0	0	202	20	393	10	60	0	0	0
Future Volume (vph)	360	206	0	0	202	20	393	10	60	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1759	1568			
Flt Permitted	0.50	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	916	1845			1845	1568		1759	1568			
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)	391	224	0	0	220	22	427	11	65	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	45	0	0	0
Lane Group Flow (vph)	391	224	0	0	220	8	0	438	20	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	66.1	66.1			41.3	41.3		33.2	33.2			
Effective Green, g (s)	66.1	66.1			41.3	41.3		33.2	33.2			
Actuated g/C Ratio	0.60	0.60			0.38	0.38		0.30	0.30			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	689	1108			692	588		530	473			
v/s Ratio Prot	c0.09	0.12			0.12			c0.25				
v/s Ratio Perm	c0.25					0.01			0.01			
v/c Ratio	0.57	0.20			0.32	0.01		0.83	0.04			
Uniform Delay, d1	11.9	10.0			24.4	21.6		35.7	27.2			
Progression Factor	0.46	0.39			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.0	0.4			1.2	0.0		10.2	0.0			
Delay (s)	6.5	4.3			25.6	21.6		45.9	27.2			
Level of Service	A	A			C	C		D	C			
Approach Delay (s)		5.7			25.2			43.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	97.3%	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 (veh/h)	360	206	0	0	202	20	393	10	60	0	0	0
Future Volume (veh/h)	360	206	0	0	202	20	393	10	60	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	391	224	0	0	220	22	427	11	65			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	713	1159	0	0	764	647	480	12	437			
Arrive On Green	0.26	1.00	0.00	0.00	0.41	0.41	0.28	0.28	0.28			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1725	44	1572			
Grp Volume(v), veh/h	391	224	0	0	220	22	438	0	65			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1769	0	1572			
Q Serve(g_s), s	14.1	0.0	0.0	0.0	8.7	0.9	26.1	0.0	3.4			
Cycle Q Clear(g_c), s	14.1	0.0	0.0	0.0	8.7	0.9	26.1	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	713	1159	0	0	764	647	492	0	437			
V/C Ratio(X)	0.55	0.19	0.00	0.00	0.29	0.03	0.89	0.00	0.15			
Avail Cap(c_a), veh/h	850	1159	0	0	764	647	656	0	583			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.6	0.0	0.0	0.0	21.6	19.3	38.1	0.0	29.9			
Incr Delay (d2), s/veh	0.6	0.3	0.0	0.0	1.0	0.1	11.5	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.8	0.1	0.0	0.0	3.7	0.3	12.7	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.3	0.0	0.0	22.6	19.4	49.6	0.0	30.0			
LnGrp LOS	B	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		615			242			503				
Approach Delay, s/veh		7.9			22.3			47.0				
Approach LOS		A			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.2			23.4	51.8		34.8				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		58.5			25.5	26.5		40.8				
Max Q Clear Time (g_c+I1), s		2.0			16.1	10.7		28.1				
Green Ext Time (p_c), s		1.1			0.8	0.9		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			24.9									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	220	174	230	260	68
Future Vol, veh/h	56	220	174	230	260	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	239	189	250	283	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	948	320	357	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	289	721	1202	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	244	721	1202	-	-	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	3.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1202	-	244	721	-	-
HCM Lane V/C Ratio	0.157	-	0.249	0.332	-	-
HCM Control Delay (s)	8.6	-	24.6	12.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	1	1.5	-	-

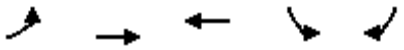
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	155	39	196	212	57	354
Future Vol, veh/h	155	39	196	212	57	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	42	213	230	62	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	722	213	0	0	443	0
Stage 1	213	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	394	827	-	-	1117	-
Stage 1	823	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	372	827	-	-	1117	-
Mov Cap-2 Maneuver	372	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	570	-	-	-	-	-

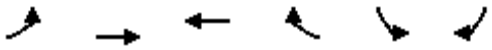
Approach	WB	NB	SB
HCM Control Delay, s	19.8	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	372	827	1117	-
HCM Lane V/C Ratio	-	-	0.453	0.051	0.055	-
HCM Control Delay (s)	-	-	22.4	9.6	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.2	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	225	432	749	229	211
v/c Ratio	0.55	0.26	0.69	0.72	0.48
Control Delay	20.0	14.7	25.8	44.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	14.7	25.8	44.2	10.8
Queue Length 50th (ft)	44	55	131	89	8
Queue Length 95th (ft)	94	136	276	218	75
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	794	1958	1377	479	567
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.22	0.54	0.48	0.37

Intersection Summary

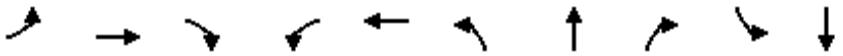


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	214	410	490	221	218	200
Future Volume (vph)	214	410	490	221	218	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3384		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3384		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	432	516	233	229	211
RTOR Reduction (vph)	0	0	51	0	0	155
Lane Group Flow (vph)	225	432	698	0	229	56
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	16.5	33.7	22.5		13.1	13.1
Effective Green, g (s)	16.5	33.7	22.5		13.1	13.1
Actuated g/C Ratio	0.23	0.46	0.31		0.18	0.18
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	402	1643	1038		319	285
v/s Ratio Prot	c0.13	0.12	c0.21			
v/s Ratio Perm					c0.13	0.03
v/c Ratio	0.56	0.26	0.67		0.72	0.20
Uniform Delay, d1	25.2	12.2	22.2		28.4	25.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.0	1.4		6.3	0.1
Delay (s)	26.1	12.2	23.5		34.7	25.7
Level of Service	C	B	C		C	C
Approach Delay (s)		17.0	23.5		30.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	21.2
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

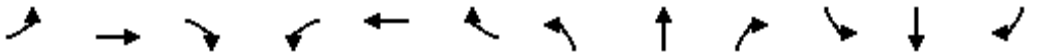


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	633	92	276	1004	143	90	143	269	264
v/c Ratio	0.39	0.47	0.14	0.85	0.70	0.70	0.42	0.28	0.84	0.81
Control Delay	53.1	32.8	2.8	67.1	24.8	69.3	54.6	8.4	69.0	63.0
Queue Delay	0.0	2.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	34.9	2.8	67.1	25.2	69.3	54.6	8.5	69.0	63.1
Queue Length 50th (ft)	72	198	0	211	353	108	66	22	212	197
Queue Length 95th (ft)	137	303	20	300	454	172	115	38	302	287
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	263	1339	663	402	1429	268	282	577	396	401
Starvation Cap Reductn	0	0	0	0	123	0	0	0	0	0
Spillback Cap Reductn	0	533	0	0	0	0	0	11	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.79	0.14	0.69	0.77	0.53	0.32	0.25	0.68	0.66

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	0.99	
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	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	633	92	276	816	188	143	90	143	384	88	61
RTOR Reduction (vph)	0	0	57	0	16	0	0	0	55	0	10	0
Lane Group Flow (vph)	102	633	35	276	988	0	143	90	88	269	254	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Effective Green, g (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Actuated g/C Ratio	0.15	0.38	0.38	0.18	0.41		0.11	0.11	0.29	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	263	1343	586	323	1415		202	213	467	319	316	
v/s Ratio Prot	0.06	0.18		c0.15	c0.29		c0.08	0.05	0.03	c0.16	0.15	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.39	0.47	0.06	0.85	0.70		0.71	0.42	0.19	0.84	0.80	
Uniform Delay, d1	46.3	28.4	23.9	47.6	29.3		51.3	49.5	31.6	47.0	46.6	
Progression Factor	1.00	1.00	1.00	1.00	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	1.2	0.2	15.4	2.3		8.9	0.5	0.1	17.3	13.1	
Delay (s)	46.6	29.6	24.1	63.2	24.5		60.2	50.0	31.7	64.3	59.7	
Level of Service	D	C	C	E	C		E	D	C	E	E	
Approach Delay (s)		31.1			32.8			46.9			62.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
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 (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	102	633	92	276	816	188	143	90	143	266	252	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	472	895	390	566	874	201	181	190	663	345	281	68
Arrive On Green	0.26	0.25	0.25	0.63	0.60	0.60	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1795	3582	1560	1795	2889	666	1795	1885	1583	1795	1464	354
Grp Volume(v), veh/h	102	633	92	276	506	498	143	90	143	266	0	313
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1764	1795	1885	1583	1795	0	1818
Q Serve(g_s), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Cycle Q Clear(g_c), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	472	895	390	566	542	533	181	190	663	345	0	349
V/C Ratio(X)	0.22	0.71	0.24	0.49	0.93	0.93	0.79	0.47	0.22	0.77	0.00	0.90
Avail Cap(c_a), veh/h	472	895	390	566	672	662	269	283	741	419	0	424
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	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	41.0	35.9	17.0	22.6	22.6	52.7	50.9	22.5	46.0	0.0	47.3
Incr Delay (d2), s/veh	0.1	4.7	1.4	0.2	21.0	21.2	4.9	0.7	0.1	5.5	0.0	16.9
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	2.3	9.0	2.3	3.2	11.2	11.1	4.4	2.6	2.6	8.0	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	45.7	37.3	17.2	43.6	43.8	57.6	51.6	22.5	51.4	0.0	64.2
LnGrp LOS	C	D	D	B	D	D	E	D	C	D	A	E
Approach Vol, veh/h		827			1280			376			579	
Approach Delay, s/veh		43.4			38.0			42.8			58.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.8	34.0		27.1	36.6	40.3		16.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0	30.0		28.0	12.0	45.0		18.0				
Max Q Clear Time (g_c+I1), s	11.8	21.3		22.2	7.3	32.8		11.3				
Green Ext Time (p_c), s	0.2	2.1		0.9	0.0	3.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		43.9	
HCM 6th LOS		D	

Notes

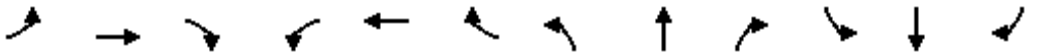
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1198	309	947	500	387	245	526
v/c Ratio	1.12	1.22	0.56	1.25	1.25	0.29	0.69
Control Delay	99.1	169.5	10.0	171.5	178.8	21.5	27.5
Queue Delay	0.5	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	99.6	169.5	10.1	171.5	178.8	21.5	27.6
Queue Length 50th (ft)	~574	~284	146	~484	~374	116	273
Queue Length 95th (ft)	#676	#466	147	#695	#569	175	408
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1065	253	1691	399	309	858	761
Starvation Cap Reductn	1	0	0	0	0	0	0
Spillback Cap Reductn	109	0	137	0	0	0	2
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.22	0.61	1.25	1.25	0.29	0.69

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1086	40	290	890	0	0	0	470	364	230	494
Future Volume (vph)	0	1086	40	290	890	0	0	0	470	364	230	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		0.99		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3552		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3552		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1155	43	309	947	0	0	0	500	387	245	526
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1198	0	309	947	0	0	0	500	387	245	485
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Effective Green, g (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Actuated g/C Ratio		0.30		0.14	0.47				0.25	0.17	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1065		253	1691				399	309	858	720
v/s Ratio Prot		c0.34		c0.17	0.26				c0.31	c0.22	0.13	
v/s Ratio Perm												0.31
v/c Ratio		1.12		1.22	0.56				1.25	1.25	0.29	0.67
Uniform Delay, d1		42.0		51.5	22.6				45.2	49.6	20.4	25.6
Progression Factor		0.77		0.92	0.38				1.00	1.00	1.00	1.00
Incremental Delay, d2		67.4		128.6	1.3				133.0	137.5	0.8	5.0
Delay (s)		99.6		176.0	9.9				178.3	187.1	21.2	30.6
Level of Service		F		F	A				F	F	C	C
Approach Delay (s)		99.6			50.7			178.3			80.9	
Approach LOS		F			D			F			F	

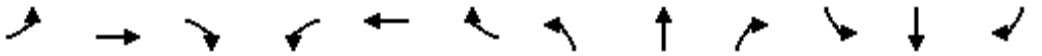
Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

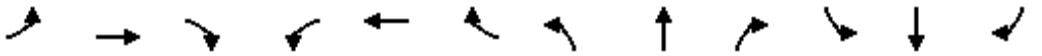
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	417	1246	1084	378	242	243	274
v/c Ratio	0.72	0.46	0.64	0.41	0.78	0.78	0.72
Control Delay	22.6	5.1	27.7	4.2	63.0	63.0	38.1
Queue Delay	0.3	1.3	0.1	0.0	1.1	1.1	0.0
Total Delay	23.0	6.4	27.8	4.2	64.1	64.1	38.1
Queue Length 50th (ft)	125	142	340	5	188	189	123
Queue Length 95th (ft)	243	175	457	67	273	274	211
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	626	2695	1691	919	386	387	446
Starvation Cap Reductn	28	1158	0	0	0	0	0
Spillback Cap Reductn	0	0	66	0	37	37	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.81	0.67	0.41	0.69	0.69	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	1184	0	0	1030	359	450	10	260	0	0	0
Future Volume (vph)	396	1184	0	0	1030	359	450	10	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1787	3574			3574	1536	1698	1706	1599			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	297	3574			3574	1536	1698	1706	1599			
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)	417	1246	0	0	1084	378	474	11	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	193	0	0	87	0	0	0
Lane Group Flow (vph)	417	1246	0	0	1084	185	242	243	187	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Effective Green, g (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Actuated g/C Ratio	0.75	0.75			0.47	0.47	0.18	0.18	0.18			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	580	2695			1691	727	312	314	294			
v/s Ratio Prot	c0.17	0.35			0.30		c0.14	0.14				
v/s Ratio Perm	c0.37					0.12			0.12			
v/c Ratio	0.72	0.46			0.64	0.25	0.78	0.77	0.64			
Uniform Delay, d1	23.6	5.6			23.9	18.9	46.6	46.6	45.2			
Progression Factor	0.66	0.77			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.4	0.4			1.9	0.8	11.0	10.9	3.9			
Delay (s)	18.0	4.7			25.8	19.8	57.6	57.4	49.1			
Level of Service	B	A			C	B	E	E	D			
Approach Delay (s)		8.0			24.2			54.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
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)	396	1184	0	0	1030	359	450	10	260	0	0	0
Future Volume (veh/h)	396	1184	0	0	1030	359	450	10	260	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	417	1246	0	0	1084	378	482	0	274			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	645	2656	0	0	1445	627	695	0	309			
Arrive On Green	0.30	0.74	0.00	0.00	0.40	0.40	0.19	0.00	0.19			
Sat Flow, veh/h	1795	3676	0	0	3676	1554	3591	0	1598			
Grp Volume(v), veh/h	417	1246	0	0	1084	378	482	0	274			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1554	1795	0	1598			
Q Serve(g_s), s	16.1	16.5	0.0	0.0	31.1	23.0	15.0	0.0	20.0			
Cycle Q Clear(g_c), s	16.1	16.5	0.0	0.0	31.1	23.0	15.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	645	2656	0	0	1445	627	695	0	309			
V/C Ratio(X)	0.65	0.47	0.00	0.00	0.75	0.60	0.69	0.00	0.89			
Avail Cap(c_a), veh/h	645	2656	0	0	1445	627	817	0	363			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.58	0.58	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.1	6.1	0.0	0.0	30.6	28.2	45.1	0.0	47.1			
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.0	3.6	4.3	1.8	0.0	19.4			
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	10.1	5.4	0.0	0.0	13.8	9.1	6.8	0.0	18.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	6.5	0.0	0.0	34.3	32.5	46.9	0.0	66.5			
LnGrp LOS	C	A	A	A	C	C	D	A	E			
Approach Vol, veh/h		1663			1462			756				
Approach Delay, s/veh		13.2			33.8			54.0				
Approach LOS		B			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		93.1		26.9	40.1	53.0			
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6			
Max Green Setting (Gmax), s		* 85		27.3	31.9	48.4			
Max Q Clear Time (g_c+I1), s		18.5		22.0	18.1	33.1			
Green Ext Time (p_c), s		10.0		1.2	0.5	5.5			

Intersection Summary		
HCM 6th Ctrl Delay	28.9	
HCM 6th LOS	C	

Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2053	255	1255
v/c Ratio	0.75	1.01	0.35
Control Delay	2.1	98.7	0.2
Queue Delay	0.1	30.7	0.1
Total Delay	2.2	129.4	0.3
Queue Length 50th (ft)	54	~180	0
Queue Length 95th (ft)	m0	#369	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2743	253	3574
Starvation Cap Reductn	0	28	0
Spillback Cap Reductn	46	0	598
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.76	1.13	0.42

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1520	410	240	1180	0	0
Future Volume (vph)	1520	410	240	1180	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3441		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3441		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1617	436	255	1255	0	0
RTOR Reduction (vph)	20	0	0	0	0	0
Lane Group Flow (vph)	2033	0	255	1255	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	94.8		17.0	120.0		
Effective Green, g (s)	94.8		17.0	111.5		
Actuated g/C Ratio	0.79		0.14	0.93		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2718		253	3320		
v/s Ratio Prot	c0.59		c0.14	0.35		
v/s Ratio Perm						
v/c Ratio	0.75		1.01	0.38		
Uniform Delay, d1	6.5		51.5	0.5		
Progression Factor	0.31		0.90	1.00		
Incremental Delay, d2	0.1		51.6	0.1		
Delay (s)	2.1		97.9	0.5		
Level of Service	A		F	A		
Approach Delay (s)	2.1			17.0	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Appendix C: Freeway Segment LOS Calculation Sheets

Existing

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2851	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1714
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.1
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2510	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1492
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.5
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2851	114
Peak Hour Factor (PHF)	0.94	0.91
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3427	129
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.76	0.07

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.463
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3427	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.6
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.3

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2510	193
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	2985	223
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.66	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.471
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	2985	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.9
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.5

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2737	337
Peak Hour Factor (PHF)	0.94	0.88
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3290	394
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.434
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3290	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3684	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.1

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2317	172
Peak Hour Factor (PHF)	0.95	0.91
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	2756	196
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.10

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.353
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2756	Ramp Junction Speed (S), mi/h	61.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	2952	Average Density (D), pc/mi/ln	24.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.5

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3074	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1848
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.5
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2489	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1480
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.2
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2172	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.84	Flow Rate (V_p), pc/h/ln	1461
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3317	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	2060
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.3
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2172	157
Peak Hour Factor (PHF)	0.84	0.73
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	2922	239
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.473
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	2922	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.4
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.9

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3317	347
Peak Hour Factor (PHF)	0.91	0.91
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4119	385
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.91	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.486
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	4119	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	36.0
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	38.1

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2015	200
Peak Hour Factor (PHF)	0.84	0.75
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	2711	296
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.67	0.16

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.357
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2711	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3007	Average Density (D), pc/mi/ln	24.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.8

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2970	216
Peak Hour Factor (PHF)	0.91	0.64
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	3688	341
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.89	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.497
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3688	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	4029	Average Density (D), pc/mi/ln	35.4
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.7

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2215	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.84	Flow Rate (V_p), pc/h/ln	1490
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.4
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3186	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	1978
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.4
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

Existing Plus Project

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2956	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1776
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.6
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2723	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1620
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2956	219
Peak Hour Factor (PHF)	0.94	0.91
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3553	248
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.79	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.474
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3553	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	30.8
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.4

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2723	406
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	3239	469
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.72	0.25

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.494
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3239	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.4
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.7

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2737	506
Peak Hour Factor (PHF)	0.94	0.88
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3290	592
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.86	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.468
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3290	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3882	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	31.5

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2317	302
Peak Hour Factor (PHF)	0.95	0.91
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	2756	345
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.69	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.365
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	60.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2756	Ramp Junction Speed (S), mi/h	60.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3101	Average Density (D), pc/mi/ln	25.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.6

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3243	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1949
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.5
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2619	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1558
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2273	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.84	Flow Rate (V_p), pc/h/ln	1529
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3499	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	2172
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.8
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2273	258
Peak Hour Factor (PHF)	0.84	0.73
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	3058	392
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.68	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.487
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3058	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.7
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	29.0

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3499	529
Peak Hour Factor (PHF)	0.91	0.91
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4345	587
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.96	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.504
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	4345	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	38.3
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	40.1

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2015	396
Peak Hour Factor (PHF)	0.84	0.75
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	2711	586
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.73	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.383
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2711	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	3297	Average Density (D), pc/mi/ln	27.3
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.9

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2970	362
Peak Hour Factor (PHF)	0.91	0.64
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	3688	571
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.94	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.554
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3688	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	4259	Average Density (D), pc/mi/ln	38.6
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	34.4

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+P AM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2411	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.84	Flow Rate (V_p), pc/h/ln	1622
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.1
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+P PM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3332	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	2068
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.5
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

Cumulative

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3180	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1912
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.4
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2974	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1768
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3180	210
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3823	235
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.85	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.473
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3823	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	33.2
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	35.7

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3180	210
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3823	235
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.85	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.473
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3823	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	33.2
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	35.7

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2974	250
Peak Hour Factor (PHF)	0.95	0.92
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	3537	282
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.78	0.15

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.477
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3537	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	30.8
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.2

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2970	360
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3570	403
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.88	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.486
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3570	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3973	Average Density (D), pc/mi/ln	34.7
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.3

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2724	260
Peak Hour Factor (PHF)	0.95	0.92
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	3240	294
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.78	0.16

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.412
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	59.4
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3240	Ramp Junction Speed (S), mi/h	59.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	3534	Average Density (D), pc/mi/ln	29.7
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	29.0

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3330	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2002
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2984	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1774
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.6
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2531	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1521
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.0
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3904	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2346
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2531	250
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	3042	302
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.67	0.16

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.479
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3042	Ramp Junction Speed (S), mi/h	57.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.9

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3904	390
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4693	428
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	1.04	0.23

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4693	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	43.1

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2281	270
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	2742	326
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.68	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.362
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	60.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2742	Ramp Junction Speed (S), mi/h	60.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3068	Average Density (D), pc/mi/ln	25.2
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.3

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3514	280
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4224	307
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	1.01	0.16

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	52.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4224	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4531	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	36.7

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM AM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2551	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1533
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.3
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM PM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3794	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2280
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

Cumulative Plus Project

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3285	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1974
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Mainline south of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3187	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1896
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3285	315
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3949	353
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.88	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.483
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3949	Ramp Junction Speed (S), mi/h	57.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	34.5
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	36.8

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Off Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3187	463
Peak Hour Factor (PHF)	0.95	0.92
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	3791	523
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.84	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.498
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3791	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	33.3
Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	35.4

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2970	529
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.971
Flow Rate (vi),pc/h	3570	592
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.92	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.529
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3570	Ramp Junction Speed (S), mi/h	55.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	4162	Average Density (D), pc/mi/ln	37.2
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.7

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 On Ramp at Willow Road - NB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	640
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2724	390
Peak Hour Factor (PHF)	0.95	0.92
Total Trucks, %	13.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.962
Flow Rate (vi),pc/h	3240	441
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.23

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.433
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	3240	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3681	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.0

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3499	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2103
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Mainline north of Willow Road - NB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3114	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1852
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.6
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2632	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1582
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	65.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.2
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Mainline north of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4086	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2456
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2632	351
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	3164	423
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.70	0.23

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.489
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	78.5
Flow in Lanes 1 and 2 (v12), pc/h	3164	Ramp Junction Speed (S), mi/h	57.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.7
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	29.9

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Off Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	170
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4086	572
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4912	628
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	1.09	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4912	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2281	466
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.901
Flow Rate (vi),pc/h	2742	562
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	0.73	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.384
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	60.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	71.6
Flow in Lanes 1 and 2 (v12), pc/h	2742	Ramp Junction Speed (S), mi/h	60.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	3304	Average Density (D), pc/mi/ln	27.4
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.0

HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 On Ramp at Willow Road - SB	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Balanced Mix	Balanced Mix
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.950	0.950
Final Capacity Adjustment Factor (CAF)	0.939	0.939
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3514	426
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	13.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.885	0.990
Flow Rate (vi),pc/h	4224	468
Capacity (c), pc/h	4507	1878
Volume-to-Capacity Ratio (v/c)	1.04	0.25

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	626.7	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4224	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4692	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+P AM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2747	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1651
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+P PM US 101 Mainline south of Willow Road - SB	Unit	United States Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	75.4	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	72.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3940	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2368
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2386
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2240
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.06
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.6		

Appendix D: Traffic Signal Warrants

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Cumulative (#3)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	Hetrick Ave
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	2170 vehicles	Total Approach Volume	380 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	67 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

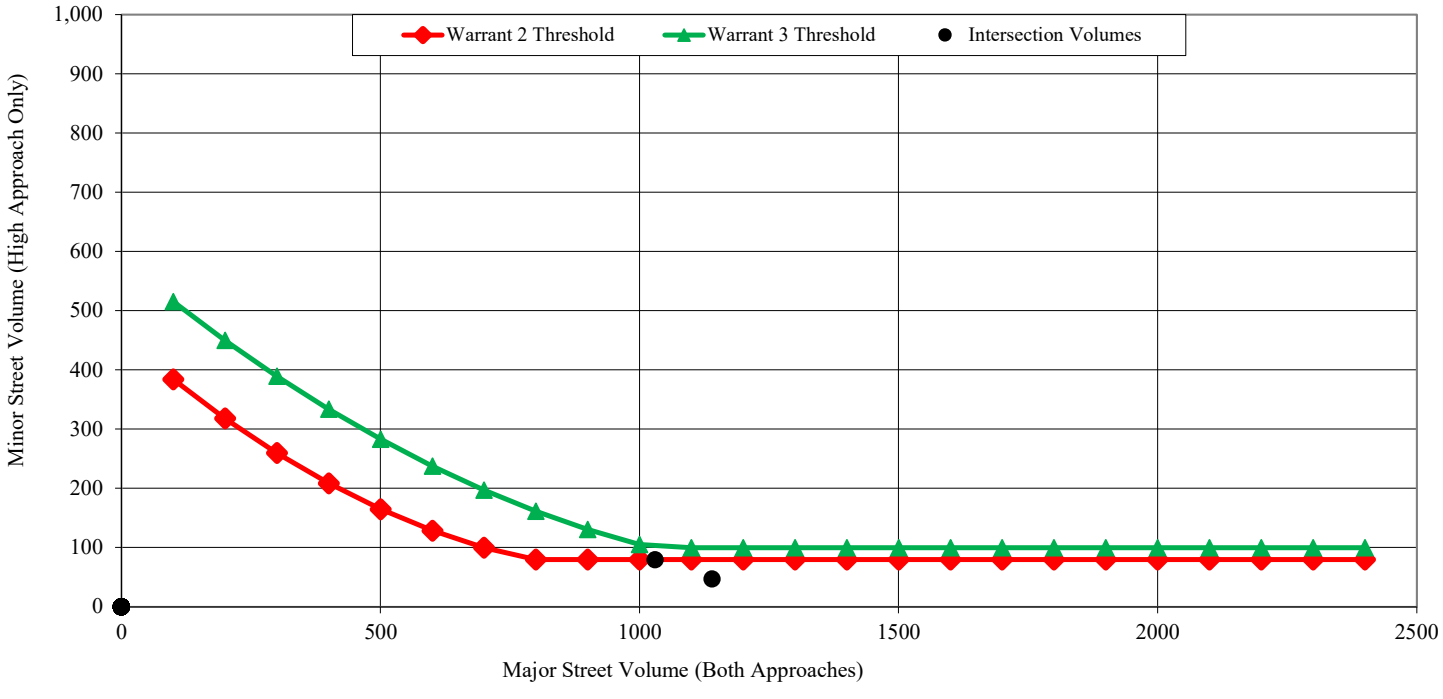
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1290 total, 200 minor, 1 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Cumulative Plus Project (#3)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	Hetrick Ave
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	2293 vehicles	Total Approach Volume	335 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	67 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

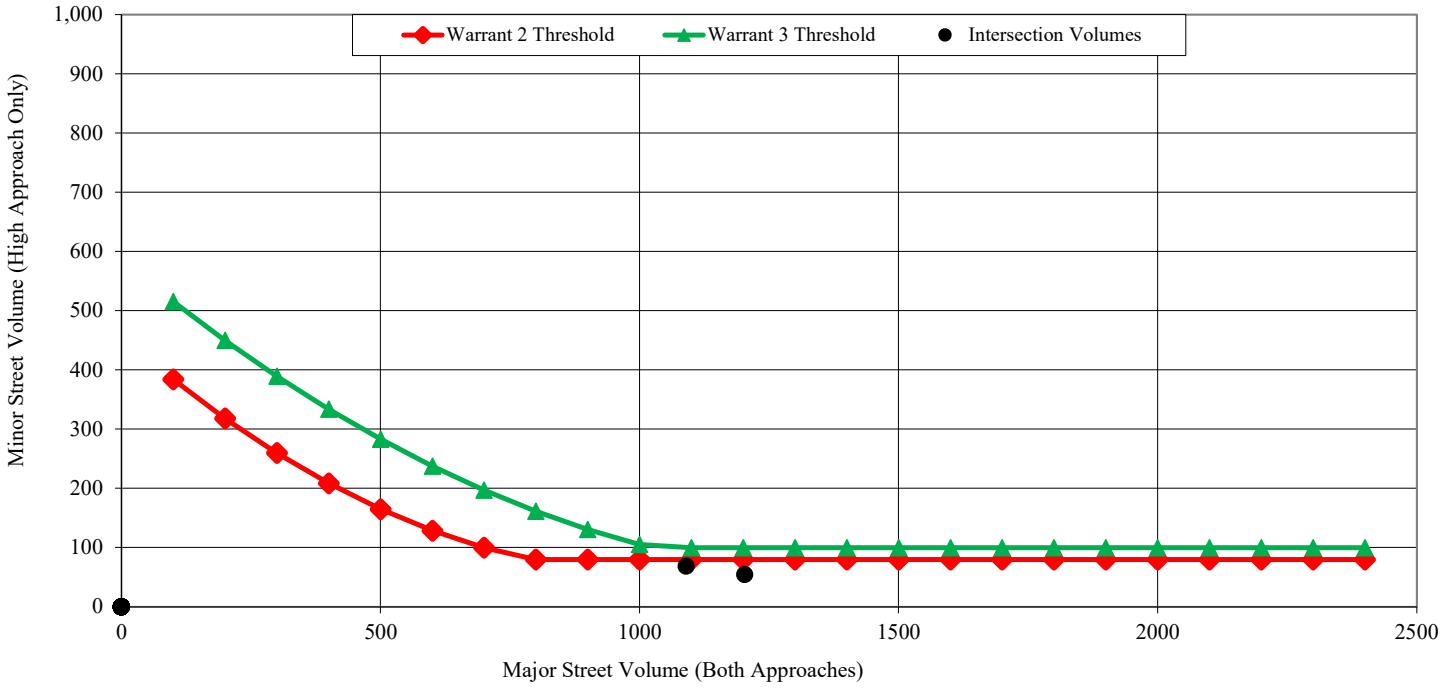
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1321 total, 167 minor, 1.8 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Existing Plus Project (#5)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	N Frontage Rd
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	2966 vehicles	Total Approach Volume	612 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	100 percent applied	Right turn reduction of	67 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

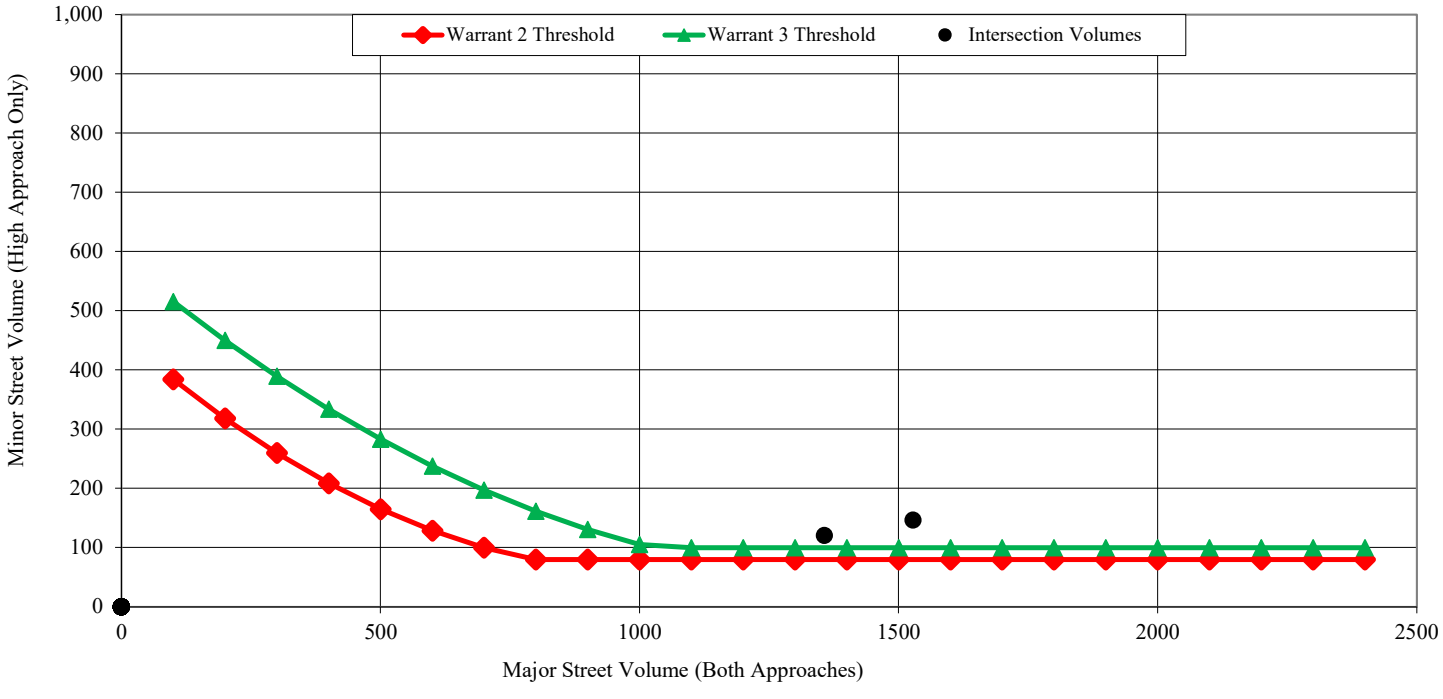
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	2 hours	2 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	2 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1901 total, 308 minor, 0 delay	2 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Existing Plus Project (#6)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	US 101 SB Ramps
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	2720 vehicles	Total Approach Volume	787 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	100 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

