Appendix I

Transportation Impacts Assessment

Olsen-Chandler Specific Plan – Paso Robles

Administrative Draft Transportation Impact Analysis

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Executive Summary

This study evaluates the potential transportation impacts of the Olsen-Chandler Specific Plan located in the southeastern area of the City of Paso Robles. Two project alternatives were analyzed. The first alternative (1,293-Unit Project) would consist of 1,293 residential dwelling units (comprised of 1,065 single-family units and 228 multifamily units), 10,659 square feet of commercial building area, and 18,752 square feet of recreational facilities. The second alternative (1,293-Unit Project and School) would consist of the same land uses plus a 495-student elementary school.

The 1,293-Unit Project is expected to generate 11,899 total trips per weekday, including 900 AM peak hour trips and 1,213 PM peak hour trips. The 1,293-Unit Project and School is expected to generate 12,835 total trips per weekday, including 1,232 AM peak hour trips and 1,297 PM peak hour trips. The City's Transportation Impact Analysis Guidelines and Caltrans criteria are applied to identify the transportation deficiencies below.

KEY FINDINGS

The following sections summarize the recommendations and mitigation measures. Analysis supporting these recommendations is provided in the body of this report.

Intersection Operations

Table 12, Table 18, and **Table 24**, duplicated below, summarize the intersection mitigation measures.

Table 12: Existing Conditions Mitigations

Existing Conditions Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
3. SR 46 E/Union Rd[3]	LOS	Prohibit NB lefts	X	X	X	Yes	Caltrans
6. Golden Hill Rd/Union Rd	LOS, Queue	Install single lane roundabout	X	X	X	Yes	City
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
12. Creston Rd/Niblick Rd	Queue	Add SBL & SBR	-	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project.
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

There are existing LOS deficiencies at SR 46 E/Union Road and Golden Hill Road/Union Road which will be exacerbated by added project traffic. There are existing queue deficiencies at three signalized intersections: 13th Street/Riverside Avenue, 13th Street/Paso Robles Street, and Niblick Road/South River Road. Project development would trigger the need for an additional intersection mitigation: adding an additional southbound left turn lane and right turn lane at Creston Road/Niblick Road.

The SR 46 E corridor operates acceptably under Existing conditions with or without the addition of traffic from either project if northbound lefts are prohibited at the intersection of SR 46 E/Union Road.

Near Term intersection mitigations are summarized in **Table 18**, duplicated below. Near Term conditions include approved, pending, and pipeline projects, including the Beechwood Specific Plan. At Golden Hill Road/Union Road, a single-lane roundabout was assumed to be in place.

Table 18: Near Term Mitigations

Near Term Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
3. SR 46 E/Union Rd[3]	LOS	Prohibit NB lefts, RTP improvements	X	X	X	Yes	Caltrans
4. SR 46 E/Airport Rd[3]	LOS	RTP improvements	X	X	X	Yes	Caltrans
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
12. Creston Rd/Niblick Rd	Queue	Add additional SBL, SBR, and EBT	-	X	X	Yes	City
13. Creston Rd/Scott St	LOS	Install traffic signal	-	X	X	Yes	City
14. Creston Rd/Stoney Creek Rd	LOS	Install traffic signal	X	X	X	Yes	City
15. Creston Rd/Meadowlark Rd	LOS	Install traffic signal	-	X	X	Yes	City
16. Creston Rd/Charolais Rd	LOS	Install all-way stop	-	X	X	No	City
18. 1st St-Niblick Rd/Spring St	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project except Creston Rd/Charloais Rd (#16).
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

Under Near Term conditions, the addition of any project traffic would worsen unacceptable operations on SR 46 E at Union Road and Airport Road. A traffic signal at Creston Road/Stoney Creek Road is needed under Near Term conditions. There are Near Term queue deficiencies at four signalized intersections: 13th Street/Riverside Avenue, 13th Street/Paso Robles Street, 1st Street-Niblick Road/Spring Street, and Niblick Road/South River Road. Project development would require four additional intersection mitigations: installation of traffic signals at Creston Road/Scott Street and Creston Road/Meadowlark Road, installation of all-way stop control at Creston Road/Charolais Road, and additional southbound lanes at Creston Road/Niblick Road.

Under Near Term conditions, no improvements were assumed on the SR 46 E corridor. Project traffic could be mitigated by the prohibition of side street left turns at Union Road and Airport Road.

For the SR 46 E corridor to operate acceptably under Near Term conditions with or without the project, the Union Road/Paso Robles Boulevard Extension to Airport Road and the Union Road eastbound on and off ramps are needed. Any improvements along SR 46 E are subject to Caltrans review and approval.

It is recommended that the project makes a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents.

Cumulative intersection mitigations are summarized in **Table 24**, duplicated below. Cumulative conditions reflect buildout of local and regional land uses.

Table 24: Cumulative Mitigations

Cumulative Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
2. SR 46 E/Golden Hill Rd[3]	LOS	Optimize traffic signal, SBR overlap	X	X	X	Yes	Caltrans
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
10. River Rd/Creston Rd	Queue	Optimize corridor operations	X	X	X	No	City
13. Creston Rd/Scott St	LOS	Install traffic signal	X	X	X	Yes	City
14. Creston Rd/Stoney Creek Rd	LOS	Install traffic signal	X	X	X	Yes	City
15. Creston Rd/Meadowlark Rd	LOS	Install traffic signal	X	X	X	Yes	City
16. Creston Rd/Charolais Rd	LOS	Install all-way stop	-	X	X	No	City
17. Riverside Ave/Pine St/ US 101 SB Ramp	LOS	Install all-way stop	X	X	X	No	Caltrans
18. 1st St-Niblick Rd/Spring St	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project.
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

Under Cumulative conditions, the following improvements were assumed to be in place:

- SR 46 E/Buena Vista Drive (#1): Second eastbound left turn lane installed
- SR 46 E/Union Road (#3): Intersection closed, eastbound on and off ramps constructed
- SR 46 E/Airport Road (#4): Turns restricted to right-in-right-out
- Golden Hill Road/Union Road (#6): Multi-lane roundabout
- Creston Road/Niblick Road (#12): Second eastbound through lane, second southbound left turn lane, dedicated southbound right turn lane

- Riverside Avenue/Pine Street/US 101 SB Ramp (#17): Pine Street converted to one-way westbound
- Golden Hill Road widened to 4-lane arterial from SR 46 E to Rolling Hills Road
- Airport Road Extension from Olsen-Chandler site to Union Road
- Gilead Lane extended east to Airport Road
- Paso Robles Boulevard overcrossing of SR 46 E and northeasterly extension to Airport Road
- US 101/SR 46W interchange: Roundabouts at northbound and southbound ramps, Vine Street realigned with Theatre Drive

Under Cumulative conditions, the addition of any project traffic would worsen operations at SR 46 E/Golden Hill Road with the Union Road Overcrossing. A traffic signal at Creston Road/Meadowlark Road, a traffic signal at Creston Road/Scott Street, a traffic signal at Creston Road/Stoney Creek Road, and all-way stop control at Riverside Avenue/Pine Street/US 101 SB Ramp are all needed under Cumulative conditions. There are Cumulative queue deficiencies at five signalized intersections: 13th Street/Riverside Avenue, 13th Street/Paso Robles Street, River Road/Creston Road, 1st Street-Niblick Road/Spring Street, and Niblick Road/South River Road. Project development would require an additional intersection mitigation: installation of all-way stop control at Creston Road/Charolais Road.

Project traffic could be mitigated by traffic signal improvements at SR 46 E/Golden Hill Road. For the intersection to operate acceptably under Cumulative conditions with or without the project, additional corridor improvements are needed.

It is recommended that the project makes a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. It is also recommended that the project makes a fair share contribution for a multi-lane roundabout at Golden Hill Road/Union Road, which is also included in the City's impact fee program.

Roadway Operations

The following roadway segments were identified as having a roadway capacity utilization over 90%:

- *Existing Conditions:* No segments identified with the addition of traffic from either project.
- *Near Term Conditions:* The Niblick Road segment east of Spring Street would operate at 90% capacity under Near Term conditions. With the addition of traffic from either project, the capacity utilization would increase but remain at or below 100%.
- *Cumulative Conditions:* The Niblick Road segment east of Spring Street would operate at 92% capacity under Cumulative conditions. With the addition of traffic from either project, the capacity utilization would increase but remain at or below 100%. The Creston Road segment east of Ferro Lane would operate at 88% capacity under Cumulative conditions. With the addition of traffic from either project, the capacity utilization would increase above 90% but remain at or below 100%.

The projected capacity utilization of 100% on Niblick Road does not justify the widening of this roadway per the City's Circulation Element. Widening the bridge to a six-lane arterial would result in a capacity utilization below 70%, which would reduce vehicle delays, but would also support higher vehicle speeds and would conflict with the City's multimodal goals and desire to maintain its small-town character.

The projected capacity utilization of 92% on Creston Road also does not justify widening. In 2018, the City Council approved a preferred alternative for the Creston Road Corridor between South River

Road and Niblick Road. The preferred alternative includes a three-lane cross section with two travel lanes and center turn lane from South River Road to Rolling Hills Road where the road transitions to a five-lane cross section with four travel lanes and a center turn lane. Also included are Class II bike lanes throughout the corridor and intersection enhancements.

Freeway Operations

A summary of freeway segments operating at LOS D or worse is shown in **Table 28**, duplicated below.

Table 28: Summary of Freeway Operations

Summary of Freeway Operations									
Direction	Location	Segment Type	Peak Hour	Existing	Ex. + Proj.	Near Term	NT + Proj.	Cumu-lative	CM + Proj.
US 101 NB	SR 46W Off Ramp	Diverge	AM	-	-	-	-	-	D
			PM	-	-	D	D	D	D
	SR 46W On Ramp	Merge	AM	-	-	-	-	D	D
			PM	D	D	D	D	E	F
	North of SR 46W	Mainline	AM	-	-	-	-	-	D
			PM	D	D	D	E	E	F
	Spring St. Off Ramp	Diverge	AM	-	-	D	D	D	D
			PM	D	D	E	E	F	F
US 101 SB	Spring St. On Ramp	Merge	AM	-	-	-	-	-	D
			PM	-	-	-	-	D	D
	North of SR 46W	Mainline	AM	D	D	D	E	E	E
			PM	D	D	D	D	E	E
	SR 46W Off Ramp	Diverge	AM	D	D	E	E	E	E
			PM	D	D	E	E	E	E
	SR 46W On Ramp	Merge	AM	-	D	D	D	D	D
			PM	-	D	D	D	D	D

Note: Segments operating acceptably are not shown in table.

Development of mitigation measures and recommendations will require Caltrans coordination. Although widening the mainline to a six-lane facility between Spring Street and Main Street would improve operations to LOS C or better for most segments, widening is difficult and is not included in the US 101 Transportation Concept Report or Regional Transportation Plan for this segment. Ramp improvements or metering may be an alternative in addition to Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies.

The SLOCOG Regional Transportation Plan (RTP) identifies a future SR 46 Urban Multi-Modal Corridor Study for this area.

Site Access and On-Site Circulation

It is recommended the project provide Class II bike lanes on Scott Street consistent with the City's Bicycle and Pedestrian Master Plan. The project should provide 13 feet where parking and bike lanes are desired consistent with the City's Standard Construction Drawings.

It is also recommended that 11-foot travel lanes be provided on all arterial roadways consistent with the City's Standard Construction drawings. Airport Road, Linne Road, Niblick Road, and Sherwood Road are designated as arterials in the City's Circulation Element.

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Appendix A: Traffic Counts

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Appendix C: Freeway LOS Calculation Sheets

Appendix D: Warrant Analysis Sheets

Introduction

This study evaluates the potential transportation impacts of the proposed Olsen-Chandler Specific Plan located in the southeastern area of the City of Paso Robles. Two project alternatives were analyzed. The first alternative (1,293-Unit Project) would consist of 1,293 residential dwelling units (comprised of 1,065 single-family units and 228 multifamily units), 10,659 square feet of commercial building area, and 18,752 square feet of recreational facilities. The second alternative (1,293-Unit Project and School) would consist of the same land uses plus a 495-student elementary school.

The project's location and study intersections are shown on **Figure 1**. **Figures 2a** and **2b** show the project site's land use and phasing plans, respectively.

The study locations, key analysis assumptions, and analysis scenarios were developed in consultation with City, County, and Caltrans staff.

The following intersections are evaluated during the weekday morning (7-9 AM) and evening (4-6 PM) time periods:

1. State Route 46 E/Buena Vista Drive
2. State Route 46 E/Golden Hill Road
3. State Route 46 E/Union Road
4. State Route 46 E/Airport Road
5. State Route 46 E/Mill Road
6. Golden Hill Road/Union Road
7. Penman Springs Road/Union Road
8. 13th Street/Riverside Avenue
9. 13th Street/Paso Robles Street
10. River Road/Creston Road
11. Creston Road/Golden Hill Road
12. Creston Road/Niblick Road
13. Creston Road/Scott Street
14. Creston Road/Stoney Creek Drive
15. Creston Road/Meadowlark Road
16. Creston Road/Charolais Road
17. Riverside Avenue/Pine Street/US 101 SB Ramp
18. 1st Street-Niblick Road/Spring Street
19. Niblick Road/South River Road
20. Sherwood Road/Commerce Way
21. Sherwood Road/Fontana Road (future)
22. Airport Road/Sherwood Road (future)
23. Airport Road/Scott Street
24. Airport Road/Meadowlark Road
25. Sherwood Road/Linne Road (future)
26. Penman Springs Road/Linne Road

The following roadway segments were evaluated using average daily traffic (ADT) volumes:

1. Union Road – Priska Drive to Kit Fox Lane
2. Creston Road – River Road to Golden Hill Road
3. Creston Road – Golden Hill Road to Niblick Road
4. Creston Road – Niblick Road to Cedarwood Drive
5. Creston Road – Cedarwood Drive to Charolais Road
6. Golden Hill Road – Creston Road to Union Road
7. Golden Hill Road – Union Road to SR 46 E
8. Niblick Road – South River Road to Spring Street
9. Niblick Road – Creston Road to South River Road
10. Sherwood Road – Fontana Road to Creston Road
11. Linne Road – Poppy Lane to Hanson Road

The following freeway facilities were evaluated during the weekday morning (7-9 AM) and evening (4-6 PM) time periods:

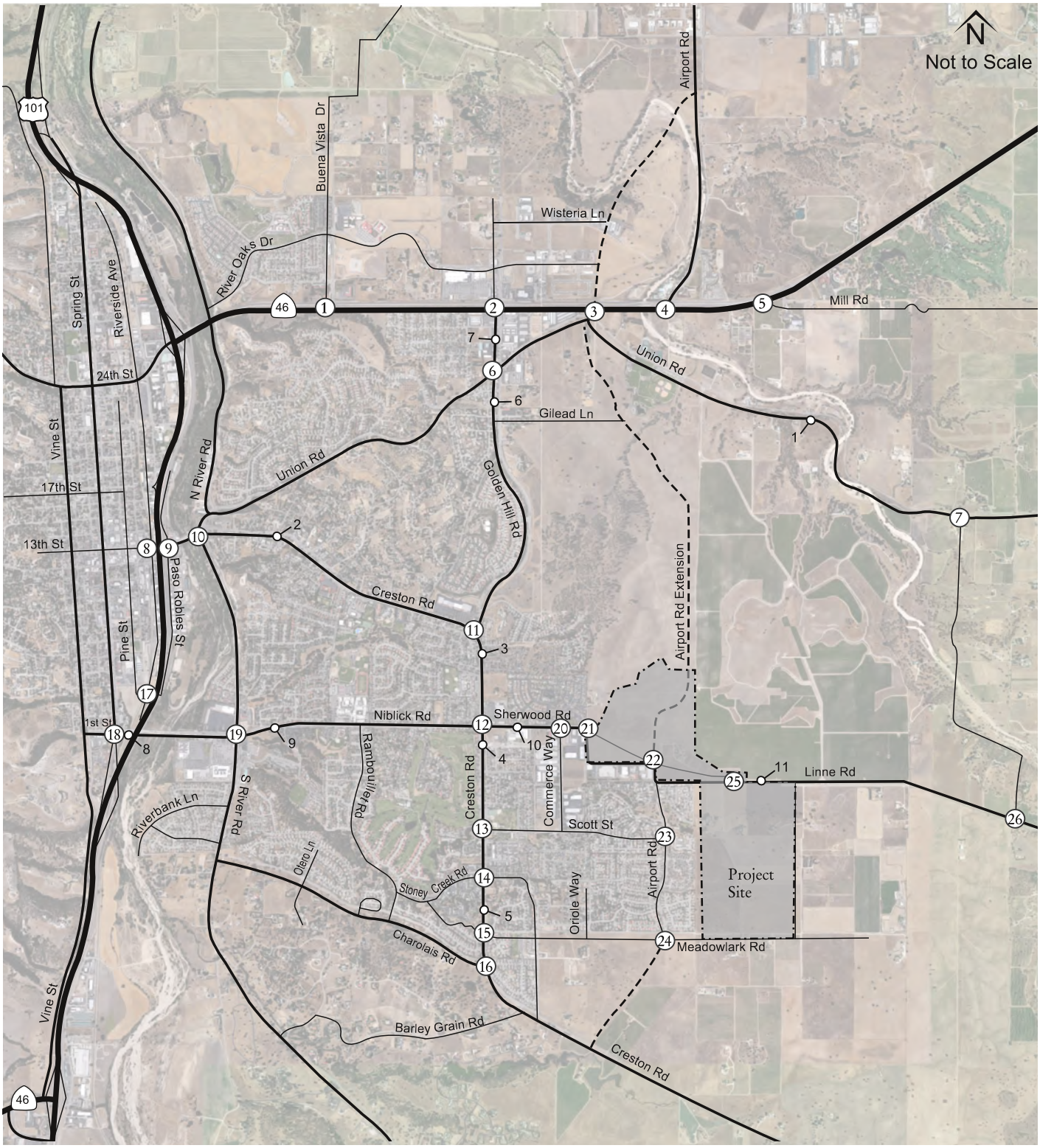
1. US 101 northbound off ramp at State Route 46 W
2. US 101 northbound on ramp at State Route 46 W
3. US 101 northbound mainline north of State Route 46 W
4. US 101 northbound off ramp at Spring Street
5. US 101 northbound off ramp at Paso Robles Street
6. US 101 northbound on ramp at Paso Robles Street
7. US 101 northbound mainline south of State Route 46 E
8. US 101 northbound off ramp at State Route 46 E
9. US 101 northbound on ramp at State Route 46 E
10. US 101 northbound mainline north of State Route 46 E
11. US 101 southbound mainline north of State Route 46 E
12. US 101 southbound off ramp at State Route 46 E
13. US 101 southbound on ramp at State Route 46 E
14. US 101 southbound off ramp at Riverside Avenue-17th Street
15. US 101 southbound mainline south of State Route 46 E
16. US 101 southbound on ramp at Riverside Avenue-17th Street
17. US 101 southbound off ramp at Riverside Avenue/Pine Street
18. US 101 southbound on ramp at Spring Street
19. US 101 southbound mainline north of State Route 46 W
20. US 101 southbound off ramp at State Route 46 W
21. US 101 southbound on ramp at State Route 46 W

The study locations were evaluated under these scenarios:

1. **Existing Conditions** reflect recent traffic counts and the existing transportation network.
2. **Existing Plus Project** adds project generated traffic to existing volumes.
3. **Near Term Conditions** add approved and pending projects in the study area to Existing Conditions volumes.
4. **Near Term Plus Project** adds project traffic to Near Term volumes.
5. **Cumulative Conditions** represent future traffic conditions reflective of the buildout of land uses and the roadway network in the area, not including the proposed Project.
6. **Cumulative Plus Project** represents future traffic conditions reflective of the buildout of land uses and the roadway network in the area, including the proposed Project.

A description of the analysis approach follows **Figures 1, 2a,** and **2b**.

Figure 1: Project and Study Locations



Legend:

(x) - Study Intersection

- - - - Cumulative Improvements

o— - Study Segment

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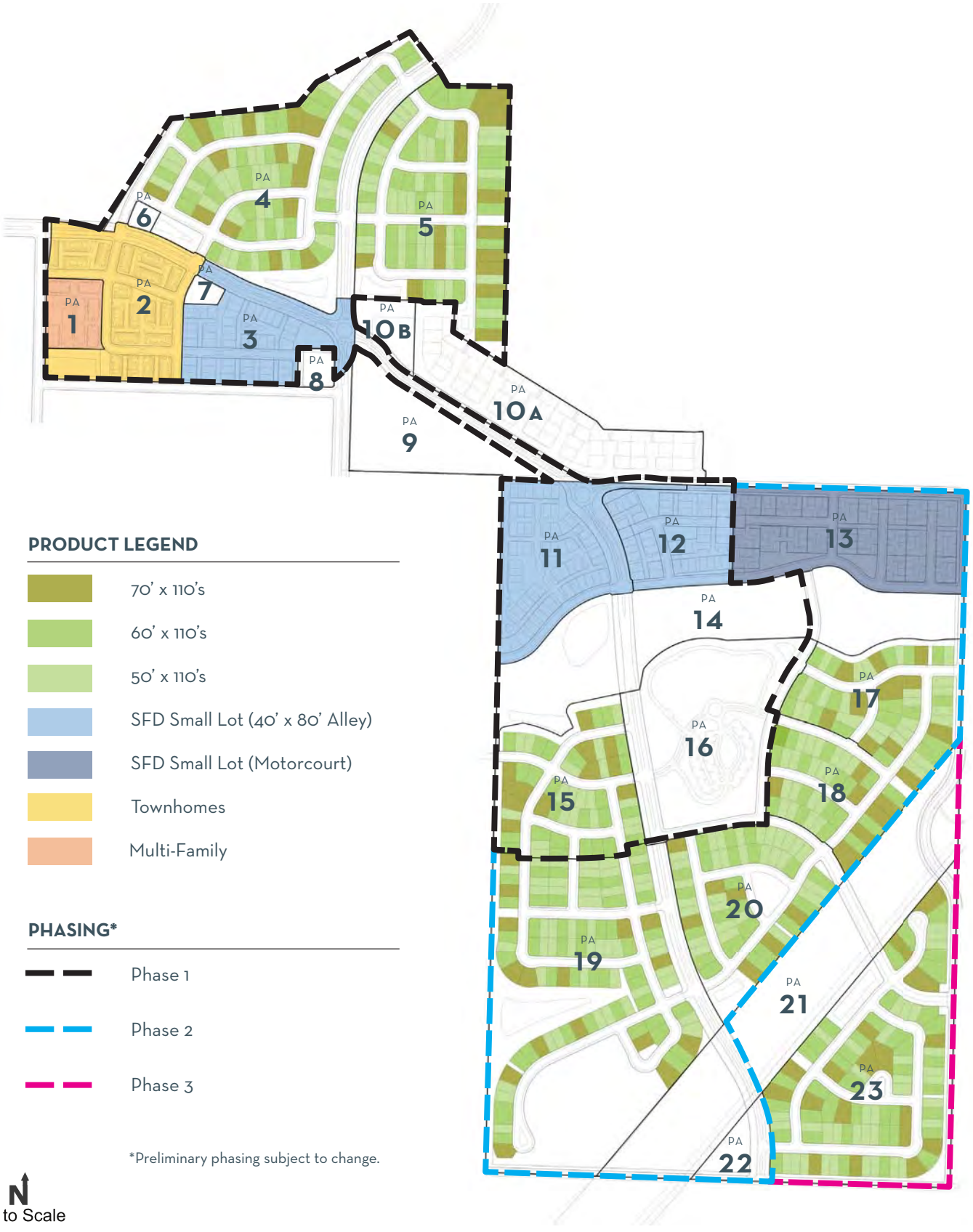
Figure 2a: Project Site Land Use Plan



Source: Viñedo Paso Robles Specific Plan, April 2019

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Figure 2b: Project Site Phasing Plan



Source: Viñedo Paso Robles Specific Plan, April 2019

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ANALYSIS METHODS

The analysis approach was developed based on the City of Paso Robles' *Transportation Impact Analysis Guidelines*, County of San Luis Obispo standards, and Caltrans standards.

City of Paso Robles Facilities

The City's TIA Guidelines provide criteria for identifying mobility deficiencies reflecting the City's Circulation Element Goals. Vehicular queues that exceed existing or planned lengths of turn pockets are a deficiency criterion. However, while vehicular level of service (LOS) is a component of the evaluation criteria for stop-controlled intersections, it is not identified as a mobility deficiency criterion for signalized intersections.

The City's TIA Guidelines provide mobility deficiency criteria for a variety of study elements. **Table 1** summarizes these criteria, which are used to identify deficiencies.

Table 1: City of Paso Robles Mobility Deficiency Criteria

City of Paso Robles Mobility Deficiency Criteria[1]	
Study Element	**Deficiency Determination**
On-site Circulation and Parking	Project designs fail to meet City or industry standard guidelines, fail to provide adequate truck access, will result in unsafe conditions, or will create parking demand or supply above code requirements.
Pedestrian, Bicycle, Transit Facilities	Project fails to provide safe and accessible connections, conflicts with adopted plans, or adds trips to facility that doesn't meet current design standards.
Traffic Operations	Project causes vehicle queues that exceed turn pocket lengths, increases safety hazards, causes stop-controlled intersection to operate below LOS D and meet signal warrants, or causes vehicle demand greater than the roadway capacity.
1. Summary based on Table 5 of City's Transportation Impact Study Guidelines.	

The City's TIA Guidelines also specify the analysis time periods, noting that typically traffic operations should be studied during the peak one hour of traffic on weekday mornings (between 7-9 AM) and afternoons (between 4-6 PM).

County of San Luis Obispo Facilities

The County of San Luis Obispo has adopted the following Level of Service (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.

The segment of Union Road from Priska Drive to Kit Fox Lane lies outside of the City limits and the Urban Reserve Line and is subject to the LOS C standard.

Caltrans Facilities

Caltrans controls the intersections along State Route 46 and the freeway segments on US 101. Caltrans relies on LOS to determine deficiencies. Accordingly, Caltrans intersections have been evaluated using

LOS criteria as contained in the HCM 6. Vehicular level of service is based on control delay, which is the total of time spent decelerating when approaching an intersection, time spent stopped or moving in a queue at an intersection, and time spent accelerating after an intersection.

Caltrans strives to maintain operations at the LOS C/D threshold on state-operated facilities. If an existing State Highway facility is operating at LOS D, E, or F the existing measure of effectiveness should be maintained. Note that any improvements proposed within Caltrans right-of-way are subject to Caltrans review and approval via their project development process.