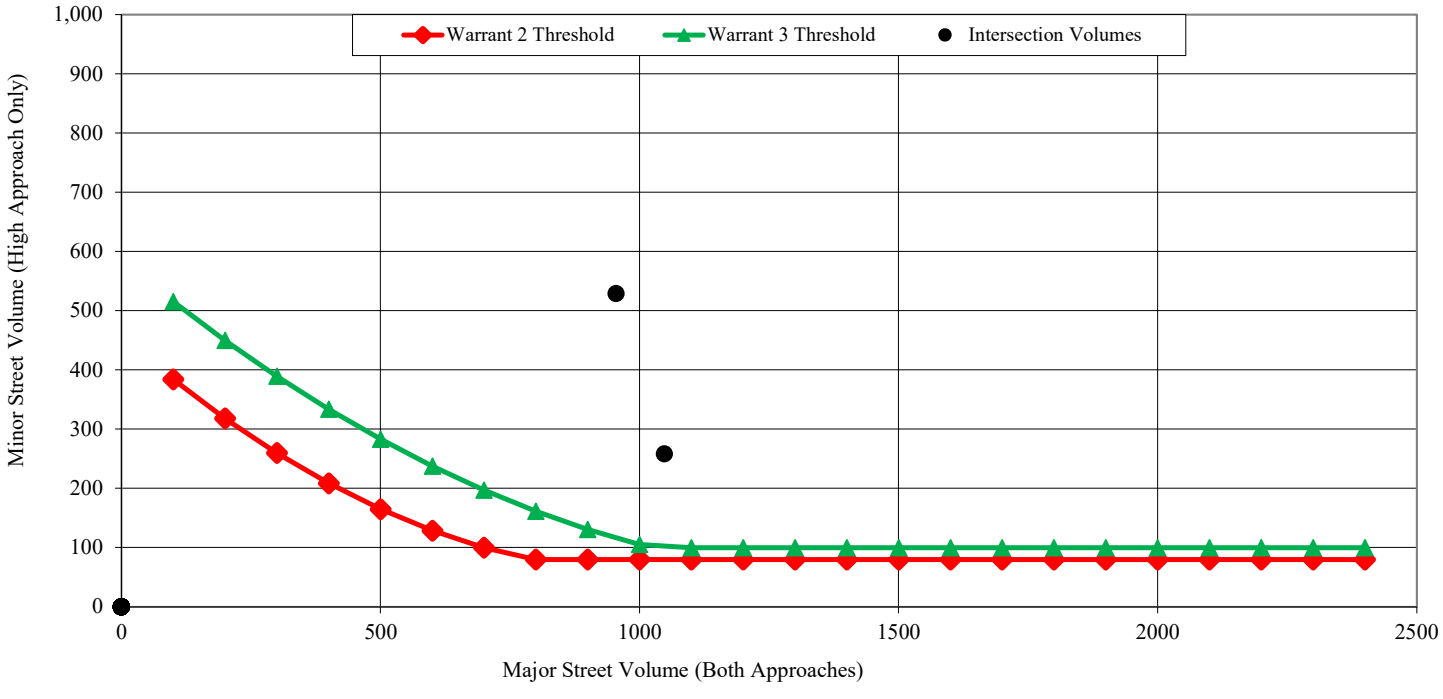
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	2 hours	2 hours	2 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	2 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1828 total, 529 minor, 7.5 delay	2 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Existing (#7)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	US 101 NB Ramps
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	984 vehicles	Total Approach Volume	307 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	100 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

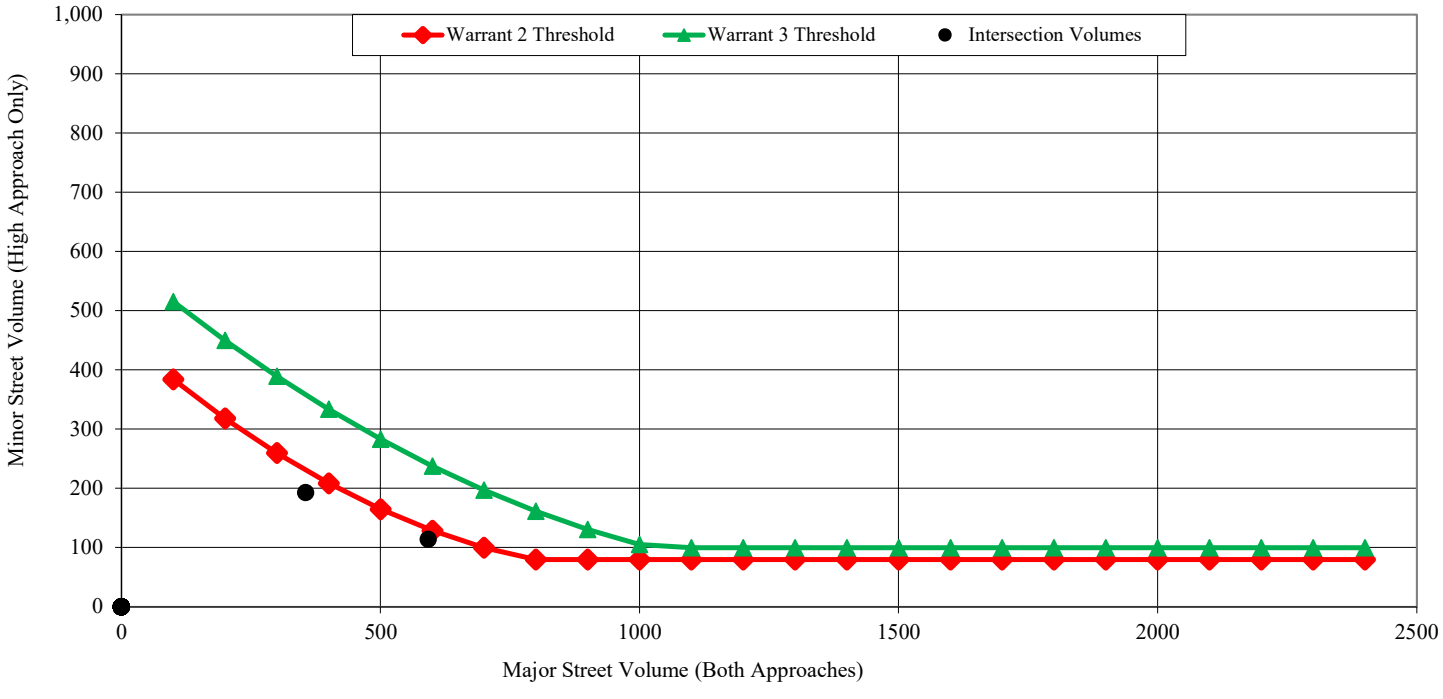
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	2 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	728 total, 114 minor, 5.7 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Dana Reserve
Project/File #	2018_83
Scenario	Existing Plus Project (#7)

Intersection Information			
Major Street (E/W Road)	Willow Rd	Minor Street (N/S Road)	US 101 NB Ramps
Analyzed with	1 approach lane	Analyzed with	2 or more approach lanes
Total Approach Volume	1536 vehicles	Total Approach Volume	625 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	100 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

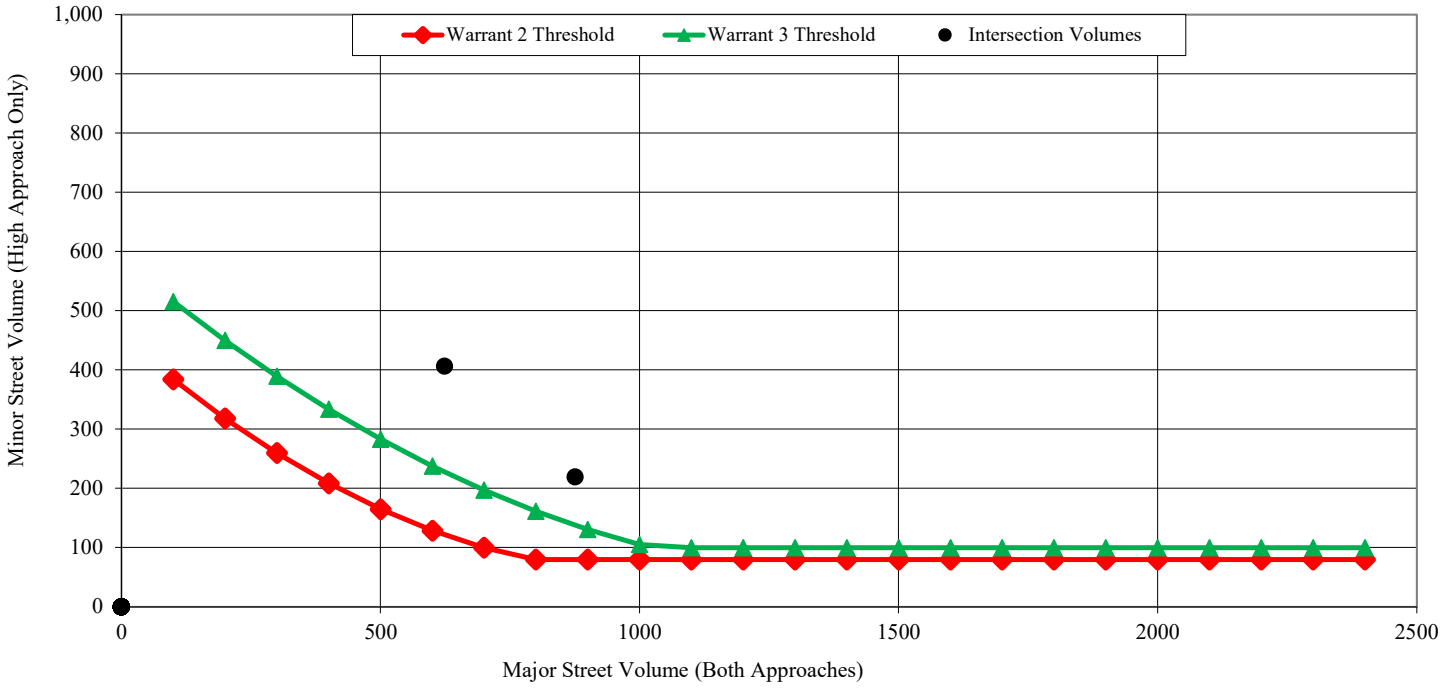
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	2 hours	2 hours	2 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	2 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1117 total, 219 minor, 224.8 delay	2 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Appendix E: SLO County SB743 Sketch VMT Tool Results

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Residential Only Land Use Projects

Residential Only uses appropriate for this category include any type of dwelling unit such as single or multifamily housing.
The analysis computes the VMT per capita and compares against the County thresholds

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SLOCOG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN
Geographic Screening: Not eligible for geographic screening for this location

Residential Project Inputs

Housing Units	<--- Choose type of Trip Generation input (Daily Trips or Housing Units)
1,443	<--- Enter Number of Housing Units

Mitigation:

If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo

Combination of Strategies	<--- Choose type of Mitigation
9.7%	<-- Mitigation Percent
	<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Trip generation uses housing units
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 9.7%

Results

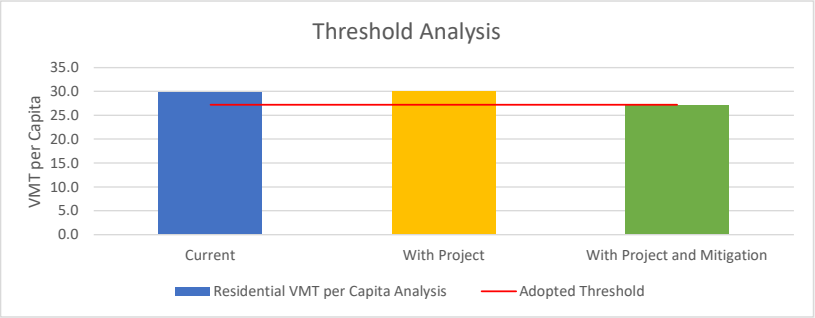
Not eligible for geographic screening for this location

Growth Assuptions

VMT District: SOUTH COUNTY FEE_URBAN	Housing Units	Population
Current	8,205	19,890
Added	1,443	3,766
New Total	9,648	23,656

Residential VMT per Capita Analysis

VMT District: SOUTH COUNTY FEE_URBAN	VMT per Capita	Adopted Threshold
Current	29.8	27.2
With Project	30.1	27.2
With Project and Mitigation	27.19	27.2



Final Result:

Project Meets Threshold With Mitigation

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Mixed Use Land Use Projects

Mixed Use involves projects that have multiple uses, the VMT produced by each of the other uses is reported separately but adjusted for internal capture and other trip reducing characteristics of the project site.

This analysis will be computed on the basis of Net VMT for the County of San Luis Obispo

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SBCAG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN

Project Inputs

Retail Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
7,453	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Non-Retail Employment Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
608	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Residential Inputs	Trip Generation Input
Housing Units	<--- Choose input type (Housing Units, Daily Trips)
1,443	<--- Enter Number of Housing Units
14%	<---Pct. Of Trips Internal Capture

Mitigation: *If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo*

Combination of Strategies <--- Choose type of Mitigation
25.0% <-- Mitigation Percent
<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Retail trip generation takes user input in units of Daily Trips. Non-retail trip generation takes user input in units of Daily TripsResidential trip generation takes user input in units of Housing Units.
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 25%

Results

Overall VMT Impact		
San Luis Obispo County	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project	9,839,599	11.21
Net VMT	**26,861**	**(0)**
San Luis Obispo County with Mitigation	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project & Mitigation	9,821,550	11.19
Net VMT after Mitigation	**8,812**	**(0)**

County Pct. Change	VMT	Avg. Trip Length
Project	0.27%	-0.46%
Project with Mitigation	0.09%	-0.64%

Summary

1) Overall VMT Analysis: Does not meet Net VMT Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

2) Work Commute Component:

3) Residential Trip Component: Project Meets VMT per Capita Threshold with mitigation strategy

Work Commute Component

Growth Assuptions

VMT District: SOUTH COUNTY FEE_URBAN	Employment
Current	791
Added	613
New Total	1,404

Commute VMT per Employee Analysis

VMT District: SOUTH COUNTY FEE_URBA	VMT per Employee	Adopted Threshold
Current	27.0	25.7
With Project	**26.9**	**25.7**
With Project and Mitigation	**20.2**	**25.7**

Residential Trip Component

Growth Assuptions

VMT District: SOUTH COUNTY FEE_URBAN	Housing Units	Population
Current	8,205	19,890
Added	1,443	3,512
New Total	9,648	23,402

Residential VMT per Capita Analysis

VMT District: SOUTH COUNTY FEE_URBAN	VMT per Capita	Adopted Threshold
Current	29.8	27.2
With Project	**30.0**	**27.2**
With Project and Mitigation	**22.5**	**27.2**

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Mixed Use Land Use Projects

Mixed Use involves projects that have multiple uses, the VMT produced by each of the other uses is reported separately but adjusted for internal capture and other trip reducing characteristics of the project site.

This analysis will be computed on the basis of Net VMT for the County of San Luis Obispo

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SBCAG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN

Project Inputs

Retail Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
7,453	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Non-Retail Employment Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
608	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Residential Inputs	Trip Generation Input
Housing Units	<--- Choose input type (Housing Units, Daily Trips)
1,443	<--- Enter Number of Housing Units
14%	<---Pct. Of Trips Internal Capture

Mitigation: *If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo*

Combination of Strategies <--- Choose type of Mitigation
4.8% <-- Mitigation Percent
<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Retail trip generation takes user input in units of Daily Trips. Non-retail trip generation takes user input in units of Daily TripsResidential trip generation takes user input in units of Housing Units.
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 4.8%

Results

Overall VMT Impact		
San Luis Obispo County	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project	9,839,599	11.21
Net VMT	**26,861**	**(0)**
San Luis Obispo County with Mitigation	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project & Mitigation	9,836,133	11.21
Net VMT after Mitigation	**23,396**	**(0)**
County Pct. Change	**VMT**	**Avg. Trip Length**
Project	0.27%	-0.46%
Project with Mitigation	0.24%	-0.49%

Work Commute Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Employment**	
Current	791	
Added	613	
New Total	1,404	
Commute VMT per Employee Analysis		
VMT District: SOUTH COUNTY FEE_URBA	**VMT per Employee**	**Adopted Threshold**
Current	27.0	25.7
With Project	**26.9**	**25.7**
With Project and Mitigation	**25.6**	**25.7**

Residential Trip Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Housing Units**	**Population**
Current	8,205	19,890
Added	1,443	3,512
New Total	9,648	23,402
Residential VMT per Capita Analysis		
VMT District: SOUTH COUNTY FEE_URBAN	**VMT per Capita**	**Adopted Threshold**
Current	29.8	27.2
With Project	**30.0**	**27.2**
With Project and Mitigation	**28.6**	**27.2**

Summary

1) Overall VMT Analysis: Does not meet Net VMT Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

2) Work Commute Component:

3) Residential Trip Component: Does not meet VMT per Capita Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Mixed Use Land Use Projects

Mixed Use involves projects that have multiple uses, the VMT produced by each of the other uses is reported separately but adjusted for internal capture and other trip reducing characteristics of the project site.

This analysis will be computed on the basis of Net VMT for the County of San Luis Obispo

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SBCAG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN

Project Inputs

Retail Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
7,453	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Non-Retail Employment Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
608	<--- Enter Number of Daily Trips
14%	<---Pct. Of Trips Internal Capture

Residential Inputs	Trip Generation Input
Housing Units	<--- Choose input type (Housing Units, Daily Trips)
1,443	<--- Enter Number of Housing Units
14%	<---Pct. Of Trips Internal Capture

Mitigation: *If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo*

Combination of Strategies <--- Choose type of Mitigation
9.5% <-- Mitigation Percent
<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Retail trip generation takes user input in units of Daily Trips. Non-retail trip generation takes user input in units of Daily TripsResidential trip generation takes user input in units of Housing Units.
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 9.5%

Results

Overall VMT Impact		
San Luis Obispo County	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project	9,839,599	11.21
Net VMT	**26,861**	**(0)**
San Luis Obispo County with Mitigation	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project & Mitigation	9,832,740	11.20
Net VMT after Mitigation	**20,002**	**(0)**
County Pct. Change	**VMT**	**Avg. Trip Length**
Project	0.27%	-0.46%
Project with Mitigation	0.20%	-0.53%

Work Commute Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Employment**	
Current	791	
Added	613	
New Total	1,404	
Commute VMT per Employee Analysis		
VMT District: SOUTH COUNTY FEE_URBA	**VMT per Employee**	**Adopted Threshold**
Current	27.0	25.7
With Project	**26.9**	**25.7**
With Project and Mitigation	**24.4**	**25.7**

Residential Trip Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Housing Units**	**Population**
Current	8,205	19,890
Added	1,443	3,512
New Total	9,648	23,402
Residential VMT per Capita Analysis		
VMT District: SOUTH COUNTY FEE_URBAN	**VMT per Capita**	**Adopted Threshold**
Current	29.8	27.2
With Project	**30.0**	**27.2**
With Project and Mitigation	**27.2**	**27.2**

Summary

1) Overall VMT Analysis: Does not meet Net VMT Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

2) Work Commute Component:

3) Residential Trip Component: Project Meets VMT per Capita Threshold with mitigation strategy

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Mixed Use Land Use Projects

Mixed Use involves projects that have multiple uses, the VMT produced by each of the other uses is reported separately but adjusted for internal capture and other trip reducing characteristics of the project site.

This analysis will be computed on the basis of Net VMT for the County of San Luis Obispo

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SBCAG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN

Project Inputs

Retail Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
7,453	<--- Enter Number of Daily Trips
3%	<---Pct. Of Trips Internal Capture

Non-Retail Employment Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
608	<--- Enter Number of Daily Trips
3%	<---Pct. Of Trips Internal Capture

Residential Inputs	Trip Generation Input
Daily Trips	<--- Choose input type (Housing Units, Daily Trips)
	<--- Enter Number of Housing Units
	<--- Enter Daily Trips
	<---Pct. Of Trips Internal Capture

Mitigation: *If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo*

Combination of Strategies <--- Choose type of Mitigation
25.0% <-- Mitigation Percent
<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Retail trip generation takes user input in units of Daily Trips. Non-retail trip generation takes user input in units of Daily TripsResidential trip generation takes user input in units of Daily Trips.
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 25%

Results

Overall VMT Impact		
San Luis Obispo County	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project	9,842,931	11.21
Net VMT	**30,194**	**(0)**
San Luis Obispo County with Mitigation	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project & Mitigation	9,822,574	11.18
Net VMT after Mitigation	**9,836**	**(0)**

County Pct. Change	VMT	Avg. Trip Length
Project	0.31%	-0.52%
Project with Mitigation	0.10%	-0.72%

Summary

1) Overall VMT Analysis: Does not meet Net VMT Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

2) Work Commute Component:

3) No Residential Component included

Work Commute Component	
Growth Assuptions	
VMT District: SOUTH COUNTY FEE_URBAN	**Employment**
Current	791
Added	613
New Total	1,404

Commute VMT per Employee Analysis		
VMT District: SOUTH COUNTY FEE_URBA	**VMT per Employee**	**Adopted Threshold**
Current	27.0	25.7
With Project	**26.9**	**25.7**
With Project and Mitigation	**20.2**	**25.7**

Residential Trip Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Housing Units**	**Population**
Current	8,205	19,890
Added	-	-
New Total	8,205	19,890

Residential VMT per Capita Analysis		
VMT District: SOUTH COUNTY FEE_URBAN	**VMT per Capita**	**Adopted Threshold**
Current	29.8	27.2
With Project	**n/a**	**27.2**
With Project and Mitigation	**n/a**	**27.2**

San Luis Obispo County SB743 Sketch VMT Tool

6/10/2021

Mixed Use Land Use Projects

Mixed Use involves projects that have multiple uses, the VMT produced by each of the other uses is reported separately but adjusted for internal capture and other trip reducing characteristics of the project site.

This analysis will be computed on the basis of Net VMT for the County of San Luis Obispo

Project Information

Project Name: Sample Project
Address: CHEROKEE ARROYO GRANDE 00000
APN: 91301073
SBCAG TAZ: 1141

VMT District: 51 SOUTH COUNTY FEE_URBAN

Project Inputs

Retail Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
7,453	<--- Enter Number of Daily Trips
3%	<---Pct. Of Trips Internal Capture

Non-Retail Employment Inputs	Trip Generation Input
Daily Trips	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
608	<--- Enter Number of Daily Trips
3%	<---Pct. Of Trips Internal Capture

Residential Inputs	Trip Generation Input
Daily Trips	<--- Choose input type (Housing Units, Daily Trips)
	<--- Enter Number of Housing Units
	<--- Enter Daily Trips
	<---Pct. Of Trips Internal Capture

Mitigation: *If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo*

Combination of Strategies <--- Choose type of Mitigation
4.8% <-- Mitigation Percent
<--- Slider for Mitigation Reduction

Click for CAPCOA Reference

Notes:

1) Retail trip generation takes user input in units of Daily Trips. Non-retail trip generation takes user input in units of Daily TripsResidential trip generation takes user input in units of Daily Trips.
2) Default parameters used for VMT analysis
3) Mitigation Type = Combination of Strategies; for a total reduction of 4.8%

Results

Overall VMT Impact		
San Luis Obispo County	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project	9,842,931	11.21
Net VMT	**30,194**	**(0)**
San Luis Obispo County with Mitigation	**VMT**	**Miles per Vehicle Trip**
Current VMT	9,812,738	11.26
New VMT with Project & Mitigation	9,839,023	11.20
Net VMT after Mitigation	**26,285**	**(0)**
County Pct. Change	**VMT**	**Avg. Trip Length**
Project	0.31%	-0.52%
Project with Mitigation	0.27%	-0.56%

Summary

1) Overall VMT Analysis: Does not meet Net VMT Threshold. Refer to CAPCOA mitigation guidance to determine an alternative mitigation strategy.

2) Work Commute Component:

3) No Residential Component included

Work Commute Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Employment**	
Current	791	
Added	613	
New Total	1,404	
Commute VMT per Employee Analysis		
VMT District: SOUTH COUNTY FEE_URBA	**VMT per Employee**	**Adopted Threshold**
Current	27.0	25.7
With Project	**26.9**	**25.7**
With Project and Mitigation	**25.7**	**25.7**

Residential Trip Component		
Growth Assuptions		
VMT District: SOUTH COUNTY FEE_URBAN	**Housing Units**	**Population**
Current	8,205	19,890
Added	-	-
New Total	8,205	19,890
Residential VMT per Capita Analysis		
VMT District: SOUTH COUNTY FEE_URBAN	**VMT per Capita**	**Adopted Threshold**
Current	29.8	27.2
With Project	**n/a**	**27.2**
With Project and Mitigation	**n/a**	**27.2**

Appendix F: Comments/Responses on drafts

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

COMMENT/RESPONSE SUMMARY

Date: July 9, 2021

From: Joe Fernandez and Michelle Matson, CCTC

Project: Dana Reserve Nipomo Traffic Impact Study and VMT Analysis – GHD Comments

The following table summarizes the comments received from GHD in April 2021 regarding the Dana Reserve Nipomo Traffic Impact Study ('TIS', February 2020) and VMT Analysis (September 2020).

ID	GHD Comment	GHD Recommendation	Response/Action
1.1	Plan and Policy Analysis a) The study does include some statements about consistency with County plan and policy. However, there does appear to be various conflicts or inconsistencies between the proposed plan and currently adopted County plan & policy that should be further assessed. Some Examples Include: • The planned alignment of Hetrick Ave. conflicts with NBD 8 of the proposed plan. • The Hwy 101 frontage road is planned to connect between Willow & Sandydale Dr., however this extension stops about 650' short. This is also inconsistent with the plan's proposed class IV connection to Sandydale, given the roadway is not shown to connect. • The County's Bicycle Transportation Plan & Caltrans defines preferred and minimum facility dimensions. However, the plan uses minimum throughout without justification why the preferred widths are not used. • Depending on Forecasted Future ADT, County Development Standards define typical roadway sections. Whereas the study has limited analysis of internal roadways, which is necessary to determine if the plan's cross sections are consistent with County Development Standards or if the traffic conditions of those roadways warrant the proposed classifications. • The plan calls for Class IV cycle tracks, whereas exhibits depict buffered Class II lanes.	Include a comprehensive section on Plan & Policy consistency. Where inconsistencies are found… recommend modifications of either the project description or amendment of the adopted Plan/Policy.	• See revised alignment of Hetrick Ave as shown in TTM.. • Applicant not planning to proceed without connection, recommend project be conditioned to complete section of Frontage Road if not done by adjacent development. • CCTC has reviewed the latest roadway cross sections in the TTM for conformance with County plans and standards. Recommendations are included in the report. • Additional discussion has been added to the On Site Circulation section. • Note that the traffic study did and does not reference Class IV cycle tracks.
1.2	Emergency Access b) No assessment provided of Emergency Access	Expand scope of traffic study to include section for emergency access.	• Emergency Access section has been added to the report.
1.3	Traffic Safety c) No assessment provided of Traffic Study. One example is Potential sight distance and spacing issues with intersection #9 Collector B and Hetrick @ Pomeroy	Expand scope of traffic study to include section for traffic safety. Its recommended that the section review access management, sight distance, speeding potential & neighborhood traffic management, uncontrolled & midblock pedestrian crossings, etc…	• See revised alignment of Hetrick Avenue. Sight distance on Pomeroy Road was checked in the field during preparation of the traffic study. New roads would be required to meet County Standards. See responses in 1.1.
1.4	Intersection Queuing a) Synchro output exhibits show locations where traffic queues exceed turn pocket storage capacity, potentially occluding thru lanes.	Include an intersection queuing report for all scenarios, identify where queues exceed turn pocket capacities and recommend measures to address.	• Queues have been added to the traffic study.
1.5	Induced Travel b) No assessment of Induced Travel. New roadway connections are being proposed, however it's not likely the project would not have an impact. A more frequent comment from CalTrans on EIR's and Traffic Studies is the lack of an induced travel assessment.	Include a section that responds to induced travel analysis under SB 743 / OPR Guidance.	• Induced Travel section has been added to the traffic study.

ID	GHD Comment	GHD Recommendation	Response/Action
1.6	Cherokee Place Cherokee Place is an undeveloped roadway traversing sections of the project site. However, this roadway is excluded from the analysis. Trip generation and distribution estimates appear to show volumes exiting and re-entering the project site via Willow Rd as well as internal capture assumptions indicate that project traffic may utilize this roadway.	Add/activate Cherokee place in traffic model and re-run traffic distribution.	• No project traffic was assumed on Cherokee Place. Portions of Cherokee are unpaved. Use of Cherokee Place versus the western project entrance from Willow Road would add approximately a quarter mile and use of Cherokee Place from Pomeroy Road would add almost a quarter mile. • See response in 3.2 for additional discussion of Cherokee Place. • The County's request for a maintenance agreement has been added to the traffic study.
2.1	Int #1 Willow Road & SR 1 b) Coded PM Peak Hour Volumes, Peak Hour Factor, & Truck Percentages don't match Collected Traffic Counts.	Update coded volumes, peak hour factor, & truck percentages.	• The PM peak hour analysis used the highest hour between 4-6 PM for trip generation and cumulative compatibility. Note that intersection would also operate at LOS B under Existing Conditions with and without the project using the earlier PM peak hour. Findings would not change. Appendices have been updated clarifying the peak hour used.
2.2	Int #2 Willow Road & Pomeroy Road a) Signal timing appears to be optimized In lieu of using actual signal timing. In many cases signal timing is constrained from synchro optimization.	Verify signal timing is consistent with current programming. If not Verify signal timing parameters are constrained to current programming. If so revising signal timing to current programming.	• Signal timing was received from Public Works and analysis updated.
2.3	Int #7 Willow Road & Hwy 101 NB Ramps a) Coded PM Peak Hour Volumes, Peak Hour Factor, & Truck Percentages don't match Collected Traffic Counts.	Update coded volumes, peak hour factor, & truck percentages. Or document justification for using alternative values.	• The PM peak hour analysis used the highest hour between 4-6 PM for trip generation and cumulative compatibility. Note that intersection would also operate at LOS C under Existing Conditions without the project and LOS F under Existing Plus Project Conditions using the earlier PM peak hour. Findings would not change. Appendices have been updated clarifying the peak hour used.
2.4	#8 Willow Road & Thompson Avenue a) Coded PM Peak Hour Volumes & Peak Hour Factor don't match Collected Traffic Counts.	Update coded volumes, peak hour factor, & truck percentages. Or document justification for using alternative values.	• The PM peak hour analysis used the highest hour between 4-6 PM for trip generation and cumulative compatibility. Note that intersection would also operate at LOS B under Existing Conditions with and without the project using the earlier PM peak hour. Findings would not change. Appendices have been updated clarifying the peak hour used.
2.5	Int #10 West Tefft St / Pomeroy Road a) Signal timing appears to just be optimized In lieu of using actual signal timing.	Verify signal timing is consistent with current programming. If not Verify signal timing parameters are constrained to current programming. If so revising signal timing to current programming.	• Signal timing was received from Public Works and analysis updated.
2.6	Int #11 West Tefft St / Mary Avenue a) Signal timing appears to be optimized In lieu of using actual signal timing. In many cases signal timing is constrained from synchro optimization.	Verify signal timing is consistent with current programming. If not Verify signal timing parameters are constrained to current programming. If so revising signal timing to current programming.	• Signal timing was received from Public Works and analysis updated.

ID	GHD Comment	GHD Recommendation	Response/Action
2.7	Int #12 West Tefft St / Hwy 101 SB Ramp a) SB On Ramp omitted from network under all scenarios. b) SB Off Ramp Construction awarded and pending construction. c) Signal timing appears to just be optimized Inlieu of using actual signal timing.	a) Code SB on ramp into Networks for all scenarios. b) Update Existing Network to reflect imminent SB Ramp improvements. c) Verify signal timing is consistent with current programming. If not Verify signal timing parameters are constrained to current programming. If so revising signal timing to current programming.	• Signal timing was received from Public Works and analysis updated including SB ramp. The updated Existing Conditions includes analysis with and without the ramp improvements. Existing Plus Project Conditions assumes the ramp improvements.
2.8	Int. #13 West Tefft St / Hwy 101 NB Ramp a) No storage length was coded for Eastbound left turn pocket in both AM & PM. b) Signal timing appears to just be optimized Inlieu of using actual signal timing.	Code EB Left Turn Lane Pocket Lengths. Verify signal timing is consistent with current programming. If not Verify signal timing parameters are constrained to current programming. If so revising signal timing to current programming.	• Signal timing was received from Public Works and analysis updated including storage length.
3.1	Project Trip Generation a) The proposed project description defines a large range of allowed uses within the Village Commercial & Flex/Commercial, many are high trip generating uses such as Restaurants & Bars, Drive-In & Drive-Thru services. The traffic impact study assumes ITE Landuse #820 "Shopping Center" for all commercial square feet. This isn't necessarily the wrong approach, however in our experience, this approach has under forecasted traffic in many circumstances due to allowed higher intensity uses being realized. b) The proposed project covers a relatively large geographic area, with uses as much as half a mile from each other "as the crow flies". However, the traffic impact study appears to apply internal capture based on the totality of all uses. This may be an over representation of internal capture. c) Pass-by reduction is applied following ITE, however the commercial areas are along a relatively isolated commercial collector. For this particular application of pass-by should be considered as diverted trips. d) Intersection #14 missing from figures	a) Revise trip generation estimates to also include higher generating retail landuse types. Add Consider development patterns of nearby developments for estimating proportions. b) Revise to include Intersection #14 c) Revise Internal Capture rate to exclude NBD 7,8, & 9. d) Revise Pass-By trips to Diverted Trips.	• a) LU 820 is common practice for future commercial development and includes a variety of land uses. The fitted curve equations were used, note that use of the average trip rates would reduce the AM and PM peak hour trips by approximately 49% and 28%, respectively. Use of the average trip rate plus one standard deviation would result in less AM peak hour trips and 11% more PM peak hours trip compared to the fitted curve equations. The Willow Rd/N Frontage Rd (#5), Willow Rd/US 101 SB Ramps (#6), and Willow Rd/US 101 NB Ramps (#7) intersections would still operate acceptably in the PM peak hour using the average trip rate plus one standard deviation. • b) Intersection #14 was only analyzed under Sunday Conditions and is shown on Figure 4 and 5. Analysis of the intersection on a weekday was not requested by the County during the scoping phase. Using volumes in the Circulation Study for Cumulative Conditions and adding project traffic would result in LOS B and findings would not change. • c & d) ITE internal capture data ranged in size to roughly 300 acre sites. This site is 288 acres within the applicable range. Pass-by trips were only applied on Willow Road at Willow Rd/North Frontage Rd (#5). Trips could be diverted from US 101. However, per ITE it is common for a traffic impact assessment of site development to treat diverted trips as additional trips, which is conservative. See response in 3.2.

ID	GHD Comment	GHD Recommendation	Response/Action
3.2	Project Trip Distribution & Assignment a) The traffic study indicates project trip distribution and assignment are derived using a select zone procedure in the SLOCOG Travel Demand Model. This is an appropriate methodology. However, assignment between Intersections 4, 5, and 9 appears to show traffic leaving the project site and then re-entering the site. This also indicates that the internal capture method may be resulting in an underestimation of project trip generation. b) Total trips entering and exiting the project is about 10% higher than what's indicated on the project trip generation table for AM & PM. This discrepancy maybe accounted for due to trips exiting and re-entering or exiting traffic utilizing new routes thru the project site… however this should be verified. c) In the PM assignments at Intersections 4,5,& 6 show an imbalance, a loss of approximately 23 trips between intersections #4 & #5 and a gain of approximately 22 trips between intersections 5 & 6. This imbalance is not present in the AM Peak. Also there does not appear to be enough landuse between intersections to account for the imbalance. d) Based on study trip distribution & assignment it's likely some project traffic will route via Cherokee Place, possibly necessitating improvements to the undeveloped road.	a) Revise Internal Capture rate to exclude NBD 7,8, & 9. b) Verify excess entering & exiting volumes. c) Check potential miscoding of volumes at intersections 4,5, & 6. d) Add or activate Cherokee Place in the SLOCOG model and rerun selection zone analysis to determine magnitude of trip distribution to that roadway. Expand scope of study to include Cherokee as necessary.	• a-c) Note that Figure 5 includes diverted volumes from the construction of the project roads as well as project traffic. There are diversions from the Tefft Street Interchange to the Willow Road Interchange via the North Frontage Extension and diversions from Hetrick-Glenhaven-Ten Oaks to the W and SW Project Driveways. NBD 7, 8, & 9 would use internal street to assess facilities and size of development is compatible with ITE. • b) Some of the trips using the SE driveway (N Frontage n/o Sandydale) are distributed to the area south of the project site and never pass through a study intersection. For project trips, none were meant to exit and re-enter. The diversions enter and then exit. See response to a). • c) There was an error in the pass-by calculations at Willow Rd/North Frontage Rd (#5) and the volume will be updated in the traffic study. Findings did not change. • d) Cherokee Place is currently active in the model and is not a centroid connector to the project TAZ. Cherokee Place is un paved and would not provide the faster or more direct route versus project roadways. Do not recommend trip generation be modified.
4	GHD analyzed CCTC's traffic impact study for existing + project conditions and associated Synchro files for traffic volume, geometry, and operational characteristics. Issues under Existing conditions carried over to Existing + Project analysis, however one issue was identified. a) The study identifies an existing + project level of service deficiency at the intersection of US 101 SB Ramps at Tefft Street. No, recommendations are provided because "acceptable operations will result from near term improvements." If the project occupies before the near-term improvements are completed there will be a temporary deficiency. Study should be updated to assume ramp improvements as an existing improvement as construction is imminent. b) The study identifies an existing + project level of service deficiency at the intersection of US 101 SB Ramps at Tefft Street. No, recommendations are provided because "acceptable operations will result from near term improvements." If the project occupies before the near-term improvements are completed there will be a temporary deficiency. Study should be updated to assume ramp improvements as an existing improvement as construction is imminent. c) The Study assumes dedicated right and left turn pockets at intersections #4 & #5, however these turn lanes do not appear to be included in the project description. These lanes would require widening which is not depicted on tract maps or the specific plan.	a) Review analysis to reflect ramp improvements. b) Address recommendations identified in sections 1 – 4 c) Update analysis to reflect project description, provide a conceptual willow road street plan that includes the widening at these intersections to accommodate turn pockets Right of way acquisition may be required to accommodate turn pockets.	• a & b) See response in 2.7 and other sections. • c) Conceptual Willow Road widening exhibits have been provided by RRM (January 2021). Traffic study is consistent with latest exhibits.
5	GHD analyzed the CCTC's traffic impact study for cumulative and cumulative + project conditions and associated Synchro files for traffic volume, geometry, and operational characteristics. Issues under Existing conditions carried over to both cumulative scenarios, however no additional issues were identified.	a) Address recommendations identified in sections 1 – 4 b) Add / Activate Cherokee Place in SLOCOG Cumulative Network	• a & b) See previous responses which will apply to Cumulative Conditions.