Queuing is not a measure of effectiveness at signalized and unsignalized intersections in the Caltrans Guide for the Preparation of Traffic Impact Studies; therefore, queuing impacts are not considered at Caltrans facilities in the following analysis.

Intersection Analysis

Table 2 presents the vehicular level of service thresholds for both City- and Caltrans-operated intersections based on the Highway Capacity Manual 6th Edition (HCM 6).

Table 2: Intersection Level of Service Thresholds

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

1. Source: Exhibit 19-8 of the Highway Capacity Manual 6th Edition.
2. Source: Exhibits 20-2 and 21-8 of the Highway Capacity Manual 6th Edition.
3. Source: Exhibit 22-8 of the Highway Capacity Manual 6th Edition.

Unsignalized intersections have lower delay thresholds because users experience more uncertainty than at signals, where drivers typically expect higher levels of congestion and more predictable levels of delay.

The study intersections were analyzed with the Synchro 10 software package. The HCM 6 methodology was applied except where unique intersection configurations or signal phasing required the HCM 2000 methodology. The 95th percentile queues for key movements are reported, which reflect the queue length that will not be exceeded 95% of the time.

Segment Analysis

The roadway study segments were evaluated for capacity utilization and level of service based on average daily traffic (ADT) volumes.

Table 3 presents the vehicular level of service thresholds for basic freeway, merge/diverge, and weaving segments based on the HCM 6.

Table 3: Freeway Segment Level of Service Thresholds

Freeway Segment Level of Service Thresholds					
Basic Freeway[1]		**Merge/Diverge[4]**		**Freeway Weaving[5]**	
Density (pc/mi/ln)[2]	**Level of Service**	**Density (pc/mi/ln)**	**Level of Service**	**Density (pc/mi/ln)[2]**	**Level of Service**
≤ 11	A	≤ 10	A	≤ 10	A
>11 - 18	B	> 10 - 20	B	> 10 - 20	B
> 18 - 26	C	> 20 - 28	C	> 20 - 28	C
> 26 - 35	D	> 28 - 35	D	> 28 - 35	D
> 35 - 45	E	> 35	E	> 35 - 43	E
> 45 or (D > C)[3]	F	v/c > 1	F	> 43 or v/c > 1	F

1. Source: Exhibit 12-15 of the Highway Capacity Manual 6th Edition.
2. Demand in units of passenger car/mile/lane.
3. LOS F if demand exceeds capacity.
4. Source: Exhibit 14-3 of the Highway Capacity Manual 6th Edition.
5. Source: Exhibit 13-6 of the Highway Capacity Manual 6th Edition.

The basic freeway and merge/diverge study segments were analyzed using Highway Capacity Software (HCS 7) package, applying the HCM 6 methodology. The weaving segment was analyzed using the Leisch methodology, which required converting the truck volumes in vehicles per hour (vph) to passenger cars per hour (pcph) based on a passenger car equivalent (PCE) value of 2.

Existing Conditions

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

EXISTING ROADWAY NETWORK

US Highway 101 (US 101) is a major north-south interstate facility connecting California, Oregon, and Washington. In the study area, US 101 is a four-lane freeway with a full access interchange at State Route 46.

State Route 46 (SR 46) is an east-west highway connecting the Central Valley with the Central Coast. In the study area, SR 46 consists of four lanes with at-grade intersections at side streets.

Golden Hill Road is a north-south arterial with two travel lanes north of Union Road that expand into four travel lanes between Mesa Road and Dallons Drive.

Union Road is a northeast-southwest arterial with two travel lanes between SR 46 E and Creston Road. Union Road also splits into a second arterial in the northwest-southeast direction just before connecting to SR 46 E.

Airport Road is a discontinuous north-south arterial with two travel lanes which runs north of SR 46 E and between Linne Road and Meadowlark Road.

Buena Vista Drive is a north-south arterial with two travel lanes north of SR 46 E.

Mill Road is a primarily east-west local road with two travel lanes south of SR 46 E.

Riverside Avenue is a north-south collector with two travel lanes west of US 101.

Pine Street is a primarily north-south local road with two travel lanes. In the study area, Pine Street runs east-west under a railroad crossing (only wide enough for one vehicle) to the intersection of Riverside Avenue and the US 101 southbound off ramp.

Paso Robles Street is a north-south collector with two travel lanes and US 101 on and off ramps to the north and south, respectively.

Creston Road is an arterial that runs both east-west and north-south throughout the study area. The segment of Creston Road between Rolling Hills Road and Charolais Road has either three or four travel lanes, while the segment from River Road to Rolling Hills Road has two travel lanes.

13th Street is an east-west facility acting as a two-lane collector and as a two- and four-lane arterial west and east of Spring Street, respectively. 13th Street turns into Creston Road east of River Road.

Niblick Road is an east-west undivided arterial with four travel lanes between Spring Street and Creston Road. West of Spring Street, Niblick Road turns in 1st Street, and east of Creston Road, it turns into Sherwood Road.

1st Street is an east-west collector with two travel lanes between Vine Street and Spring Street.

Stoney Creek Road is an east-west collector with two travel lanes between Rambouillet Road and Creston Road.

Meadowlark Road is an east-west collector with two travel lanes. Meadowlark Road borders the Olsen-Chandler study area to the south.

Charolais Road is northwest-southeast arterial with two travel lanes between South River Road and Creston Road.

South River Road is a north-south facility acting as a two-lane collector and as a two- and four-lane arterial north and south of Niblick Road, respectively. South River Road turns into Union Road north of Creston Road before intersecting with North River Road.

Sherwood Road is an east-west undivided arterial with four travel lanes between Creston Road and Fontana Road. West of Creston Road, Sherwood Road turns into Niblick Road.

Commerce Way is a north-south collector road with two travel lanes and on-street parking on both sides between Sherwood Road and Scott Street.

Fontana Road is a north-south collector road with two travel lanes connecting Sherwood Road to the north and Linne Road to the south.

Scott Street is an east-west collector road with two travel lanes between Creston Road to Airport Road. From Creston Road to Commerce Way and from Commerce Way to Airport Road, Scott Street has a posted speed limit of 25 and 35 mph, respectively.

Linne Road is an east-west rural arterial road running from Fontana Road through the Olsen-Chandler study area and continuing beyond the City Limits.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, multi-use paths, and pedestrian signals at signalized intersections. The existing pedestrian facilities in the project vicinity are described below:

- *Airport Road:* Continuous sidewalk on both sides of the road between Meadowlark Road and Linne Road. There is an uncontrolled crosswalk on the south leg of Running Stag Way and a stop control crosswalk on the south leg of Scott Street.
- *Beechwood Drive:* Continuous sidewalk on west side between Creston Road and Stoney Creek Road. Intermittent sidewalk on east side north of Meadowlark Road. A stop-controlled crosswalk is located on the north leg of Meadowlark Road.
- *Charolais Road:* A Class I bike path and continuous sidewalk is located on the north side of the roadway along the limits from Creston Road to River Road. Class I bikeway connects to the Salinas River Walk running parallel to the Salinas River and connecting to the Creston Road / 13th Street intersection. There are no marked crosswalks on the corridor.
- *Creston Road:* Intermittent sidewalk on both sides of roadway along the limits. Between Flag Way and Charolais Road there is continuous sidewalk on the west side and between Niblick Road/Sherwood Road and Stoney Creek Road there is a continuous sidewalk on the east side. Crosswalks are provided on all four legs of the Creston Road/Niblick Road/Sherwood Road and Creston Road/Cedarwood Drive signalized intersections. An uncontrolled crosswalk is located on the north leg of Meadowlark Road and the south leg of Myrtlewood Drive.
- *Meadowlark Road:* Continuous sidewalk on north side between Creston Road and easterly limits. South side sidewalk between Creston Road and Beechwood Drive. An uncontrolled crosswalk is located on the west leg of Falcon Drive and stop-controlled crosswalks on the west leg of Beechwood Drive and the east leg of Creston Road.

- *Niblick Road/Sherwood Road/1st Street:* Continuous sidewalk on north side between Vine Street and easterly limits. South side sidewalk intermittent. There are multiple uncontrolled and traffic signal-controlled crosswalks. Crosswalks are provided on all four legs of the Creston Road/Niblick Road/Sherwood Road signalized intersection.
- *River Road:* Continuous sidewalk on west side from north of Navajo Avenue to Charolais Road. East side sidewalk intermittent. Crosswalks are provided on all four legs of the River Road/Niblick Road intersection. A stop-controlled crosswalk is located on the north leg of Charolais Road.

Bicycle Facilities

Bicycle facilities in the study area consist of Class I, II, and III bikeways. Class I shared-use paths or bike paths are facilities with a separate right of way with crossflows by vehicles minimized. 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 City's Bicycle and Pedestrian Plan was most recently adopted on December 18, 2018. The existing and proposed bikeways in the project vicinity are described below:

- Airport Road: Existing Class II bikeways between Meadowlark Road and Linne Road. A future Class I bikeway is proposed adjacent and parallel to Airport Road connecting Creston Road and Union Road
- Beechwood Drive: Class I and II bikeways are proposed between Meadowlark Road and Creston Road.
- Charolais Road: Existing Class I bike path on the north side of the roadway along the limits from Creston Road to River Road. West of River Road the Class I bikeway connects to the Salinas River Walk running parallel to the Salinas River and connecting to the Creston Road / 13th Street intersection. The future Class I Salinas River Trail would eventually connect the River Walk to San Miguel and Santa Margarita.
- Creston Road: Existing Class II bike lanes north of Lana Street/Oak Meadow Lane and on north side of road between Beechwood Drive and Meadowlark Road. Class II bike lanes are proposed within the city limits.
- Meadowlark Road: No existing bikeways. Class II bike lanes are proposed west of Beechwood Drive. Class I and II bikeways are proposed east of Beechwood Drive.
- Niblick Road/Sherwood Road/1st Street: Existing Class II bike lanes from Vine Street to the easterly limits.
- River Road: Existing Class II bike lanes from Niblick Road to Charolais Road.

EXISTING TRANSIT SERVICE

The Paso Express provides fixed route and dial-a-ride transit service throughout the City of Paso Robles. All Paso Express trips begin and end at the North County Transportation Center, located at Pine Street/8th Street. The fixed route service operates Routes A and B, which run clockwise and counterclockwise, respectively. The nearest stops to the Olsen-Chandler study area are located on Sherwood Road at Quail Run, Fontana Road at Linne Road, Airport Road near Parkview Lane, and Airport Road at Scott Street, with hourly service from 6:45 AM to 7:05 PM on weekdays and 7:45 AM

to 6:05 PM on Saturdays. The dial-a-ride service provides curb-to-curb service on weekdays from 7:00 AM to 1:00 PM.

The San Luis Obispo Regional Transit Authority (RTA) provides regional fixed-route service to San Luis Obispo County. Route 9 serves the North County region, providing regional access between San Luis Obispo, Santa Margarita, Atascadero, Templeton, and Paso Robles, including a stop at the North County Transportation Center.

EXISTING TRAFFIC CONDITIONS

Peak hour intersection turning movement counts, peak hour freeway and ramp counts, and segment ADT counts were collected between May 2018 and January 2019 during clear weather and when local schools were in session. Field observations were conducted to observe traffic operating conditions and signal timings. The traffic count sheets are included in **Appendix A**.

The bicycle counts collected at the 13th Street/Riverside Avenue intersection (#8) were taken on the same day as the AIDS/LifeCycle event, resulting in uncharacteristically high AM southbound through volumes. The PM bicycle counts, as well as the AM bicycle counts on the unaffected approaches, show that typical bicycle demand at the intersection is not large enough to have a significant effect on the analysis results.

Hourly data from the Caltrans count station on US 101 north of Main Street shows that on midweek school days during the 2017-2018 school year, the peak hours in both directions most frequently occurred between 7:00 – 9:00 AM and 4:00 – 6:00 PM. On the counted day (Wednesday, June 6, 2018), the peak hours in both directions also occurred during these times and the peak hour volumes were all within two percent of the average. Hourly data from the Caltrans count station on SR 46 E west of McMillan Canyon Road shows that on mid-weekdays from July through September 2018, the PM peak hour in both directions most frequently occurred between 4:00 – 6:00 PM and had substantially larger volumes on average than the AM peak hour. This data indicates that 7:00 – 9:00 AM and 4:00 – 6:00 PM intersection counts are sufficient.

Figure 3 shows the existing weekday peak hour traffic volumes at the study intersections and the existing ADT on the study segments. **Figure 4** shows the existing lane configurations.