ID	GHD Comment	GHD Recommendation	Response/Action
6.1	SLOCOG Travel Demand Model a) Due to the regional travel demand model using employees in lieu of square footage for forecasting purposes, the proposed project's square footage needs to be converted to number of employees for forecasting VMT. The study does provide justification & data supporting an education to employment conversion. Justification or data should also be provided for conversion ratios of Commercial & Hotel Uses. b) A new VMT sketch planning tool has been developed for VMT analysis in SLO County.	a) Document source for employee conversion factors. b) Use SLO County VMT sketch planning tool for estimating project VMT.	• Revised VMT analysis used SLO County tool as directed.
6.2	Analysis Metrics a) CCTC uses a combined service population that comingles employees, population, & college. This is inconsistent with Current Draft County Guidelines that establishes measurement thresholds of significance by VMT per Capita, VMT per Employee, and Net Change in VMT. A new VMT sketch planning tool has been developed for VMT analysis in SLO County.	a) Use SLOCOG VMT sketch planning tool for estimating project VMT. Report VMT based on a per capita rate, per employee rate, and a net change.	• a) CCTC to revise VMT analysis using SLO County tool as requested in 6.1. Per sketch planning tool, only use SLOCOG model when project trips exceed 50,000.
6.3	Potential Mitigation a) Identified measures to reduce VMT are primarily programmatic which is highly prone to lapses in on-going implementation by future occupants or are outside the controls of the project occupants. Its recommended that project based VMT reductions be utilized. b) VMT measures should include quantifiable reductions.	a) For programmatic mitigation measures identify means and methods for ensuring sustained implementation of the measures for the life of the project by future occupants. b) Consider project based VMT mitigation measures. Connection to Sandydale Dr. may provide VMT reductions by providing more direct routes. Also planned but unconstructed bikeways throughout the county may have VMT offsetting potential. NCHRP 552 methodology can be used to quantify. c) Provide quantifiable reductions associated with each specific measure.	• a-c) Note that project would not proceed without Sandydale connection. VMT mitigation measure strategies are included in revised traffic study.

Dana Reserve
Transportation Impact Study Addendum

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

MEMORANDUM

Date: October 20, 2021

To: San Luis Obispo County
Nick Tompkins and Claire Simoulis, NKT Nipomo Properties, LLC

From: Michelle Matson and Joe Fernandez, CCTC

Subject: Dana Reserve – Transportation Impact Study Addendum

This memorandum evaluates the transportation impacts of increasing commercial trip levels for the Dana Reserve project. CCTC prepared a Transportation Impact Study (TIS) dated July 14th, 2021, which evaluates the project as currently proposed. The County has requested an addendum analyzing 15 percent more commercial service trips than were analyzed in the TIS as a sensitivity test.

In summary, the traffic analysis with the additional trip generation does not change the July 2021 TIS findings under Existing or Cumulative conditions. All previous recommendations would apply, and no new recommendations are triggered by the increased trips. Results are detailed below.

TRIP GENERATION

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th Edition was used to estimate project trip generation. **Table 1** summarizes the trip generation from the July 2021 TIS.

Table 1: Project Trip Generation (July 2021 TIS)

Weekday and Sunday Vehicle Trip Generation													
			Weekday	AM Peak Hour			PM Peak Hour			Sunday	Sunday MID[6]		
Land Use	Size	Unit	Daily	In	Out	Total	In	Out	Total	Daily	In	Out	Total
Single Family Residential[1]	833	DU	7,310	149	447	596	490	287	777	7,324	355	314	669
Multi Family Residential[2]	610	DU	4,571	61	205	266	186	109	295	3,831	205	204	409
Commercial Services[3]	113,000	SF	6,533	129	79	208	286	309	595	2,384	154	161	315
Education[4]	30,000	SF	608	48	14	62	28	28	56	36	3	3	6
Hotel[5]	110	Rooms	920	31	21	52	34	32	66	655	29	33	62
Gross Trips			19,942	418	766	1,184	1,024	765	1,789	14,230	746	715	1,461
Internal Trips[7]			*1,240*	*14*	*14*	*28*	*124*	*124*	*248*	*1,020*	*102*	*102*	*204*
Pass-by Trips[8]			*810*	*0*	*0*	*0*	*81*	*81*	*162*	*280*	*28*	*28*	*56*
Net New Trips			**17,892**	**404**	**752**	**1,156**	**819**	**560**	**1,379**	**12,930**	**616**	**585**	**1,201**

DU=Dwelling Unit; SF= Square Feet

1) ITE Land Use Code #210, Single-Family Detached Housing. Fitted curve equations used for weekday and Sunday.

2) ITE Land Use Code #220, Multifamily Housing (Low-Rise). Fitted curve equation used for weekday; Average rate used for Sunday.

3) ITE Land Use Code #820, Shopping Center. Fitted curve equation used for weekday; Average rate used for Sunday.

4) ITE Land Use Code #540, Junior/Community College. Average rates used for weekday and Sunday.

5) ITE Land Use Code #310, Hotel. Average rate used for weekday and Sunday.

6) Sunday, Peak Hour of Generator rates and equations used for midday.

7) Internal trips calculated using *TripGen 10* software. Sunday mid-day internal capture assumed same as weekday PM. PM and mid-day internal trips multiplied by factor of 5 to determine daily internal trips.

8) Pass-by rates from ITE *Trip Generation Handbook*, 3rd Edition. PM peak hour and Sunday Mid-day volumes both multiplied by a factor of 5 to determine weekday and Sunday daily pass-by trips, respectively. Saturday Mid-day pass-by rates used for Sunday Mid-day.

Source: ITE *Trip Generation Manual*, 10th Edition; CCTC, 2021.

Trips from the Commercial Services component of the project were estimated using the Shopping Center Land Use (#820 in ITE's *Trip Generation Manual*). ITE's description of this land use notes that: *"Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied included peripheral buildings, it can be assumed that some of the data show their effect."*

As a sensitivity test, trips from a nearby commercial center with outparcels were estimated using the specific land use codes for the outparcels (e.g. gas station, fast-food restaurant) instead of the shopping center land use. The resultant proportional trip increase of 15 percent was applied to the Dana Reserve's commercial services area to determine if additional impacts would result from this scenario.

Including the 15 percent additional gross commercial service trips the project would generate a total of 18,662 net new daily trips, 1,185 net new AM peak hour trips, 1,426 net new PM peak hour trips, 13,208 net new Sunday daily trips, and 1,232 net new Sunday midday peak hour trips. This is an increase of 770 weekday daily trips, 29 weekday AM trips, 47 weekday PM trips, 278 Sunday daily trips, and 31 Sunday peak hour trips when compared to the July 2021 TIS. Internal capture and pass-by percentages were assumed to be the same.

EXISTING PLUS PROJECT CONDITIONS

The intersection levels of service (LOS) under Existing and Existing Plus Project conditions are summarized in **Table 2** and the queues are summarized in **Table 3**.

Table 2: Existing and Existing Plus Project Levels of Service

Existing and Existing Plus Project Intersection Levels of Service								
		Existing (EX)		EX + Project		EX + Project (15% more CS trips)		
Intersection	Peak Hour	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Warrant Met?
1. Willow Rd/SR 1	AM	4.9 (12.4)	- (B)	5.1 (12.6)	- (B)	5.1 (12.6)	- (B)	-
	PM	4.4 (13.4)	- (B)	4.6 (14.1)	- (B)	4.6 (14.1)	- (B)	-
2. Willow Rd/Pomeroy Rd	AM	20.8	C	21.3	C	21.3	C	-
	PM	21.2	C	22.1	C	22.1	C	-
3. Willow Rd/Hetrick Ave	AM	4.2 (31.2)	- (D)	3.3 (33.0)	- (D)	3.3 (33.2)	- (D)	-
	PM	1.8 (17.7)	- (C)	1.4 (18.7)	- (C)	1.4 (18.8)	- (C)	-
4. Willow Rd/W Project Entry	AM	*Future Intersection*		4.5 (21.4)	- (C)	4.6 (21.7)	- (C)	-
	PM			3.4 (16.6)	- (C)	3.5 (17.0)	- (C)	-
5. Willow Rd/N Frontage Rd	AM	*Future Intersection*		24.8	C	25.4	C	-
	PM			15.4	B	16.3	B	-
6. Willow Rd/US 101 SB Ramps	AM	2.2 (12.8)	- (B)	3.6 (22.4)	- (C)	3.7 (23.0)	- (C)	Yes (B)
	PM	4.5 (12.7)	- (B)	**14.8 (50.9)**	**- (F)**	**15.9 (54.9)**	**- (F)**	Yes (C)
7. Willow Rd/US 101 NB Ramps	AM	**32.1 (181.0)**	**- (F)**	**>200 (>200)**	**- (F)**	**>200 (>200)**	**- (F)**	Yes (B)
	PM	8.6 (18.9)	- (C)	**199.1 (>200)**	**- (F)**	**>200 (>200)**	**- (F)**	Yes (C)
8. Willow Rd/Thompson Ave	AM	5.4 (15.3)	- (C)	8.0 (20.2)	- (C)	8.1 (20.3)	- (C)	-
	PM	3.6 (11.0)	- (B)	4.9 (12.0)	- (B)	4.9 (12.0)	- (B)	-
9. SW Project Entry/Pomeroy Rd	AM	*Future Intersection*		4.9 (15.2)	- (C)	4.9 (15.4)	- (C)	-
	PM			4.2 (17.2)	- (C)	4.3 (17.6)	- (C)	-
10. W Tefft St/Pomeroy Rd	AM	15.0	B	18.1	B	18.2	B	-
	PM	15.8	B	19.5	B	19.8	B	-
11. W Tefft St/Mary Ave[2]	AM	38.9/34.7	D/C	34.4	C	34.4	C	-
	PM	47.1/36.8	D/D	36.2	D	36.2	D	-
12. W Tefft St/US 101 SB Ramps/S Frontage Rd[2]	AM	**59.3**/26.3	**E**/C	31.3	C	31.5	C	-
	PM	**42.0**/22.0	**D**/C	23.0	C	23.1	C	-
13. W Tefft St/US 101 NB Ramps[2]	AM	23.5/19.5	C/B	20.5	C	20.6	C	-
	PM	**39.7**/19.1	**D**/B	19.3	B	19.3	B	-

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

2. Values on left represent 2018 Existing Conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements which are currently under construction. EX+P results assume construction is complete.

Note: Unacceptable operations shown in **bold** text.

Table 3: Existing and Existing Plus Project Queues

Existing and Existing Plus Project Intersection Queues						
Intersection	**Movement**	**Storage Length (ft)**	**Peak Hour**	**EX**	**EX + P**	**EX + P (+15% CS)**
				95th Percentile Queue (ft)[1]		
2. Pomeroy Rd/Willow Rd	NBR	25	AM	**35**	**35**	**35**
			PM	0	0	0
3. Hetrick Ave/Willow Rd.	NBR	25	AM	**55**	**40**	**40**
			PM	5	3	3
11. Tefft St/Mary Ave.[2]	NBL	120	AM	62	62	62
			PM	**137**/117	117	117
	SBL	120	AM	**137**/110	102	102
			PM	**236/161**	**155**	**155**
13. 101 NB Ramps/Tefft St[2]	NBL	125/200	AM	**227**/131	131	131
			PM	**371**/182	182	182

1. Queue length that would not be exceeded 95 percent of the time. # indicates volume exceeds capacity, queue may be longer. **Bold** indicates queue length longer than storage length.

2. Values on left represent 2018 conditions when counts were collected. Values on right include the Tefft Street Ramp widening improvements currently under construction. EX+P results assume construction is complete.

All County intersections operate at LOS D or better under Existing and Existing Plus Project conditions. However, the following queue lengths are exceeded:

- Pomeroy Road/Willow Rd (#2): the northbound right exceeds the small storage length provided within the shoulder during the AM peak hour. However, the queue would not block the through movement during the signal phase and the project does not exacerbate the queue.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

- Hetrick Avenue/Willow Rd (#3): the northbound right exceeds the small storage length provided with a flared approach during the AM peak hour. There is a small number of northbound through vehicles and the northbound queue would be less than two vehicles without a northbound right turn lane. The project reduced the queue length on this approach.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

- Tefft Street/Mary Avenue (#11): the southbound left turn lane exceeds storage during the PM peak hour with the ramp widening improvements. However, additional storage is available in the approach and the queue would not block the through movement during the signal phase.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

Although the Mary Avenue/Juniper Street (#14) intersection was only evaluated under Sunday Conditions, the intersection would operate acceptably during the weekday peak hours with the addition of project traffic.

The following Caltrans intersections operate below the LOS C threshold:

- Willow Road/US 101 SB Ramps (#6): the southbound approach operates at LOS F during the PM peak hour with project traffic due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive phasing on the westbound Willow Road approach and the existing lane configurations would result in LOS C or better during both peak hours. This improvement is included in the South County Road

Improvement Fee Program and the peak hour signal warrant is met under the Existing Plus Project conditions.

Recommendation: Install traffic signal (Recommendation is consistent with July 2021 TIS).

- Willow Road/US 101 NB Ramps (#7): the northbound approach operates at LOS F during both peak hours due to long delays resulting from side street stop control and the high volumes along Willow Road. Installation of a coordinated traffic signal with protective/permissive on the eastbound Willow Road approach and the existing lane configurations would result in LOS C or better during both peak hours. This improvement is included in the South County Road Improvement Fee Program and the peak hour signal warrant is met under the Existing Plus Project conditions.

  Recommendation: Install traffic signal (Recommendation is consistent with July 2021 TIS).

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS E and LOS D during the AM and PM peak hours, respectively. Installation of the improvements under construction, including an additional turn lane on the northbound and southbound off-ramps and restricting northbound left turns on Frontage Road would result in LOS C or better during both peak hours. The improvement will also reduce queuing on Tefft Street near the Mary Avenue intersection.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

- West Tefft Street/US 101 NB Ramps (#13): operates at LOS D during the PM peak hours. Installation of the ramp improvements currently under construction would result in LOS C or better during both peak hours.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

CUMULATIVE PLUS PROJECT CONDITIONS

The intersection LOS under Cumulative and Cumulative Plus Project conditions are summarized in **Table 4** and the queues are summarized in **Table 5**.

Table 4: Cumulative and Cumulative Plus Project Levels of Service

Cumulative and Cumulative Plus Project Intersection Levels of Service								
		Cumulative (CM)		CM + Project		CM + Project (25% more CS trips)		
Intersection	Peak Hour	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Warrant Met?
1. Willow Rd/SR 1	AM	5.7 (14.0)	- (B)	6.0 (14.5)	- (B)	6.0 (14.5)	- (B)	-
	PM	6.7 (18.6)	- (C)	7.1 (20.0)	- (C)	7.1 (20.0)	- (C)	-
2. Willow Rd/Pomeroy Rd	AM	22.0	C	22.4	C	22.4	C	-
	PM	22.3	C	22.8	C	22.8	C	-
3. Willow Rd/Hetrick Ave	AM	**5.2 (37.1)**	**- (E)**	**4.6 (38.8)**	**- (E)**	**4.6 (38.9)**	**- (E)**	No
	PM	3.1 (29.0)	- (D)	2.9 (31.7)	- (D)	2.9 (31.8)	- (D)	No
4. Willow Rd/W Project Entry	AM	*Future Intersection*		4.5 (23.7)	- (C)	4.6 (23.9)	- (C)	-
	PM			3.5 (19.0)	- (C)	3.7 (19.5)	- (C)	-
5. Willow Rd/N Frontage Rd	AM	*Future Intersection*		26.2	C	27.0	C	-
	PM			17.7	B	19.3	B	-
6. Willow Rd/US 101 SB Ramps	AM	3.4 (13.6)	- (B)	4.8 (23.3)	- (C)	4.9 (23.7)	- (C)	Yes (B)
	PM	5.1 (14.1)	- (B)	**16.3 (56.3)**	**- (F)**	**17.3 (60.2)**	**- (F)**	Yes (C)
7. Willow Rd/US 101 NB Ramps	AM	**14.5 (49.4)**	**- (E)**	**>200 (>200)**	**- (F)**	**>200 (>200)**	**- (F)**	Yes (B)
	PM	**13.8 (35.2)**	**- (E)**	**>200 (>200)**	**- (F)**	**>200 (>200)**	**- (F)**	Yes (C)
8. Willow Rd/Thompson Ave	AM	4.9 (13.2)	- (B)	6.1 (14.8)	- (B)	6.2 (14.9)	- (B)	-
	PM	4.3 (13.2)	- (B)	5.6 (15.0)	- (C)	5.6 (15.0)	- (C)	-
9. SW Project Entry/Pomeroy Rd	AM	*Future Intersection*		5.1 (17.7)	- (C)	5.1 (18.0)	- (C)	-
	PM			4.3 (19.8)	- (C)	4.5 (20.5)	- (C)	-
10. W Tefft St/Pomeroy Rd	AM	17.2	B	19.7	B	19.8	B	-
	PM	18.3	B	21.0	C	21.1	C	-
11. W Tefft St/Mary Ave	AM	40.3	D	39.9	D	39.9	D	-
	PM	44.0	D	43.9	D	43.9	D	-
12. W Tefft St/US 101 SB Ramps/S Frontage Rd	AM	**96.6**	**F**	**101.7**	**F**	**101.9**	**F**	N/A
	PM	**87.1**	**F**	**89.0**	**F**	**89.1**	**F**	N/A
13. W Tefft St/US 101 NB Ramps	AM	30.3	C	33.5	C	33.5	C	-
	PM	28.9	C	28.9	C	28.9	C	-

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 10 & 12). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

Note: Unacceptable operations shown in **bold** text.

Table 5: Cumulative and Cumulative Plus Project Queues

Cumulative and Cumulative Plus Project Intersection Queues						
Intersection	**Movement**	**Storage Length (ft)**	**Peak Hour**	**CM**	**CM + P**	**CM + P (+15% CS)**
				95th Percentile Queue (ft)[1]		
2. Pomeroy Rd/Willow Rd	NBR	25	AM	**51**	**51**	**51**
			PM	0	0	0
3. Hetrick Ave/Willow Rd	NBR	25	AM	**48**	**38**	**38**
			PM	5	3	3
10. Tefft St/Pomeroy Rd	EBL	95	AM	63	77	78
			PM	69	**105**	**107**
11. Tefft St/Mary Ave	EBL	125	AM	59	59	59
			PM	**137**	**137**	**137**
	NBL	120	AM	82	82	82
			PM	**172**	**172**	**172**
	SBL	120	AM	**205**	**194**	**194**
			PM	**311**	**302**	**302**
12. Frontage Road/101 SB Off Ramp/Tefft St	WBL	280	AM	**#335**	**#334**	**#334**
			PM	**#466**	**#466**	**#466**
	SBL	250	AM	**#382**	**#465**	**#466**
			PM	**#505**	**#569**	**#571**
13. 101 NB Ramps/Tefft St	EBL	195	AM	**#636**	**#592**	**#592**
			PM	**279**	**243**	**243**
	NBL	200	AM	174	173	173
			PM	**273**	**273**	**273**
	NBR	200	AM	140	149	149
			PM	**204**	**211**	**211**

1. Queue length that would not be exceeded 95 percent of the time. # indicates volume exceeds capacity, queue may be longer. **Bold** indicates queue length longer than storage length.

The following County intersections operates below the LOS D threshold or queue lengths exceed storage:

- Pomeroy Road/Willow Rd (#2): the northbound right exceeds the small storage length provided within the shoulder during the AM peak hour. However, the queue would not block the through movement during the signal phase and the project does not exacerbate the queue.

  Recommendation: None (Recommendation is consistent with July 2021 TIS).

- Willow Road/Hetrick Avenue (#3): the southbound approach operates at LOS E during the AM peak hour under Cumulative conditions with and without the project. The peak hour signal warrant is not met and the proposed project improves operations at this location by providing two new parallel routes to Hetrick Avenue.

  Recommendation: None, traffic signal warrant not met (Recommendation is consistent with July 2021 TIS).

- Tefft Street/Pomeroy Road (#10): the eastbound left turn lane exceeds the storage length during the PM peak hour. However, additional storage is available in the bay taper.

  Recommendation: None(Recommendation is consistent with July 2021 TIS).

- Tefft Street/Mary Avenue (#11): the eastbound, northbound, and southbound left turn lane exceeds storage during one or more peak hours under Cumulative Conditions. However, the project does not

exacerbate the queues. A ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street would be required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program. The additional interchange will also benefit Tefft Street/Mary Avenue.

Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements (Recommendation is consistent with July 2021 TIS).

The following Caltrans intersections operate below the LOS C threshold or queue lengths exceed storage:

- Willow Road/US 101 SB Ramps (#6): the southbound approach operates at LOS F in the PM peak hour under Cumulative Plus Project conditions. Installation of a coordinated traffic signal with protective/permissive on the westbound Willow Road approach and the existing lane configurations would result in LOS C during both peak hours. This improvement is consistent with the South County Road Improvement Fee Program and the traffic signal warrant is met.

  Recommendation: Install traffic signal (Recommendation is consistent with July 2021 TIS).

- Willow Road/US 101 NB Ramps (#7): the northbound approach operates at LOS F during both peak hours under Cumulative conditions and LOS F during both peak hours under Cumulative Plus Project conditions. Installation of a coordinated traffic signal with protective/permissive on the eastbound Willow Road approach and the existing lane configurations would result in LOS C or better during both peak hours. This improvement is consistent with the South County Road Improvement Fee Program and the traffic signal warrant is met.

  Recommendation: Install traffic signal (Recommendation is consistent with July 2021 TIS).

- West Tefft Street/US 101 SB Ramps/South Frontage Road (#12): operates at LOS F during both peak hours under Cumulative conditions with and without the project and the southbound and westbound left turn lanes exceed storage. A ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street is required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program.

  Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements (Recommendation is consistent with July 2021 TIS).

- West Tefft Street/US 101 NB Ramps (#13): the northbound left and right turn lanes and the eastbound left turn lane exceed storage during one or more peak hours under Cumulative Conditions. The ramp widening project is currently being constructed and was assumed to be in place. However, in addition to the North Frontage Road extension, construction of an additional interchange near Southland Street is required to divert traffic off Tefft Street and relieve congestion to an acceptable LOS. Construction of the additional interchange is included in the South County Road Improvement Fee Program.

  Recommendation: Project makes a fair share contribution through the County's impact fee program for cumulative roadway improvements (Recommendation is consistent with July 2021 TIS).

CONCLUSIONS

No new project impacts would occur if the commercial service trips were increased by 15 percent.

Please let us know if you have any questions.

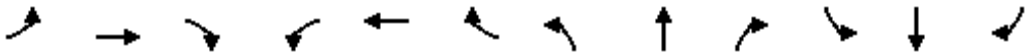
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	173	203	55	94	132
Future Vol, veh/h	58	173	203	55	94	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	67	201	236	64	109	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	639	268	0	0	300	0
Stage 1	268	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	431	756	-	-	1228	-
Stage 1	763	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	756	-	-	1228	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	3.4
HCM LOS	B		

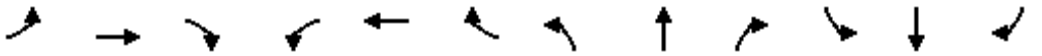
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	756	1228	-
HCM Lane V/C Ratio	-	-	0.172	0.266	0.089	-
HCM Control Delay (s)	-	-	16	11.5	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.1	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	372	55	46	282	18	106	119	154	37	61	14
v/c Ratio	0.06	0.54	0.08	0.30	0.36	0.02	0.41	0.34	0.36	0.22	0.18	0.03
Control Delay	35.9	21.6	0.2	39.7	15.4	0.1	39.9	28.9	7.8	36.5	27.3	0.2
Queue Delay	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 Delay	35.9	21.6	0.2	39.7	15.4	0.1	39.9	28.9	7.8	36.5	27.3	0.2
Queue Length 50th (ft)	4	133	0	19	71	0	44	45	0	15	22	0
Queue Length 95th (ft)	19	213	0	54	158	0	#130	94	35	45	55	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	155	1150	1014	155	1159	1041	259	1014	932	195	1014	932
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.32	0.05	0.30	0.24	0.02	0.41	0.12	0.17	0.19	0.06	0.02

Intersection Summary

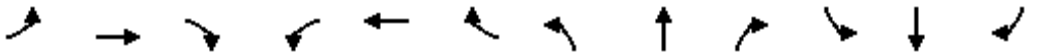
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	309	46	38	234	15	88	99	128	31	51	12
Future Volume (vph)	8	309	46	38	234	15	88	99	128	31	51	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	10	372	55	46	282	18	106	119	154	37	61	14
RTOR Reduction (vph)	0	0	35	0	0	11	0	0	125	0	0	13
Lane Group Flow (vph)	10	372	20	46	282	7	106	119	29	37	61	1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.7	25.1	25.1	2.4	26.8	26.8	9.3	13.0	13.0	3.0	6.7	6.7
Effective Green, g (s)	0.7	25.1	25.1	2.4	26.8	26.8	9.3	13.0	13.0	3.0	6.7	6.7
Actuated g/C Ratio	0.01	0.37	0.37	0.04	0.39	0.39	0.14	0.19	0.19	0.04	0.10	0.10
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	17	668	555	60	713	606	235	346	294	75	178	151
v/s Ratio Prot	0.01	c0.21		c0.03	0.16		c0.06	c0.07		0.02	0.03	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.59	0.56	0.04	0.77	0.40	0.01	0.45	0.34	0.10	0.49	0.34	0.01
Uniform Delay, d1	33.5	17.0	13.7	32.5	14.8	12.5	27.0	23.8	22.7	31.8	28.6	27.7
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	45.2	1.7	0.1	44.6	0.8	0.0	0.5	1.0	0.3	1.9	2.0	0.0
Delay (s)	78.7	18.7	13.8	77.1	15.5	12.6	27.5	24.8	22.9	33.6	30.6	27.7
Level of Service	E	B	B	E	B	B	C	C	C	C	C	C
Approach Delay (s)		19.5			23.6			24.8			31.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	24.5
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 (veh/h)	8	309	46	38	234	15	88	99	128	31	51	12
Future Volume (veh/h)	8	309	46	38	234	15	88	99	128	31	51	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	10	372	55	46	282	18	106	119	154	37	61	14
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	22	536	444	80	596	505	134	305	259	69	236	200
Arrive On Green	0.01	0.29	0.29	0.05	0.33	0.33	0.08	0.17	0.17	0.04	0.13	0.13
Sat Flow, veh/h	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	10	372	55	46	282	18	106	119	154	37	61	14
Grp Sat Flow(s),veh/h/ln	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.3	9.8	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
Cycle Q Clear(g_c), s	0.3	9.8	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
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	22	536	444	80	596	505	134	305	259	69	236	200
V/C Ratio(X)	0.45	0.69	0.12	0.57	0.47	0.04	0.79	0.39	0.60	0.54	0.26	0.07
Avail Cap(c_a), veh/h	161	1123	932	161	1123	952	203	1049	889	203	1049	889
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	26.4	16.9	14.0	25.2	14.5	12.4	24.5	20.0	20.8	25.4	21.2	20.6
Incr Delay (d2), s/veh	15.8	3.4	0.3	7.6	1.2	0.1	5.7	1.4	3.7	2.4	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.4	0.7	2.2	0.1	1.3	1.2	1.7	0.4	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	20.4	14.3	32.8	15.7	12.4	30.2	21.4	24.5	27.9	22.1	20.9
LnGrp LOS	D	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		437			346			379			112	
Approach Delay, s/veh		20.1			17.8			25.1			23.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	22.9	9.5	13.8	6.0	24.7	7.4	15.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 33	6.3	* 31	5.0	* 33	6.3	* 31
Max Q Clear Time (g_c+I1), s	3.4	11.8	5.2	3.6	2.3	8.6	3.1	7.0
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	0.0	2.9	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	466	1	18	287	10	1	3	141	11	4	2
Future Vol, veh/h	4	466	1	18	287	10	1	3	141	11	4	2
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	597	1	23	368	13	1	4	181	14	5	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	598	0	0	1032	1034	597	1114	1022	368
Stage 1	-	-	-	-	-	-	607	607	-	414	414	-
Stage 2	-	-	-	-	-	-	425	427	-	700	608	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1161	-	-	964	-	-	208	229	497	183	233	671
Stage 1	-	-	-	-	-	-	478	482	-	610	588	-
Stage 2	-	-	-	-	-	-	601	580	-	425	481	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1161	-	-	964	-	-	199	223	497	112	226	671
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	223	-	112	226	-
Stage 1	-	-	-	-	-	-	476	480	-	608	574	-
Stage 2	-	-	-	-	-	-	579	566	-	267	479	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	16.5	33.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	199	223	497	1161	-	-	964	-	-	112	226	671
HCM Lane V/C Ratio	0.006	0.017	0.364	0.004	-	-	0.024	-	-	0.126	0.023	0.004
HCM Control Delay (s)	23.2	21.4	16.3	8.1	-	-	8.8	-	-	41.7	21.3	10.4
HCM Lane LOS	C	C	C	A	-	-	A	-	-	E	C	B
HCM 95th %tile Q(veh)	0	0.1	1.6	0	-	-	0.1	-	-	0.4	0.1	0

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	632	13	109	311	23	202
Future Vol, veh/h	632	13	109	311	23	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	687	14	118	338	25	220

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	701	0	1261	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	574	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	896	-	188	447
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	896	-	163	447
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	489	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	163	447	-	-	896	-
HCM Lane V/C Ratio	0.153	0.491	-	-	0.132	-
HCM Control Delay (s)	31	20.6	-	-	9.6	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	2.6	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	888	18	177	423	34	302
v/c Ratio	0.82	0.02	0.48	0.27	0.19	0.68
Control Delay	20.9	4.7	9.9	3.0	39.4	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	4.7	9.9	3.0	39.4	25.8
Queue Length 50th (ft)	343	1	19	54	17	84
Queue Length 95th (ft)	553	10	70	94	47	182
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1431	1219	375	1621	612	446
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.01	0.47	0.26	0.06	0.68

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	817	17	163	389	31	278
Future Volume (vph)	817	17	163	389	31	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.12	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	220	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	888	18	177	423	34	302
RTOR Reduction (vph)	0	6	0	0	0	92
Lane Group Flow (vph)	888	12	177	423	34	210
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	42.5	42.5	58.1	58.1	4.0	13.1
Effective Green, g (s)	42.5	42.5	58.1	58.1	4.0	13.1
Actuated g/C Ratio	0.57	0.57	0.77	0.77	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1054	895	358	1441	94	413
v/s Ratio Prot	c0.48		0.06	0.23	0.02	c0.06
v/s Ratio Perm		0.01	0.32			0.07
v/c Ratio	0.84	0.01	0.49	0.29	0.36	0.51
Uniform Delay, d1	13.5	7.1	11.5	2.5	34.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.0	1.1	0.1	2.4	1.0
Delay (s)	19.8	7.1	12.6	2.6	36.7	29.1
Level of Service	B	A	B	A	D	C
Approach Delay (s)	19.5			5.5	29.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	19.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	817	17	163	389	31	278
Future Volume (veh/h)	817	17	163	389	31	278
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	888	18	177	423	34	302
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	961	815	245	1222	358	424
Arrive On Green	0.51	0.51	0.07	0.65	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	888	18	177	423	34	302
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	39.2	0.5	3.9	9.1	1.4	15.4
Cycle Q Clear(g_c), s	39.2	0.5	3.9	9.1	1.4	15.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	961	815	245	1222	358	424
V/C Ratio(X)	0.92	0.02	0.72	0.35	0.09	0.71
Avail Cap(c_a), veh/h	1130	958	296	1444	459	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	10.7	19.8	6.9	29.1	29.6
Incr Delay (d2), s/veh	11.3	0.0	6.7	0.2	0.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	0.1	2.1	2.6	0.6	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	10.7	26.5	7.1	29.2	33.2
LnGrp LOS	C	B	C	A	C	C
Approach Vol, veh/h	906			600	336	
Approach Delay, s/veh	31.0			12.8	32.8	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.4	52.4				64.9	24.5
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	54.0				69.0	23.0
Max Q Clear Time (g_c+I1), s	5.9	41.2				11.1	17.4
Green Ext Time (p_c), s	0.1	4.7				2.3	0.6

Intersection Summary							
HCM 6th Ctrl Delay			25.4				
HCM 6th LOS			C				

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	719	375	23	316	0	0	0	0	25	0	236
Future Vol, veh/h	0	719	375	23	316	0	0	0	0	25	0	236
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	999	521	32	439	0	0	0	0	35	0	328

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	1520	0	0			1763	2023	439
Stage 1	-	-	-	-	-	-			503	503	-
Stage 2	-	-	-	-	-	-			1260	1520	-
Critical Hdwy	-	-	-	4.15	-	-			6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-			5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-			3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	430	-	0			91	57	612
Stage 1	0	-	-	-	-	0			601	536	-
Stage 2	0	-	-	-	-	0			263	178	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	430	-	-			84	0	612
Mov Cap-2 Maneuver	-	-	-	-	-	-			84	0	-
Stage 1	-	-	-	-	-	-			601	0	-
Stage 2	-	-	-	-	-	-			244	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	23
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	430	-	84	612
HCM Lane V/C Ratio	-	-	0.074	-	0.413	0.536
HCM Control Delay (s)	-	-	14	-	75.2	17.5
HCM Lane LOS	-	-	B	-	F	C
HCM 95th %tile Q(veh)	-	-	0.2	-	1.7	3.2

Intersection	
Int Delay, s/veh	760.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	485	270	0	0	126	22	200	1	23	0	0	0
Future Vol, veh/h	485	270	0	0	126	22	200	1	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	713	397	0	0	185	32	294	1	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	217	0	-	-	-	0	2024	2040	397
Stage 1	-	-	-	-	-	-	1823	1823	-
Stage 2	-	-	-	-	-	-	201	217	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1347	-	0	0	-	-	~ 63	56	650
Stage 1	-	-	0	0	-	-	~ 140	127	-
Stage 2	-	-	0	0	-	-	830	721	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1347	-	-	-	-	-	~ 30	0	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 30	0	-
Stage 1	-	-	-	-	-	-	~ 66	0	-
Stage 2	-	-	-	-	-	-	830	0	-

Approach	EB	WB	NB
HCM Control Delay, s	6.8	0	$ 3804.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	30	650	1347	-	-	-
HCM Lane V/C Ratio	9.853	0.052	0.529	-	-	-
HCM Control Delay (s)	$ 4238.2	10.8	10.6	-	-	-
HCM Lane LOS	F	B	B	-	-	-
HCM 95th %tile Q(veh)	36.3	0.2	3.2	-	-	-

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

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	271	124	259	170	22
Future Vol, veh/h	23	271	124	259	170	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	40	475	218	454	298	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1208	318	337	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	201	720	1217	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	720	1217	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	400	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1217	-	165	720	-	-
HCM Lane V/C Ratio	0.179	-	0.245	0.66	-	-
HCM Control Delay (s)	8.6	-	33.7	19.2	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.7	-	0.9	5	-	-

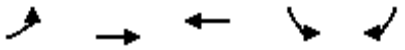
Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	191	53	272	131	30	134
Future Vol, veh/h	191	53	272	131	30	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	58	296	142	33	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	508	296	0	0	438	0
Stage 1	296	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	525	743	-	-	1122	-
Stage 1	755	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	510	743	-	-	1122	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	510	743	1122	-
HCM Lane V/C Ratio	-	-	0.407	0.078	0.029	-
HCM Control Delay (s)	-	-	16.8	10.3	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2	0.3	0.1	-

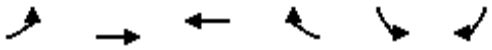


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	228	412	468	147	174
v/c Ratio	0.73	0.21	0.37	0.55	0.45
Control Delay	35.2	9.1	14.8	34.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	9.1	14.8	34.0	9.5
Queue Length 50th (ft)	~72	23	42	41	0
Queue Length 95th (ft)	75	114	144	#152	55
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	314	2119	1390	338	443
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.19	0.34	0.43	0.39

Intersection Summary

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

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

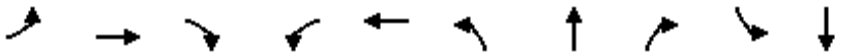


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	379	313	118	135	160
Future Volume (vph)	210	379	313	118	135	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3394		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3394		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	412	340	128	147	174
RTOR Reduction (vph)	0	0	41	0	0	149
Lane Group Flow (vph)	228	412	427	0	147	25
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	10.3	32.3	20.8		8.7	8.7
Effective Green, g (s)	10.3	32.3	20.8		8.7	8.7
Actuated g/C Ratio	0.17	0.53	0.34		0.14	0.14
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	298	1873	1157		252	225
v/s Ratio Prot	c0.13	0.12	c0.13			
v/s Ratio Perm					c0.08	0.02
v/c Ratio	0.77	0.22	0.37		0.58	0.11
Uniform Delay, d1	24.2	7.6	15.2		24.5	22.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.1	0.0	0.1		2.2	0.1
Delay (s)	34.3	7.7	15.2		26.7	22.9
Level of Service	C	A	B		C	C
Approach Delay (s)		17.1	15.2		24.6	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

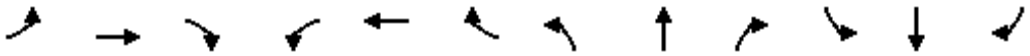
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



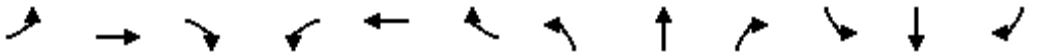
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	493	68	43	206	116	115
v/c Ratio	0.19	0.31	0.09	0.68	0.26	0.36	0.22	0.42	0.54	0.51
Control Delay	35.4	18.7	1.1	43.9	6.7	38.5	34.8	4.4	42.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	18.7	1.1	43.9	6.7	38.5	34.8	4.4	42.7	36.8
Queue Length 50th (ft)	18	85	0	82	12	35	22	0	63	53
Queue Length 95th (ft)	41	174	5	140	87	62	44	18	102	93
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	267	1636	782	270	1926	374	394	534	375	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.31	0.09	0.54	0.26	0.18	0.11	0.39	0.31	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
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)	34	505	70	147	431	62	68	43	206	168	40	23
RTOR Reduction (vph)	0	0	41	0	8	0	0	0	154	0	12	0
Lane Group Flow (vph)	34	505	29	147	485	0	68	43	52	116	103	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Effective Green, g (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Actuated g/C Ratio	0.07	0.42	0.42	0.16	0.51		0.10	0.10	0.25	0.13	0.13	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	118	1478	644	279	1764		170	179	400	215	214	
v/s Ratio Prot	0.02	c0.14		c0.08	0.14		c0.04	0.02	0.02	c0.07	0.06	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.29	0.34	0.05	0.53	0.27		0.40	0.24	0.13	0.54	0.48	
Uniform Delay, d1	37.7	16.8	14.7	32.9	11.9		36.1	35.5	24.5	34.7	34.4	
Progression Factor	1.00	1.00	1.00	0.80	0.43		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.1	0.8	0.4		0.6	0.3	0.1	1.3	0.6	
Delay (s)	38.2	17.4	14.8	27.1	5.5		36.7	35.8	24.5	36.0	35.0	
Level of Service	D	B	B	C	A		D	D	C	D	D	
Approach Delay (s)		18.3			10.4			28.6			35.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.5%	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)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (veh/h)	30	439	61	128	375	54	59	37	179	146	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	62	68	43	206	116	113	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	822	753	334	740	516	74	121	127	765	187	158	32
Arrive On Green	0.46	0.21	0.21	0.83	0.33	0.33	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1578	1781	3121	446	1781	1870	1578	1781	1506	306
Grp Volume(v), veh/h	34	505	70	147	244	249	68	43	206	116	0	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1781	1777	1790	1781	1870	1578	1781	0	1812
Q Serve(g_s), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Cycle Q Clear(g_c), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	822	753	334	740	294	296	121	127	765	187	0	190
V/C Ratio(X)	0.04	0.67	0.21	0.20	0.83	0.84	0.56	0.34	0.27	0.62	0.00	0.71
Avail Cap(c_a), veh/h	822	753	334	740	397	400	377	396	992	398	0	405
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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	30.8	27.6	4.3	27.3	27.4	38.4	37.8	13.0	36.4	0.0	36.8
Incr Delay (d2), s/veh	0.0	4.7	1.4	0.0	22.4	23.2	1.5	0.6	0.1	1.2	0.0	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	0.3	5.1	1.3	0.5	5.5	5.6	1.4	0.9	2.2	2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	35.5	29.1	4.4	49.7	50.6	39.9	38.4	13.1	37.7	0.0	38.7
LnGrp LOS	B	D	C	A	D	D	D	D	B	D	A	D
Approach Vol, veh/h		609			640			317			252	
Approach Delay, s/veh		33.5			39.6			22.3			38.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.3	22.0		12.9	44.2	18.1		9.8				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	18.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	13.1		8.2	2.9	12.9		5.1				
Green Ext Time (p_c), s	0.1	1.1		0.4	0.0	1.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		34.4	
HCM 6th LOS		C	

Notes

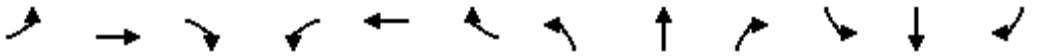
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	973	81	515	460	138	72	237
v/c Ratio	0.81	0.65	0.32	0.87	1.11	0.09	0.29
Control Delay	25.8	56.2	10.5	45.7	154.5	14.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	56.2	10.5	45.7	154.5	14.7	3.2
Queue Length 50th (ft)	257	28	89	228	~85	22	0
Queue Length 95th (ft)	156	#104	89	#393	#194	46	38
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1204	124	1623	530	124	806	811
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.65	0.32	0.87	1.11	0.09	0.29

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	856	10	72	458	0	0	0	409	123	64	211
Future Volume (vph)	0	856	10	72	458	0	0	0	409	123	64	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3532		1770	3539				1611	1770	1863	1563
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3532		1770	3539				1611	1770	1863	1563
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)	0	962	11	81	515	0	0	0	460	138	72	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	134
Lane Group Flow (vph)	0	973	0	81	515	0	0	0	460	138	72	103
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Effective Green, g (s)		29.0		6.0	39.0				28.0	6.0	36.8	36.8
Actuated g/C Ratio		0.34		0.07	0.46				0.33	0.07	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1205		124	1623				530	124	806	676
v/s Ratio Prot		c0.28		c0.05	0.15				c0.29	c0.08	0.04	
v/s Ratio Perm												0.07
v/c Ratio		0.81		0.65	0.32				0.87	1.11	0.09	0.15
Uniform Delay, d1		25.5		38.5	14.6				26.8	39.5	14.2	14.6
Progression Factor		0.77		0.78	0.68				1.00	1.00	1.00	1.00
Incremental Delay, d2		5.7		11.6	0.5				14.0	114.4	0.2	0.5
Delay (s)		25.2		41.6	10.4				40.8	153.9	14.4	15.1
Level of Service		C		D	B				D	F	B	B
Approach Delay (s)		25.2			14.6			40.8			57.8	
Approach LOS		C			B			D			E	

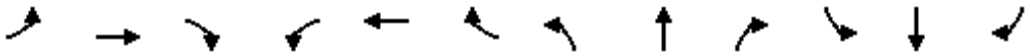
Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	600	547	396	254	147	149	142
v/c Ratio	0.63	0.21	0.30	0.35	0.60	0.61	0.40
Control Delay	8.5	2.7	21.1	4.6	43.6	43.9	9.2
Queue Delay	0.8	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	3.0	21.1	4.6	43.6	43.9	9.2
Queue Length 50th (ft)	80	29	79	0	77	80	0
Queue Length 95th (ft)	135	49	127	53	131	133	46
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	969	2639	1313	727	514	515	582
Starvation Cap Reductn	142	1393	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.44	0.30	0.35	0.29	0.29	0.24

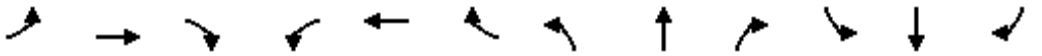
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	546	498	0	0	360	231	268	1	129	0	0	0
Future Volume (vph)	546	498	0	0	360	231	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1765	3539			3539	1532	1681	1686	1583			
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	882	3539			3539	1532	1681	1686	1583			
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)	600	547	0	0	396	254	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	160	0	0	121	0	0	0
Lane Group Flow (vph)	600	547	0	0	396	94	147	149	21	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Effective Green, g (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Actuated g/C Ratio	0.75	0.75			0.37	0.37	0.15	0.15	0.15			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	946	2639			1311	567	245	245	230			
v/s Ratio Prot	c0.21	0.15			0.11		0.09	c0.09				
v/s Ratio Perm	c0.27					0.06			0.01			
v/c Ratio	0.63	0.21			0.30	0.17	0.60	0.61	0.09			
Uniform Delay, d1	8.5	3.2			19.0	17.9	34.0	34.0	31.4			
Progression Factor	0.58	0.70			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.2			0.6	0.6	3.3	3.6	0.1			
Delay (s)	5.8	2.4			19.6	18.6	37.3	37.6	31.5			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		4.2			19.2			35.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.5%	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 (veh/h)	546	498	0	0	360	231	268	1	129	0	0	0
Future Volume (veh/h)	546	498	0	0	360	231	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	600	547	0	0	396	254	296	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1075	2730	0	0	702	303	436	0	194			
Arrive On Green	0.87	1.00	0.00	0.00	0.20	0.20	0.12	0.00	0.12			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	3563	0	1585			
Grp Volume(v), veh/h	600	547	0	0	396	254	296	0	142			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.6	13.6	6.8	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.6	13.6	6.8	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1075	2730	0	0	702	303	436	0	194			
V/C Ratio(X)	0.56	0.20	0.00	0.00	0.56	0.84	0.68	0.00	0.73			
Avail Cap(c_a), veh/h	1075	2730	0	0	702	303	1090	0	485			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.2	0.0	0.0	0.0	30.8	32.8	35.7	0.0	36.0			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	3.3	23.4	1.4	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	1.4	0.1	0.0	0.0	3.8	6.8	3.0	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.1	0.0	0.0	34.0	56.2	37.1	0.0	39.9			
LnGrp LOS	A	A	A	A	C	E	D	A	D			
Approach Vol, veh/h		1147			650			438				
Approach Delay, s/veh		1.4			42.7			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		69.4		15.6	48.6	20.8						
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0						
Max Green Setting (Gmax), s		* 50		* 26	28.9	16.8						
Max Q Clear Time (g_c+I1), s		2.0		9.3	2.0	15.6						
Green Ext Time (p_c), s		4.0		1.1	0.9	0.5						

Intersection Summary												
HCM 6th Ctrl Delay			20.6									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1560	96	596
v/c Ratio	0.55	0.77	0.17
Control Delay	0.7	66.2	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.7	66.2	0.2
Queue Length 50th (ft)	6	32	0
Queue Length 95th (ft)	m0	#119	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2858	124	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	11	0	492
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.77	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1048	340	85	530	0	0
Future Volume (vph)	1048	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3388		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3388		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1178	382	96	596	0	0
RTOR Reduction (vph)	30	0	0	0	0	0
Lane Group Flow (vph)	1530	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	71.0		6.0	85.0		
Effective Green, g (s)	71.0		6.0	79.8		
Actuated g/C Ratio	0.84		0.07	0.94		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2829		124	3322		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.54		0.77	0.18		
Uniform Delay, d1	2.1		38.8	0.2		
Progression Factor	0.16		0.67	1.00		
Incremental Delay, d2	0.1		24.8	0.1		
Delay (s)	0.4		51.0	0.3		
Level of Service	A		D	A		
Approach Delay (s)	0.4			7.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

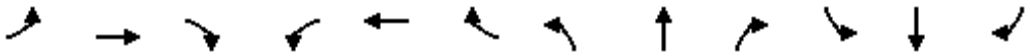
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	173	203	55	94	132
Future Vol, veh/h	58	173	203	55	94	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	67	201	236	64	109	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	639	268	0	0	300	0
Stage 1	268	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	431	756	-	-	1228	-
Stage 1	763	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	756	-	-	1228	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	624	-	-	-	-	-

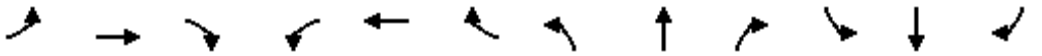
Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	756	1228	-
HCM Lane V/C Ratio	-	-	0.172	0.266	0.089	-
HCM Control Delay (s)	-	-	16	11.5	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.1	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	372	55	46	282	18	106	119	154	37	61	14
v/c Ratio	0.06	0.56	0.08	0.26	0.36	0.02	0.39	0.33	0.36	0.21	0.20	0.04
Control Delay	36.8	22.5	0.3	38.2	15.5	0.1	35.2	29.2	8.4	36.9	30.4	0.2
Queue Delay	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 Delay	36.8	22.5	0.3	38.2	15.5	0.1	35.2	29.2	8.4	36.9	30.4	0.2
Queue Length 50th (ft)	4	140	0	19	74	0	44	46	0	15	24	0
Queue Length 95th (ft)	20	217	0	54	159	0	97	95	39	46	59	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	156	1124	992	178	1153	1034	313	1124	1013	206	1021	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.33	0.06	0.26	0.24	0.02	0.34	0.11	0.15	0.18	0.06	0.01

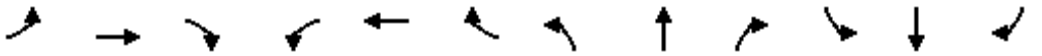
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	309	46	38	234	15	88	99	128	31	51	12
Future Volume (vph)	8	309	46	38	234	15	88	99	128	31	51	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	10	372	55	46	282	18	106	119	154	37	61	14
RTOR Reduction (vph)	0	0	35	0	0	11	0	0	124	0	0	12
Lane Group Flow (vph)	10	372	20	46	282	7	106	119	30	37	61	2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.7	24.6	24.6	2.8	26.7	26.7	7.9	12.9	12.9	3.1	8.1	8.1
Effective Green, g (s)	0.7	24.6	24.6	2.8	26.7	26.7	7.9	12.9	12.9	3.1	8.1	8.1
Actuated g/C Ratio	0.01	0.36	0.36	0.04	0.39	0.39	0.12	0.19	0.19	0.05	0.12	0.12
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	17	655	545	70	711	604	200	343	292	78	215	183
v/s Ratio Prot	0.01	c0.21		c0.03	0.16		c0.06	c0.07		0.02	0.03	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.59	0.57	0.04	0.66	0.40	0.01	0.53	0.35	0.10	0.47	0.28	0.01
Uniform Delay, d1	33.5	17.4	14.0	32.1	14.8	12.6	28.3	23.8	22.7	31.6	27.3	26.4
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	45.2	1.9	0.1	20.8	0.8	0.0	1.4	1.1	0.3	1.7	1.3	0.0
Delay (s)	78.7	19.2	14.0	52.9	15.6	12.6	29.6	24.9	23.0	33.3	28.5	26.4
Level of Service	E	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		20.0			20.4			25.4			29.8	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	24.5
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 (veh/h)	8	309	46	38	234	15	88	99	128	31	51	12
Future Volume (veh/h)	8	309	46	38	234	15	88	99	128	31	51	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	10	372	55	46	282	18	106	119	154	37	61	14
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	22	537	445	80	598	507	135	306	259	69	236	200
Arrive On Green	0.01	0.29	0.29	0.05	0.33	0.33	0.08	0.17	0.17	0.04	0.13	0.13
Sat Flow, veh/h	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	10	372	55	46	282	18	106	119	154	37	61	14
Grp Sat Flow(s),veh/h/ln	1739	1826	1514	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.3	9.8	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
Cycle Q Clear(g_c), s	0.3	9.8	1.4	1.4	6.6	0.4	3.2	3.1	5.0	1.1	1.6	0.4
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	22	537	445	80	598	507	135	306	259	69	236	200
V/C Ratio(X)	0.45	0.69	0.12	0.57	0.47	0.04	0.78	0.39	0.59	0.54	0.26	0.07
Avail Cap(c_a), veh/h	161	1151	955	183	1175	996	312	1151	976	212	1047	887
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	26.5	16.9	14.0	25.3	14.5	12.4	24.5	20.1	20.8	25.5	21.2	20.7
Incr Delay (d2), s/veh	15.8	3.4	0.3	7.6	1.2	0.1	3.7	1.4	3.7	2.4	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.4	0.7	2.2	0.1	1.3	1.2	1.7	0.4	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	20.3	14.2	32.8	15.7	12.4	28.2	21.4	24.5	27.9	22.2	21.0
LnGrp LOS	D	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		437			346			379			112	
Approach Delay, s/veh		20.1			17.8			24.6			23.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	23.0	9.5	13.8	6.0	24.8	7.4	15.9
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 34	9.7	* 31	5.0	* 35	6.6	* 34
Max Q Clear Time (g_c+I1), s	3.4	11.8	5.2	3.6	2.3	8.6	3.1	7.0
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	0.0	3.0	0.0	1.9

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	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	466	1	18	287	10	1	3	141	11	4	2
Future Vol, veh/h	4	466	1	18	287	10	1	3	141	11	4	2
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	597	1	23	368	13	1	4	181	14	5	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	598	0	0	1032	1034	597	1114	1022	368
Stage 1	-	-	-	-	-	-	607	607	-	414	414	-
Stage 2	-	-	-	-	-	-	425	427	-	700	608	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1161	-	-	964	-	-	208	229	497	183	233	671
Stage 1	-	-	-	-	-	-	478	482	-	610	588	-
Stage 2	-	-	-	-	-	-	601	580	-	425	481	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1161	-	-	964	-	-	199	223	497	112	226	671
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	223	-	112	226	-
Stage 1	-	-	-	-	-	-	476	480	-	608	574	-
Stage 2	-	-	-	-	-	-	579	566	-	267	479	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	16.5	33.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	199	223	497	1161	-	-	964	-	-	112	226	671
HCM Lane V/C Ratio	0.006	0.017	0.364	0.004	-	-	0.024	-	-	0.126	0.023	0.004
HCM Control Delay (s)	23.2	21.4	16.3	8.1	-	-	8.8	-	-	41.7	21.3	10.4
HCM Lane LOS	C	C	C	A	-	-	A	-	-	E	C	B
HCM 95th %tile Q(veh)	0	0.1	1.6	0	-	-	0.1	-	-	0.4	0.1	0

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	632	13	109	311	23	202
Future Vol, veh/h	632	13	109	311	23	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	687	14	118	338	25	220

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	701	0	1261	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	574	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	896	-	188	447
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	896	-	163	447
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	489	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	163	447	-	-	896	-
HCM Lane V/C Ratio	0.153	0.491	-	-	0.132	-
HCM Control Delay (s)	31	20.6	-	-	9.6	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	2.6	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	888	18	177	423	34	302
v/c Ratio	0.71	0.02	0.39	0.26	0.28	0.71
Control Delay	17.7	5.5	8.5	1.6	53.6	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	5.5	8.5	1.6	53.6	31.7
Queue Length 50th (ft)	387	1	22	80	23	115
Queue Length 95th (ft)	698	12	55	22	55	188
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1257	1072	458	1642	370	424
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.02	0.39	0.26	0.09	0.71

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	817	17	163	389	31	278
Future Volume (vph)	817	17	163	389	31	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.18	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	326	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	888	18	177	423	34	302
RTOR Reduction (vph)	0	5	0	0	0	101
Lane Group Flow (vph)	888	13	177	423	34	201
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	71.7	71.7	91.8	91.8	5.2	18.8
Effective Green, g (s)	71.7	71.7	91.8	91.8	5.2	18.8
Actuated g/C Ratio	0.65	0.65	0.83	0.83	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1214	1031	450	1554	83	364
v/s Ratio Prot	c0.48		0.05	0.23	0.02	c0.07
v/s Ratio Perm		0.01	0.28			0.06
v/c Ratio	0.73	0.01	0.39	0.27	0.41	0.55
Uniform Delay, d1	12.7	6.7	10.5	1.9	50.9	41.7
Progression Factor	1.00	1.00	3.16	0.58	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.5	0.4	3.3	1.8
Delay (s)	16.7	6.7	33.8	1.5	54.2	43.6
Level of Service	B	A	C	A	D	D
Approach Delay (s)	16.5			11.0	44.6	
Approach LOS	B			B	D	

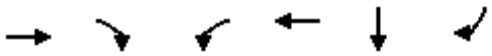
Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	817	17	163	389	31	278
Future Volume (veh/h)	817	17	163	389	31	278
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	888	18	177	423	34	302
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1061	899	281	1284	348	405
Arrive On Green	0.57	0.57	0.12	1.00	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	888	18	177	423	34	302
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	43.0	0.5	4.5	0.0	1.7	19.3
Cycle Q Clear(g_c), s	43.0	0.5	4.5	0.0	1.7	19.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1061	899	281	1284	348	405
V/C Ratio(X)	0.84	0.02	0.63	0.33	0.10	0.75
Avail Cap(c_a), veh/h	1061	899	312	1284	372	426
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.86	0.86	1.00	1.00
Uniform Delay (d), s/veh	19.6	10.4	19.0	0.0	36.3	37.7
Incr Delay (d2), s/veh	7.9	0.0	3.0	0.6	0.1	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	0.2	2.2	0.2	0.8	8.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.4	10.5	22.0	0.6	36.4	44.4
LnGrp LOS	C	B	C	A	D	D
Approach Vol, veh/h	906			600	336	
Approach Delay, s/veh	27.1			6.9	43.6	
Approach LOS	C			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.1	68.9				82.0	28.0
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	59.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	6.5	45.0				2.0	21.3
Green Ext Time (p_c), s	0.1	4.9				2.4	0.2

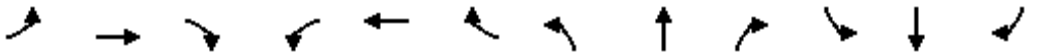
Intersection Summary							
HCM 6th Ctrl Delay			23.5				
HCM 6th LOS			C				



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	999	521	32	439	35	328
v/c Ratio	0.74	0.43	0.10	0.30	0.23	0.76
Control Delay	12.2	2.8	4.7	6.5	48.0	16.7
Queue Delay	0.1	0.0	0.0	1.1	0.0	0.0
Total Delay	12.3	2.8	4.7	7.6	48.0	16.7
Queue Length 50th (ft)	495	3	1	14	24	0
Queue Length 95th (ft)	274	28	m16	258	41	19
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1349	1213	324	1475	500	680
Starvation Cap Reductn	0	0	0	771	0	0
Spillback Cap Reductn	13	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.43	0.10	0.62	0.07	0.48

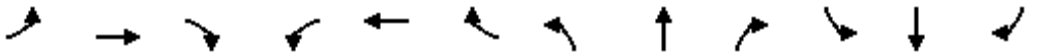
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	719	375	23	316	0	0	0	0	25	0	236
Future Volume (vph)	0	719	375	23	316	0	0	0	0	25	0	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1810	1538	1719	1810						1719	1538
Flt Permitted		1.00	1.00	0.17	1.00						0.95	1.00
Satd. Flow (perm)		1810	1538	304	1810						1719	1538
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	0	999	521	32	439	0	0	0	0	35	0	328
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	299
Lane Group Flow (vph)	0	999	448	32	439	0	0	0	0	0	35	29
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		79.5	79.5	89.7	89.7						9.6	9.6
Effective Green, g (s)		79.5	79.5	89.7	89.7						9.6	9.6
Actuated g/C Ratio		0.72	0.72	0.82	0.82						0.09	0.09
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1308	1111	295	1475						150	134
v/s Ratio Prot		c0.55		0.00	c0.24						c0.02	
v/s Ratio Perm			0.29	0.08								0.02
v/c Ratio		0.76	0.40	0.11	0.30						0.23	0.21
Uniform Delay, d1		9.4	6.0	8.9	2.5						46.8	46.7
Progression Factor		0.75	0.54	1.51	1.97						1.00	1.00
Incremental Delay, d2		3.6	0.9	0.1	0.5						0.8	0.8
Delay (s)		10.7	4.1	13.6	5.3						47.6	47.5
Level of Service		B	A	B	A						D	D
Approach Delay (s)		8.5			5.9			0.0			47.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.5%	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 (veh/h)	0	719	375	23	316	0	0	0	0	25	0	236
Future Volume (veh/h)	0	719	375	23	316	0	0	0	0	25	0	236
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	1826	1826	1826	1826	0				1826	1826	1826
Adj Flow Rate, veh/h	0	999	521	32	439	0				35	0	328
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72				0.72	0.72	0.72
Percent Heavy Veh, %	0	5	5	5	5	0				5	5	5
Cap, veh/h	0	1065	902	310	1224	0				404	0	359
Arrive On Green	0.00	1.00	1.00	0.06	1.00	0.00				0.23	0.00	0.23
Sat Flow, veh/h	0	1826	1547	1739	1826	0				1739	0	1547
Grp Volume(v), veh/h	0	999	521	32	439	0				35	0	328
Grp Sat Flow(s),veh/h/ln	0	1826	1547	1739	1826	0				1739	0	1547
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0				1.7	0.0	22.7
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.8	0.0	0.0				1.7	0.0	22.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1065	902	310	1224	0				404	0	359
V/C Ratio(X)	0.00	0.94	0.58	0.10	0.36	0.00				0.09	0.00	0.91
Avail Cap(c_a), veh/h	0	1065	902	340	1224	0				506	0	450
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.64	0.64	0.97	0.97	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	7.5	0.0	0.0				33.1	0.0	41.1
Incr Delay (d2), s/veh	0.0	11.6	1.7	0.1	0.8	0.0				0.1	0.0	20.0
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	3.4	0.4	0.2	0.3	0.0				0.7	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.6	1.7	7.6	0.8	0.0				33.2	0.0	61.1
LnGrp LOS	A	B	A	A	A	A				C	A	E
Approach Vol, veh/h		1520			471						363	
Approach Delay, s/veh		8.2			1.3						58.4	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	70.6		29.7		80.3
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.0	55.8		* 32		67.3
Max Q Clear Time (g_c+I1), s	2.8	2.0		24.7		2.0
Green Ext Time (p_c), s	0.0	12.1		0.8		2.5

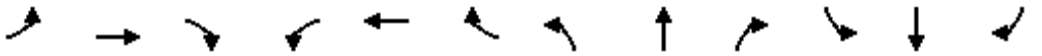
Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

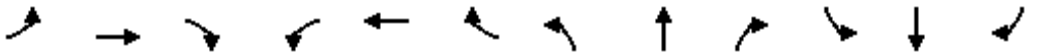
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	713	397	185	32	295	34
v/c Ratio	0.81	0.31	0.30	0.06	0.78	0.08
Control Delay	11.0	2.9	33.0	0.2	54.2	0.4
Queue Delay	0.4	0.4	0.0	0.0	0.3	0.0
Total Delay	11.4	3.4	33.0	0.2	54.5	0.4
Queue Length 50th (ft)	33	16	97	0	197	0
Queue Length 95th (ft)	101	39	137	0	189	0
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	921	1266	643	596	511	526
Starvation Cap Reductn	32	453	0	0	0	0
Spillback Cap Reductn	0	0	0	0	26	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.49	0.29	0.05	0.61	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	485	270	0	0	126	22	200	1	23	0	0	0
Future Volume (vph)	485	270	0	0	126	22	200	1	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1757	1568			
Flt Permitted	0.52	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	957	1845			1845	1568		1757	1568			
Peak-hour factor, PHF	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Adj. Flow (vph)	713	397	0	0	185	32	294	1	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	27	0	0	0
Lane Group Flow (vph)	713	397	0	0	185	11	0	295	7	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	75.5	75.5			37.3	37.3		23.8	23.8			
Effective Green, g (s)	75.5	75.5			37.3	37.3		23.8	23.8			
Actuated g/C Ratio	0.69	0.69			0.34	0.34		0.22	0.22			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	885	1266			625	531		380	339			
v/s Ratio Prot	c0.23	0.22			0.10			c0.17				
v/s Ratio Perm	c0.32					0.01			0.00			
v/c Ratio	0.81	0.31			0.30	0.02		0.78	0.02			
Uniform Delay, d1	9.9	6.9			26.7	24.2		40.6	33.9			
Progression Factor	0.43	0.31			1.00	1.00		1.00	1.00			
Incremental Delay, d2	4.0	0.5			1.2	0.1		9.6	0.0			
Delay (s)	8.3	2.6			27.9	24.3		50.2	34.0			
Level of Service	A	A			C	C		D	C			
Approach Delay (s)		6.3			27.4			48.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.5%	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 (veh/h)	485	270	0	0	126	22	200	1	23	0	0	0
Future Volume (veh/h)	485	270	0	0	126	22	200	1	23	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	713	397	0	0	185	32	294	1	34			
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	908	1317	0	0	686	582	340	1	304			
Arrive On Green	0.37	0.94	0.00	0.00	0.37	0.37	0.19	0.19	0.19			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1761	6	1572			
Grp Volume(v), veh/h	713	397	0	0	185	32	295	0	34			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1767	0	1572			
Q Serve(g_s), s	27.7	1.9	0.0	0.0	7.7	1.4	17.8	0.0	2.0			
Cycle Q Clear(g_c), s	27.7	1.9	0.0	0.0	7.7	1.4	17.8	0.0	2.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	908	1317	0	0	686	582	341	0	304			
V/C Ratio(X)	0.79	0.30	0.00	0.00	0.27	0.06	0.86	0.00	0.11			
Avail Cap(c_a), veh/h	966	1317	0	0	686	582	514	0	457			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.59	0.59	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.1	1.0	0.0	0.0	24.3	22.3	43.0	0.0	36.6			
Incr Delay (d2), s/veh	2.5	0.3	0.0	0.0	1.0	0.2	9.6	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.5	0.5	0.0	0.0	3.3	0.5	8.6	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	1.3	0.0	0.0	25.2	22.5	52.6	0.0	36.8			
LnGrp LOS	B	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		1110			217			329				
Approach Delay, s/veh		8.5			24.8			50.9				
Approach LOS		A			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		84.5			37.4	47.2		25.5				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		67.3			34.5	26.3		32.0				
Max Q Clear Time (g_c+I1), s		3.9			29.7	9.7		19.8				
Green Ext Time (p_c), s		2.2			1.2	0.8		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	271	124	259	170	22
Future Vol, veh/h	23	271	124	259	170	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	40	475	218	454	298	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1208	318	337	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	201	720	1217	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	720	1217	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	400	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1217	-	165	720	-	-
HCM Lane V/C Ratio	0.179	-	0.245	0.66	-	-
HCM Control Delay (s)	8.6	-	33.7	19.2	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.7	-	0.9	5	-	-

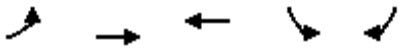
Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	191	53	272	131	30	134
Future Vol, veh/h	191	53	272	131	30	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	58	296	142	33	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	508	296	0	0	438	0
Stage 1	296	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	525	743	-	-	1122	-
Stage 1	755	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	510	743	-	-	1122	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	799	-	-	-	-	-

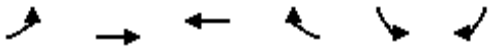
Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	510	743	1122	-
HCM Lane V/C Ratio	-	-	0.407	0.078	0.029	-
HCM Control Delay (s)	-	-	16.8	10.3	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2	0.3	0.1	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	228	412	468	147	174
v/c Ratio	0.51	0.25	0.45	0.59	0.47
Control Delay	15.5	13.0	20.6	39.1	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	13.0	20.6	39.1	9.9
Queue Length 50th (ft)	44	45	67	56	0
Queue Length 95th (ft)	73	123	158	136	54
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	877	1764	1097	388	483
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.43	0.38	0.36

Intersection Summary

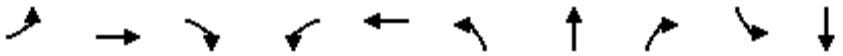


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	379	313	118	135	160
Future Volume (vph)	210	379	313	118	135	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3394		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3394		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	412	340	128	147	174
RTOR Reduction (vph)	0	0	40	0	0	149
Lane Group Flow (vph)	228	412	428	0	147	25
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	17.0	32.6	20.4		9.8	9.8
Effective Green, g (s)	17.0	32.6	20.4		9.8	9.8
Actuated g/C Ratio	0.25	0.48	0.30		0.14	0.14
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	439	1686	1012		253	226
v/s Ratio Prot	c0.13	0.12	c0.13			
v/s Ratio Perm					c0.08	0.02
v/c Ratio	0.52	0.24	0.42		0.58	0.11
Uniform Delay, d1	22.2	10.6	19.3		27.4	25.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1		2.2	0.1
Delay (s)	22.6	10.6	19.4		29.6	25.6
Level of Service	C	B	B		C	C
Approach Delay (s)		14.9	19.4		27.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	21.2
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

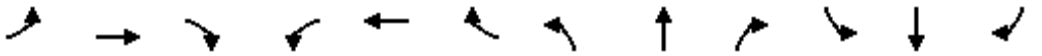
c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