1. Intersection Operations

Table 4 presents the existing LOS for the study intersections, with detailed calculation sheets in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 4: Existing Intersection Auto Levels of Service

Existing Intersection Auto Levels of Service			
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS
1. SR 46E/Buena Vista Dr	AM	16.7	B
	PM	12.0	B
2. SR 46E/Golden Hill Rd	AM	24.5	C
	PM	26.2	C
3. SR 46E/Union Rd	AM	4.2 (23.5)	- (C)
	PM	**5.6 (31.3)**	**- (D)**
4. SR 46E/Airport Rd	AM	5.7 (20.8)	- (C)
	PM	4.7 (23.3)	- (C)
5. SR 46E/Mill Rd	AM	0.1 (16.3)	- (C)
	PM	0.2 (19.3)	- (C)
6. Golden Hill Rd/Union Rd	AM	**51.3**	**F**
	PM	**50.5**	**F**
7. Penman Springs Rd/Union Rd	AM	1.8 (9.4)	- (A)
	PM	0.9 (9.6)	- (A)
8. 13th St/Riverside Ave	AM	30.0	C
	PM	37.6	D
9. 13th St/Paso Robles St	AM	15.5	B
	PM	18.0	B
10. River Rd/Creston Rd	AM	23.1	C
	PM	19.3	B
11. Creston Rd/Golden Hill Rd	AM	19.6	B
	PM	17.1	B
12. Creston Rd/Niblick Rd	AM	25.9	C
	PM	24.0	C
13. Creston Rd/Scott St	AM	2.2 (22.6)	- (C)
	PM	2.5 (22.9)	- (C)
14. Creston Rd/Stoney Creek Rd	AM	8.1 (40.8)	- (E)
	PM	3.7 (19.9)	- (C)
15. Creston Rd/Meadowlark Rd	AM	12.7	B
	PM	9.8	A
16. Creston Rd/Charolais Rd	AM	4.7 (12.8)	- (B)
	PM	5.4 (11.6)	- (B)
17. Riverside Ave/Pine St/US 101 SB Ramp	AM	3.7 (12.3)	- (B)
	PM	5.2 (12.9)	- (B)
18. 1st St-Niblick Rd/Spring St	AM	29.3	C
	PM	34.5	C
19. Niblick Rd/South River Rd	AM	33.8	C
	PM	24.6	C
20. Sherwood Rd/Commerce Way	AM	6.8	A
	PM	7.3	A
21. Sherwood Rd/Fontana Rd	AM	Future intersection	
	PM		
22. Airport Rd/Sherwood Rd	AM	Future intersection	
	PM		
23. Airport Rd/Scott St	AM	7.7	A
	PM	7.7	A
24. Airport Rd/Meadowlark Rd	AM	7.4 (8.8)	- (A)
	PM	6.8 (8.5)	- (A)
25. Sherwood Rd/Linne Rd	AM	Future intersection	
	PM		
26. Penman Springs Rd/Linne Rd	AM	0.9 (8.9)	- (A)
	PM	1.1 (8.9)	- (A)

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 1, 11 and 17). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.
Note: Unacceptable operations (LOS deficiency and/or signal warrants met) shown in **bold** text.

The following Caltrans intersection operates below the LOS C threshold:

- State Route 46 E/Union Road (#3): the northbound approach operates at LOS D during the PM peak hour due to long delays resulting from side street stop control and the high volumes along SR 46 E.

The following stop-controlled City intersections operate below LOS D:

- Golden Hill Road/Union Road (#6): operates at LOS F during the AM and PM peak hours and meets signal warrants due to high volumes from all approaches of the intersection. A single-lane roundabout is being designed for this intersection.
- Creston Road/Stoney Creek Road (#14): operates at LOS E during the AM peak hour but does not meet signal warrants. Therefore, the intersection operates acceptably per the City's TIA Guidelines.

2. Queues

Table 5 summarizes the existing vehicular queuing for key movements.

Table 5: Existing Queues

Existing Queues				
Intersection	Movement	Storage Length (ft)	Peak Hour	95th Percentile Queues (ft)[1]
1. SR 46E/Buena Vista Dr	EBL[2]	345	AM	248
			PM	197
2. SR 46E/Golden Hill Rd	NBL	160	AM	142
			PM	125
	SBL	140	AM	63
			PM	108
	EBL[2]	225	AM	127
			PM	108
	WBL[2]	125	AM	29
			PM	39
3. SR 46E/Union Rd	WBL[2]	195	AM	55
			PM	60
4. SR 46E/Airport Rd	EBL[2]	580	AM	135
			PM	35
5. SR 46E/Mill Rd	WBL[2]	305	AM	0
			PM	0
6. Golden Hill Rd/Union Rd	NBR	190	AM	103
			PM	153
	WBL	250	AM	235
			PM	203
8. 13th St/Riverside Ave	WBL	125	AM	**332**
			PM	**266**
	WBT	295	AM	268
			PM	**342**
9. 13th St/Paso Robles St	NBL	130	AM	**200**
			PM	**221**
	NBR	110	AM	42
			PM	**268**
	EBL	120	AM	85
			PM	107
	EBT	295	AM	227
			PM	**381**
10. River Rd/Creston Rd	NBL	140	AM	**182**
			PM	134
11. Creston Rd/Golden Hill Rd	EBL	125	AM	103
			PM	86
12. Creston Rd/Niblick Rd	NBL	230	AM	#214
			PM	152
	SBL	245	AM	156
			PM	141
	EBL	150	AM	124
			PM	**#196**
	WBL	170	AM	43
			PM	90
13. Creston Rd/Scott St	SBL	60	AM	5
			PM	8
18. 1st St-Niblick Rd/Spring St	NBL	165	AM	122
			PM	148
	NBR	290	AM	48
			PM	213
	SBL	305	AM	187
			PM	291
19. Niblick Rd/South River Rd	NBL	150	AM	**264**
			PM	**177**
	SBL	110	AM	**#315**
			PM	**172**
	EBL	140	AM	73
			PM	139
	WBL	80	AM	**126**
			PM	**132**
20. Sherwood Rd/Commerce Way	WBL	75	AM	7
			PM	15
24. Airport Rd/Meadowlark Rd	SBL	50	AM	0
			PM	0

1. Queue length that would not be exceeded 95 percent of the time.
2. Deceleration length of 530 feet has been subtracted from the storage length per the Highway Design Manual for 60 mph
indicates that 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.

The following queue deficiencies at City intersections are noted:

- 13th Street/Riverside Avenue (#8): The westbound left turn queue length exceeds storage length during the AM and PM peak hours, while the westbound through queue length exceeds storage length during the PM peak hour.
- 13th Street/Paso Robles Street (#9): Queues exceed storage length during at least one peak hour on the northbound left, northbound right, and eastbound through turning movements.
- River Road/Creston Road (#10): The northbound left turn queue length exceeds storage length during the AM peak hour.
- Creston Road/Niblick Road (#12): The eastbound left turn queue length exceeds storage length during the PM peak hour.
- Niblick Road/South River Road (#19): Queues exceed storage length during the AM and PM peak hours on the northbound left, southbound left, and westbound left turning movements.

3. Roadway Segment Operations

Table 6 shows the existing capacity utilization and LOS for the study segments.

Table 6: Existing Roadway Segment Operations

Existing Roadway Segment Operations							
Street	**ID**	**Segment**	**Facility Type**	**Lanes**	**ADT**	**LOS**	**Capacity Utilization**
Union Road	1	Priska Drive to Kit Fox Lane	Arterial	2	1,570	C	9%
Creston Road	2	East of Ferro Lane	Arterial	2*	16,049	D	74%
	3	East of Golden Hill Road	Arterial	4	13,675	A	37%
	4	South of Niblick Road	Arterial	4	14,856	A	40%
	5	North of Meadowlark Road	Arterial	4	6,008	A	16%
Golden Hill Road	6	South of Union Road	Arterial	3	12,676	C	58%
	7	North of Union Road	Arterial	3	9,805	C	45%
Niblick Road	8	East of Spring Street	Arterial	4	29,676	D	79%
	9	East of Quarterhorse	Arterial	4	20,115	A	54%
Sherwood Road	10	East of Creston Road	Arterial	4	9,659	A	26%
Linne Road	11	Poppy Lane to Hanson Road	Arterial	2	1,311	C	7%

* Note that an asterisk (*) indicates the prescence of a raised median or two-way left-turn lane on a two-lane arterial.
Source: City of Paso Robles General Plan Circulation Element, 2011; CCTC, 2019.

All City segments report a capacity utilization below 90% and the County segment on Union Road (#1) operates at LOS C.

4. Freeway Segment Operations

Table 7 shows the existing peak hour volumes at the freeway mainline and ramp locations and **Table 8** shows the existing LOS, with calculation sheets in **Appendix C**. The ramp peak hour factors (PHF) were calculated based on the individual on and off ramp peak hour volumes. The PHFs and truck percentages for the Riverside Avenue/Pine Street, Spring Street, and SR 46 W ramps were calculated using turning movement count data. The PHFs and truck percentages from the US 101 mainline count taken at the Niblick Road Bridge (per direction) were used as the baseline for all mainline segments, with modified PHFs and truck percentages north of SR 46 E based on ramp data. The Leisch method was employed to calculate the LOS for the US 101 southbound weaving segment (SR 46 E on ramp to Riverside/17th Street off ramp). For a worst-case analysis, no volume was assigned to the weave segment's ramp-to-ramp movement.

Table 7: US 101 Existing Peak Hour Volumes

US 101 Existing Peak Hour Volumes			
Direction	**Segment ID**	**Location**	**Existing**
US 101 NB	1	SR 46W Off Ramp	146 (114)
	2	SR 46W On Ramp	427 (755)
	3	Mainline North of SR 46W	2221 (3281)
	4	Spring St. Off Ramp	756 (1337)
	5	Paso Robles St. Off Ramp	323 (561)
	6	Paso Robles St. On Ramp	394 (326)
	7	Mainline South of SR 46E	1536 (1709)
	8	SR 46E Off Ramp	890 (947)
	9	SR 46E On Ramp	260 (249)
	10	Mainline North of SR 46E	906 (1011)
US 101 SB	11	Mainline North of SR 46E	850 (1361)
	12	SR 46E Off Ramp	248 (327)
	13	SR 46E to Riverside/17th St. Weave On	892 (992)
	14	SR 46E to Riverside/17th St. Weave Off	218 (303)
	15	Mainline South of SR 46E	1276 (1723)
	16	Riverside/17th St. On Ramp	298 (205)
	17	Riverside/Pine St. Off Ramp	93 (126)
	18	Spring St. On Ramp	1190 (894)
	19	Mainline North of SR 46W	3020 (3046)
	20	SR 46W Off Ramp	510 (523)
	21	SR 46W On Ramp	92 (146)
AM (PM) Peak Hour Volumes			

Table 8: Existing Freeway Operations

Existing Freeway Operations						
Direction	**Location**	**Segment ID**	**Segment Type**	**Peak Hour**	**Density[1]**	**LOS**
US 101 NB	SR 46W Off Ramp	1	Diverge	AM	22.2	C
				PM	26.2	C
	SR 46W On Ramp	2	Merge	AM	23.8	C
				PM	**30.4**	**D**
	North of SR 46W	3	Mainline	AM	19.9	C
				PM	**28.0**	**D**
	Spring St Off Ramp	4	Diverge	AM	27.1	C
				PM	**33.6**	**D**
	Paso Robles St Off Ramp	5	Diverge	AM	16.9	B
				PM	19.6	B
	Paso Robles St On Ramp	6	Merge	AM	17.7	B
				PM	17.0	B
	South of SR 46E	7	Mainline	AM	13.6	B
				PM	13.4	B
	SR 46E Off Ramp	8	Diverge	AM	18.1	B
				PM	17.8	B
	SR 46E On Ramp	9	Merge	AM	13.5	B
				PM	13.1	B
	North of SR 46E	10	Mainline	AM	10.1	A
				PM	9.7	A
US 101 SB	North of SR 46E	11	Mainline	AM	8.1	A
				PM	13.4	B
	SR 46E Off Ramp	12	Diverge	AM	12.2	B
				PM	18.3	B
	SR 46E to Riverside/17th St[2]	13-14	Weave	AM	-	A
				PM	-	B
	South of SR 46E	15	Mainline	AM	11.1	B
				PM	14.8	B
	Riverside/17th St On Ramp	16	Merge	AM	17.6	B
				PM	20.9	C
	Riverside/Pine St Off Ramp	17	Diverge	AM	18.3	B
				PM	21.7	C
	Spring St On Ramp	18	Merge	AM	23.6	C
				PM	23.9	C
	North of SR 46W	19	Mainline	AM	**28.5**	**D**
				PM	**28.6**	**D**
	SR 46W Off Ramp	20	Diverge	AM	**32.5**	**D**
				PM	**32.6**	**D**
	SR 46W On Ramp	21	Merge	AM	27.1	C
				PM	27.6	C

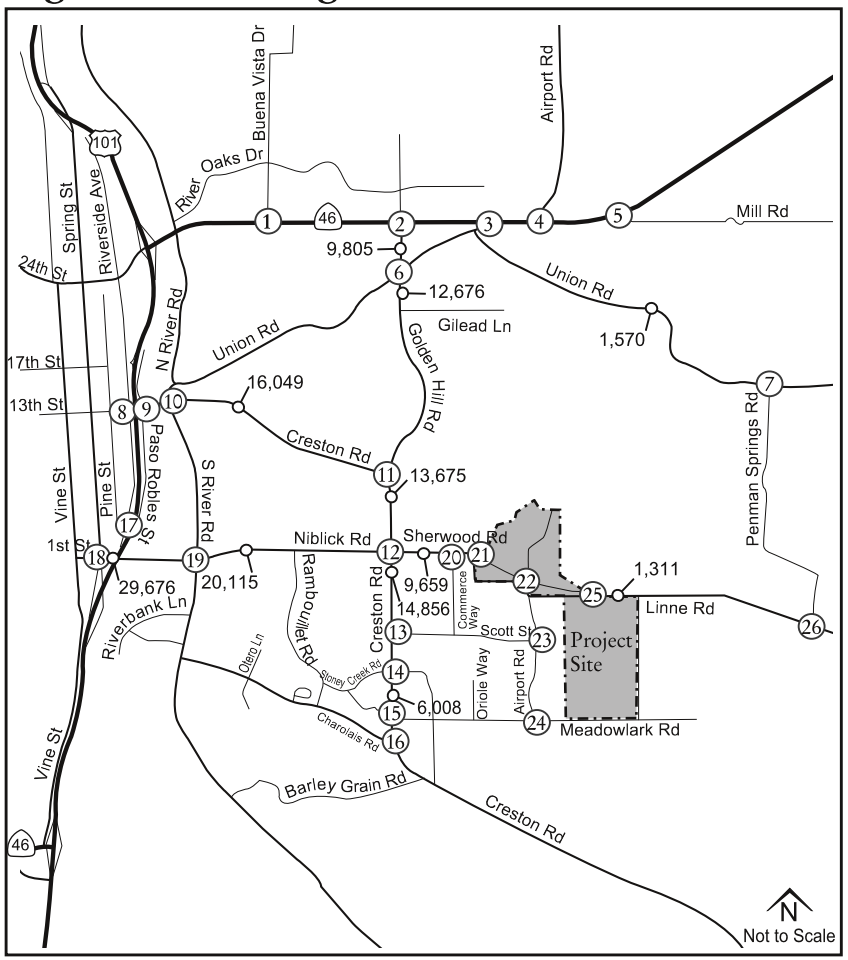
1. HCM 6 density (passenger cars per mile per lane).
2. The Leisch method used for weave section analysis does not report density.

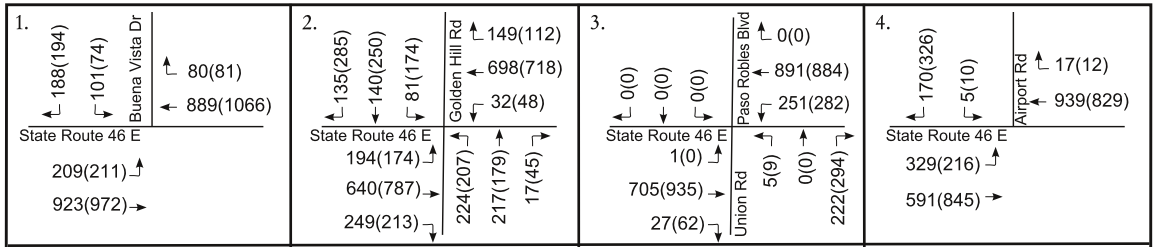
Note: Unacceptable operations shown in **bold** text.

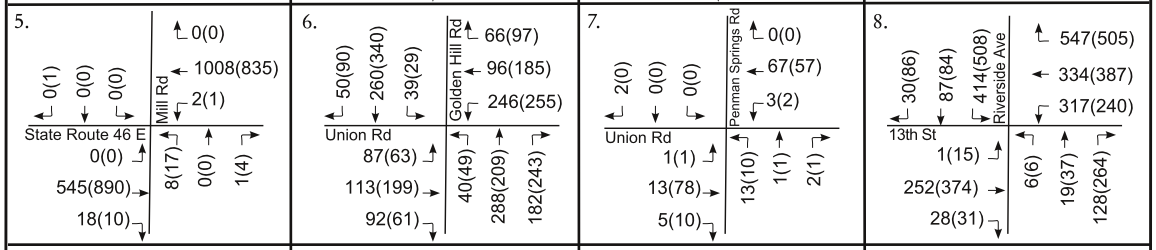
The following freeway segments operate below the LOS C threshold:

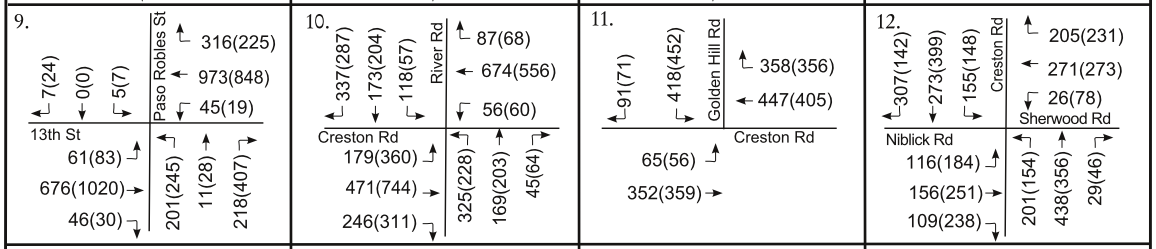
1. SR 46 W northbound on ramp merge segment operates at LOS D during the PM peak hour.
2. US 101 mainline north of SR 46 W operates at LOS D northbound during the PM peak hour and southbound during the AM and PM peak hours.
3. Spring Street northbound off ramp diverge segment operates at LOS D during the PM peak hour.
4. SR 46 W southbound off ramp diverge segment operates at LOS D during the AM and PM peak hours.

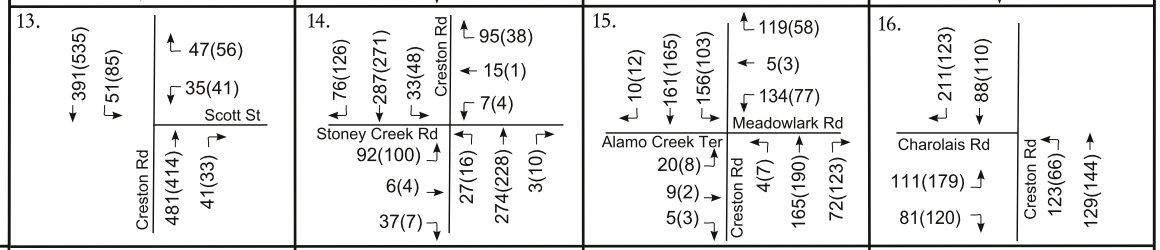
Figure 3: Existing Traffic Volumes

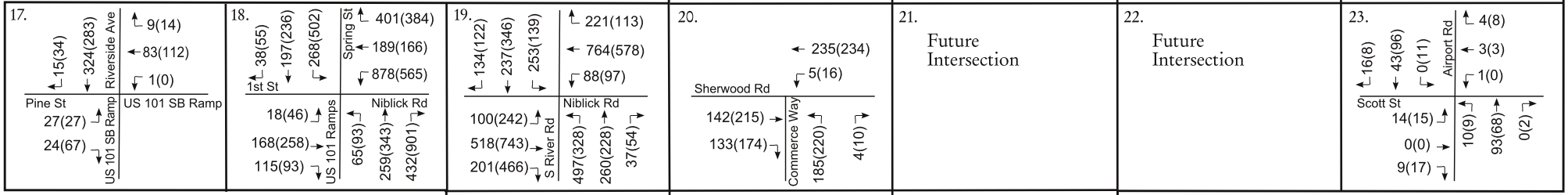


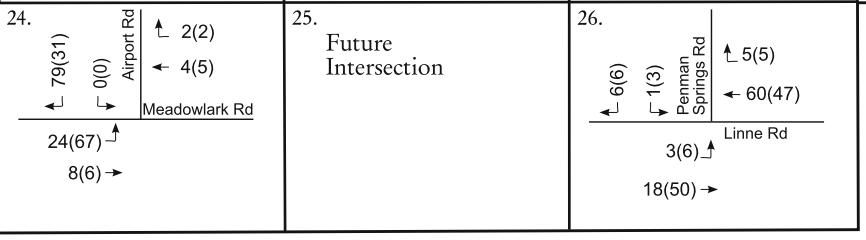












Legend:

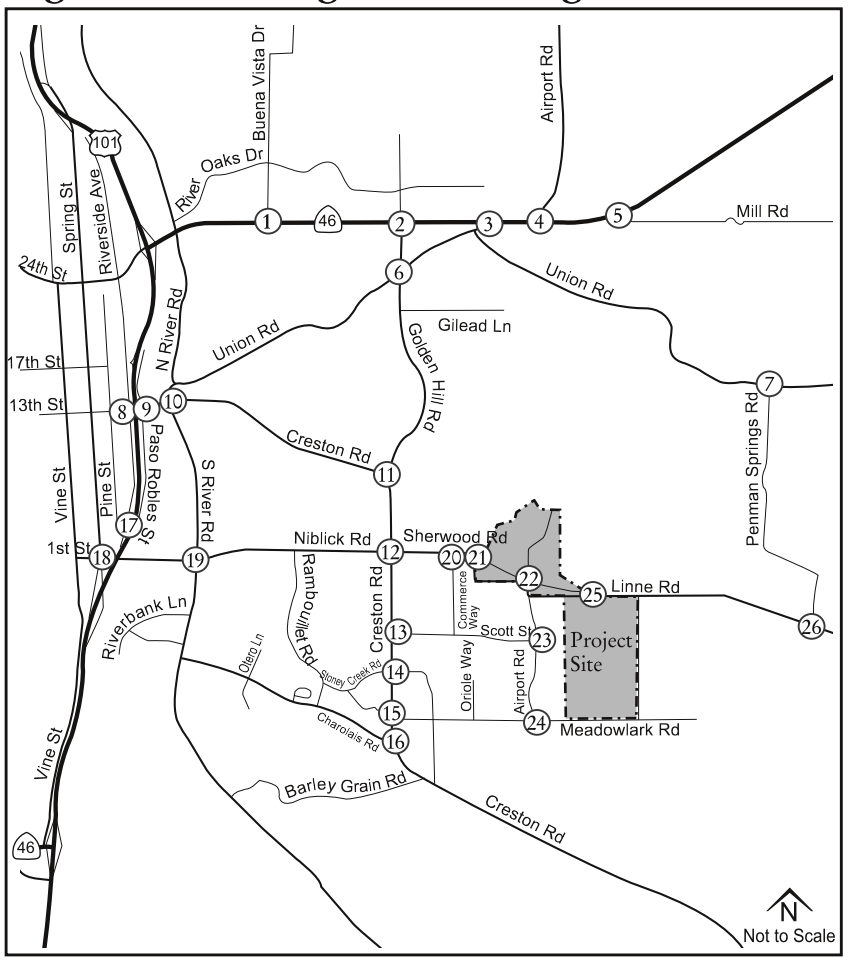
o- - Average Daily Traffic Volumes

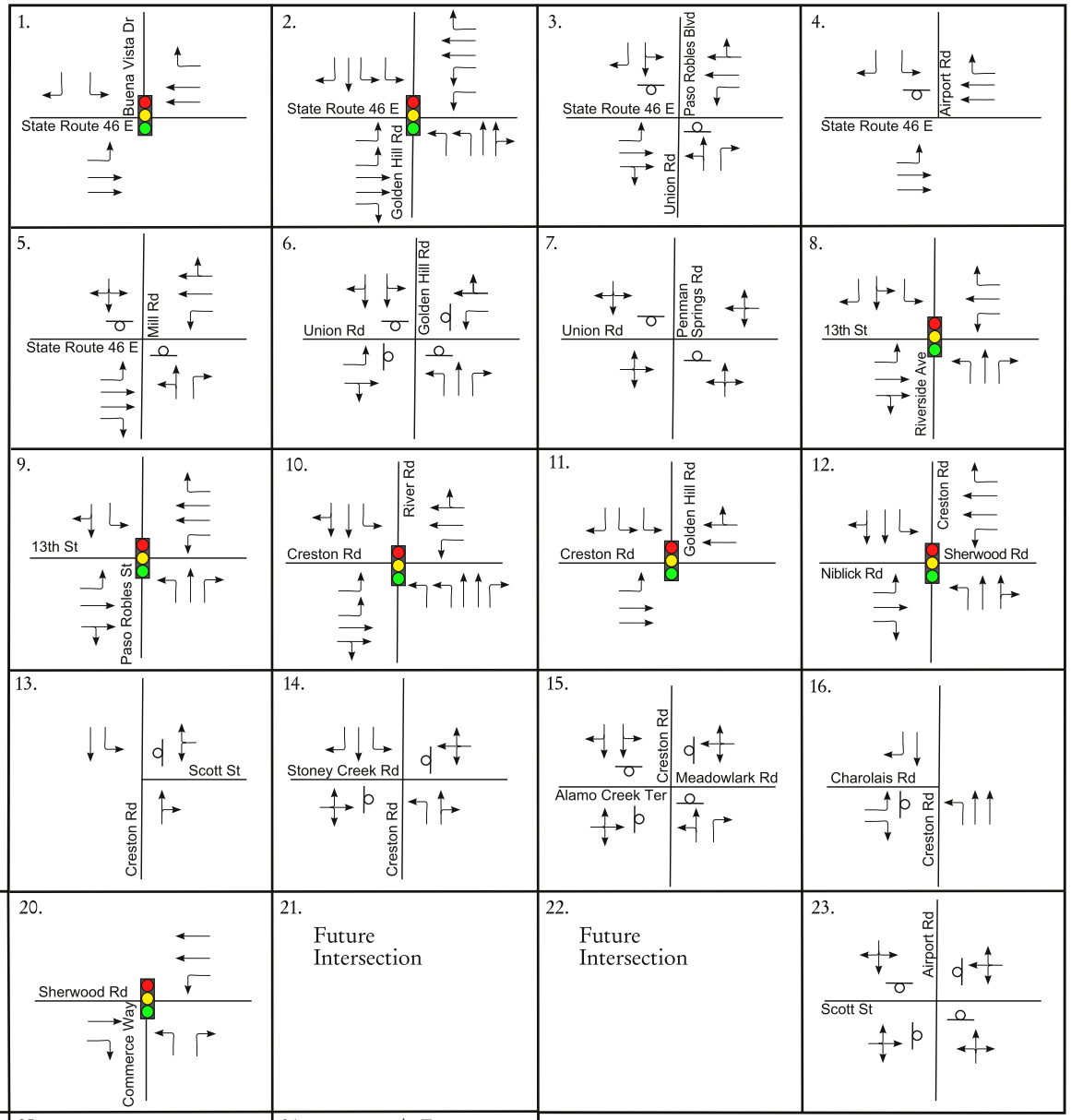
(x) - Study Intersection

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

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Figure 4: Existing Lane Configurations





Legend:

- Traffic Signal
- Stop Sign
- (x) - Study Intersection

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Existing Plus Project Conditions

This section evaluates the impacts of the proposed project on the surrounding transportation network, including traffic operations, bicycle, pedestrian, transit, and site access deficiencies. Existing Plus Project conditions reflect existing traffic levels plus the estimated traffic generated by the proposed project.