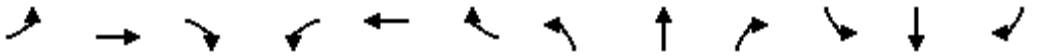
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	505	70	147	493	68	43	206	116	115
v/c Ratio	0.19	0.31	0.09	0.68	0.26	0.36	0.22	0.42	0.54	0.51
Control Delay	35.4	18.7	1.1	41.2	6.5	38.5	34.8	4.4	42.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	18.7	1.1	41.2	6.5	38.5	34.8	4.4	42.7	36.8
Queue Length 50th (ft)	18	85	0	81	13	35	22	0	63	53
Queue Length 95th (ft)	41	174	5	139	57	62	44	18	102	93
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	267	1636	782	270	1926	374	394	534	375	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.31	0.09	0.54	0.26	0.18	0.11	0.39	0.31	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (vph)	30	439	61	128	375	54	59	37	179	146	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1770	3539	1544	1770	3472		1770	1863	1575	1681	1673	
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)	34	505	70	147	431	62	68	43	206	168	40	23
RTOR Reduction (vph)	0	0	41	0	8	0	0	0	154	0	12	0
Lane Group Flow (vph)	34	505	29	147	485	0	68	43	52	116	103	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Effective Green, g (s)	5.7	35.5	35.5	13.4	43.2		8.2	8.2	21.6	10.9	10.9	
Actuated g/C Ratio	0.07	0.42	0.42	0.16	0.51		0.10	0.10	0.25	0.13	0.13	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	118	1478	644	279	1764		170	179	400	215	214	
v/s Ratio Prot	0.02	c0.14		c0.08	0.14		c0.04	0.02	0.02	c0.07	0.06	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.29	0.34	0.05	0.53	0.27		0.40	0.24	0.13	0.54	0.48	
Uniform Delay, d1	37.7	16.8	14.7	32.9	11.9		36.1	35.5	24.5	34.7	34.4	
Progression Factor	1.00	1.00	1.00	0.72	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.1	0.8	0.4		0.6	0.3	0.1	1.3	0.6	
Delay (s)	38.2	17.4	14.8	24.5	5.3		36.7	35.8	24.5	36.0	35.0	
Level of Service	D	B	B	C	A		D	D	C	D	D	
Approach Delay (s)		18.3			9.7			28.6			35.5	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.5%	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)	30	439	61	128	375	54	59	37	179	146	35	20
Future Volume (veh/h)	30	439	61	128	375	54	59	37	179	146	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	505	70	147	431	62	68	43	206	116	113	23
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	822	753	334	740	516	74	121	127	765	187	158	32
Arrive On Green	0.46	0.21	0.21	0.83	0.33	0.33	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1578	1781	3121	446	1781	1870	1578	1781	1506	306
Grp Volume(v), veh/h	34	505	70	147	244	249	68	43	206	116	0	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1781	1777	1790	1781	1870	1578	1781	0	1812
Q Serve(g_s), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Cycle Q Clear(g_c), s	0.9	11.1	3.1	1.4	10.8	10.9	3.1	1.9	0.0	5.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	822	753	334	740	294	296	121	127	765	187	0	190
V/C Ratio(X)	0.04	0.67	0.21	0.20	0.83	0.84	0.56	0.34	0.27	0.62	0.00	0.71
Avail Cap(c_a), veh/h	822	753	334	740	397	400	377	396	992	398	0	405
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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	30.8	27.6	4.3	27.3	27.4	38.4	37.8	13.0	36.4	0.0	36.8
Incr Delay (d2), s/veh	0.0	4.7	1.4	0.0	22.4	23.2	1.5	0.6	0.1	1.2	0.0	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	0.3	5.1	1.3	0.5	5.5	5.6	1.4	0.9	2.2	2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	35.5	29.1	4.4	49.7	50.6	39.9	38.4	13.1	37.7	0.0	38.7
LnGrp LOS	B	D	C	A	D	D	D	D	B	D	A	D
Approach Vol, veh/h		609			640			317			252	
Approach Delay, s/veh		33.5			39.6			22.3			38.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.3	22.0		12.9	44.2	18.1		9.8				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	18.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	13.1		8.2	2.9	12.9		5.1				
Green Ext Time (p_c), s	0.1	1.1		0.4	0.0	1.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		34.4	
HCM 6th LOS		C	

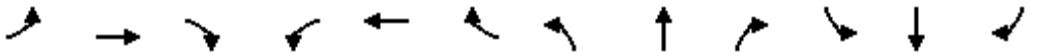
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	973	81	515	460	138	72	237
v/c Ratio	0.87	0.65	0.33	0.87	0.83	0.08	0.28
Control Delay	31.7	56.2	10.6	45.7	76.7	13.5	3.1
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	56.2	10.6	45.7	76.7	13.5	3.1
Queue Length 50th (ft)	265	28	89	228	74	21	1
Queue Length 95th (ft)	#168	#104	90	#393	#171	44	38
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1121	124	1540	530	166	850	840
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	4	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.65	0.33	0.87	0.83	0.08	0.28

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	856	10	72	458	0	0	0	409	123	64	211
Future Volume (vph)	0	856	10	72	458	0	0	0	409	123	64	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3532		1770	3539				1611	1770	1863	1563
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3532		1770	3539				1611	1770	1863	1563
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)	0	962	11	81	515	0	0	0	460	138	72	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	973	0	81	515	0	0	0	460	138	72	110
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		27.0		6.0	37.0				28.0	8.0	38.8	38.8
Effective Green, g (s)		27.0		6.0	37.0				28.0	8.0	38.8	38.8
Actuated g/C Ratio		0.32		0.07	0.44				0.33	0.09	0.46	0.46
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1121		124	1540				530	166	850	713
v/s Ratio Prot		c0.28		c0.05	0.15				c0.29	c0.08	0.04	
v/s Ratio Perm												0.07
v/c Ratio		0.87		0.65	0.33				0.87	0.83	0.08	0.15
Uniform Delay, d1		27.3		38.5	15.9				26.8	37.8	13.1	13.5
Progression Factor		0.80		0.78	0.62				1.00	1.00	1.00	1.00
Incremental Delay, d2		8.9		11.6	0.6				14.0	36.2	0.2	0.5
Delay (s)		30.8		41.6	10.5				40.8	74.0	13.3	14.0
Level of Service		C		D	B				D	E	B	B
Approach Delay (s)		30.8			14.7			40.8			32.4	
Approach LOS		C			B			D			C	

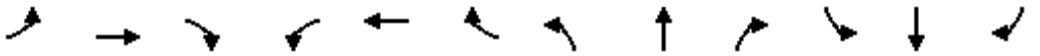
Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	600	547	396	254	147	149	142
v/c Ratio	0.63	0.21	0.30	0.35	0.60	0.61	0.40
Control Delay	8.1	2.5	21.1	4.6	43.6	43.9	9.2
Queue Delay	0.8	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	2.8	21.1	4.6	43.6	43.9	9.2
Queue Length 50th (ft)	70	25	79	0	77	80	0
Queue Length 95th (ft)	133	48	127	53	131	133	46
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	969	2639	1313	727	514	515	582
Starvation Cap Reductn	142	1393	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.44	0.30	0.35	0.29	0.29	0.24

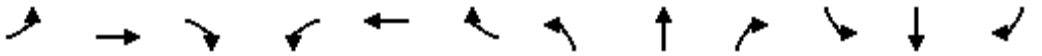
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	546	498	0	0	360	231	268	1	129	0	0	0
Future Volume (vph)	546	498	0	0	360	231	268	1	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1765	3539			3539	1532	1681	1686	1583			
Flt Permitted	0.47	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	882	3539			3539	1532	1681	1686	1583			
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)	600	547	0	0	396	254	295	1	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	160	0	0	121	0	0	0
Lane Group Flow (vph)	600	547	0	0	396	94	147	149	21	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Effective Green, g (s)	63.4	63.4			31.5	31.5	12.4	12.4	12.4			
Actuated g/C Ratio	0.75	0.75			0.37	0.37	0.15	0.15	0.15			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	946	2639			1311	567	245	245	230			
v/s Ratio Prot	c0.21	0.15			0.11		0.09	c0.09				
v/s Ratio Perm	c0.27					0.06			0.01			
v/c Ratio	0.63	0.21			0.30	0.17	0.60	0.61	0.09			
Uniform Delay, d1	8.5	3.2			19.0	17.9	34.0	34.0	31.4			
Progression Factor	0.54	0.64			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.2			0.6	0.6	3.3	3.6	0.1			
Delay (s)	5.5	2.2			19.6	18.6	37.3	37.6	31.5			
Level of Service	A	A			B	B	D	D	C			
Approach Delay (s)		3.9			19.2			35.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.5%	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 (veh/h)	546	498	0	0	360	231	268	1	129	0	0	0
Future Volume (veh/h)	546	498	0	0	360	231	268	1	129	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	600	547	0	0	396	254	296	0	142			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1075	2730	0	0	702	303	436	0	194			
Arrive On Green	0.87	1.00	0.00	0.00	0.20	0.20	0.12	0.00	0.12			
Sat Flow, veh/h	1781	3647	0	0	3647	1532	3563	0	1585			
Grp Volume(v), veh/h	600	547	0	0	396	254	296	0	142			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1532	1781	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	8.6	13.6	6.8	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	8.6	13.6	6.8	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1075	2730	0	0	702	303	436	0	194			
V/C Ratio(X)	0.56	0.20	0.00	0.00	0.56	0.84	0.68	0.00	0.73			
Avail Cap(c_a), veh/h	1075	2730	0	0	702	303	1090	0	485			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.2	0.0	0.0	0.0	30.8	32.8	35.7	0.0	36.0			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	3.3	23.4	1.4	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	1.4	0.1	0.0	0.0	3.8	6.8	3.0	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.1	0.0	0.0	34.0	56.2	37.1	0.0	39.9			
LnGrp LOS	A	A	A	A	C	E	D	A	D			
Approach Vol, veh/h		1147			650			438				
Approach Delay, s/veh		1.4			42.7			38.0				
Approach LOS		A			D			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		69.4		15.6	48.6	20.8						
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0						
Max Green Setting (Gmax), s		* 50		* 26	28.9	16.8						
Max Q Clear Time (g_c+I1), s		2.0		9.3	2.0	15.6						
Green Ext Time (p_c), s		4.0		1.1	0.9	0.5						

Intersection Summary												
HCM 6th Ctrl Delay			20.6									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1560	96	596
v/c Ratio	0.55	0.77	0.17
Control Delay	0.8	66.2	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	0.8	66.2	0.2
Queue Length 50th (ft)	6	32	0
Queue Length 95th (ft)	3	#119	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2858	124	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	10	0	492
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.77	0.20

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1048	340	85	530	0	0
Future Volume (vph)	1048	340	85	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.96		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3388		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3388		1770	3539		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1178	382	96	596	0	0
RTOR Reduction (vph)	30	0	0	0	0	0
Lane Group Flow (vph)	1530	0	96	596	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	71.0		6.0	85.0		
Effective Green, g (s)	71.0		6.0	79.8		
Actuated g/C Ratio	0.84		0.07	0.94		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2829		124	3322		
v/s Ratio Prot	c0.45		c0.05	0.17		
v/s Ratio Perm						
v/c Ratio	0.54		0.77	0.18		
Uniform Delay, d1	2.1		38.8	0.2		
Progression Factor	0.24		0.67	1.00		
Incremental Delay, d2	0.1		24.8	0.1		
Delay (s)	0.6		51.0	0.3		
Level of Service	A		D	A		
Approach Delay (s)	0.6			7.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

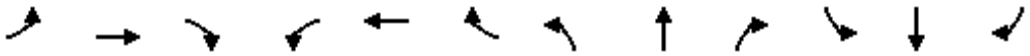
Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	109	197	80	221	213
Future Vol, veh/h	43	109	197	80	221	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	45	115	207	84	233	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	939	249	0	0	291	0
Stage 1	249	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	292	787	-	-	1265	-
Stage 1	790	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	787	-	-	1265	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	405	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	4.3
HCM LOS	B		

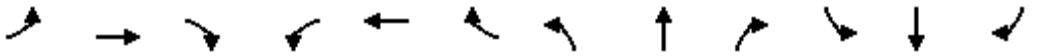
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	238	787	1265	-
HCM Lane V/C Ratio	-	-	0.19	0.146	0.184	-
HCM Control Delay (s)	-	-	23.6	10.4	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.5	0.7	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	19	383	128	88	308	38	111	49	48	23	84	17
v/c Ratio	0.14	0.57	0.19	0.67	0.34	0.04	0.66	0.12	0.10	0.17	0.30	0.05
Control Delay	35.3	22.4	2.7	60.0	14.1	0.1	55.2	24.7	0.4	36.0	30.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	22.4	2.7	60.0	14.1	0.1	55.2	24.7	0.4	36.0	30.2	0.3
Queue Length 50th (ft)	7	131	0	35	74	0	45	14	0	9	31	0
Queue Length 95th (ft)	30	225	22	#123	177	0	#149	50	0	34	77	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	135	943	878	132	972	901	168	884	835	132	864	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.41	0.15	0.67	0.32	0.04	0.66	0.06	0.06	0.17	0.10	0.02

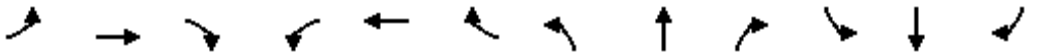
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	345	115	79	277	34	100	44	43	21	76	15
Future Volume (vph)	17	345	115	79	277	34	100	44	43	21	76	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	19	383	128	88	308	38	111	49	48	23	84	17
RTOR Reduction (vph)	0	0	79	0	0	21	0	0	38	0	0	15
Lane Group Flow (vph)	19	383	49	88	308	17	111	49	10	23	84	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	28.9	28.9	5.1	33.1	33.1	6.4	14.9	14.9	1.8	10.3	10.3
Effective Green, g (s)	0.9	28.9	28.9	5.1	33.1	33.1	6.4	14.9	14.9	1.8	10.3	10.3
Actuated g/C Ratio	0.01	0.38	0.38	0.07	0.44	0.44	0.09	0.20	0.20	0.02	0.14	0.14
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	715	608	120	820	696	150	369	313	42	255	211
v/s Ratio Prot	0.01	c0.21		c0.05	c0.17		c0.06	c0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.90	0.54	0.08	0.73	0.38	0.02	0.74	0.13	0.03	0.55	0.33	0.01
Uniform Delay, d1	37.1	17.9	14.7	34.4	14.1	11.9	33.6	24.8	24.3	36.3	29.3	28.0
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	153.1	1.4	0.1	21.1	0.6	0.0	15.1	0.3	0.1	7.6	1.3	0.0
Delay (s)	190.2	19.4	14.8	55.5	14.7	11.9	48.7	25.1	24.4	43.9	30.6	28.1
Level of Service	F	B	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		24.4			22.7			37.5			32.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	50.7%	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)	17	345	115	79	277	34	100	44	43	21	76	15
Future Volume (veh/h)	17	345	115	79	277	34	100	44	43	21	76	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	383	128	88	308	38	111	49	48	23	84	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	561	476	118	643	545	142	323	274	48	225	186
Arrive On Green	0.02	0.30	0.30	0.07	0.34	0.34	0.08	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Grp Volume(v), veh/h	19	383	128	88	308	38	111	49	48	23	84	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Q Serve(g_s), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
Cycle Q Clear(g_c), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
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	41	561	476	118	643	545	142	323	274	48	225	186
V/C Ratio(X)	0.47	0.68	0.27	0.75	0.48	0.07	0.78	0.15	0.18	0.48	0.37	0.09
Avail Cap(c_a), veh/h	161	1119	949	158	1116	946	180	1050	890	158	1027	850
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	27.3	17.4	15.0	25.9	14.6	12.5	25.5	19.8	19.9	27.1	22.9	22.1
Incr Delay (d2), s/veh	9.7	3.1	0.6	13.8	1.2	0.1	12.0	0.4	0.5	2.8	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	1.1	1.4	2.5	0.3	1.7	0.5	0.5	0.3	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	20.5	15.7	39.7	15.8	12.6	37.5	20.2	20.4	29.9	24.7	22.5
LnGrp LOS	D	C	B	D	B	B	D	C	C	C	C	C
Approach Vol, veh/h		530			434			208			124	
Approach Delay, s/veh		19.9			20.3			29.5			25.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	24.1	9.8	13.6	6.6	26.5	6.8	16.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.0	* 34	5.7	* 31	5.1	* 34	5.0	* 32
Max Q Clear Time (g_c+I1), s	4.7	12.2	5.5	4.3	2.6	9.3	2.7	3.5
Green Ext Time (p_c), s	0.0	4.8	0.0	0.7	0.0	3.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	405	2	40	376	20	1	3	18	18	8	6
Future Vol, veh/h	6	405	2	40	376	20	1	3	18	18	8	6
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	418	2	41	388	21	1	3	19	19	8	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	409	0	0	420	0	0	918	921	418	912	902	388
Stage 1	-	-	-	-	-	-	430	430	-	470	470	-
Stage 2	-	-	-	-	-	-	488	491	-	442	432	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1144	-	-	1134	-	-	251	269	633	254	276	658
Stage 1	-	-	-	-	-	-	601	582	-	572	558	-
Stage 2	-	-	-	-	-	-	559	546	-	592	581	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	1134	-	-	235	258	633	237	265	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	258	-	237	265	-
Stage 1	-	-	-	-	-	-	598	579	-	569	538	-
Stage 2	-	-	-	-	-	-	526	526	-	569	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	12.5	18.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	235	258	633	1144	-	-	1134	-	-	237	265	658
HCM Lane V/C Ratio	0.004	0.012	0.029	0.005	-	-	0.036	-	-	0.078	0.031	0.009
HCM Control Delay (s)	20.4	19.1	10.9	8.2	-	-	8.3	-	-	21.5	19	10.5
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0	0	0.1	0	-	-	0.1	-	-	0.3	0.1	0

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	429	25	213	538	18	151
Future Vol, veh/h	429	25	213	538	18	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	27	232	585	20	164

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	493	0	1515	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	132	597
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	337	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	103	597
Mov Cap-2 Maneuver	-	-	-	-	103	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	264	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	103	597	-	-	1071	-
HCM Lane V/C Ratio	0.19	0.275	-	-	0.216	-
HCM Control Delay (s)	48	13.3	-	-	9.3	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.1	-	-	0.8	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	552	78	387	735	82	277
v/c Ratio	0.75	0.12	0.67	0.52	0.33	0.39
Control Delay	26.7	4.8	14.0	7.0	35.1	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	4.8	14.0	7.0	35.1	8.9
Queue Length 50th (ft)	210	1	55	135	34	34
Queue Length 95th (ft)	361	26	164	248	81	94
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1072	943	698	1565	687	833
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.08	0.55	0.47	0.12	0.33

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	72	356	676	75	255
Future Volume (vph)	508	72	356	676	75	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.21	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	396	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	78	387	735	82	277
RTOR Reduction (vph)	0	46	0	0	0	102
Lane Group Flow (vph)	552	32	387	735	82	175
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	27.0	27.0	47.6	47.6	7.0	21.1
Effective Green, g (s)	27.0	27.0	47.6	47.6	7.0	21.1
Actuated g/C Ratio	0.40	0.40	0.70	0.70	0.10	0.31
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	744	632	565	1311	183	646
v/s Ratio Prot	0.30		c0.14	0.39	c0.05	0.06
v/s Ratio Perm		0.02	c0.34			0.05
v/c Ratio	0.74	0.05	0.68	0.56	0.45	0.27
Uniform Delay, d1	17.3	12.4	8.2	4.9	28.5	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.0	3.4	0.6	1.7	0.2
Delay (s)	21.3	12.5	11.6	5.4	30.2	17.7
Level of Service	C	B	B	A	C	B
Approach Delay (s)	20.2			7.6	20.6	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	19.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	72	356	676	75	255
Future Volume (veh/h)	508	72	356	676	75	255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	78	387	735	82	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	651	552	470	1153	326	556
Arrive On Green	0.35	0.35	0.17	0.62	0.18	0.18
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	552	78	387	735	82	277
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	17.7	2.2	8.1	16.1	2.6	8.9
Cycle Q Clear(g_c), s	17.7	2.2	8.1	16.1	2.6	8.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	651	552	470	1153	326	556
V/C Ratio(X)	0.85	0.14	0.82	0.64	0.25	0.50
Avail Cap(c_a), veh/h	1000	847	664	1705	633	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	14.5	12.8	7.9	22.6	16.5
Incr Delay (d2), s/veh	4.3	0.1	5.8	0.6	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.6	2.8	3.7	1.0	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.8	14.6	18.5	8.4	23.0	17.2
LnGrp LOS	C	B	B	A	C	B
Approach Vol, veh/h	630			1122	359	
Approach Delay, s/veh	22.7			11.9	18.6	
Approach LOS	C			B	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.4	29.0				46.4	18.3
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	17.9	34.6				59.0	23.0
Max Q Clear Time (g_c+I1), s	10.1	19.7				18.1	10.9
Green Ext Time (p_c), s	0.7	2.9				4.9	1.0

Intersection Summary			
HCM 6th Ctrl Delay		16.3	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	15.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	413	350	18	540	0	0	0	0	41	0	492
Future Vol, veh/h	0	413	350	18	540	0	0	0	0	41	0	492
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	426	361	19	557	0	0	0	0	42	0	507

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	787	0	0			1202	1382	557
Stage 1	-	-	-	-	-	-			595	595	-
Stage 2	-	-	-	-	-	-			607	787	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	832	-	0			204	144	530
Stage 1	0	-	-	-	-	0			551	492	-
Stage 2	0	-	-	-	-	0			544	403	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	832	-	-			199	0	530
Mov Cap-2 Maneuver	-	-	-	-	-	-			199	0	-
Stage 1	-	-	-	-	-	-			551	0	-
Stage 2	-	-	-	-	-	-			531	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.3	54.9
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	832	-	199	530
HCM Lane V/C Ratio	-	-	0.022	-	0.212	0.957
HCM Control Delay (s)	-	-	9.4	-	27.9	57.1
HCM Lane LOS	-	-	A	-	D	F
HCM 95th %tile Q(veh)	-	-	0.1	-	0.8	12.4

Intersection	
Int Delay, s/veh	215.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	292	185	0	0	157	14	390	1	21	0	0	0
Future Vol, veh/h	292	185	0	0	157	14	390	1	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	321	203	0	0	173	15	429	1	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	188	0	-	-	-	0	1026	1033	203
Stage 1	-	-	-	-	-	-	845	845	-
Stage 2	-	-	-	-	-	-	181	188	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1380	-	0	0	-	-	~ 259	232	835
Stage 1	-	-	0	0	-	-	~ 420	377	-
Stage 2	-	-	0	0	-	-	848	743	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1380	-	-	-	-	-	~ 199	0	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 199	0	-
Stage 1	-	-	-	-	-	-	~ 322	0	-
Stage 2	-	-	-	-	-	-	848	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.1	0	$ 547.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	199	835	1380	-	-	-
HCM Lane V/C Ratio	2.159	0.028	0.233	-	-	-
HCM Control Delay (s)	$ 576.5	9.4	8.4	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	33.6	0.1	0.9	-	-	-

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

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	174	142	102	251	25
Future Vol, veh/h	21	174	142	102	251	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	193	158	113	279	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	722	293	307	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	394	746	1254	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	344	746	1254	-	-	-
Mov Cap-2 Maneuver	344	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1254	-	344	746	-	-
HCM Lane V/C Ratio	0.126	-	0.068	0.259	-	-
HCM Control Delay (s)	8.3	-	16.2	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	1	-	-

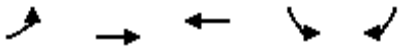
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	163	41	174	215	59	288
Future Vol, veh/h	163	41	174	215	59	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	177	45	189	234	64	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	630	189	0	0	423	0
Stage 1	189	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	446	853	-	-	1136	-
Stage 1	843	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	421	853	-	-	1136	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	421	853	1136	-
HCM Lane V/C Ratio	-	-	0.421	0.052	0.056	-
HCM Control Delay (s)	-	-	19.6	9.5	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2	0.2	0.2	-

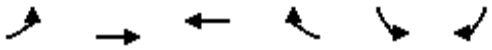


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	222	426	728	171	207
v/c Ratio	0.80	0.21	0.55	0.58	0.47
Control Delay	46.7	9.4	16.9	34.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	9.4	16.9	34.0	9.0
Queue Length 50th (ft)	~82	25	73	47	0
Queue Length 95th (ft)	86	122	242	#173	60
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	276	2288	1593	429	541
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.19	0.46	0.40	0.38

Intersection Summary

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

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

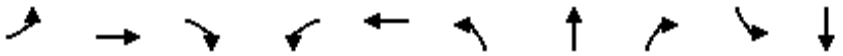


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	405	485	206	162	197
Future Volume (vph)	211	405	485	206	162	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3393		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3393		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	222	426	511	217	171	207
RTOR Reduction (vph)	0	0	47	0	0	175
Lane Group Flow (vph)	222	426	681	0	171	32
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	9.2	32.4	21.8		9.6	9.6
Effective Green, g (s)	9.2	32.4	21.8		9.6	9.6
Actuated g/C Ratio	0.15	0.52	0.35		0.16	0.16
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	266	1873	1196		277	248
v/s Ratio Prot	c0.12	0.12	c0.20			
v/s Ratio Perm					c0.10	0.02
v/c Ratio	0.83	0.23	0.57		0.62	0.13
Uniform Delay, d1	25.6	7.9	16.2		24.4	22.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	18.9	0.0	0.4		2.9	0.1
Delay (s)	44.5	8.0	16.6		27.3	22.6
Level of Service	D	A	B		C	C
Approach Delay (s)		20.5	16.6		24.7	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	21.2
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.



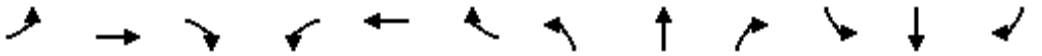
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	697	140	63	83	180	179
v/c Ratio	0.42	0.34	0.12	0.80	0.49	0.58	0.25	0.18	0.68	0.64
Control Delay	39.2	22.2	2.3	58.9	15.2	43.3	33.4	3.5	46.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	22.2	2.3	58.9	15.2	43.3	33.4	3.5	46.2	40.3
Queue Length 50th (ft)	47	92	0	103	72	72	31	0	96	85
Queue Length 95th (ft)	94	165	15	#199	#271	117	61	13	155	144
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	262	1357	672	252	1416	378	398	480	379	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.34	0.12	0.73	0.49	0.37	0.16	0.17	0.47	0.46

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	83	140	63	83	234	80	45
RTOR Reduction (vph)	0	0	53	0	10	0	0	0	60	0	15	0
Lane Group Flow (vph)	96	466	30	184	687	0	140	63	23	180	164	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Effective Green, g (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Actuated g/C Ratio	0.12	0.37	0.37	0.14	0.39		0.14	0.14	0.28	0.16	0.16	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	212	1311	573	252	1363		241	254	438	265	263	
v/s Ratio Prot	0.05	0.13		c0.10	c0.20		c0.08	0.03	0.01	c0.11	0.10	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.45	0.36	0.05	0.73	0.50		0.58	0.25	0.05	0.68	0.62	
Uniform Delay, d1	34.9	19.6	17.4	34.9	19.7		34.5	32.9	22.6	33.8	33.5	
Progression Factor	1.00	1.00	1.00	0.97	0.59		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.2	8.3	1.2		2.3	0.2	0.0	5.4	3.3	
Delay (s)	35.4	20.3	17.5	42.1	12.8		36.8	33.1	22.6	39.2	36.8	
Level of Service	D	C	B	D	B		D	C	C	D	D	
Approach Delay (s)		22.2			18.9			31.8			38.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
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)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (veh/h)	94	457	81	180	602	81	137	62	81	229	78	44
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		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	83	140	63	83	180	156	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	607	801	349	587	672	91	193	202	692	256	200	58
Arrive On Green	0.34	0.22	0.22	0.65	0.42	0.42	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1560	1795	3170	428	1795	1885	1584	1795	1403	405
Grp Volume(v), veh/h	96	466	83	184	346	351	140	63	83	180	0	201
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1807	1795	1885	1584	1795	0	1807
Q Serve(g_s), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Cycle Q Clear(g_c), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	607	801	349	587	380	383	193	202	692	256	0	258
V/C Ratio(X)	0.16	0.58	0.24	0.31	0.91	0.92	0.73	0.31	0.12	0.70	0.00	0.78
Avail Cap(c_a), veh/h	607	801	349	587	400	404	380	399	857	401	0	404
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	29.5	27.1	10.6	23.7	23.8	36.7	35.0	14.4	34.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	3.1	1.6	0.1	26.6	26.9	2.0	0.3	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.4	1.5	1.3	7.4	7.5	2.8	1.2	0.9	3.5	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	32.5	28.7	10.7	50.3	50.6	38.7	35.4	14.4	36.1	0.0	37.1
LnGrp LOS	B	C	C	B	D	D	D	D	B	D	A	D
Approach Vol, veh/h		645			881			286			381	
Approach Delay, s/veh		30.1			42.2			30.9			36.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	23.0		16.1	33.8	22.0		13.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	19.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	5.8	11.9		11.1	5.2	17.5		8.4				
Green Ext Time (p_c), s	0.1	1.3		0.6	0.0	0.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		36.2	
HCM 6th LOS		D	

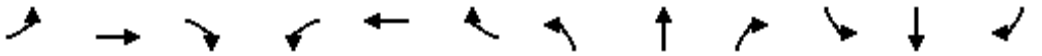
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	892	146	707	284	155	203	386
v/c Ratio	0.74	0.68	0.39	0.72	0.84	0.27	0.53
Control Delay	22.1	47.6	8.8	42.0	74.2	18.5	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	47.6	8.8	42.0	74.2	18.5	13.3
Queue Length 50th (ft)	240	65	110	140	83	71	79
Queue Length 95th (ft)	156	141	127	#250	#187	121	162
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1203	252	1799	392	185	747	731
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.58	0.39	0.72	0.84	0.27	0.53

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	812	26	137	665	0	0	0	267	146	191	363
Future Volume (vph)	0	812	26	137	665	0	0	0	267	146	191	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3555		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3555		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	864	28	146	707	0	0	0	284	155	203	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	892	0	146	707	0	0	0	284	155	203	282
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Effective Green, g (s)		28.8		10.2	42.8				20.5	8.8	33.8	33.8
Actuated g/C Ratio		0.34		0.12	0.50				0.24	0.10	0.40	0.40
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1204		214	1799				392	185	747	627
v/s Ratio Prot		c0.25		c0.08	0.20				c0.17	c0.09	0.11	
v/s Ratio Perm												0.18
v/c Ratio		0.74		0.68	0.39				0.72	0.84	0.27	0.45
Uniform Delay, d1		24.8		35.8	13.1				29.7	37.4	17.3	18.8
Progression Factor		0.70		0.89	0.62				1.00	1.00	1.00	1.00
Incremental Delay, d2		4.0		6.8	0.6				6.5	34.2	0.9	2.3
Delay (s)		21.4		38.6	8.7				36.2	71.6	18.2	21.1
Level of Service		C		D	A				D	E	B	C
Approach Delay (s)		21.4			13.8			36.2			30.8	
Approach LOS		C			B			D			C	

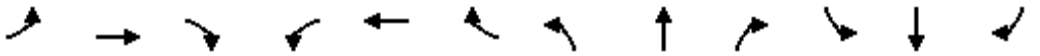
Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

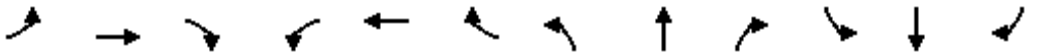
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	338	528	467	155	239	235	186
v/c Ratio	0.43	0.21	0.29	0.20	0.67	0.66	0.39
Control Delay	6.9	4.0	17.9	4.4	39.6	39.0	6.4
Queue Delay	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	4.2	17.9	4.4	39.6	39.0	6.4
Queue Length 50th (ft)	51	40	84	0	124	122	0
Queue Length 95th (ft)	76	55	144	40	182	177	45
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	837	2514	1584	770	585	587	673
Starvation Cap Reductn	199	1186	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.40	0.29	0.20	0.41	0.40	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	502	0	0	444	147	446	5	177	0	0	0
Future Volume (vph)	321	502	0	0	444	147	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1782	3574			3574	1545	1698	1704	1599			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	847	3574			3574	1545	1698	1704	1599			
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)	338	528	0	0	467	155	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	86	0	0	147	0	0	0
Lane Group Flow (vph)	338	528	0	0	467	69	239	235	39	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	59.8	59.8			37.7	37.7	17.8	17.8	17.8			
Effective Green, g (s)	59.8	59.8			37.7	37.7	17.8	17.8	17.8			
Actuated g/C Ratio	0.70	0.70			0.44	0.44	0.21	0.21	0.21			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	783	2514			1585	685	355	356	334			
v/s Ratio Prot	c0.09	0.15			0.13		c0.14	0.14				
v/s Ratio Perm	c0.22					0.04			0.02			
v/c Ratio	0.43	0.21			0.29	0.10	0.67	0.66	0.12			
Uniform Delay, d1	7.4	4.4			15.1	13.8	30.9	30.8	27.2			
Progression Factor	0.60	0.74			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.2			0.5	0.3	4.5	4.1	0.1			
Delay (s)	4.6	3.4			15.6	14.1	35.4	34.9	27.3			
Level of Service	A	A			B	B	D	C	C			
Approach Delay (s)		3.9			15.2			33.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	72.0%	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)	321	502	0	0	444	147	446	5	177	0	0	0
Future Volume (veh/h)	321	502	0	0	444	147	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	338	528	0	0	467	155	473	0	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	935	2647	0	0	986	427	608	0	271			
Arrive On Green	0.82	1.00	0.00	0.00	0.28	0.28	0.17	0.00	0.17			
Sat Flow, veh/h	1795	3676	0	0	3676	1549	3591	0	1598			
Grp Volume(v), veh/h	338	528	0	0	467	155	473	0	186			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1549	1795	0	1598			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.2	6.8	10.7	0.0	9.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.2	6.8	10.7	0.0	9.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	935	2647	0	0	986	427	608	0	271			
V/C Ratio(X)	0.36	0.20	0.00	0.00	0.47	0.36	0.78	0.00	0.69			
Avail Cap(c_a), veh/h	935	2647	0	0	986	427	1238	0	551			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.0	0.0	0.0	0.0	25.7	24.8	33.8	0.0	33.2			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.6	2.4	1.6	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	0.9	0.1	0.0	0.0	4.0	2.7	4.7	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.1	0.0	0.0	27.3	27.2	35.4	0.0	35.5			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		866			622			659				
Approach Delay, s/veh		1.3			27.3			35.4				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		66.9		18.1	38.9	28.0						
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6						
Max Green Setting (Gmax), s		* 48		29.3	19.9	23.4						
Max Q Clear Time (g_c+I1), s		2.0		12.7	2.0	11.2						
Green Ext Time (p_c), s		3.1		1.7	0.4	1.9						

Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1303	90	853
v/c Ratio	0.48	0.42	0.24
Control Delay	0.5	35.5	0.2
Queue Delay	0.0	0.0	0.0
Total Delay	0.5	35.5	0.2
Queue Length 50th (ft)	4	35	0
Queue Length 95th (ft)	0	0	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2713	252	3574
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	469
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.48	0.36	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	822	403	85	802	0	0
Future Volume (vph)	822	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3370		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3370		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	874	429	90	853	0	0
RTOR Reduction (vph)	65	0	0	0	0	0
Lane Group Flow (vph)	1238	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	66.6		10.2	85.0		
Effective Green, g (s)	66.6		10.2	76.5		
Actuated g/C Ratio	0.78		0.12	0.90		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2640		214	3216		
v/s Ratio Prot	c0.37		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.47		0.42	0.27		
Uniform Delay, d1	3.1		34.7	0.6		
Progression Factor	0.06		0.87	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.3		30.6	0.6		
Level of Service	A		C	A		
Approach Delay (s)	0.3			3.5	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	1.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

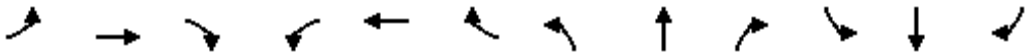
Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	109	197	80	221	213
Future Vol, veh/h	43	109	197	80	221	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	45	115	207	84	233	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	939	249	0	0	291	0
Stage 1	249	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	292	787	-	-	1265	-
Stage 1	790	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	787	-	-	1265	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	405	-	-	-	-	-

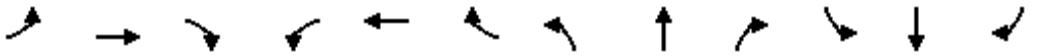
Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	238	787	1265	-
HCM Lane V/C Ratio	-	-	0.19	0.146	0.184	-
HCM Control Delay (s)	-	-	23.6	10.4	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.5	0.7	-



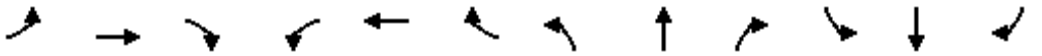
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	19	383	128	88	308	38	111	49	48	23	84	17
v/c Ratio	0.12	0.45	0.16	0.38	0.30	0.04	0.48	0.10	0.09	0.15	0.29	0.05
Control Delay	41.1	24.3	3.7	40.6	16.7	0.1	42.9	26.8	0.4	41.3	35.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	24.3	3.7	40.6	16.7	0.1	42.9	26.8	0.4	41.3	35.7	0.3
Queue Length 50th (ft)	9	163	0	40	86	0	51	16	0	11	38	0
Queue Length 95th (ft)	34	269	30	99	194	0	118	55	0	38	89	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	152	1002	917	274	1081	979	302	1037	945	161	922	841
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.38	0.14	0.32	0.28	0.04	0.37	0.05	0.05	0.14	0.09	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	345	115	79	277	34	100	44	43	21	76	15
Future Volume (vph)	17	345	115	79	277	34	100	44	43	21	76	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1547
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)	19	383	128	88	308	38	111	49	48	23	84	17
RTOR Reduction (vph)	0	0	77	0	0	21	0	0	39	0	0	15
Lane Group Flow (vph)	19	383	51	88	308	17	111	49	9	23	84	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.7	31.7	31.7	6.7	36.7	36.7	6.9	15.2	15.2	1.8	10.1	10.1
Effective Green, g (s)	1.7	31.7	31.7	6.7	36.7	36.7	6.9	15.2	15.2	1.8	10.1	10.1
Actuated g/C Ratio	0.02	0.40	0.40	0.08	0.46	0.46	0.09	0.19	0.19	0.02	0.13	0.13
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	37	739	628	148	855	727	152	354	301	39	235	195
v/s Ratio Prot	0.01	c0.21		c0.05	c0.17		c0.06	c0.03		0.01	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.51	0.52	0.08	0.59	0.36	0.02	0.73	0.14	0.03	0.59	0.36	0.01
Uniform Delay, d1	38.7	18.3	15.0	35.3	14.0	11.8	35.6	26.9	26.3	38.7	31.9	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	13.3	1.2	0.1	6.6	0.5	0.0	14.3	0.3	0.1	13.8	1.6	0.0
Delay (s)	52.0	19.5	15.1	41.9	14.5	11.8	49.9	27.2	26.4	52.5	33.5	30.6
Level of Service	D	B	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		19.6			19.9			39.2			36.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	50.7%	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)	17	345	115	79	277	34	100	44	43	21	76	15
Future Volume (veh/h)	17	345	115	79	277	34	100	44	43	21	76	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	383	128	88	308	38	111	49	48	23	84	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	562	476	118	643	545	143	324	275	48	224	186
Arrive On Green	0.02	0.30	0.30	0.07	0.34	0.34	0.08	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Grp Volume(v), veh/h	19	383	128	88	308	38	111	49	48	23	84	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1549
Q Serve(g_s), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
Cycle Q Clear(g_c), s	0.6	10.2	3.5	2.7	7.3	0.9	3.5	1.3	1.5	0.7	2.3	0.6
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	41	562	476	118	643	545	143	324	275	48	224	186
V/C Ratio(X)	0.47	0.68	0.27	0.75	0.48	0.07	0.78	0.15	0.17	0.48	0.37	0.09
Avail Cap(c_a), veh/h	170	1128	956	306	1270	1076	337	1191	1009	180	1025	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	17.4	15.1	25.9	14.6	12.5	25.5	19.8	19.9	27.1	22.9	22.1
Incr Delay (d2), s/veh	9.7	3.1	0.6	10.7	1.2	0.1	3.4	0.4	0.5	2.8	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	1.1	1.3	2.5	0.3	1.4	0.5	0.5	0.3	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	20.5	15.7	36.6	15.8	12.6	28.9	20.2	20.4	29.9	24.7	22.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		530			434			208			124	
Approach Delay, s/veh		19.9			19.7			24.9			25.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	24.1	9.8	13.6	6.6	26.5	6.8	16.6
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 34	10.7	* 31	5.4	* 38	5.7	* 36
Max Q Clear Time (g_c+I1), s	4.7	12.2	5.5	4.3	2.6	9.3	2.7	3.5
Green Ext Time (p_c), s	0.1	4.8	0.0	0.7	0.0	3.5	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	405	2	40	376	20	1	3	18	18	8	6
Future Vol, veh/h	6	405	2	40	376	20	1	3	18	18	8	6
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	418	2	41	388	21	1	3	19	19	8	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	409	0	0	420	0	0	918	921	418	912	902	388
Stage 1	-	-	-	-	-	-	430	430	-	470	470	-
Stage 2	-	-	-	-	-	-	488	491	-	442	432	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1144	-	-	1134	-	-	251	269	633	254	276	658
Stage 1	-	-	-	-	-	-	601	582	-	572	558	-
Stage 2	-	-	-	-	-	-	559	546	-	592	581	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	1134	-	-	235	258	633	237	265	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	258	-	237	265	-
Stage 1	-	-	-	-	-	-	598	579	-	569	538	-
Stage 2	-	-	-	-	-	-	526	526	-	569	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	12.5	18.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	235	258	633	1144	-	-	1134	-	-	237	265	658
HCM Lane V/C Ratio	0.004	0.012	0.029	0.005	-	-	0.036	-	-	0.078	0.031	0.009
HCM Control Delay (s)	20.4	19.1	10.9	8.2	-	-	8.3	-	-	21.5	19	10.5
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0	0	0.1	0	-	-	0.1	-	-	0.3	0.1	0

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	429	25	213	538	18	151
Future Vol, veh/h	429	25	213	538	18	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	27	232	585	20	164

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	493	0	1515	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	132	597
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	337	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	103	597
Mov Cap-2 Maneuver	-	-	-	-	103	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	264	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	103	597	-	-	1071	-
HCM Lane V/C Ratio	0.19	0.275	-	-	0.216	-
HCM Control Delay (s)	48	13.3	-	-	9.3	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.1	-	-	0.8	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	552	78	387	735	82	277
v/c Ratio	0.51	0.08	0.57	0.48	0.49	0.45
Control Delay	18.7	4.5	6.9	2.8	56.4	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	4.5	6.9	2.8	56.4	10.2
Queue Length 50th (ft)	236	2	28	86	56	41
Queue Length 95th (ft)	409	28	106	151	102	95
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1077	946	716	1531	370	655
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.08	0.54	0.48	0.22	0.42

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	508	72	356	676	75	255
Future Volume (vph)	508	72	356	676	75	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.32	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	591	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	78	387	735	82	277
RTOR Reduction (vph)	0	31	0	0	0	144
Lane Group Flow (vph)	552	47	387	735	82	133
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	62.3	62.3	87.8	87.8	9.2	28.2
Effective Green, g (s)	62.3	62.3	87.8	87.8	9.2	28.2
Actuated g/C Ratio	0.57	0.57	0.80	0.80	0.08	0.26
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1055	896	675	1487	148	499
v/s Ratio Prot	0.30		c0.10	0.39	c0.05	0.05
v/s Ratio Perm		0.03	c0.36			0.04
v/c Ratio	0.52	0.05	0.57	0.49	0.55	0.27
Uniform Delay, d1	14.7	10.7	6.6	3.7	48.4	32.6
Progression Factor	1.00	1.00	1.19	0.43	1.00	1.00
Incremental Delay, d2	1.9	0.1	1.0	1.0	4.4	0.3
Delay (s)	16.6	10.8	8.8	2.6	52.9	32.9
Level of Service	B	B	A	A	D	C
Approach Delay (s)	15.8			4.8	37.5	
Approach LOS	B			A	D	

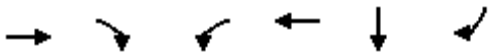
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	508	72	356	676	75	255
Future Volume (veh/h)	508	72	356	676	75	255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	78	387	735	82	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	972	824	555	1330	304	480
Arrive On Green	0.52	0.52	0.26	1.00	0.17	0.17
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	552	78	387	735	82	277
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	22.1	2.7	11.8	0.0	4.4	16.2
Cycle Q Clear(g_c), s	22.1	2.7	11.8	0.0	4.4	16.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	972	824	555	1330	304	480
V/C Ratio(X)	0.57	0.09	0.70	0.55	0.27	0.58
Avail Cap(c_a), veh/h	972	824	667	1330	372	541
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.71	0.71	1.00	1.00
Uniform Delay (d), s/veh	18.0	13.3	10.5	0.0	39.6	32.4
Incr Delay (d2), s/veh	2.4	0.2	1.8	1.2	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.9	2.7	0.4	2.0	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.4	13.6	12.3	1.2	40.1	33.6
LnGrp LOS	C	B	B	A	D	C
Approach Vol, veh/h	630			1122	359	
Approach Delay, s/veh	19.5			5.0	35.1	
Approach LOS	B			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	21.0	63.7				84.7	25.3
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	21.5	46.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	13.8	24.1				2.0	18.2
Green Ext Time (p_c), s	0.7	3.2				5.0	0.5

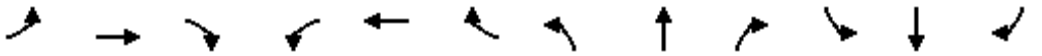
Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	426	361	19	557	42	507
v/c Ratio	0.38	0.33	0.03	0.46	0.10	0.87
Control Delay	11.0	1.5	5.6	7.9	27.4	34.0
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	11.0	1.5	5.6	8.3	27.4	34.0
Queue Length 50th (ft)	83	0	3	98	23	183
Queue Length 95th (ft)	172	16	m8	319	43	273
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1126	1093	548	1215	720	794
Starvation Cap Reductn	0	0	0	230	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.33	0.03	0.57	0.06	0.64

Intersection Summary

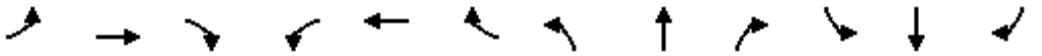
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	413	350	18	540	0	0	0	0	41	0	492
Future Volume (vph)	0	413	350	18	540	0	0	0	0	41	0	492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.40	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	754	1863						1770	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	426	361	19	557	0	0	0	0	42	0	507
RTOR Reduction (vph)	0	0	148	0	0	0	0	0	0	0	0	189
Lane Group Flow (vph)	0	426	213	19	557	0	0	0	0	0	42	318
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		62.6	62.6	71.8	71.8						27.5	27.5
Effective Green, g (s)		62.6	62.6	71.8	71.8						27.5	27.5
Actuated g/C Ratio		0.57	0.57	0.65	0.65						0.25	0.25
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1060	900	517	1216						442	395
v/s Ratio Prot		0.23		0.00	c0.30						0.02	
v/s Ratio Perm			0.13	0.02								c0.20
v/c Ratio		0.40	0.24	0.04	0.46						0.10	0.81
Uniform Delay, d1		13.2	11.8	7.7	9.5						31.7	38.7
Progression Factor		0.66	0.30	0.54	0.57						1.00	1.00
Incremental Delay, d2		1.0	0.6	0.0	1.1						0.1	11.3
Delay (s)		9.7	4.1	4.2	6.5						31.8	50.1
Level of Service		A	A	A	A						C	D
Approach Delay (s)		7.1			6.4			0.0			48.7	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	90.0%	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 (veh/h)	0	413	350	18	540	0	0	0	0	41	0	492
Future Volume (veh/h)	0	413	350	18	540	0	0	0	0	41	0	492
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	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	426	361	19	557	0				42	0	507
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	901	764	328	1049	0				609	0	542
Arrive On Green	0.00	0.48	0.48	0.04	1.00	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	1870	1585	1781	1870	0				1781	0	1585
Grp Volume(v), veh/h	0	426	361	19	557	0				42	0	507
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1781	1870	0				1781	0	1585
Q Serve(g_s), s	0.0	16.8	16.8	0.6	0.0	0.0				1.7	0.0	34.1
Cycle Q Clear(g_c), s	0.0	16.8	16.8	0.6	0.0	0.0				1.7	0.0	34.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	901	764	328	1049	0				609	0	542
V/C Ratio(X)	0.00	0.47	0.47	0.06	0.53	0.00				0.07	0.00	0.94
Avail Cap(c_a), veh/h	0	901	764	381	1049	0				725	0	646
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.86	0.86	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.1	19.1	14.2	0.0	0.0				24.4	0.0	35.0
Incr Delay (d2), s/veh	0.0	1.5	1.8	0.1	1.9	0.0				0.0	0.0	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.9	5.9	0.2	0.5	0.0				0.7	0.0	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.6	20.9	14.2	1.9	0.0				24.5	0.0	54.4
LnGrp LOS	A	C	C	B	A	A				C	A	D
Approach Vol, veh/h		787			576						549	
Approach Delay, s/veh		20.8			2.3						52.1	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.7	59.5		41.8		68.2
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.5	42.5		* 45		54.5
Max Q Clear Time (g_c+I1), s	2.6	18.8		36.1		2.0
Green Ext Time (p_c), s	0.0	3.5		1.5		3.3

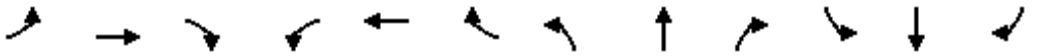
Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

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

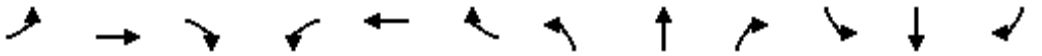
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	321	203	173	15	430	23
v/c Ratio	0.44	0.18	0.24	0.02	0.82	0.04
Control Delay	17.1	13.3	27.0	0.1	48.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	17.1	13.3	27.0	0.1	48.2	0.1
Queue Length 50th (ft)	134	79	79	0	281	0
Queue Length 95th (ft)	291	160	169	0	354	0
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	758	1112	743	676	699	683
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	15	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.18	0.23	0.02	0.63	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	292	185	0	0	157	14	390	1	21	0	0	0
Future Volume (vph)	292	185	0	0	157	14	390	1	21	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1757	1568			
Flt Permitted	0.56	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1028	1845			1845	1568		1757	1568			
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)	321	203	0	0	173	15	429	1	23	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	16	0	0	0
Lane Group Flow (vph)	321	203	0	0	173	6	0	430	7	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	66.3	66.3			43.8	43.8		33.0	33.0			
Effective Green, g (s)	66.3	66.3			43.8	43.8		33.0	33.0			
Actuated g/C Ratio	0.60	0.60			0.40	0.40		0.30	0.30			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	724	1112			734	624		527	470			
v/s Ratio Prot	c0.06	0.11			0.09			c0.24				
v/s Ratio Perm	c0.20					0.00			0.00			
v/c Ratio	0.44	0.18			0.24	0.01		0.82	0.01			
Uniform Delay, d1	10.9	9.8			22.0	20.0		35.7	27.1			
Progression Factor	1.24	1.15			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.4	0.3			0.8	0.0		9.5	0.0			
Delay (s)	14.0	11.5			22.7	20.0		45.1	27.1			
Level of Service	B	B			C	C		D	C			
Approach Delay (s)		13.0			22.5			44.2			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	90.0%	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 (veh/h)	292	185	0	0	157	14	390	1	21	0	0	0
Future Volume (veh/h)	292	185	0	0	157	14	390	1	21	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	321	203	0	0	173	15	429	1	23			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	738	1165	0	0	851	721	484	1	432			
Arrive On Green	0.04	0.21	0.00	0.00	0.46	0.46	0.27	0.27	0.27			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1763	4	1572			
Grp Volume(v), veh/h	321	203	0	0	173	15	430	0	23			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1767	0	1572			
Q Serve(g_s), s	9.5	9.9	0.0	0.0	6.1	0.6	25.7	0.0	1.2			
Cycle Q Clear(g_c), s	9.5	9.9	0.0	0.0	6.1	0.6	25.7	0.0	1.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	738	1165	0	0	851	721	486	0	432			
V/C Ratio(X)	0.43	0.17	0.00	0.00	0.20	0.02	0.89	0.00	0.05			
Avail Cap(c_a), veh/h	873	1165	0	0	851	721	704	0	626			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.7	20.1	0.0	0.0	17.8	16.3	38.2	0.0	29.4			
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	0.5	0.1	9.4	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.8	4.3	0.0	0.0	2.5	0.2	12.2	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	20.4	0.0	0.0	18.3	16.3	47.7	0.0	29.4			
LnGrp LOS	B	C	A	A	B	B	D	A	C			
Approach Vol, veh/h		524			188			453				
Approach Delay, s/veh		16.0			18.2			46.8				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.6			18.6	57.0		34.4				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		55.5			20.5	28.5		43.8				
Max Q Clear Time (g_c+I1), s		11.9			11.5	8.1		27.7				
Green Ext Time (p_c), s		1.0			0.6	0.7		2.6				
Intersection Summary												
HCM 6th Ctrl Delay			28.3									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	174	142	102	251	25
Future Vol, veh/h	21	174	142	102	251	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	193	158	113	279	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	722	293	307	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	394	746	1254	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	344	746	1254	-	-	-
Mov Cap-2 Maneuver	344	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1254	-	344	746	-	-
HCM Lane V/C Ratio	0.126	-	0.068	0.259	-	-
HCM Control Delay (s)	8.3	-	16.2	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	1	-	-

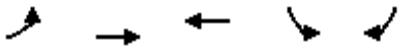
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	163	41	174	215	59	288
Future Vol, veh/h	163	41	174	215	59	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	177	45	189	234	64	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	630	189	0	0	423	0
Stage 1	189	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	446	853	-	-	1136	-
Stage 1	843	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	421	853	-	-	1136	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	1.4
HCM LOS	C		

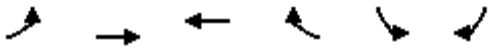
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	421	853	1136	-
HCM Lane V/C Ratio	-	-	0.421	0.052	0.056	-
HCM Control Delay (s)	-	-	19.6	9.5	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2	0.2	0.2	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	222	426	728	171	207
v/c Ratio	0.53	0.25	0.66	0.64	0.50
Control Delay	18.4	13.1	23.4	41.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	13.1	23.4	41.8	9.8
Queue Length 50th (ft)	43	48	116	64	0
Queue Length 95th (ft)	94	124	249	#172	62
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	835	2060	1447	373	497
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.21	0.50	0.46	0.42

Intersection Summary

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

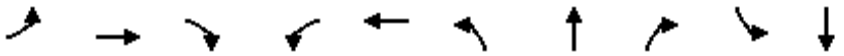


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	405	485	206	162	197
Future Volume (vph)	211	405	485	206	162	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3392		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3392		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	222	426	511	217	171	207
RTOR Reduction (vph)	0	0	48	0	0	176
Lane Group Flow (vph)	222	426	680	0	171	31
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	16.1	33.0	21.8		10.4	10.4
Effective Green, g (s)	16.1	33.0	21.8		10.4	10.4
Actuated g/C Ratio	0.23	0.47	0.31		0.15	0.15
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	413	1697	1063		267	239
v/s Ratio Prot	c0.12	0.12	c0.20			
v/s Ratio Perm					c0.10	0.02
v/c Ratio	0.54	0.25	0.64		0.64	0.13
Uniform Delay, d1	23.4	10.9	20.5		27.8	25.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.0	0.9		3.9	0.1
Delay (s)	24.1	10.9	21.4		31.7	25.7
Level of Service	C	B	C		C	C
Approach Delay (s)		15.4	21.4		28.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	21.2
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

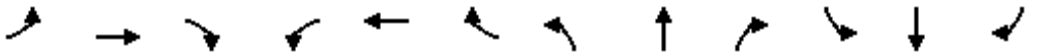
HCM 6th Edition methodology expects strict NEMA phasing.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	466	83	184	697	140	63	83	180	179
v/c Ratio	0.42	0.34	0.12	0.80	0.49	0.58	0.25	0.18	0.68	0.64
Control Delay	39.2	22.2	2.3	58.4	15.2	43.3	33.4	3.5	46.2	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	22.2	2.3	58.4	15.2	43.3	33.4	3.5	46.2	40.3
Queue Length 50th (ft)	47	92	0	103	73	72	31	0	96	85
Queue Length 95th (ft)	94	165	15	#198	#270	117	61	13	155	144
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	262	1357	672	252	1416	378	398	480	379	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.34	0.12	0.73	0.49	0.37	0.16	0.17	0.47	0.46

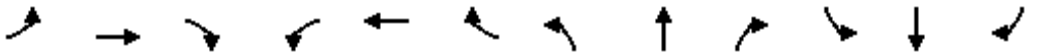
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (vph)	94	457	81	180	602	81	137	62	81	229	78	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3574	1562	1787	3501		1787	1881	1586	1698	1686	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	96	466	83	184	614	83	140	63	83	234	80	45
RTOR Reduction (vph)	0	0	53	0	10	0	0	0	60	0	15	0
Lane Group Flow (vph)	96	466	30	184	687	0	140	63	23	180	164	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Effective Green, g (s)	10.1	31.2	31.2	12.0	33.1		11.5	11.5	23.5	13.3	13.3	
Actuated g/C Ratio	0.12	0.37	0.37	0.14	0.39		0.14	0.14	0.28	0.16	0.16	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	212	1311	573	252	1363		241	254	438	265	263	
v/s Ratio Prot	0.05	0.13		c0.10	c0.20		c0.08	0.03	0.01	c0.11	0.10	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.45	0.36	0.05	0.73	0.50		0.58	0.25	0.05	0.68	0.62	
Uniform Delay, d1	34.9	19.6	17.4	34.9	19.7		34.5	32.9	22.6	33.8	33.5	
Progression Factor	1.00	1.00	1.00	0.96	0.59		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.2	8.3	1.2		2.3	0.2	0.0	5.4	3.3	
Delay (s)	35.4	20.3	17.5	41.7	12.8		36.8	33.1	22.6	39.2	36.8	
Level of Service	D	C	B	D	B		D	C	C	D	D	
Approach Delay (s)		22.2			18.8			31.8			38.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.0
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)	94	457	81	180	602	81	137	62	81	229	78	44
Future Volume (veh/h)	94	457	81	180	602	81	137	62	81	229	78	44
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		0.99
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	466	83	184	614	83	140	63	83	180	156	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	607	801	349	587	672	91	193	202	692	256	200	58
Arrive On Green	0.34	0.22	0.22	0.65	0.42	0.42	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1560	1795	3170	428	1795	1885	1584	1795	1403	405
Grp Volume(v), veh/h	96	466	83	184	346	351	140	63	83	180	0	201
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1807	1795	1885	1584	1795	0	1807
Q Serve(g_s), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Cycle Q Clear(g_c), s	3.2	9.9	3.7	3.8	15.4	15.5	6.4	2.6	0.0	8.1	0.0	9.1
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	607	801	349	587	380	383	193	202	692	256	0	258
V/C Ratio(X)	0.16	0.58	0.24	0.31	0.91	0.92	0.73	0.31	0.12	0.70	0.00	0.78
Avail Cap(c_a), veh/h	607	801	349	587	400	404	380	399	857	401	0	404
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	29.5	27.1	10.6	23.7	23.8	36.7	35.0	14.4	34.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	3.1	1.6	0.1	26.6	26.9	2.0	0.3	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.4	1.5	1.3	7.4	7.5	2.8	1.2	0.9	3.5	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	32.5	28.7	10.7	50.3	50.6	38.7	35.4	14.4	36.1	0.0	37.1
LnGrp LOS	B	C	C	B	D	D	D	D	B	D	A	D
Approach Vol, veh/h		645			881			286			381	
Approach Delay, s/veh		30.1			42.2			30.9			36.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	23.0		16.1	33.8	22.0		13.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	19.0		19.0	12.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	5.8	11.9		11.1	5.2	17.5		8.4				
Green Ext Time (p_c), s	0.1	1.3		0.6	0.0	0.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		36.2	
HCM 6th LOS		D	

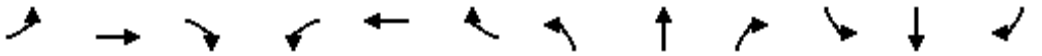
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	892	146	707	284	155	203	386
v/c Ratio	0.77	0.68	0.40	0.76	0.68	0.26	0.52
Control Delay	24.1	48.0	8.8	45.7	52.3	17.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	48.0	8.8	45.7	52.3	17.8	13.2
Queue Length 50th (ft)	243	68	111	142	80	70	81
Queue Length 95th (ft)	#158	141	129	#261	#164	118	162
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1162	252	1757	373	227	770	743
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.58	0.40	0.76	0.68	0.26	0.52

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	812	26	137	665	0	0	0	267	146	191	363
Future Volume (vph)	0	812	26	137	665	0	0	0	267	146	191	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3555		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3555		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	864	28	146	707	0	0	0	284	155	203	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	892	0	146	707	0	0	0	284	155	203	289
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		27.8		10.2	41.8				19.5	10.8	34.8	34.8
Effective Green, g (s)		27.8		10.2	41.8				19.5	10.8	34.8	34.8
Actuated g/C Ratio		0.33		0.12	0.49				0.23	0.13	0.41	0.41
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1162		214	1757				373	227	770	646
v/s Ratio Prot		c0.25		c0.08	0.20				c0.17	c0.09	0.11	
v/s Ratio Perm												0.18
v/c Ratio		0.77		0.68	0.40				0.76	0.68	0.26	0.45
Uniform Delay, d1		25.7		35.8	13.7				30.6	35.5	16.6	18.1
Progression Factor		0.71		0.90	0.59				1.00	1.00	1.00	1.00
Incremental Delay, d2		4.7		6.8	0.7				8.9	15.4	0.8	2.2
Delay (s)		23.1		39.0	8.7				39.5	50.9	17.5	20.4
Level of Service		C		D	A				D	D	B	C
Approach Delay (s)		23.1			13.9			39.5			25.9	
Approach LOS		C			B			D			C	

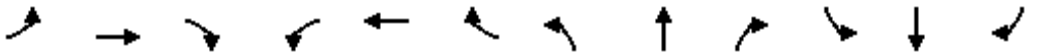
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

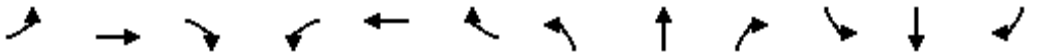
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	338	528	467	155	239	235	186
v/c Ratio	0.44	0.21	0.29	0.20	0.67	0.66	0.39
Control Delay	6.5	3.6	17.4	4.3	39.6	39.0	6.4
Queue Delay	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	3.8	17.4	4.3	39.6	39.0	6.4
Queue Length 50th (ft)	45	34	84	0	124	122	0
Queue Length 95th (ft)	76	56	141	39	182	177	45
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	822	2514	1603	778	585	587	673
Starvation Cap Reductn	196	1178	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.40	0.29	0.20	0.41	0.40	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	502	0	0	444	147	446	5	177	0	0	0
Future Volume (vph)	321	502	0	0	444	147	446	5	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1782	3574			3574	1545	1698	1704	1599			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	849	3574			3574	1545	1698	1704	1599			
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)	338	528	0	0	467	155	469	5	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	86	0	0	147	0	0	0
Lane Group Flow (vph)	338	528	0	0	467	69	239	235	39	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	59.8	59.8			38.1	38.1	17.8	17.8	17.8			
Effective Green, g (s)	59.8	59.8			38.1	38.1	17.8	17.8	17.8			
Actuated g/C Ratio	0.70	0.70			0.45	0.45	0.21	0.21	0.21			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	780	2514			1601	692	355	356	334			
v/s Ratio Prot	c0.09	0.15			0.13		c0.14	0.14				
v/s Ratio Perm	c0.22					0.04			0.02			
v/c Ratio	0.43	0.21			0.29	0.10	0.67	0.66	0.12			
Uniform Delay, d1	7.4	4.4			14.9	13.5	30.9	30.8	27.2			
Progression Factor	0.55	0.67			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.2			0.5	0.3	4.5	4.1	0.1			
Delay (s)	4.2	3.1			15.3	13.8	35.4	34.9	27.3			
Level of Service	A	A			B	B	D	C	C			
Approach Delay (s)		3.5			15.0			33.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	72.0%	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)	321	502	0	0	444	147	446	5	177	0	0	0
Future Volume (veh/h)	321	502	0	0	444	147	446	5	177	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	338	528	0	0	467	155	473	0	186			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	925	2647	0	0	1028	445	608	0	271			
Arrive On Green	0.80	1.00	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1795	3676	0	0	3676	1550	3591	0	1598			
Grp Volume(v), veh/h	338	528	0	0	467	155	473	0	186			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1550	1795	0	1598			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.1	6.7	10.7	0.0	9.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.1	6.7	10.7	0.0	9.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	925	2647	0	0	1028	445	608	0	271			
V/C Ratio(X)	0.37	0.20	0.00	0.00	0.45	0.35	0.78	0.00	0.69			
Avail Cap(c_a), veh/h	925	2647	0	0	1028	445	1238	0	551			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	3.3	0.0	0.0	0.0	24.8	24.0	33.8	0.0	33.2			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.4	2.1	1.6	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	1.0	0.1	0.0	0.0	3.9	2.6	4.7	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.1	0.0	0.0	26.3	26.1	35.4	0.0	35.5			
LnGrp LOS	A	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		866			622			659				
Approach Delay, s/veh		1.4			26.3			35.4				
Approach LOS		A			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		66.9		18.1	37.9	29.0			
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6			
Max Green Setting (Gmax), s		* 48		29.3	18.9	24.4			
Max Q Clear Time (g_c+I1), s		2.0		12.7	2.0	11.1			
Green Ext Time (p_c), s		3.1		1.7	0.4	1.9			

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	1303	90	853
v/c Ratio	0.48	0.42	0.24
Control Delay	0.6	35.8	0.2
Queue Delay	0.0	0.0	0.0
Total Delay	0.6	35.8	0.2
Queue Length 50th (ft)	3	37	0
Queue Length 95th (ft)	0	0	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2713	252	3574
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	755
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.48	0.36	0.30

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	822	403	85	802	0	0
Future Volume (vph)	822	403	85	802	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.95		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3370		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3370		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	874	429	90	853	0	0
RTOR Reduction (vph)	65	0	0	0	0	0
Lane Group Flow (vph)	1238	0	90	853	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	66.6		10.2	85.0		
Effective Green, g (s)	66.6		10.2	76.5		
Actuated g/C Ratio	0.78		0.12	0.90		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2640		214	3216		
v/s Ratio Prot	c0.37		c0.05	0.24		
v/s Ratio Perm						
v/c Ratio	0.47		0.42	0.27		
Uniform Delay, d1	3.1		34.7	0.6		
Progression Factor	0.09		0.88	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.4		31.0	0.6		
Level of Service	A		C	A		
Approach Delay (s)	0.4			3.5	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	1.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

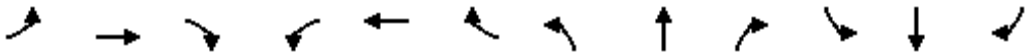
Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	188	210	74	144	160
Future Vol, veh/h	88	188	210	74	144	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	96	204	228	80	157	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	756	268	0	0	308	0
Stage 1	268	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	367	756	-	-	1219	-
Stage 1	763	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	756	-	-	1219	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	527	-	-	-	-	-

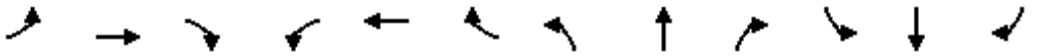
Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	320	756	1219	-
HCM Lane V/C Ratio	-	-	0.299	0.27	0.128	-
HCM Control Delay (s)	-	-	21	11.5	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	1.1	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	501	59	43	400	20	117	109	141	37	65	22
v/c Ratio	0.14	0.69	0.08	0.29	0.51	0.03	0.50	0.26	0.31	0.24	0.24	0.06
Control Delay	43.1	25.9	0.2	45.5	20.1	0.1	43.3	31.6	8.7	43.6	37.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	25.9	0.2	45.5	20.1	0.1	43.3	31.6	8.7	43.6	37.3	0.3
Queue Length 50th (ft)	11	216	0	21	120	0	57	50	1	18	31	0
Queue Length 95th (ft)	38	357	0	62	269	0	126	108	51	54	76	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	153	1104	992	150	1107	1013	336	1028	934	180	864	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.06	0.29	0.36	0.02	0.35	0.11	0.15	0.21	0.08	0.03

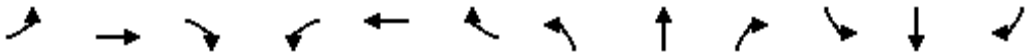
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	461	54	40	368	18	108	100	130	34	60	20
Future Volume (vph)	20	461	54	40	368	18	108	100	130	34	60	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	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	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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	1719	1810	1506	1719	1810	1538	1719	1810	1538	1719	1810	1538
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)	22	501	59	43	400	20	117	109	141	37	65	22
RTOR Reduction (vph)	0	0	36	0	0	12	0	0	109	0	0	19
Lane Group Flow (vph)	22	501	23	43	400	8	117	109	32	37	65	3
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.8	30.6	30.6	2.8	31.6	31.6	7.9	16.7	16.7	3.3	12.1	12.1
Effective Green, g (s)	1.8	30.6	30.6	2.8	31.6	31.6	7.9	16.7	16.7	3.3	12.1	12.1
Actuated g/C Ratio	0.02	0.39	0.39	0.04	0.41	0.41	0.10	0.21	0.21	0.04	0.16	0.16
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	39	710	591	61	734	623	174	388	329	72	281	238
v/s Ratio Prot	0.01	c0.28		c0.03	0.22		c0.07	c0.06		0.02	0.04	
v/s Ratio Perm			0.02			0.01			0.02			0.00
v/c Ratio	0.56	0.71	0.04	0.70	0.54	0.01	0.67	0.28	0.10	0.51	0.23	0.01
Uniform Delay, d1	37.7	19.9	14.6	37.1	17.7	13.8	33.8	25.6	24.5	36.5	28.8	27.9
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	18.8	4.0	0.1	31.8	1.5	0.0	7.8	0.7	0.2	2.6	0.7	0.0
Delay (s)	56.4	23.9	14.6	69.0	19.1	13.8	41.5	26.3	24.8	39.1	29.6	27.9
Level of Service	E	C	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		24.2			23.5			30.6			32.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	57.1%	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)	20	461	54	40	368	18	108	100	130	34	60	20
Future Volume (veh/h)	20	461	54	40	368	18	108	100	130	34	60	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	22	501	59	43	400	20	117	109	141	37	65	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	44	671	556	73	701	594	149	292	248	66	205	173
Arrive On Green	0.03	0.37	0.37	0.04	0.38	0.38	0.09	0.16	0.16	0.04	0.11	0.11
Sat Flow, veh/h	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Grp Volume(v), veh/h	22	501	59	43	400	20	117	109	141	37	65	22
Grp Sat Flow(s),veh/h/ln	1739	1826	1515	1739	1826	1547	1739	1826	1547	1739	1826	1547
Q Serve(g_s), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.3	1.3	2.0	0.8
Cycle Q Clear(g_c), s	0.8	14.9	1.6	1.5	10.8	0.5	4.1	3.3	5.3	1.3	2.0	0.8
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	44	671	556	73	701	594	149	292	248	66	205	173
V/C Ratio(X)	0.50	0.75	0.11	0.59	0.57	0.03	0.78	0.37	0.57	0.56	0.32	0.13
Avail Cap(c_a), veh/h	162	1203	998	159	1200	1017	354	1080	915	189	907	769
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	30.0	17.2	13.0	29.4	15.2	12.0	27.9	23.4	24.2	29.5	25.5	25.0
Incr Delay (d2), s/veh	10.1	3.6	0.2	8.7	1.6	0.0	3.4	1.4	3.5	2.8	1.5	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	0.4	5.4	0.5	0.7	3.7	0.1	1.6	1.3	1.9	0.5	0.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	20.8	13.2	38.1	16.7	12.0	31.3	24.8	27.7	32.3	27.0	25.5
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		582			463			367			124	
Approach Delay, s/veh		20.7			18.5			28.0			28.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	30.0	10.7	13.8	6.9	31.1	7.7	16.8
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	5.7	* 41	12.7	* 31	5.8	* 41	6.8	* 37
Max Q Clear Time (g_c+I1), s	3.5	16.9	6.1	4.0	2.8	12.8	3.3	7.3
Green Ext Time (p_c), s	0.0	6.0	0.1	0.5	0.0	4.6	0.0	1.8