PROJECT TRAFFIC ESTIMATES

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

Trip Generation

The project's proposed 10,659 square feet of commercial building area is comprised of neighborhood commercial (9,800 square feet) and a farm stand (859 square feet). The proposed 18,752 square feet of recreational facilities is comprised of a clubhouse and fitness center (15,332 square feet) and a spa (3,420 square feet). Additional resident-serving facilities on the project site were assumed to typically have a negligible independent trip generation during the weekday AM and PM peak hours.

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th Edition was used to estimate project trip generation. Internal trips were not subtracted from the total trips due to the need to analyze on-site intersections. Pass-by and diverted link trips were not applied due to low existing volumes on adjacent roads. **Table 9** summarizes the estimated trip generation for the two project sizes.

Table 9: Olsen-Chandler Specific Plan Weekday Vehicle Trip Generation

Olsen-Chandler Specific Plan Weekday Vehicle Trip Generation									
				AM			PM		
Land Use	Size	Unit[1]	Daily	In	Out	Total	In	Out	Total
1,293-Unit Project									
Single-Family Residential Housing[2]	1,065	DU	9,164	190	571	761	620	364	984
Multifamily Housing (Low-Rise)[3]	228	DU	1,683	24	80	104	77	46	123
Shopping Center[4]	10,659	s.f.	402	6	4	10	20	21	41
Health/Fitness Club[5]	18,752	s.f.	650	13	12	25	37	28	65
		Total Trips	**11,899**	**233**	**667**	**900**	**754**	**459**	**1,213**
1,293-Unit + School Project									
Single-Family Residential Housing[2]	1,065	DU	9,164	190	571	761	620	364	984
Multifamily Housing (Low-Rise)[3]	228	DU	1,683	24	80	104	77	46	123
Shopping Center[4]	10,659	s.f.	402	6	4	10	20	21	41
Health/Fitness Club[5]	18,752	s.f.	650	13	12	25	37	28	65
Elementary School[6]	495	Students	936	179	153	332	40	44	84
		Total Trips	**12,835**	**412**	**820**	**1,232**	**794**	**503**	**1,297**

1) DU = Dwelling Unit; s.f. = Square Foot of Gross Leasable Area
2) ITE Land Use Code #210, Single-Family Detached Housing. Fitted curve equation used.
3) ITE Land Use Code #220, Multifamily Housing (Low-Rise). Fitted curve equation used.
4) ITE Land Use Code #820, Shopping Center. Average rates used.
5) ITE Land Use Code #492, Health/Fitness Club. AM and PM Average rates used. Daily assumed to be ten times the PM.
6) ITE Land Use Code #520, Elementary School. Average rates used.
Source: ITE *Trip Generation Manual*, 10th Edition, 2017; CCTC, 2019.

The 1,293-Unit Project would generate 11,899 total trips per weekday, including 900 AM peak hour trips and 1,213 PM peak hour trips. The 1,293-Unit Project and School would generate 12,835 total trips per weekday, including 1,232 AM peak hour trips and 1,297 PM peak hour trips.

The proposed elementary school will likely serve nearby residents, and if built would shift area travel patterns but would not generate additional Citywide demand since that demand occurs with the development of homes. Therefore, adding these trips as net new trips presents a conservative approach in order to capture potential local circulation issues near the school.

Trip Distribution and Assignment

Project trip distribution was derived using a select zone procedure of the 2017 version of the City's Travel Demand Model (TDM, in TransCAD 7 software). The model includes the Caltrans intersections and segments. **Figure 5** displays the trip distribution for the project under Existing and Cumulative conditions. The Existing conditions distribution will also be used for Near Term conditions. **Figures 6a and 6b** display the trip assignment for the project under Existing and Near Term conditions.

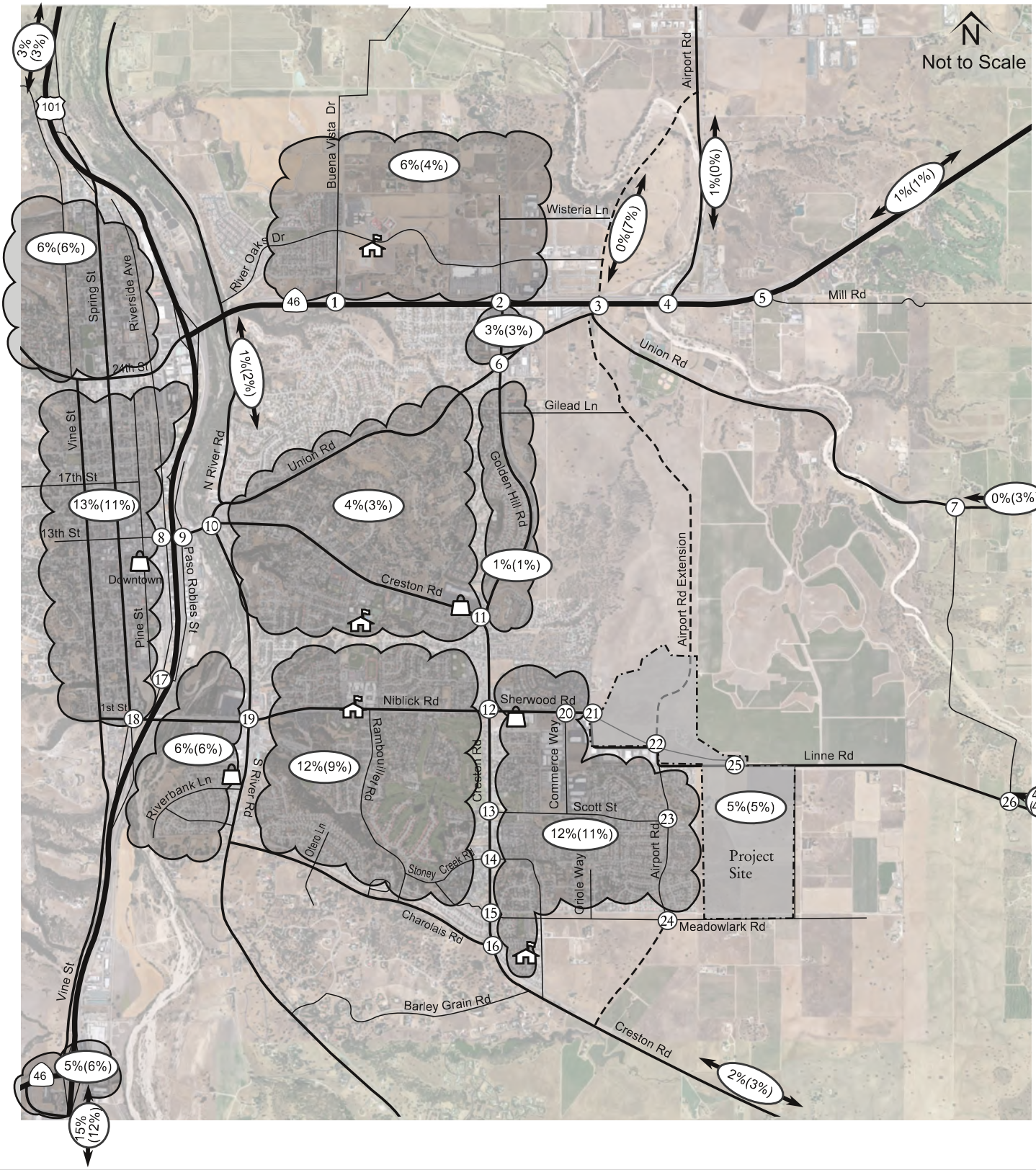
Planned Improvements

It was assumed that the following on-site study intersections would be constructed with either project size:

- Sherwood Road/Fontana Road (#21): Two-way stop control on Fontana Road approaches with 100' NBR turn pocket; two-way left turn lane on Sherwood Road with two westbound through lanes and one eastbound through lane.
- Airport Road/Sherwood Road (#22): Single lane roundabout.
- Sherwood Road/Linne Road (#25): Single lane roundabout.

Additional project improvements are discussed in detail in the Site Access and On-Site Circulation section of this report.

Figure 5: Project Trip Distribution

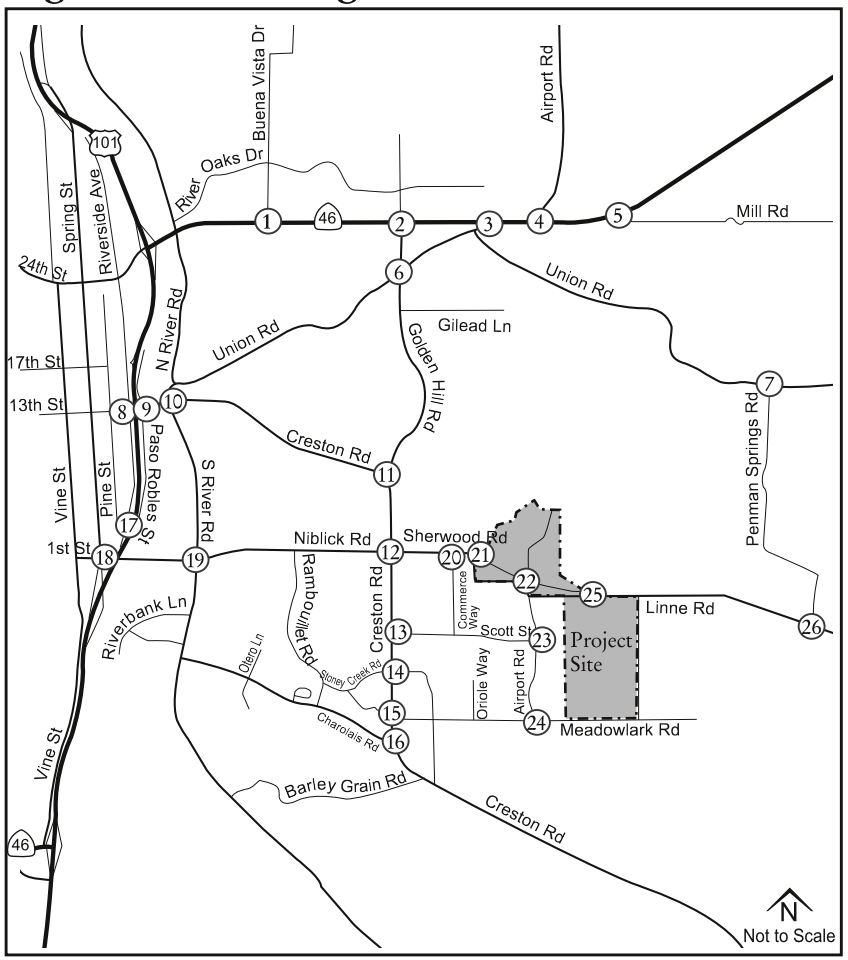


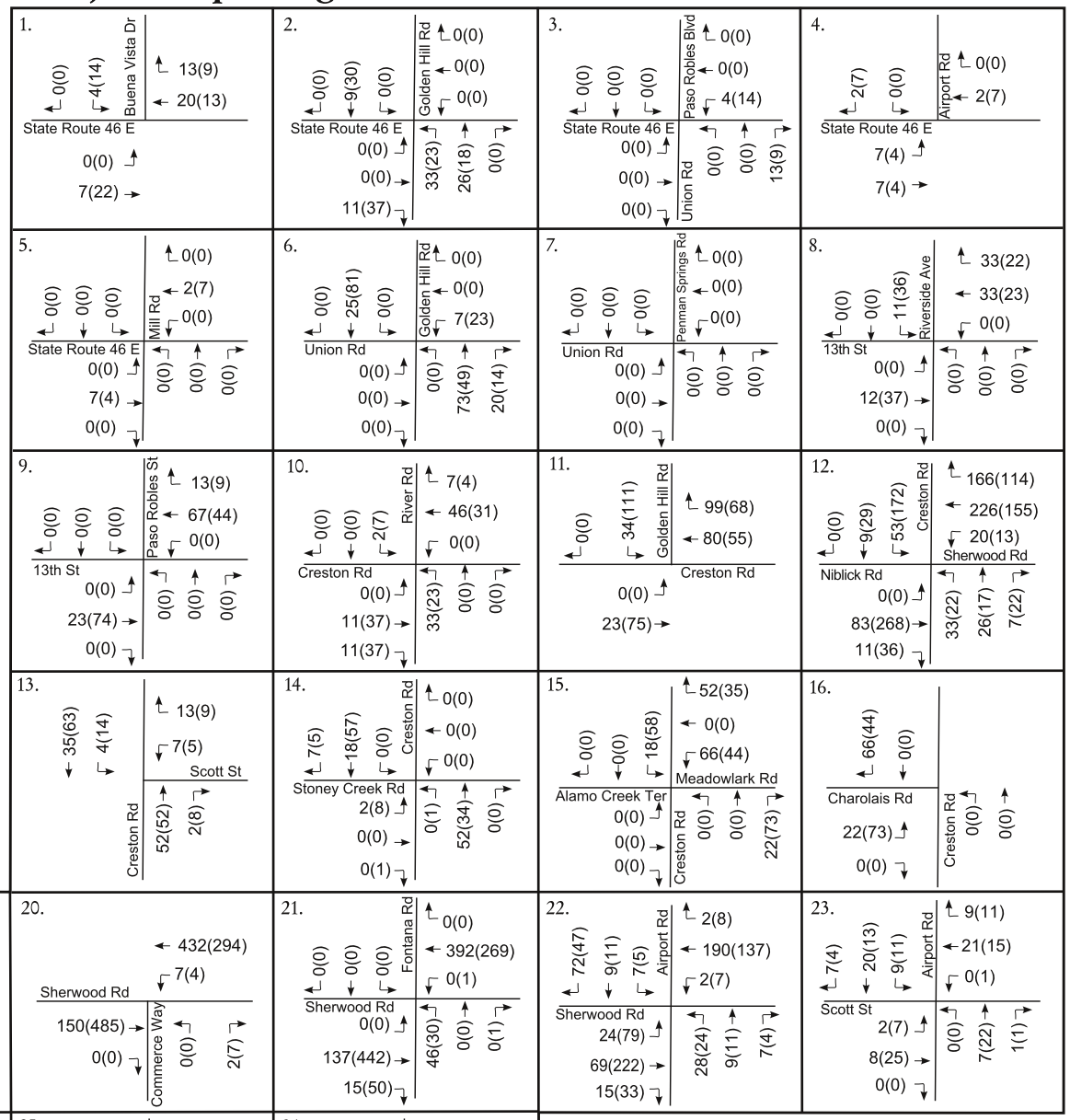
Legend:

- (x) - Study Intersection
- - - - Cumulative Improvements
- x%(y%) - Existing/Near Term % (Cumulative %) Project Trip Distribution
- School
- Retail Center

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Figure 6a: Existing and Near Term 1,293-Unit Project Trip Assignment





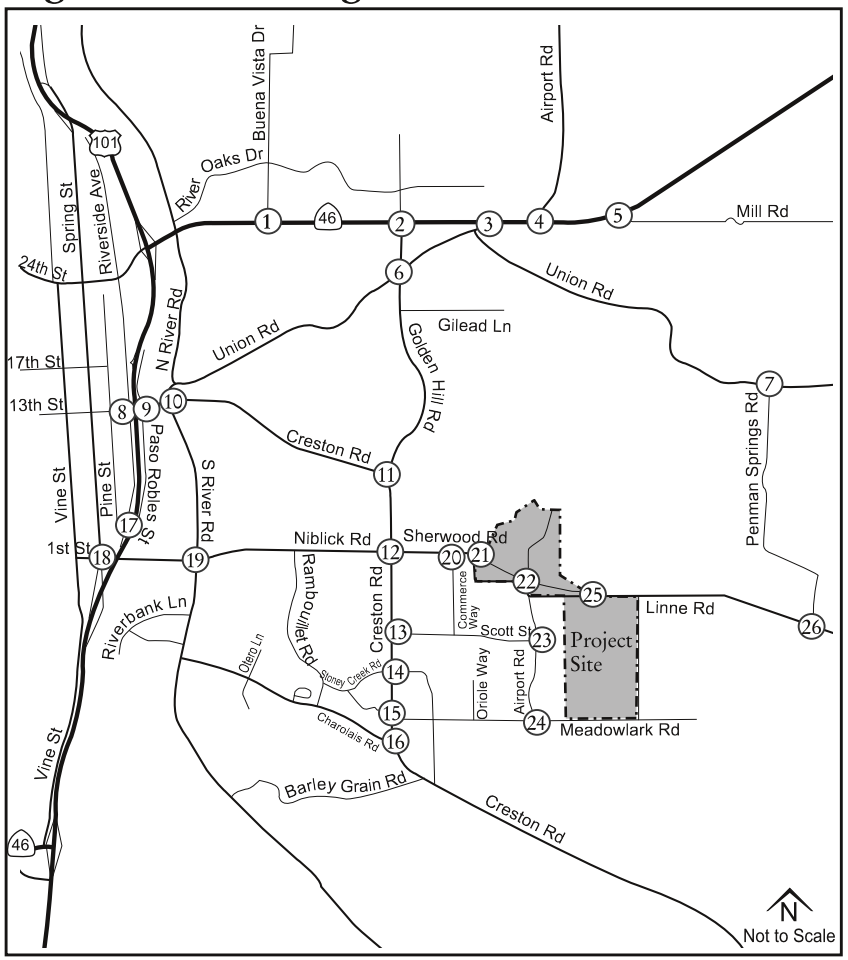
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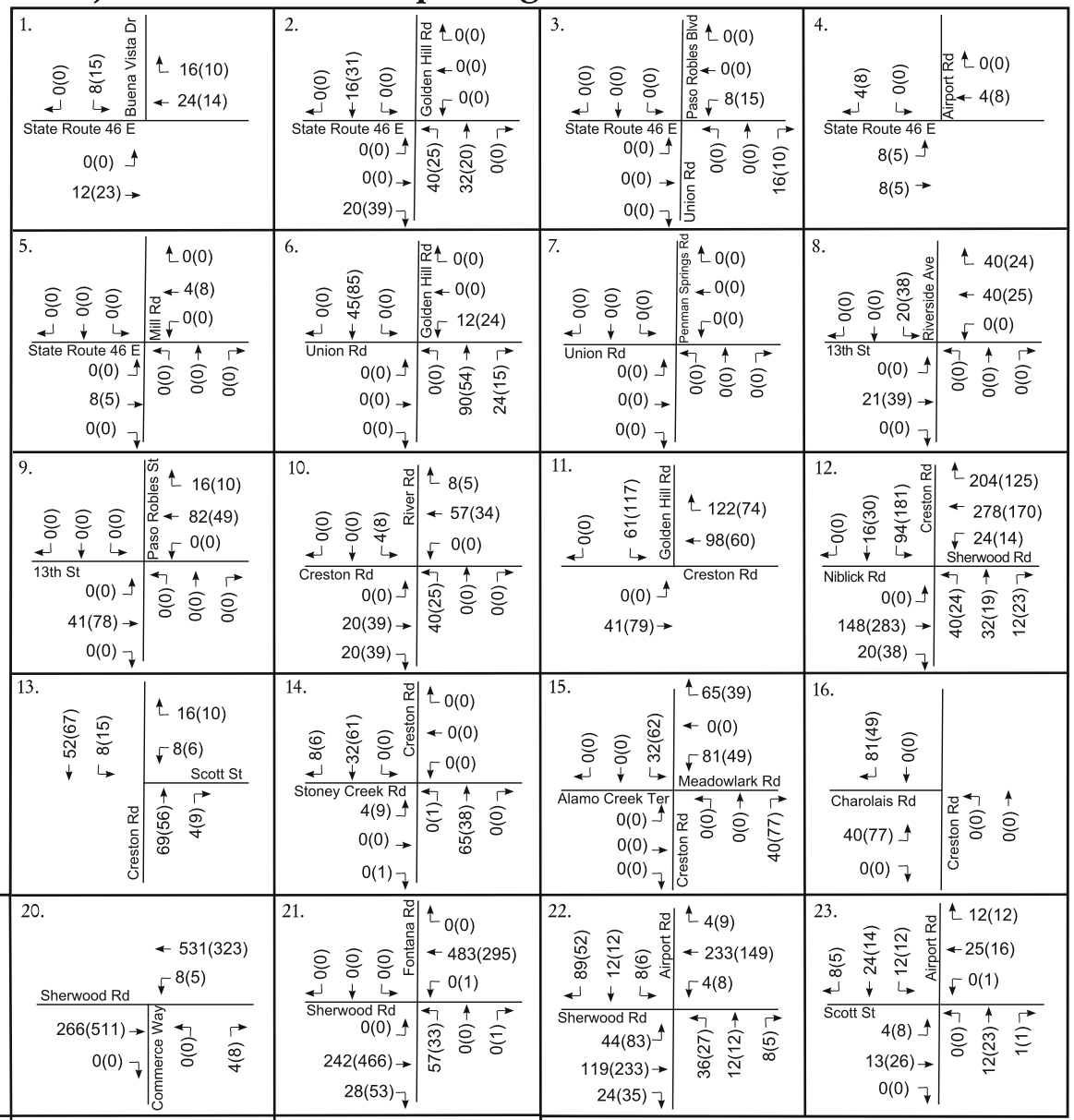
(x) - Study Intersection

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

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Figure 6b: Existing and Near Term 1,293-Unit Project and School Trip Assignment





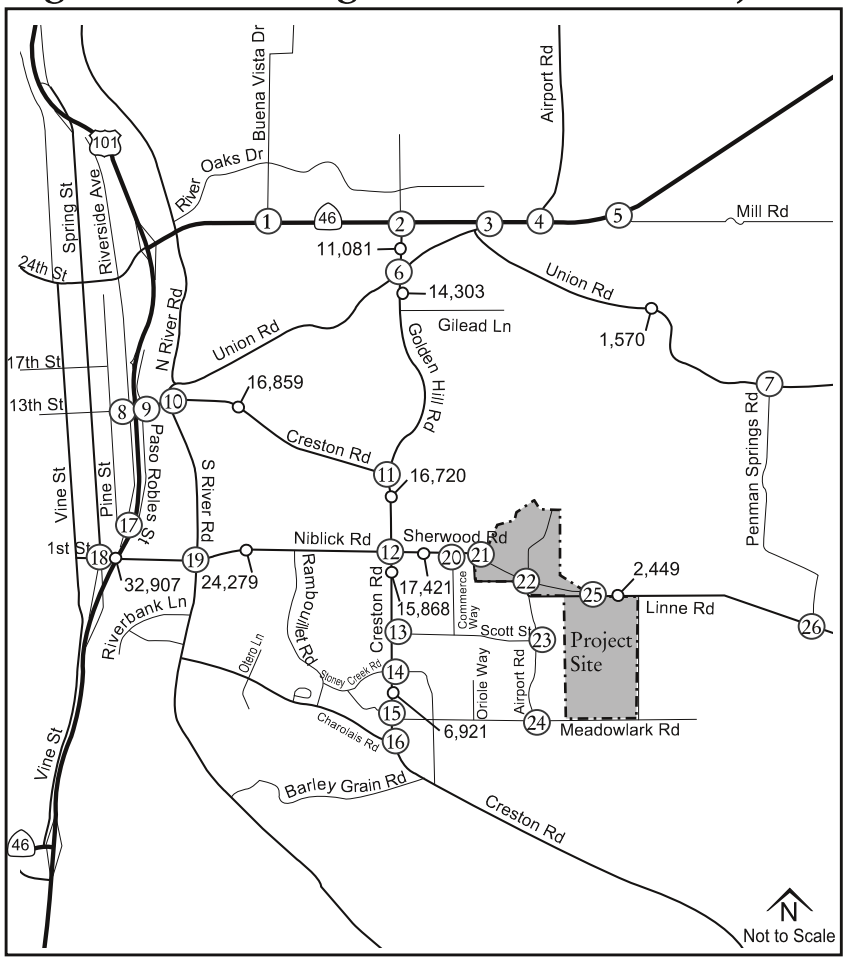
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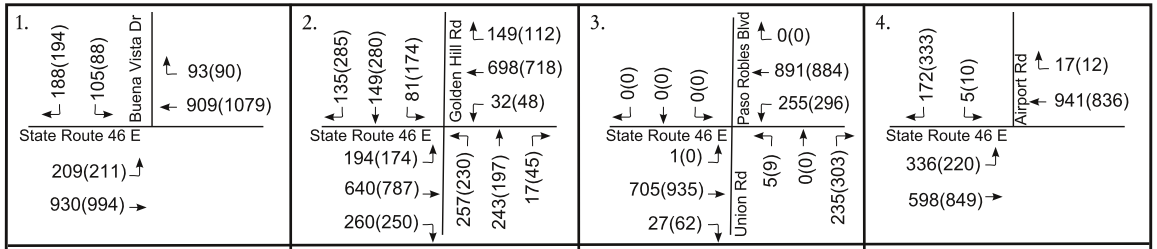
(x) - Study Intersection

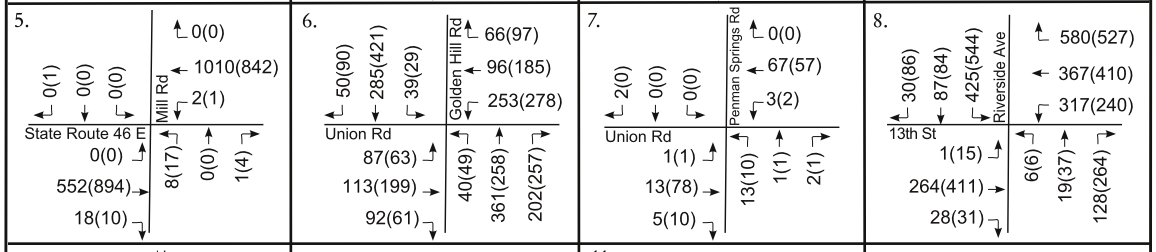
xx(yy) - AM(PM) Peak Hour Traffic Volumes