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	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	585	20	43	396	28	10	10	147	24	20	20
Future Vol, veh/h	20	585	20	43	396	28	10	10	147	24	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	22	636	22	47	430	30	11	11	160	26	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	658	0	0	1241	1234	636	1301	1226	430
Stage 1	-	-	-	-	-	-	680	680	-	524	524	-
Stage 2	-	-	-	-	-	-	561	554	-	777	702	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1085	-	-	916	-	-	150	174	472	136	176	619
Stage 1	-	-	-	-	-	-	436	446	-	531	525	-
Stage 2	-	-	-	-	-	-	507	509	-	385	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1085	-	-	916	-	-	123	162	472	81	164	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	162	-	81	164	-
Stage 1	-	-	-	-	-	-	427	437	-	520	498	-
Stage 2	-	-	-	-	-	-	444	483	-	243	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.8	18.5	38.9
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	123	162	472	1085	-	-	916	-	-	81	164	619
HCM Lane V/C Ratio	0.088	0.067	0.339	0.02	-	-	0.051	-	-	0.322	0.133	0.035
HCM Control Delay (s)	37.1	28.8	16.5	8.4	-	-	9.1	-	-	69.3	30.3	11
HCM Lane LOS	E	D	C	A	-	-	A	-	-	F	D	B
HCM 95th %tile Q(veh)	0.3	0.2	1.5	0.1	-	-	0.2	-	-	1.2	0.4	0.1

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	674	13	110	374	23	201
Future Vol, veh/h	674	13	110	374	23	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	733	14	120	407	25	218

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	747	0	1380	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	647	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	861	-	159	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	861	-	137	421
Mov Cap-2 Maneuver	-	-	-	-	137	-
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	23.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	137	421	-	-	861	-
HCM Lane V/C Ratio	0.182	0.519	-	-	0.139	-
HCM Control Delay (s)	37.1	22.4	-	-	9.9	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	2.9	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	933	18	177	492	34	302
v/c Ratio	0.84	0.02	0.51	0.31	0.20	0.71
Control Delay	21.2	4.7	12.7	3.1	41.9	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	4.7	12.7	3.1	41.9	28.8
Queue Length 50th (ft)	379	1	20	66	18	93
Queue Length 95th (ft)	610	10	82	113	50	195
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1454	1238	351	1635	578	427
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.01	0.50	0.30	0.06	0.71

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	858	17	163	453	31	278
Future Volume (vph)	858	17	163	453	31	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	200	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	933	18	177	492	34	302
RTOR Reduction (vph)	0	5	0	0	0	91
Lane Group Flow (vph)	933	13	177	492	34	211
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	46.5	46.5	62.2	62.2	4.1	13.3
Effective Green, g (s)	46.5	46.5	62.2	62.2	4.1	13.3
Actuated g/C Ratio	0.59	0.59	0.78	0.78	0.05	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1092	928	339	1461	91	395
v/s Ratio Prot	c0.50		0.06	0.26	0.02	c0.06
v/s Ratio Perm		0.01	0.35			0.07
v/c Ratio	0.85	0.01	0.52	0.34	0.37	0.53
Uniform Delay, d1	13.6	6.8	13.2	2.5	36.4	30.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.0	1.5	0.1	2.6	1.4
Delay (s)	20.3	6.8	14.7	2.6	38.9	31.6
Level of Service	C	A	B	A	D	C
Approach Delay (s)	20.0			5.8	32.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	858	17	163	453	31	278
Future Volume (veh/h)	858	17	163	453	31	278
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	933	18	177	492	34	302
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1001	848	230	1245	355	416
Arrive On Green	0.53	0.53	0.06	0.67	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	933	18	177	492	34	302
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	44.6	0.5	4.0	11.5	1.5	16.7
Cycle Q Clear(g_c), s	44.6	0.5	4.0	11.5	1.5	16.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1001	848	230	1245	355	416
V/C Ratio(X)	0.93	0.02	0.77	0.40	0.10	0.73
Avail Cap(c_a), veh/h	1146	971	275	1437	425	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	10.5	21.8	7.3	31.5	32.3
Incr Delay (d2), s/veh	12.5	0.0	10.5	0.2	0.1	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.2	0.2	2.6	3.4	0.7	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.3	10.5	32.3	7.5	31.6	37.0
LnGrp LOS	C	B	C	A	C	D
Approach Vol, veh/h	951			669	336	
Approach Delay, s/veh	32.8			14.1	36.4	
Approach LOS	C			B	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.6	58.0				70.6	25.7
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	8.5	59.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	6.0	46.6				13.5	18.7
Green Ext Time (p_c), s	0.1	4.9				2.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	727	408	60	322	0	0	0	0	60	0	294
Future Vol, veh/h	0	727	408	60	322	0	0	0	0	60	0	294
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	790	443	65	350	0	0	0	0	65	0	320

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	1233	0	0	1492	1713	350
Stage 1	-	-	-	-	-	-	480	480	-
Stage 2	-	-	-	-	-	-	1012	1233	-
Critical Hdwy	-	-	-	4.15	-	-	6.45	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	5.45	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.45	5.55	-
Follow-up Hdwy	-	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	0	-	-	555	-	0	134	89	687
Stage 1	0	-	-	-	-	0	616	549	-
Stage 2	0	-	-	-	-	0	347	246	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	555	-	-	118	0	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	0	-
Stage 1	-	-	-	-	-	-	616	0	-
Stage 2	-	-	-	-	-	-	306	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.9	23.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	555	-	118	687
HCM Lane V/C Ratio	-	-	0.118	-	0.553	0.465
HCM Control Delay (s)	-	-	12.3	-	68	14.7
HCM Lane LOS	-	-	B	-	F	B
HCM 95th %tile Q(veh)	-	-	0.4	-	2.6	2.5

Intersection	
Int Delay, s/veh	240.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	491	306	0	0	152	30	230	10	80	0	0	0
Future Vol, veh/h	491	306	0	0	152	30	230	10	80	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	534	333	0	0	165	33	250	11	87	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	198	0	-	-	-	0	1583	1599	333
Stage 1	-	-	-	-	-	-	1401	1401	-
Stage 2	-	-	-	-	-	-	182	198	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1369	-	0	0	-	-	~ 119	106	706
Stage 1	-	-	0	0	-	-	~ 227	206	-
Stage 2	-	-	0	0	-	-	847	735	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1369	-	-	-	-	-	~ 73	0	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 73	0	-
Stage 1	-	-	-	-	-	-	~ 138	0	-
Stage 2	-	-	-	-	-	-	847	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.7	0	$ 960.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	73	706	1369	-	-	-
HCM Lane V/C Ratio	3.574	0.123	0.39	-	-	-
HCM Control Delay (s)	$ 1277.3	10.8	9.3	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	27.1	0.4	1.9	-	-	-

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

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	339	128	320	230	34
Future Vol, veh/h	48	339	128	320	230	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	52	368	139	348	250	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	895	269	287	0	-	0
Stage 1	269	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	310	767	1269	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	276	767	1269	-	-	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1269	-	276	767	-	-
HCM Lane V/C Ratio	0.11	-	0.189	0.48	-	-
HCM Control Delay (s)	8.2	-	21.1	14	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	2.6	-	-

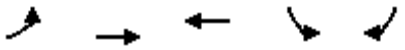
Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	192	53	287	130	30	213
Future Vol, veh/h	192	53	287	130	30	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	58	312	141	33	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	610	312	0	0	453	0
Stage 1	312	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	458	728	-	-	1108	-
Stage 1	742	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	444	728	-	-	1108	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	730	-	-	-	-	-

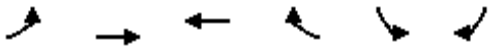
Approach	WB	NB	SB
HCM Control Delay, s	18	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	444	728	1108	-
HCM Lane V/C Ratio	-	-	0.47	0.079	0.029	-
HCM Control Delay (s)	-	-	20.1	10.4	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.5	0.3	0.1	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	237	446	480	215	184
v/c Ratio	0.70	0.23	0.40	0.67	0.42
Control Delay	31.7	10.4	17.7	36.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	10.4	17.7	36.8	8.2
Queue Length 50th (ft)	77	30	52	66	0
Queue Length 95th (ft)	78	140	172	195	55
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	348	2117	1314	547	616
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.21	0.37	0.39	0.30

Intersection Summary

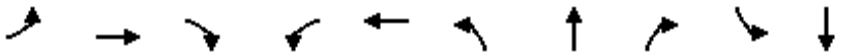


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	218	410	320	121	198	169
Future Volume (vph)	218	410	320	121	198	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3393		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3393		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	237	446	348	132	215	184
RTOR Reduction (vph)	0	0	37	0	0	153
Lane Group Flow (vph)	237	446	443	0	215	31
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	12.1	34.6	21.2		11.2	11.2
Effective Green, g (s)	12.1	34.6	21.2		11.2	11.2
Actuated g/C Ratio	0.18	0.53	0.32		0.17	0.17
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	325	1863	1094		301	269
v/s Ratio Prot	c0.13	0.13	c0.13			
v/s Ratio Perm					c0.12	0.02
v/c Ratio	0.73	0.24	0.41		0.71	0.12
Uniform Delay, d1	25.3	8.4	17.3		25.7	23.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.8	0.0	0.1		6.5	0.1
Delay (s)	32.0	8.4	17.4		32.3	23.1
Level of Service	C	A	B		C	C
Approach Delay (s)		16.6	17.4		28.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	21.2
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

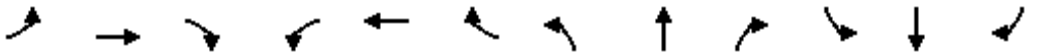


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	641	76	196	702	65	48	217	175	175
v/c Ratio	0.17	0.37	0.09	0.76	0.39	0.42	0.30	0.51	0.74	0.72
Control Delay	38.8	22.0	0.3	56.8	9.0	54.0	49.5	14.2	63.0	58.7
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	38.8	22.6	0.3	56.8	9.0	54.0	49.5	14.3	63.0	58.7
Queue Length 50th (ft)	24	146	0	138	61	45	33	48	126	118
Queue Length 95th (ft)	59	267	2	202	213	82	65	61	194	187
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	306	1724	822	354	1860	289	304	503	320	326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	695	0	0	0	0	0	19	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.62	0.09	0.55	0.38	0.22	0.16	0.45	0.55	0.54

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (vph)	40	590	70	180	480	166	60	44	200	244	48	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	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	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	3539	1542	1770	3403		1770	1863	1576	1681	1671	
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)	43	641	76	196	522	180	65	48	217	265	52	33
RTOR Reduction (vph)	0	0	41	0	25	0	0	0	78	0	8	0
Lane Group Flow (vph)	43	641	35	196	677	0	65	48	139	175	167	0
Confl. Peds. (#/hr)			2						1			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Effective Green, g (s)	14.3	50.7	50.7	18.0	54.4		8.7	8.7	26.7	15.6	15.6	
Actuated g/C Ratio	0.13	0.46	0.46	0.16	0.49		0.08	0.08	0.24	0.14	0.14	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	230	1631	710	289	1682		139	147	382	238	236	
v/s Ratio Prot	0.02	0.18		c0.11	c0.20		c0.04	0.03	0.06	c0.10	0.10	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.19	0.39	0.05	0.68	0.40		0.47	0.33	0.36	0.74	0.71	
Uniform Delay, d1	42.7	19.5	16.4	43.3	17.5		48.4	47.9	34.6	45.2	45.0	
Progression Factor	1.00	1.00	1.00	0.88	0.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.7	0.1	4.5	0.7		0.9	0.5	0.2	9.7	7.7	
Delay (s)	42.8	20.2	16.5	42.6	7.9		49.3	48.4	34.8	54.9	52.7	
Level of Service	D	C	B	D	A		D	D	C	D	D	
Approach Delay (s)		21.1			15.5			39.6			53.8	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	52.7%	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)	40	590	70	180	480	166	60	44	200	244	48	30
Future Volume (veh/h)	40	590	70	180	480	166	60	44	200	244	48	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	641	76	196	522	180	65	48	217	175	178	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	748	1034	460	635	590	203	107	112	660	246	211	39
Arrive On Green	0.42	0.29	0.29	0.71	0.45	0.45	0.06	0.06	0.06	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1580	1781	2596	891	1781	1870	1577	1781	1533	284
Grp Volume(v), veh/h	43	641	76	196	357	345	65	48	217	175	0	211
Grp Sat Flow(s),veh/h/ln	1781	1777	1580	1781	1777	1710	1781	1870	1577	1781	0	1817
Q Serve(g_s), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Cycle Q Clear(g_c), s	1.6	17.2	3.9	4.5	20.1	20.3	3.9	2.7	0.0	10.3	0.0	12.5
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	748	1034	460	635	404	389	107	112	660	246	0	251
V/C Ratio(X)	0.06	0.62	0.17	0.31	0.88	0.89	0.61	0.43	0.33	0.71	0.00	0.84
Avail Cap(c_a), veh/h	748	1034	460	635	678	653	291	306	823	340	0	347
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	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	33.7	29.1	10.8	28.6	28.7	50.4	49.9	21.7	45.3	0.0	46.2
Incr Delay (d2), s/veh	0.0	2.8	0.8	0.1	21.4	22.8	2.1	1.0	0.1	1.9	0.0	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.7	1.6	1.5	8.6	8.5	1.8	1.3	3.7	4.6	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	36.5	29.8	10.9	50.0	51.5	52.5	50.8	21.8	47.2	0.0	55.7
LnGrp LOS	B	D	C	B	D	D	D	D	C	D	A	E
Approach Vol, veh/h		760			898			330			386	
Approach Delay, s/veh		34.9			42.0			32.1			51.8	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	44.2	36.0		19.2	51.2	29.0		10.6				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	22.0	32.0		21.0	12.0	42.0		18.0				
Max Q Clear Time (g_c+I1), s	6.5	19.2		14.5	3.6	22.3		5.9				
Green Ext Time (p_c), s	0.1	2.5		0.6	0.0	2.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		39.9	
HCM 6th LOS		D	

Notes

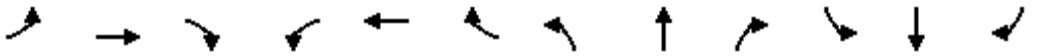
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1342	217	772	598	311	98	278
v/c Ratio	1.10	1.23	0.45	1.32	1.38	0.12	0.37
Control Delay	89.4	182.2	6.9	191.4	234.5	19.1	12.1
Queue Delay	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.8	182.2	6.9	191.4	234.5	19.1	12.1
Queue Length 50th (ft)	~576	~179	85	~546	~292	40	63
Queue Length 95th (ft)	#683	#334	93	#763	#466	74	128
Internal Link Dist (ft)	421		23			407	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1217	177	1705	454	225	809	753
Starvation Cap Reductn	16	0	0	0	0	0	0
Spillback Cap Reductn	103	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.23	0.45	1.32	1.38	0.12	0.37

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1204	30	200	710	0	0	0	550	286	90	256
Future Volume (vph)	0	1204	30	200	710	0	0	0	550	286	90	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		1.00		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3524		1770	3539				1611	1770	1863	1562
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3524		1770	3539				1611	1770	1863	1562
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)	0	1309	33	217	772	0	0	0	598	311	98	278
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	1342	0	217	772	0	0	0	598	311	98	203
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)			2									
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Effective Green, g (s)		38.0		11.0	53.0				31.0	14.0	47.8	47.8
Actuated g/C Ratio		0.35		0.10	0.48				0.28	0.13	0.43	0.43
Clearance Time (s)		4.0		4.0	4.0				4.0	4.0	5.2	5.2
Vehicle Extension (s)		3.0		3.0	3.0				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1217		177	1705				454	225	809	678
v/s Ratio Prot		c0.38		c0.12	0.22				c0.37	c0.18	0.05	
v/s Ratio Perm												0.13
v/c Ratio		1.10		1.23	0.45				1.32	1.38	0.12	0.30
Uniform Delay, d1		36.0		49.5	18.9				39.5	48.0	18.6	20.2
Progression Factor		0.87		0.97	0.32				1.00	1.00	1.00	1.00
Incremental Delay, d2		58.2		140.6	0.8				157.6	197.2	0.3	1.1
Delay (s)		89.7		188.8	6.9				197.1	245.2	18.9	21.4
Level of Service		F		F	A				F	F	B	C
Approach Delay (s)		89.7			46.8			197.1			122.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	101.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

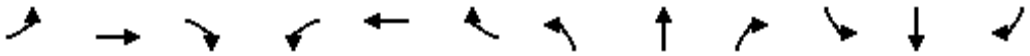
c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	678	1148	935	397	158	157	228
v/c Ratio	0.90	0.42	0.69	0.48	0.67	0.67	0.71
Control Delay	29.6	3.7	32.4	4.8	58.4	57.8	33.4
Queue Delay	1.1	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	4.9	32.4	4.8	58.4	57.8	33.4
Queue Length 50th (ft)	299	84	285	0	113	112	74
Queue Length 95th (ft)	#592	161	399	69	173	173	149
Internal Link Dist (ft)		187	384			246	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	755	2748	1364	832	397	399	463
Starvation Cap Reductn	14	1271	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.78	0.69	0.48	0.40	0.39	0.49

Intersection Summary

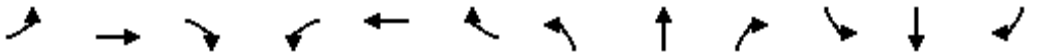
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	624	1056	0	0	860	365	280	10	210	0	0	0
Future Volume (vph)	624	1056	0	0	860	365	280	10	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3539	1527	1681	1691	1583			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	307	3539			3539	1527	1681	1691	1583			
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)	678	1148	0	0	935	397	304	11	228	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	244	0	0	101	0	0	0
Lane Group Flow (vph)	678	1148	0	0	935	153	158	157	127	0	0	0
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)						2						
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Effective Green, g (s)	85.4	85.4			42.4	42.4	15.4	15.4	15.4			
Actuated g/C Ratio	0.78	0.78			0.39	0.39	0.14	0.14	0.14			
Clearance Time (s)	4.1	4.0			4.0	4.0	5.2	5.2	5.2			
Vehicle Extension (s)	2.0	3.0			3.0	3.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	755	2747			1364	588	235	236	221			
v/s Ratio Prot	c0.32	0.32			0.26		c0.09	0.09				
v/s Ratio Perm	c0.38					0.10			0.08			
v/c Ratio	0.90	0.42			0.69	0.26	0.67	0.67	0.58			
Uniform Delay, d1	22.1	4.1			28.2	23.1	44.9	44.9	44.2			
Progression Factor	0.68	0.75			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	8.8	0.3			2.8	1.1	6.7	6.2	3.0			
Delay (s)	23.8	3.4			31.1	24.2	51.6	51.1	47.2			
Level of Service	C	A			C	C	D	D	D			
Approach Delay (s)		10.9			29.0			49.6			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	77.7%	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)	624	1056	0	0	860	365	280	10	210	0	0	0
Future Volume (veh/h)	624	1056	0	0	860	365	280	10	210	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	678	1148	0	0	935	397	312	0	228			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	825	2658	0	0	1027	445	597	0	266			
Arrive On Green	0.42	0.75	0.00	0.00	0.29	0.29	0.17	0.00	0.17			
Sat Flow, veh/h	1781	3647	0	0	3647	1539	3563	0	1585			
Grp Volume(v), veh/h	678	1148	0	0	935	397	312	0	228			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1539	1781	0	1585			
Q Serve(g_s), s	31.8	13.2	0.0	0.0	27.9	27.2	8.8	0.0	15.4			
Cycle Q Clear(g_c), s	31.8	13.2	0.0	0.0	27.9	27.2	8.8	0.0	15.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	825	2658	0	0	1027	445	597	0	266			
V/C Ratio(X)	0.82	0.43	0.00	0.00	0.91	0.89	0.52	0.00	0.86			
Avail Cap(c_a), veh/h	825	2658	0	0	1027	445	842	0	375			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.54	0.54	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.8	5.2	0.0	0.0	37.7	37.5	41.8	0.0	44.5			
Incr Delay (d2), s/veh	3.5	0.3	0.0	0.0	13.3	22.8	0.5	0.0	11.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.4	4.0	0.0	0.0	13.7	12.8	3.9	0.0	13.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	5.4	0.0	0.0	51.1	60.3	42.3	0.0	56.4			
LnGrp LOS	C	A	A	A	D	E	D	A	E			
Approach Vol, veh/h		1826			1332			540				
Approach Delay, s/veh		14.3			53.8			48.2				
Approach LOS		B			D			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		86.4		23.6	50.6	35.8			
Change Period (Y+Rc), s		* 4.1		* 5.2	4.1	4.0			
Max Green Setting (Gmax), s		* 75		* 26	38.9	31.8			
Max Q Clear Time (g_c+I1), s		15.2		17.4	33.8	29.9			
Green Ext Time (p_c), s		11.2		1.1	0.7	1.3			

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2206	261	978
v/c Ratio	0.78	1.47	0.28
Control Delay	2.1	269.9	0.2
Queue Delay	0.2	0.0	0.1
Total Delay	2.4	269.9	0.3
Queue Length 50th (ft)	45	~244	0
Queue Length 95th (ft)	m0	#409	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2837	177	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	148	0	1023
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	1.47	0.39

Intersection Summary

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

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

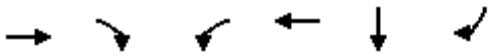
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1650	380	240	900	0	0
Future Volume (vph)	1650	380	240	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3422		1770	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3422		1770	3539		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1793	413	261	978	0	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	2200	0	261	978	0	0
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 4 8		
Permitted Phases						
Actuated Green, G (s)	91.0		11.0	110.0		
Effective Green, g (s)	91.0		11.0	104.8		
Actuated g/C Ratio	0.83		0.10	0.95		
Clearance Time (s)			4.0			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	2830		177	3371		
v/s Ratio Prot	c0.64		c0.15	0.28		
v/s Ratio Perm						
v/c Ratio	0.78		1.47	0.29		
Uniform Delay, d1	4.6		49.5	0.2		
Progression Factor	0.40		0.90	1.00		
Incremental Delay, d2	0.1		236.1	0.2		
Delay (s)	2.0		280.6	0.3		
Level of Service	A		F	A		
Approach Delay (s)	2.0			59.4	0.0	
Approach LOS	A			E	A	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

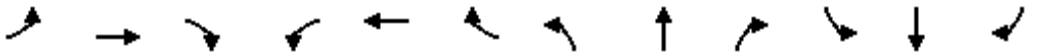
HCM 6th Edition methodology does not support clustered intersections.



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	790	443	65	350	65	320
v/c Ratio	0.62	0.38	0.15	0.24	0.39	0.73
Control Delay	6.9	1.8	2.7	2.9	49.3	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	1.8	2.7	2.9	49.3	15.1
Queue Length 50th (ft)	149	15	3	15	42	0
Queue Length 95th (ft)	192	m28	14	136	79	79
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	1267	1161	434	1448	523	691
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.38	0.15	0.24	0.12	0.46

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	727	408	60	322	0	0	0	0	60	0	294
Future Volume (veh/h)	0	727	408	60	322	0	0	0	0	60	0	294
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	1826	1826	1826	1826	0				1826	1826	1826
Adj Flow Rate, veh/h	0	790	443	65	350	0				65	0	320
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	5	5	5	5	0				5	5	5
Cap, veh/h	0	1034	876	389	1220	0				399	0	355
Arrive On Green	0.00	1.00	1.00	0.08	1.00	0.00				0.23	0.00	0.23
Sat Flow, veh/h	0	1826	1547	1739	1826	0				1739	0	1547
Grp Volume(v), veh/h	0	790	443	65	350	0				65	0	320
Grp Sat Flow(s),veh/h/ln	0	1826	1547	1739	1826	0				1739	0	1547
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0				3.1	0.0	21.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.5	0.0	0.0				3.1	0.0	21.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1034	876	389	1220	0				399	0	355
V/C Ratio(X)	0.00	0.76	0.51	0.17	0.29	0.00				0.16	0.00	0.90
Avail Cap(c_a), veh/h	0	1034	876	401	1220	0				530	0	472
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.58	0.58	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	7.3	0.0	0.0				32.4	0.0	39.3
Incr Delay (d2), s/veh	0.0	3.2	1.2	0.2	0.6	0.0				0.2	0.0	16.6
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	0.9	0.3	0.5	0.2	0.0				1.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.2	1.2	7.5	0.6	0.0				32.6	0.0	55.9
LnGrp LOS	A	A	A	A	A	A				C	A	E
Approach Vol, veh/h		1233			415						385	
Approach Delay, s/veh		2.5			1.7						51.9	
Approach LOS		A			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	65.9		28.3		76.7
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.0	50.8		* 32		62.3
Max Q Clear Time (g_c+I1), s	3.5	2.0		23.1		2.0
Green Ext Time (p_c), s	0.0	7.8		1.0		1.9

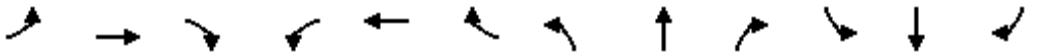
Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	534	333	165	33	261	87
v/c Ratio	0.61	0.26	0.20	0.04	0.74	0.22
Control Delay	6.3	3.3	23.0	0.1	51.7	5.6
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	3.3	23.0	0.1	51.7	5.6
Queue Length 50th (ft)	76	27	65	0	166	0
Queue Length 95th (ft)	40	27	151	0	233	28
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	935	1287	812	734	536	550
Starvation Cap Reductn	64	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.26	0.20	0.04	0.49	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	491	306	0	0	152	30	230	10	80	0	0	0
Future Volume (veh/h)	491	306	0	0	152	30	230	10	80	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	534	333	0	0	165	33	250	11	87			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	887	1339	0	0	906	768	300	13	278			
Arrive On Green	0.17	0.72	0.00	0.00	0.49	0.49	0.18	0.18	0.18			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1696	75	1572			
Grp Volume(v), veh/h	534	333	0	0	165	33	261	0	87			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1771	0	1572			
Q Serve(g_s), s	14.6	6.4	0.0	0.0	5.2	1.2	14.9	0.0	5.1			
Cycle Q Clear(g_c), s	14.6	6.4	0.0	0.0	5.2	1.2	14.9	0.0	5.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	887	1339	0	0	906	768	313	0	278			
V/C Ratio(X)	0.60	0.25	0.00	0.00	0.18	0.04	0.83	0.00	0.31			
Avail Cap(c_a), veh/h	1080	1339	0	0	906	768	540	0	479			
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.2	5.0	0.0	0.0	15.1	14.0	41.7	0.0	37.7			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	0.4	0.1	5.8	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	1.8	0.0	0.0	2.1	0.4	7.0	0.0	2.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.7	5.3	0.0	0.0	15.5	14.2	47.6	0.0	38.3			
LnGrp LOS	A	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		867			198			348				
Approach Delay, s/veh		7.4			15.3			45.3				
Approach LOS		A			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		82.3			24.5	57.8		22.7				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		62.3			29.5	26.3		32.0				
Max Q Clear Time (g_c+I1), s		8.4			16.6	7.2		16.9				
Green Ext Time (p_c), s		1.8			1.4	0.7		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									

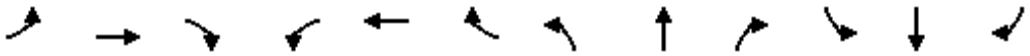
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	176	230	88	228	220
Future Vol, veh/h	96	176	230	88	228	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	120	0	-	-	415	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	185	242	93	240	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1001	289	0	0	335	0
Stage 1	289	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	268	748	-	-	1219	-
Stage 1	758	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	215	748	-	-	1219	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	389	-	-	-	-	-

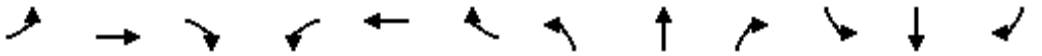
Approach	WB	NB	SB
HCM Control Delay, s	20	0	4.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	215	748	1219	-
HCM Lane V/C Ratio	-	-	0.47	0.248	0.197	-
HCM Control Delay (s)	-	-	35.8	11.4	8.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.3	1	0.7	-



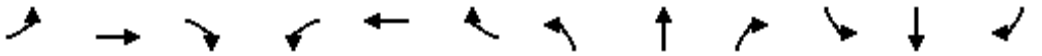
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	535	128	87	477	39	115	65	65	30	87	22
v/c Ratio	0.24	0.66	0.16	0.46	0.52	0.05	0.52	0.18	0.15	0.24	0.35	0.06
Control Delay	48.6	27.6	1.5	50.3	20.9	0.1	50.2	34.2	0.8	49.5	43.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	27.6	1.5	50.3	20.9	0.1	50.2	34.2	0.8	49.5	43.0	0.3
Queue Length 50th (ft)	19	264	0	48	212	0	64	33	0	17	47	0
Queue Length 95th (ft)	53	412	13	107	334	0	133	75	0	50	100	0
Internal Link Dist (ft)		703			1846			579			485	
Turn Bay Length (ft)	370		40	375		25	175		25	250		25
Base Capacity (vph)	141	990	925	211	1064	981	255	836	784	137	712	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.54	0.14	0.41	0.45	0.04	0.45	0.08	0.08	0.22	0.12	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	492	118	80	439	36	106	60	60	28	80	20
Future Volume (vph)	30	492	118	80	439	36	106	60	60	28	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Lane Util. 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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1546
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)	33	535	128	87	477	39	115	65	65	30	87	22
RTOR Reduction (vph)	0	0	73	0	0	21	0	0	53	0	0	20
Lane Group Flow (vph)	33	535	55	87	477	18	115	65	12	30	87	2
Confl. Bikes (#/hr)												1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	38.5	38.5	7.0	42.1	42.1	10.7	17.0	17.0	3.3	9.6	9.6
Effective Green, g (s)	3.4	38.5	38.5	7.0	42.1	42.1	10.7	17.0	17.0	3.3	9.6	9.6
Actuated g/C Ratio	0.04	0.43	0.43	0.08	0.47	0.47	0.12	0.19	0.19	0.04	0.11	0.11
Clearance Time (s)	5.3	7.1	7.1	5.3	7.1	7.1	5.3	6.8	6.8	5.3	6.8	6.8
Vehicle Extension (s)	3.5	5.0	5.0	3.5	5.0	5.0	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	66	794	674	137	868	738	209	350	298	64	198	164
v/s Ratio Prot	0.02	c0.29		c0.05	c0.26		c0.06	0.03		0.02	c0.05	
v/s Ratio Perm			0.03			0.01			0.01			0.00
v/c Ratio	0.50	0.67	0.08	0.64	0.55	0.02	0.55	0.19	0.04	0.47	0.44	0.01
Uniform Delay, d1	42.6	20.8	15.4	40.4	17.3	13.0	37.5	30.8	30.0	42.6	37.8	36.1
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	6.9	3.0	0.1	9.7	1.3	0.0	1.8	0.4	0.1	2.0	2.7	0.1
Delay (s)	49.5	23.8	15.5	50.1	18.6	13.0	39.3	31.3	30.1	44.6	40.5	36.2
Level of Service	D	C	B	D	B	B	D	C	C	D	D	D
Approach Delay (s)		23.5			22.7			34.7			40.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	24.5
Intersection Capacity Utilization	58.9%	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)	30	492	118	80	439	36	106	60	60	28	80	20
Future Volume (veh/h)	30	492	118	80	439	36	106	60	60	28	80	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	535	128	87	477	39	115	65	65	30	87	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	716	607	113	771	653	148	290	246	57	195	161
Arrive On Green	0.03	0.38	0.38	0.06	0.41	0.41	0.08	0.15	0.15	0.03	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Grp Volume(v), veh/h	33	535	128	87	477	39	115	65	65	30	87	22
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1548
Q Serve(g_s), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
Cycle Q Clear(g_c), s	1.2	16.5	3.6	3.2	13.4	1.0	4.2	2.0	2.4	1.1	2.9	0.9
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	61	716	607	113	771	653	148	290	246	57	195	161
V/C Ratio(X)	0.54	0.75	0.21	0.77	0.62	0.06	0.78	0.22	0.26	0.53	0.45	0.14
Avail Cap(c_a), veh/h	173	1207	1023	259	1296	1098	312	1019	864	168	868	718
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	31.7	17.8	13.8	30.8	15.5	11.8	30.0	24.7	24.9	31.8	28.1	27.2
Incr Delay (d2), s/veh	8.7	3.3	0.4	12.5	1.7	0.1	3.3	0.7	1.0	2.8	2.7	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	0.6	6.2	1.1	1.6	4.8	0.3	1.7	0.8	0.9	0.5	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	21.1	14.2	43.3	17.2	11.9	33.4	25.4	25.8	34.6	30.9	27.9
LnGrp LOS	D	C	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		696			603			245			139	
Approach Delay, s/veh		20.8			20.6			29.3			31.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	32.7	10.8	13.8	7.6	34.6	7.4	17.2
Change Period (Y+Rc), s	5.3	* 7.1	5.3	* 6.8	5.3	* 7.1	5.3	* 6.8
Max Green Setting (Gmax), s	9.7	* 43	11.7	* 31	6.5	* 46	6.3	* 36
Max Q Clear Time (g_c+I1), s	5.2	18.5	6.2	4.9	3.2	15.4	3.1	4.4
Green Ext Time (p_c), s	0.1	7.1	0.1	0.7	0.0	5.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	540	20	64	525	36	10	10	16	28	20	20
Future Vol, veh/h	20	540	20	64	525	36	10	10	16	28	20	20
Conflicting Peds, #/hr	0	0	0	0	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	475	-	25	280	-	25	170	-	25	140	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	557	21	66	541	37	10	10	16	29	21	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	578	0	0	578	0	0	1312	1309	557	1296	1293	541
Stage 1	-	-	-	-	-	-	599	599	-	673	673	-
Stage 2	-	-	-	-	-	-	713	710	-	623	620	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	991	-	-	991	-	-	135	158	528	138	162	539
Stage 1	-	-	-	-	-	-	487	489	-	443	452	-
Stage 2	-	-	-	-	-	-	421	435	-	472	478	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	991	-	-	991	-	-	109	144	528	118	148	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	144	-	118	148	-
Stage 1	-	-	-	-	-	-	477	479	-	434	422	-
Stage 2	-	-	-	-	-	-	359	406	-	438	468	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	25.7	31.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	109	144	528	991	-	-	991	-	-	118	148	539
HCM Lane V/C Ratio	0.095	0.072	0.031	0.021	-	-	0.067	-	-	0.245	0.139	0.038
HCM Control Delay (s)	41.4	31.9	12	8.7	-	-	8.9	-	-	45.1	33.2	11.9
HCM Lane LOS	E	D	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	0.3	0.2	0.1	0.1	-	-	0.2	-	-	0.9	0.5	0.1

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	520	25	211	547	18	153
Future Vol, veh/h	520	25	211	547	18	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	565	27	229	595	20	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	592	0	1618	565
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	1053	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	984	-	114	524
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	336	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	984	-	87	524
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	87	524	-	-	984	-
HCM Lane V/C Ratio	0.225	0.317	-	-	0.233	-
HCM Control Delay (s)	58	15	-	-	9.8	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	1.4	-	-	0.9	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	653	78	387	742	82	277
v/c Ratio	0.80	0.11	0.72	0.51	0.36	0.41
Control Delay	28.7	5.7	20.5	6.5	40.7	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	5.7	20.5	6.5	40.7	11.3
Queue Length 50th (ft)	290	4	86	142	40	44
Queue Length 95th (ft)	461	29	#240	254	91	116
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1148	999	628	1589	600	762
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.08	0.62	0.47	0.14	0.36

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	601	72	356	683	75	255
Future Volume (vph)	601	72	356	683	75	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.17	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	308	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	653	78	387	742	82	277
RTOR Reduction (vph)	0	35	0	0	0	97
Lane Group Flow (vph)	653	43	387	742	82	180
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	34.0	34.0	56.6	56.6	7.3	23.4
Effective Green, g (s)	34.0	34.0	56.6	56.6	7.3	23.4
Actuated g/C Ratio	0.44	0.44	0.74	0.74	0.09	0.30
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	823	699	532	1371	168	615
v/s Ratio Prot	c0.35		c0.15	0.40	c0.05	0.06
v/s Ratio Perm		0.03	0.38			0.05
v/c Ratio	0.79	0.06	0.73	0.54	0.49	0.29
Uniform Delay, d1	18.4	12.3	13.6	4.5	33.0	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	0.0	4.9	0.4	2.2	0.3
Delay (s)	23.7	12.3	18.6	4.9	35.3	20.7
Level of Service	C	B	B	A	D	C
Approach Delay (s)	22.5			9.6	24.0	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	601	72	356	683	75	255
Future Volume (veh/h)	601	72	356	683	75	255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	653	78	387	742	82	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	747	633	437	1209	319	537
Arrive On Green	0.40	0.40	0.16	0.65	0.18	0.18
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	653	78	387	742	82	277
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	24.0	2.3	9.2	17.3	3.0	10.4
Cycle Q Clear(g_c), s	24.0	2.3	9.2	17.3	3.0	10.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	747	633	437	1209	319	537
V/C Ratio(X)	0.87	0.12	0.88	0.61	0.26	0.52
Avail Cap(c_a), veh/h	1105	936	595	1733	550	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	14.1	15.8	7.7	26.3	19.7
Incr Delay (d2), s/veh	5.5	0.1	11.6	0.5	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.7	4.0	4.2	1.2	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.1	14.2	27.4	8.2	26.7	20.5
LnGrp LOS	C	B	C	A	C	C
Approach Vol, veh/h	731			1129	359	
Approach Delay, s/veh	24.8			14.8	21.9	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.4	36.3				54.7	19.8
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	18.5	44.0				69.0	23.0
Max Q Clear Time (g_c+I1), s	11.2	26.0				19.3	12.4
Green Ext Time (p_c), s	0.7	3.8				5.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	17.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↲	↱
Traffic Vol, veh/h	0	504	352	70	543	0	0	0	0	70	10	496
Future Vol, veh/h	0	504	352	70	543	0	0	0	0	70	10	496
Conflicting Peds, #/hr	0	0	0	0	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	-	-	165	0	-	-	-	-	-	-	-	580
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	520	363	72	560	0	0	0	0	72	10	511

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	883	0	0			1406	1587	560
Stage 1	-	-	-	-	-	-			704	704	-
Stage 2	-	-	-	-	-	-			702	883	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	766	-	0			153	108	528
Stage 1	0	-	-	-	-	0			490	440	-
Stage 2	0	-	-	-	-	0			491	364	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	766	-	-			139	0	528
Mov Cap-2 Maneuver	-	-	-	-	-	-			139	0	-
Stage 1	-	-	-	-	-	-			490	0	-
Stage 2	-	-	-	-	-	-			445	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.2	60.2
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	766	-	139	528
HCM Lane V/C Ratio	-	-	0.094	-	0.593	0.968
HCM Control Delay (s)	-	-	10.2	-	63	59.7
HCM Lane LOS	-	-	B	-	F	F
HCM 95th %tile Q(veh)	-	-	0.3	-	3.1	12.8

Intersection	
Int Delay, s/veh	369.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	365	209	0	0	204	20	399	10	60	0	0	0
Future Vol, veh/h	365	209	0	0	204	20	399	10	60	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	0	-	-	-	-	175	-	-	190	-	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	397	227	0	0	222	22	434	11	65	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	244	0	-	-	-	0	1254	1265	227
Stage 1	-	-	-	-	-	-	1021	1021	-
Stage 2	-	-	-	-	-	-	233	244	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1316	-	0	0	-	-	~ 189	168	810
Stage 1	-	-	0	0	-	-	~ 346	312	-
Stage 2	-	-	0	0	-	-	803	702	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1316	-	-	-	-	-	~ 132	0	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 132	0	-
Stage 1	-	-	-	-	-	-	~ 242	0	-
Stage 2	-	-	-	-	-	-	803	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.7	0	$ 991.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	132	810	1316	-	-	-
HCM Lane V/C Ratio	3.368	0.081	0.301	-	-	-
HCM Control Delay (s)	$ 1135.3	9.8	8.9	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	43	0.3	1.3	-	-	-

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

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	223	176	230	260	68
Future Vol, veh/h	56	223	176	230	260	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	185	0	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	242	191	250	283	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	952	320	357	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	288	721	1202	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	242	721	1202	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	3.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1202	-	242	721	-	-
HCM Lane V/C Ratio	0.159	-	0.252	0.336	-	-
HCM Control Delay (s)	8.6	-	24.8	12.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	1	1.5	-	-

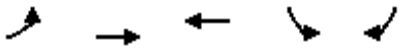
Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	161	41	196	217	59	354
Future Vol, veh/h	161	41	196	217	59	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	200	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	45	213	236	64	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	726	213	0	0	449	0
Stage 1	213	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	391	827	-	-	1111	-
Stage 1	823	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	827	-	-	1111	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	566	-	-	-	-	-

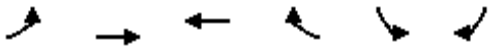
Approach	WB	NB	SB
HCM Control Delay, s	20.5	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	827	1111	-
HCM Lane V/C Ratio	-	-	0.476	0.054	0.058	-
HCM Control Delay (s)	-	-	23.3	9.6	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.5	0.2	0.2	-



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	227	432	750	231	214
v/c Ratio	0.71	0.22	0.61	0.67	0.47
Control Delay	35.5	10.3	20.6	37.2	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	10.3	20.6	37.2	11.6
Queue Length 50th (ft)	76	31	95	71	11
Queue Length 95th (ft)	107	141	294	236	92
Internal Link Dist (ft)		455	3022	487	
Turn Bay Length (ft)	95				90
Base Capacity (vph)	328	2708	1872	650	693
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.16	0.40	0.36	0.31

Intersection Summary

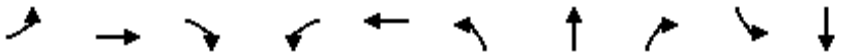


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	216	410	490	222	219	203
Future Volume (vph)	216	410	490	222	219	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.8	5.8		5.8	5.8
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3384		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3384		1787	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	227	432	516	234	231	214
RTOR Reduction (vph)	0	0	45	0	0	143
Lane Group Flow (vph)	227	432	705	0	231	71
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5 8	2	6			
Permitted Phases					7	7
Actuated Green, G (s)	12.3	37.1	23.2		12.8	12.8
Effective Green, g (s)	12.3	37.1	23.2		12.8	12.8
Actuated g/C Ratio	0.18	0.53	0.33		0.18	0.18
Clearance Time (s)		5.8	5.8		5.8	5.8
Vehicle Extension (s)		2.0	2.0		1.5	1.5
Lane Grp Cap (vph)	316	1907	1129		329	294
v/s Ratio Prot	c0.13	0.12	c0.21			
v/s Ratio Perm					c0.13	0.04
v/c Ratio	0.72	0.23	0.62		0.70	0.24
Uniform Delay, d1	27.0	8.6	19.5		26.6	24.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.4	0.0	0.8		5.5	0.2
Delay (s)	33.3	8.6	20.3		32.0	24.4
Level of Service	C	A	C		C	C
Approach Delay (s)		17.1	20.3		28.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	21.2
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology expects strict NEMA phasing.

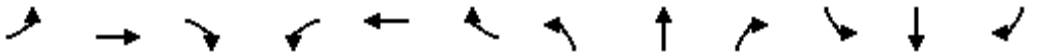


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	633	92	276	1004	143	90	143	269	264
v/c Ratio	0.39	0.47	0.14	0.85	0.70	0.70	0.42	0.28	0.84	0.81
Control Delay	53.1	32.8	2.8	67.1	24.8	69.3	54.6	8.4	69.0	63.0
Queue Delay	0.0	2.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	34.9	2.8	67.1	25.2	69.3	54.6	8.5	69.0	63.1
Queue Length 50th (ft)	72	198	0	211	353	108	66	22	212	197
Queue Length 95th (ft)	137	303	20	300	454	172	115	38	302	287
Internal Link Dist (ft)		607			421		434			1296
Turn Bay Length (ft)	125		125	325		120		80	120	
Base Capacity (vph)	263	1339	663	402	1429	268	282	577	396	401
Starvation Cap Reductn	0	0	0	0	123	0	0	0	0	0
Spillback Cap Reductn	0	533	0	0	0	0	0	11	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.79	0.14	0.69	0.77	0.53	0.32	0.25	0.68	0.66

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (vph)	100	620	90	270	800	184	140	88	140	376	86	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	0.99	
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	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1787	3574	1560	1787	3459		1787	1881	1588	1698	1680	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	633	92	276	816	188	143	90	143	384	88	61
RTOR Reduction (vph)	0	0	57	0	16	0	0	0	55	0	10	0
Lane Group Flow (vph)	102	633	35	276	988	0	143	90	88	269	254	0
Confl. Peds. (#/hr)			1			1			3			5
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Effective Green, g (s)	17.7	45.1	45.1	21.7	49.1		13.6	13.6	35.3	22.6	22.6	
Actuated g/C Ratio	0.15	0.38	0.38	0.18	0.41		0.11	0.11	0.29	0.19	0.19	
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0		4.0	4.0	5.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	263	1343	586	323	1415		202	213	467	319	316	
v/s Ratio Prot	0.06	0.18		c0.15	c0.29		c0.08	0.05	0.03	c0.16	0.15	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.39	0.47	0.06	0.85	0.70		0.71	0.42	0.19	0.84	0.80	
Uniform Delay, d1	46.3	28.4	23.9	47.6	29.3		51.3	49.5	31.6	47.0	46.6	
Progression Factor	1.00	1.00	1.00	1.00	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	1.2	0.2	15.4	2.3		8.9	0.5	0.1	17.3	13.1	
Delay (s)	46.6	29.6	24.1	63.2	24.5		60.2	50.0	31.7	64.3	59.7	
Level of Service	D	C	C	E	C		E	D	C	E	E	
Approach Delay (s)		31.1			32.8			46.9			62.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
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 (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Future Volume (veh/h)	100	620	90	270	800	184	140	88	140	376	86	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	102	633	92	276	816	188	143	90	143	266	252	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	472	895	390	566	874	201	181	190	663	345	281	68
Arrive On Green	0.26	0.25	0.25	0.63	0.60	0.60	0.10	0.10	0.10	0.19	0.19	0.19
Sat Flow, veh/h	1795	3582	1560	1795	2889	666	1795	1885	1583	1795	1464	354
Grp Volume(v), veh/h	102	633	92	276	506	498	143	90	143	266	0	313
Grp Sat Flow(s),veh/h/ln	1795	1791	1560	1795	1791	1764	1795	1885	1583	1795	0	1818
Q Serve(g_s), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Cycle Q Clear(g_c), s	5.3	19.3	5.6	9.8	30.8	30.8	9.3	5.4	0.0	16.9	0.0	20.2
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	472	895	390	566	542	533	181	190	663	345	0	349
V/C Ratio(X)	0.22	0.71	0.24	0.49	0.93	0.93	0.79	0.47	0.22	0.77	0.00	0.90
Avail Cap(c_a), veh/h	472	895	390	566	672	662	269	283	741	419	0	424
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	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	41.0	35.9	17.0	22.6	22.6	52.7	50.9	22.5	46.0	0.0	47.3
Incr Delay (d2), s/veh	0.1	4.7	1.4	0.2	21.0	21.2	4.9	0.7	0.1	5.5	0.0	16.9
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	2.3	9.0	2.3	3.2	11.2	11.1	4.4	2.6	2.6	8.0	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	45.7	37.3	17.2	43.6	43.8	57.6	51.6	22.5	51.4	0.0	64.2
LnGrp LOS	C	D	D	B	D	D	E	D	C	D	A	E
Approach Vol, veh/h		827			1280			376			579	
Approach Delay, s/veh		43.4			38.0			42.8			58.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.8	34.0		27.1	36.6	40.3		16.1				
Change Period (Y+Rc), s	5.0	4.0		4.0	5.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0	30.0		28.0	12.0	45.0		18.0				
Max Q Clear Time (g_c+I1), s	11.8	21.3		22.2	7.3	32.8		11.3				
Green Ext Time (p_c), s	0.2	2.1		0.9	0.0	3.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		43.9	
HCM 6th LOS		D	

Notes

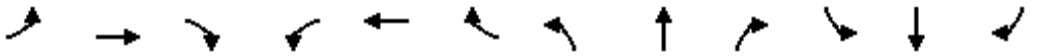
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1198	309	947	500	388	245	526
v/c Ratio	1.12	1.22	0.56	1.25	1.26	0.29	0.69
Control Delay	99.1	169.5	10.0	171.5	180.0	21.5	27.5
Queue Delay	0.5	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	99.6	169.5	10.1	171.5	180.0	21.5	27.6
Queue Length 50th (ft)	~574	~284	146	~484	~376	116	273
Queue Length 95th (ft)	#676	#466	147	#695	#571	175	408
Internal Link Dist (ft)	421		23			491	
Turn Bay Length (ft)					250		450
Base Capacity (vph)	1065	253	1691	399	309	858	761
Starvation Cap Reductn	1	0	0	0	0	0	0
Spillback Cap Reductn	109	0	137	0	0	0	2
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.22	0.61	1.25	1.26	0.29	0.69

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1086	40	290	890	0	0	0	470	365	230	494
Future Volume (vph)	0	1086	40	290	890	0	0	0	470	365	230	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	0.95				1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00				1.00	1.00	1.00	1.00
Frt		0.99		1.00	1.00				0.86	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (prot)		3552		1787	3574				1627	1787	1881	1578
Flt Permitted		1.00		0.95	1.00				1.00	0.95	1.00	1.00
Satd. Flow (perm)		3552		1787	3574				1627	1787	1881	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1155	43	309	947	0	0	0	500	388	245	526
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1198	0	309	947	0	0	0	500	388	245	485
Confl. Peds. (#/hr)			2									1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Prot	NA				Prot	Prot	NA	Perm
Protected Phases		2		1	6				7	8	4	
Permitted Phases												4
Actuated Green, G (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Effective Green, g (s)		36.0		17.0	56.8				29.5	20.8	54.8	54.8
Actuated g/C Ratio		0.30		0.14	0.47				0.25	0.17	0.46	0.46
Clearance Time (s)		4.0		4.0	4.2				4.5	4.2	4.2	4.2
Vehicle Extension (s)		2.5		2.0	2.5				3.0	2.5	2.5	2.5
Lane Grp Cap (vph)		1065		253	1691				399	309	858	720
v/s Ratio Prot		c0.34		c0.17	0.26				c0.31	c0.22	0.13	
v/s Ratio Perm												0.31
v/c Ratio		1.12		1.22	0.56				1.25	1.26	0.29	0.67
Uniform Delay, d1		42.0		51.5	22.6				45.2	49.6	20.4	25.6
Progression Factor		0.77		0.92	0.38				1.00	1.00	1.00	1.00
Incremental Delay, d2		67.4		128.6	1.3				133.0	138.8	0.8	5.0
Delay (s)		99.6		176.0	9.9				178.3	188.4	21.2	30.6
Level of Service		F		F	A				F	F	C	C
Approach Delay (s)		99.6			50.7			178.3			81.4	
Approach LOS		F			D			F			F	

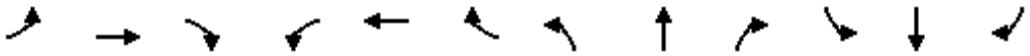
Intersection Summary			
HCM 2000 Control Delay	89.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

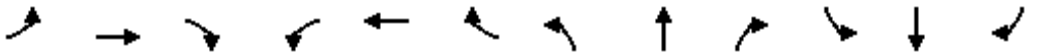
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	417	1247	1084	379	242	243	274
v/c Ratio	0.72	0.46	0.64	0.41	0.78	0.78	0.72
Control Delay	22.6	5.1	27.7	4.2	63.0	63.0	38.1
Queue Delay	0.3	1.3	0.1	0.0	1.1	1.1	0.0
Total Delay	23.0	6.4	27.8	4.2	64.1	64.1	38.1
Queue Length 50th (ft)	124	142	340	5	188	189	123
Queue Length 95th (ft)	243	175	457	67	273	274	211
Internal Link Dist (ft)		187	384			486	
Turn Bay Length (ft)				250	200		200
Base Capacity (vph)	626	2695	1691	920	386	387	446
Starvation Cap Reductn	28	1159	0	0	0	0	0
Spillback Cap Reductn	0	0	66	0	37	37	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.81	0.67	0.41	0.69	0.69	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	1185	0	0	1030	360	450	10	260	0	0	0
Future Volume (vph)	396	1185	0	0	1030	360	450	10	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	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	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1787	3574			3574	1536	1698	1706	1599			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	297	3574			3574	1536	1698	1706	1599			
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)	417	1247	0	0	1084	379	474	11	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	193	0	0	87	0	0	0
Lane Group Flow (vph)	417	1247	0	0	1084	186	242	243	187	0	0	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases	2					6			4			
Actuated Green, G (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Effective Green, g (s)	90.5	90.5			56.8	56.8	22.1	22.1	22.1			
Actuated g/C Ratio	0.75	0.75			0.47	0.47	0.18	0.18	0.18			
Clearance Time (s)	4.1	3.7			4.6	4.6	3.7	3.7	3.7			
Vehicle Extension (s)	2.0	2.5			2.0	2.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	580	2695			1691	727	312	314	294			
v/s Ratio Prot	c0.17	0.35			0.30		c0.14	0.14				
v/s Ratio Perm	c0.37					0.12			0.12			
v/c Ratio	0.72	0.46			0.64	0.26	0.78	0.77	0.64			
Uniform Delay, d1	23.6	5.6			23.9	18.9	46.6	46.6	45.2			
Progression Factor	0.66	0.77			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.4	0.4			1.9	0.8	11.0	10.9	3.9			
Delay (s)	18.0	4.7			25.8	19.8	57.6	57.4	49.1			
Level of Service	B	A			C	B	E	E	D			
Approach Delay (s)		8.0			24.2			54.5			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
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)	396	1185	0	0	1030	360	450	10	260	0	0	0
Future Volume (veh/h)	396	1185	0	0	1030	360	450	10	260	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		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1885	1885	1885			
Adj Flow Rate, veh/h	417	1247	0	0	1084	379	482	0	274			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	645	2656	0	0	1445	627	695	0	309			
Arrive On Green	0.30	0.74	0.00	0.00	0.40	0.40	0.19	0.00	0.19			
Sat Flow, veh/h	1795	3676	0	0	3676	1554	3591	0	1598			
Grp Volume(v), veh/h	417	1247	0	0	1084	379	482	0	274			
Grp Sat Flow(s),veh/h/ln	1795	1791	0	0	1791	1554	1795	0	1598			
Q Serve(g_s), s	16.1	16.6	0.0	0.0	31.1	23.1	15.0	0.0	20.0			
Cycle Q Clear(g_c), s	16.1	16.6	0.0	0.0	31.1	23.1	15.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	645	2656	0	0	1445	627	695	0	309			
V/C Ratio(X)	0.65	0.47	0.00	0.00	0.75	0.60	0.69	0.00	0.89			
Avail Cap(c_a), veh/h	645	2656	0	0	1445	627	817	0	363			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.58	0.58	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.1	6.1	0.0	0.0	30.6	28.2	45.1	0.0	47.1			
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.0	3.6	4.3	1.8	0.0	19.4			
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	10.1	5.4	0.0	0.0	13.8	9.1	6.8	0.0	18.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	6.5	0.0	0.0	34.3	32.5	46.9	0.0	66.5			
LnGrp LOS	C	A	A	A	C	C	D	A	E			
Approach Vol, veh/h		1664			1463			756				
Approach Delay, s/veh		13.2			33.8			54.0				
Approach LOS		B			C			D				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		93.1		26.9	40.1	53.0			
Change Period (Y+Rc), s		* 4.1		3.7	4.1	4.6			
Max Green Setting (Gmax), s		* 85		27.3	31.9	48.4			
Max Q Clear Time (g_c+I1), s		18.6		22.0	18.1	33.1			
Green Ext Time (p_c), s		10.0		1.2	0.5	5.5			

Intersection Summary		
HCM 6th Ctrl Delay		28.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	0	0	0
HCM LOS	-	-	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0	0
LT Vol	0	0	0	0	0
Through Vol	0	0	0	0	0
RT Vol	0	0	0	0	0
Lane Flow Rate	0	0	0	0	0
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0	0	0	0	0
Departure Headway (Hd)	4.534	4.534	4.334	4.534	4.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	0	0	0	0
Service Time	2.234	2.234	2.334	2.234	2.234
HCM Lane V/C Ratio	0	0	0	0	0
HCM Control Delay	7.2	7.2	7.3	7.2	7.2
HCM Lane LOS	N	N	N	N	N
HCM 95th-tile Q	0	0	0	0	0

Lane Group	EBT	WBL	WBT
Lane Group Flow (vph)	2054	255	1255
v/c Ratio	0.75	1.01	0.35
Control Delay	2.1	98.7	0.2
Queue Delay	0.1	30.7	0.1
Total Delay	2.2	129.4	0.3
Queue Length 50th (ft)	54	~180	0
Queue Length 95th (ft)	m0	#369	0
Internal Link Dist (ft)	23		187
Turn Bay Length (ft)			
Base Capacity (vph)	2743	253	3574
Starvation Cap Reductn	0	28	0
Spillback Cap Reductn	45	0	598
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.76	1.13	0.42

Intersection Summary

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

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

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1521	410	240	1180	0	0
Future Volume (vph)	1521	410	240	1180	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.2		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	0.99		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.97		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3441		1787	3574		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3441		1787	3574		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1618	436	255	1255	0	0
RTOR Reduction (vph)	20	0	0	0	0	0
Lane Group Flow (vph)	2034	0	255	1255	0	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA		
Protected Phases	2 7 4 8		1	6 2 8 7		
Permitted Phases						
Actuated Green, G (s)	94.8		17.0	120.0		
Effective Green, g (s)	94.8		17.0	111.5		
Actuated g/C Ratio	0.79		0.14	0.93		
Clearance Time (s)			4.0			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)	2718		253	3320		
v/s Ratio Prot	c0.59		c0.14	0.35		
v/s Ratio Perm						
v/c Ratio	0.75		1.01	0.38		
Uniform Delay, d1	6.5		51.5	0.5		
Progression Factor	0.31		0.90	1.00		
Incremental Delay, d2	0.1		51.6	0.1		
Delay (s)	2.1		97.9	0.5		
Level of Service	A		F	A		
Approach Delay (s)	2.1			17.0	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support clustered intersections.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	653	78	387	742	82	277
v/c Ratio	0.65	0.09	0.63	0.49	0.49	0.44
Control Delay	24.6	6.5	14.6	5.5	56.4	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	6.5	14.6	5.5	56.4	13.0
Queue Length 50th (ft)	323	6	103	93	56	65
Queue Length 95th (ft)	#604	35	197	321	102	114
Internal Link Dist (ft)	1518			887	815	
Turn Bay Length (ft)		200	275		150	
Base Capacity (vph)	1005	882	627	1516	366	636
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.09	0.62	0.49	0.22	0.44

Intersection Summary

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

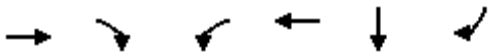
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	601	72	356	683	75	255
Future Volume (vph)	601	72	356	683	75	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	1845	1752	1568
Flt Permitted	1.00	1.00	0.23	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	424	1845	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	653	78	387	742	82	277
RTOR Reduction (vph)	0	28	0	0	0	104
Lane Group Flow (vph)	653	50	387	742	82	173
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2	6			8
Actuated Green, G (s)	58.7	58.7	87.8	87.8	9.2	31.8
Effective Green, g (s)	58.7	58.7	87.8	87.8	9.2	31.8
Actuated g/C Ratio	0.53	0.53	0.80	0.80	0.08	0.29
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	984	836	611	1472	146	545
v/s Ratio Prot	c0.35		c0.13	0.40	c0.05	0.07
v/s Ratio Perm		0.03	0.37			0.05
v/c Ratio	0.66	0.06	0.63	0.50	0.56	0.32
Uniform Delay, d1	18.5	12.4	10.7	3.7	48.5	30.6
Progression Factor	1.00	1.00	1.92	1.04	1.00	1.00
Incremental Delay, d2	3.5	0.1	1.7	1.0	4.9	0.3
Delay (s)	22.0	12.5	22.2	4.9	53.3	30.9
Level of Service	C	B	C	A	D	C
Approach Delay (s)	21.0			10.8	36.1	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	601	72	356	683	75	255
Future Volume (veh/h)	601	72	356	683	75	255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	653	78	387	742	82	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	984	834	473	1313	308	460
Arrive On Green	0.53	0.53	0.12	0.71	0.17	0.17
Sat Flow, veh/h	1856	1572	1767	1856	1767	1572
Grp Volume(v), veh/h	653	78	387	742	82	277
Grp Sat Flow(s),veh/h/ln	1856	1572	1767	1856	1767	1572
Q Serve(g_s), s	28.1	2.7	10.3	21.4	4.4	16.6
Cycle Q Clear(g_c), s	28.1	2.7	10.3	21.4	4.4	16.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	984	834	473	1313	308	460
V/C Ratio(X)	0.66	0.09	0.82	0.57	0.27	0.60
Avail Cap(c_a), veh/h	984	834	593	1313	370	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.67	0.67	1.00	1.00
Uniform Delay (d), s/veh	18.7	12.8	16.6	7.8	39.3	33.4
Incr Delay (d2), s/veh	3.5	0.2	5.0	1.2	0.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.9	4.3	6.5	2.0	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	13.0	21.6	9.0	39.8	35.0
LnGrp LOS	C	B	C	A	D	D
Approach Vol, veh/h	731			1129	359	
Approach Delay, s/veh	21.3			13.3	36.1	
Approach LOS	C			B	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	19.5	64.8				84.3	25.7
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.5	47.0				74.0	23.0
Max Q Clear Time (g_c+I1), s	12.3	30.1				23.4	18.6
Green Ext Time (p_c), s	0.7	3.7				5.1	0.5

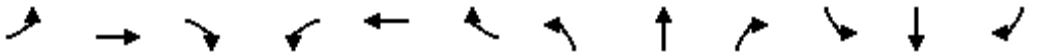
Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	548	383	76	590	87	539
v/c Ratio	0.55	0.39	0.18	0.50	0.19	0.89
Control Delay	17.8	6.0	19.0	23.2	29.0	36.7
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	17.8	6.0	19.0	23.9	29.0	36.7
Queue Length 50th (ft)	303	95	37	291	47	204
Queue Length 95th (ft)	463	163	m50	301	76	310
Internal Link Dist (ft)	887			403	686	
Turn Bay Length (ft)		165				580
Base Capacity (vph)	994	984	422	1175	655	743
Starvation Cap Reductn	0	0	0	275	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.39	0.18	0.66	0.13	0.73

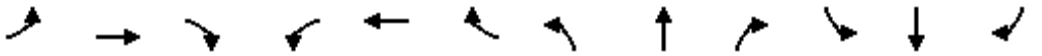
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	504	352	70	543	0	0	0	0	70	10	496
Future Volume (vph)	0	504	352	70	543	0	0	0	0	70	10	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Lane Util. Factor		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		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (prot)		1845	1568	1752	1845						1767	1568
Flt Permitted		1.00	1.00	0.30	1.00						0.96	1.00
Satd. Flow (perm)		1845	1568	549	1845						1767	1568
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)	0	548	383	76	590	0	0	0	0	76	11	539
RTOR Reduction (vph)	0	0	142	0	0	0	0	0	0	0	0	189
Lane Group Flow (vph)	0	548	241	76	590	0	0	0	0	0	87	350
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Actuated Green, G (s)		58.1	58.1	70.1	70.1						29.2	29.2
Effective Green, g (s)		58.1	58.1	70.1	70.1						29.2	29.2
Actuated g/C Ratio		0.53	0.53	0.64	0.64						0.27	0.27
Clearance Time (s)		6.5	6.5	6.5	6.5						4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		974	828	410	1175						469	416
v/s Ratio Prot		c0.30		0.01	c0.32						0.05	
v/s Ratio Perm			0.15	0.11								c0.22
v/c Ratio		0.56	0.29	0.19	0.50						0.19	0.84
Uniform Delay, d1		17.4	14.5	10.1	10.6						31.2	38.2
Progression Factor		0.77	1.05	1.80	1.69						1.00	1.00
Incremental Delay, d2		1.9	0.7	0.2	1.3						0.2	14.3
Delay (s)		15.4	15.9	18.5	19.3						31.4	52.5
Level of Service		B	B	B	B						C	D
Approach Delay (s)		15.6			19.2			0.0			49.6	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
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 (veh/h)	0	504	352	70	543	0	0	0	0	70	10	496
Future Volume (veh/h)	0	504	352	70	543	0	0	0	0	70	10	496
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	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	548	383	76	590	0				76	11	539
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	824	699	264	1010	0				556	81	563
Arrive On Green	0.00	0.44	0.44	0.08	1.00	0.00				0.36	0.36	0.36
Sat Flow, veh/h	0	1856	1572	1767	1856	0				1553	225	1572
Grp Volume(v), veh/h	0	548	383	76	590	0				87	0	539
Grp Sat Flow(s),veh/h/ln	0	1856	1572	1767	1856	0				1778	0	1572
Q Serve(g_s), s	0.0	25.6	19.7	2.5	0.0	0.0				3.6	0.0	36.8
Cycle Q Clear(g_c), s	0.0	25.6	19.7	2.5	0.0	0.0				3.6	0.0	36.8
Prop In Lane	0.00		1.00	1.00		0.00				0.87		1.00
Lane Grp Cap(c), veh/h	0	824	699	264	1010	0				637	0	563
V/C Ratio(X)	0.00	0.66	0.55	0.29	0.58	0.00				0.14	0.00	0.96
Avail Cap(c_a), veh/h	0	824	699	280	1010	0				659	0	583
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.78	0.78	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.1	22.5	17.3	0.0	0.0				23.8	0.0	34.5
Incr Delay (d2), s/veh	0.0	3.3	2.4	0.6	2.4	0.0				0.1	0.0	26.4
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	10.9	7.0	0.9	0.7	0.0				1.5	0.0	17.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.4	24.9	17.9	2.4	0.0				23.9	0.0	60.9
LnGrp LOS	A	C	C	B	A	A				C	A	E
Approach Vol, veh/h		931			666						626	
Approach Delay, s/veh		26.4			4.1						55.7	
Approach LOS		C			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.0	55.4		43.6		66.4
Change Period (Y+Rc), s	6.5	6.5		* 4.2		6.5
Max Green Setting (Gmax), s	5.5	46.5		* 41		58.5
Max Q Clear Time (g_c+I1), s	4.5	27.6		38.8		2.0
Green Ext Time (p_c), s	0.0	4.2		0.6		3.6

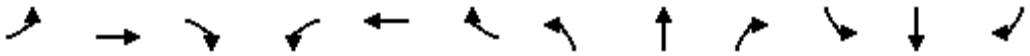
Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

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

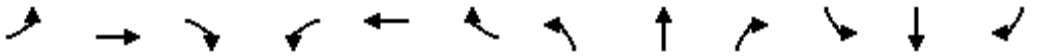
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	397	227	222	22	445	65
v/c Ratio	0.58	0.21	0.33	0.04	0.83	0.12
Control Delay	22.8	13.7	30.4	0.1	48.6	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	13.7	30.4	0.1	48.6	2.1
Queue Length 50th (ft)	72	39	112	0	289	0
Queue Length 95th (ft)	271	142	218	0	369	12
Internal Link Dist (ft)		403	1526		696	
Turn Bay Length (ft)				175		190
Base Capacity (vph)	737	1108	688	632	658	648
Starvation Cap Reductn	8	0	0	0	0	0
Spillback Cap Reductn	0	0	7	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.20	0.33	0.03	0.68	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	209	0	0	204	20	399	10	60	0	0	0
Future Volume (vph)	365	209	0	0	204	20	399	10	60	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1752	1845			1845	1568		1759	1568			
Flt Permitted	0.49	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	906	1845			1845	1568		1759	1568			
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)	397	227	0	0	222	22	434	11	65	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	45	0	0	0
Lane Group Flow (vph)	397	227	0	0	222	8	0	445	20	0	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Actuated Green, G (s)	65.7	65.7			40.6	40.6		33.6	33.6			
Effective Green, g (s)	65.7	65.7			40.6	40.6		33.6	33.6			
Actuated g/C Ratio	0.60	0.60			0.37	0.37		0.31	0.31			
Clearance Time (s)	6.5	6.5			6.5	6.5		4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	684	1101			680	578		537	478			
v/s Ratio Prot	c0.10	0.12			0.12			c0.25				
v/s Ratio Perm	c0.25					0.01			0.01			
v/c Ratio	0.58	0.21			0.33	0.01		0.83	0.04			
Uniform Delay, d1	12.2	10.2			24.9	22.0		35.5	26.9			
Progression Factor	1.50	1.15			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.1	0.4			1.3	0.0		10.2	0.0			
Delay (s)	19.3	12.0			26.2	22.1		45.7	26.9			
Level of Service	B	B			C	C		D	C			
Approach Delay (s)		16.7			25.8			43.3			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.2
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 (veh/h)	365	209	0	0	204	20	399	10	60	0	0	0
Future Volume (veh/h)	365	209	0	0	204	20	399	10	60	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	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	397	227	0	0	222	22	434	11	65			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	708	1152	0	0	750	635	487	12	443			
Arrive On Green	0.26	1.00	0.00	0.00	0.40	0.40	0.28	0.28	0.28			
Sat Flow, veh/h	1767	1856	0	0	1856	1572	1726	44	1572			
Grp Volume(v), veh/h	397	227	0	0	222	22	445	0	65			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1856	1572	1769	0	1572			
Q Serve(g_s), s	14.5	0.0	0.0	0.0	8.9	0.9	26.5	0.0	3.4			
Cycle Q Clear(g_c), s	14.5	0.0	0.0	0.0	8.9	0.9	26.5	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	708	1152	0	0	750	635	499	0	443			
V/C Ratio(X)	0.56	0.20	0.00	0.00	0.30	0.03	0.89	0.00	0.15			
Avail Cap(c_a), veh/h	839	1152	0	0	750	635	656	0	583			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.8	0.0	0.0	0.0	22.2	19.8	37.9	0.0	29.6			
Incr Delay (d2), s/veh	0.6	0.3	0.0	0.0	1.0	0.1	11.9	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.9	0.1	0.0	0.0	3.8	0.3	13.0	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	0.3	0.0	0.0	23.2	19.9	49.7	0.0	29.7			
LnGrp LOS	B	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		624			244			510				
Approach Delay, s/veh		8.0			22.9			47.2				
Approach LOS		A			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		74.8			23.8	50.9		35.2				
Change Period (Y+Rc), s		6.5			6.5	6.5		4.2				
Max Green Setting (Gmax), s		58.5			25.5	26.5		40.8				
Max Q Clear Time (g_c+I1), s		2.0			16.5	10.9		28.5				
Green Ext Time (p_c), s		1.2			0.8	0.9		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			25.1									
HCM 6th LOS			C									