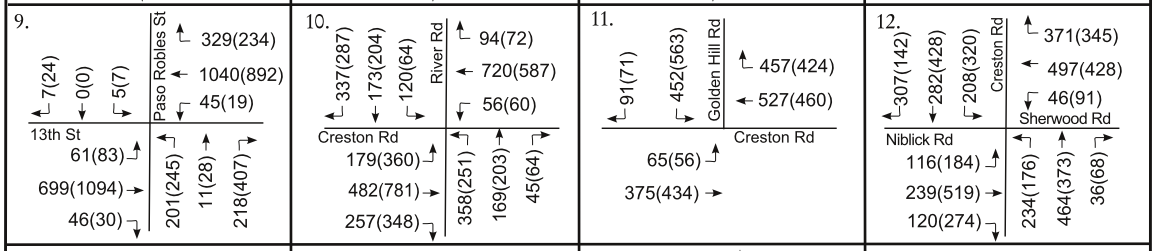
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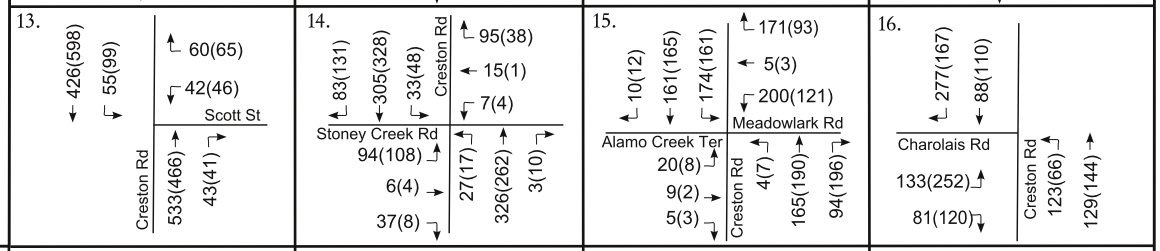
Figure 7a: Existing Plus 1,293-Unit Project Traffic Volumes

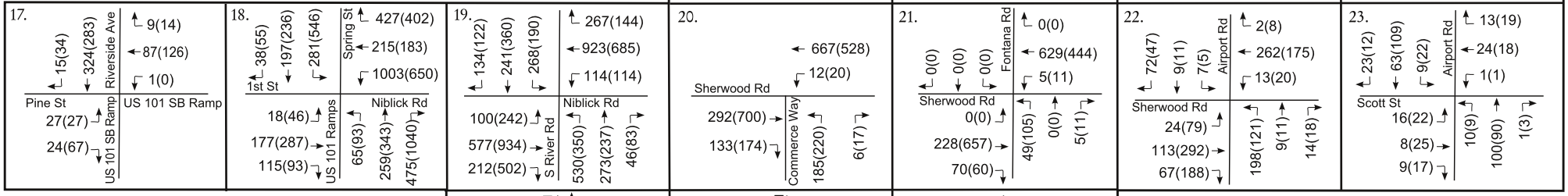


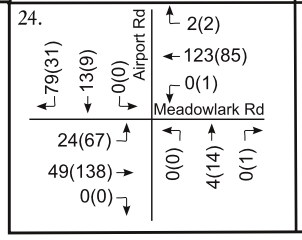


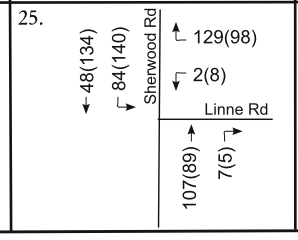


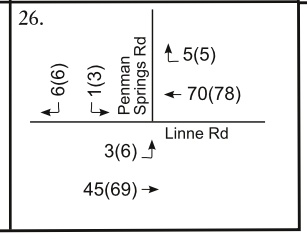












Legend:

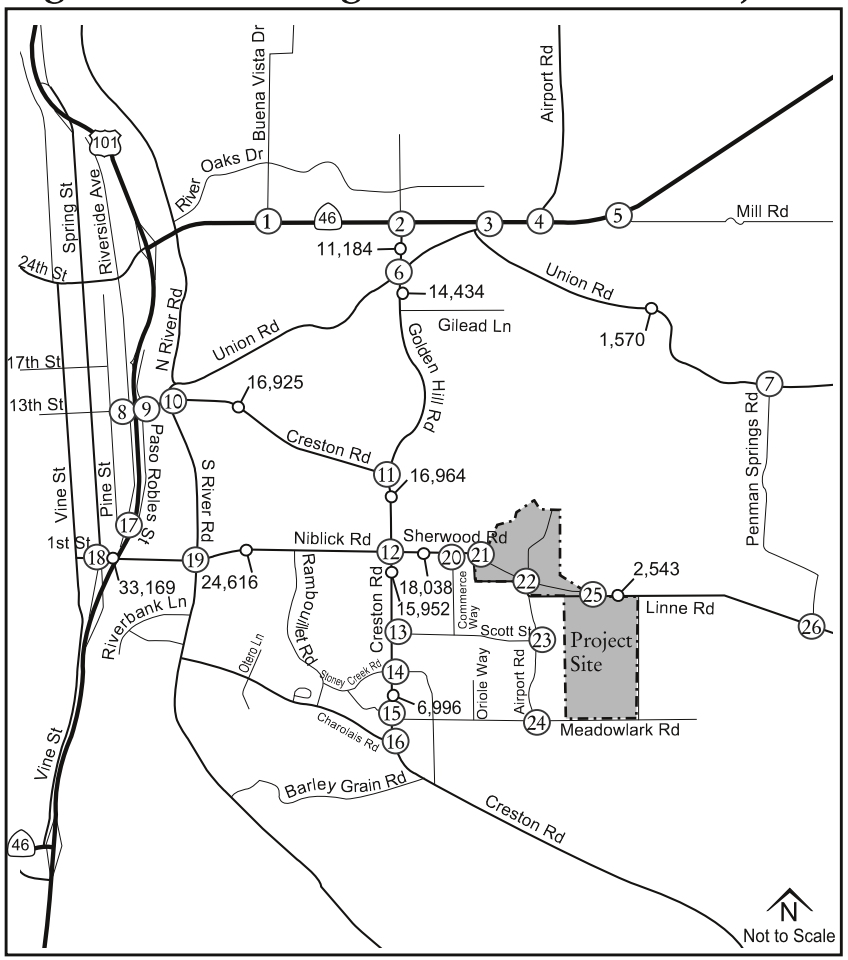
o- - Average Daily Traffic Volumes

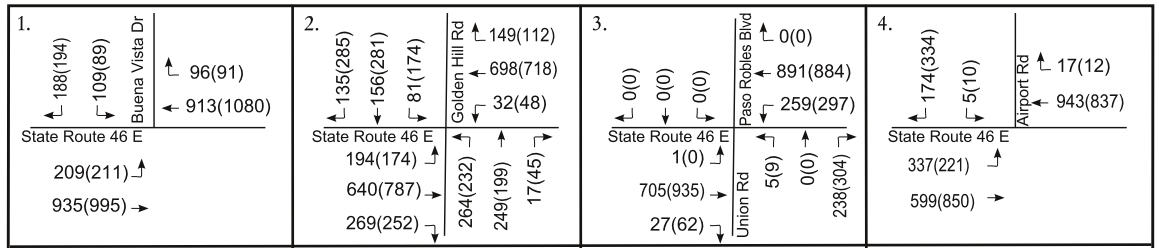
(x) - Study Intersection

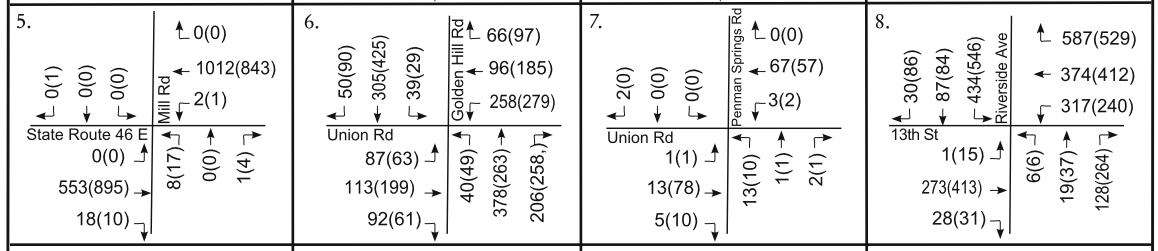
xx(yy) - AM(PM) Peak Hour Traffic Volumes

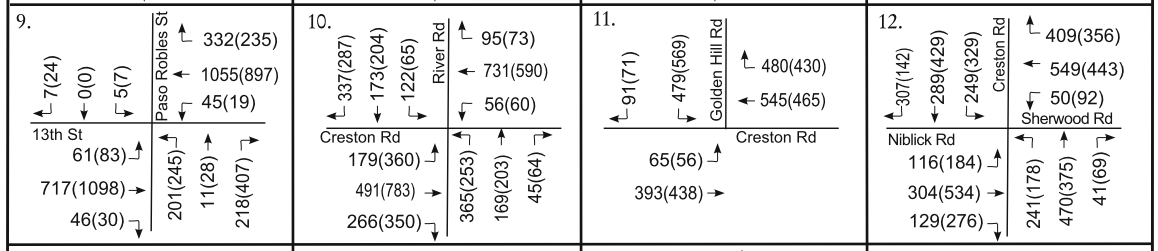
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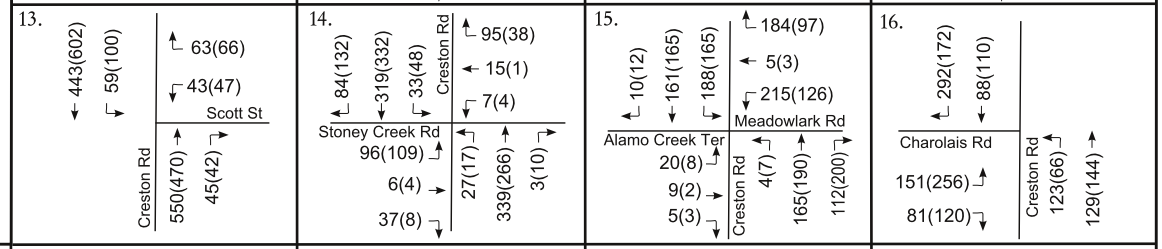
Figure 7b: Existing Plus 1,293-Unit Project and School Traffic Volumes

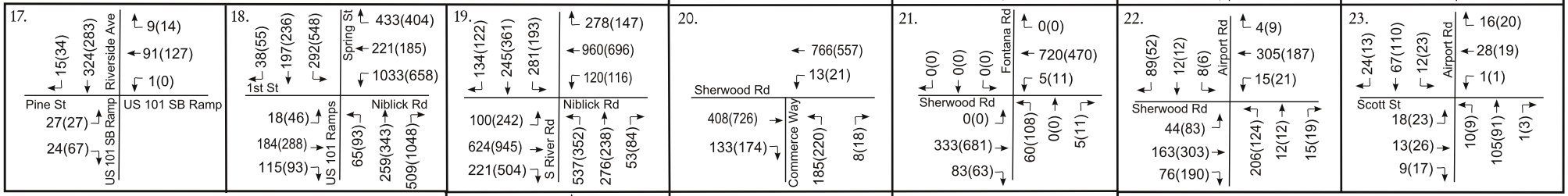


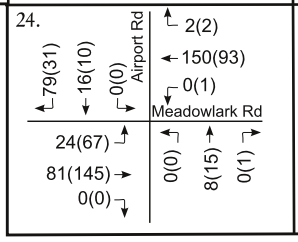


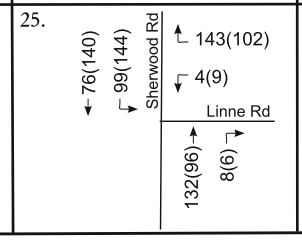


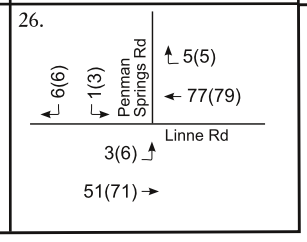












Legend:

o– - Average Daily Traffic Volumes

(x) - Study Intersection

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

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EXISTING PLUS PROJECT IMPACT ANALYSIS

1. Intersection Operations

Figures 7a and 7b show the traffic volumes for the study intersections during the weekday peak hours and ADT on the study segments under Existing Plus Project conditions.

Table 10 summarizes the intersection operating conditions under Existing and Existing Plus Project conditions with detailed calculation sheets in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 10: Existing and Existing Plus Project Intersection Auto Levels of Service

Existing and Existing Plus Project Intersection Auto Levels of Service							
Intersection	Peak Hour	Existing		EX + 1293		EX + 1293 + School	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1. SR 46E/Buena Vista Dr	AM	16.7	B	17.2	B	17.4	B
	PM	12.0	B	12.4	B	12.4	B
2. SR 46E/Golden Hill Rd	AM	24.5	C	25.3	C	25.5	C
	PM	26.2	C	26.8	C	26.8	C
3. SR 46E/Union Rd	AM	4.2 (23.5)	- (C)	4.5 (24.4)	- (C)	4.5 (24.5)	- (C)
	PM	**5.6 (31.3)**	**- (D)**	**5.9 (32.5)**	**- (D)**	**5.9 (32.5)**	**- (D)**
4. SR 46E/Airport Rd	AM	5.7 (20.8)	- (C)	5.9 (20.6)	- (C)	5.9 (20.8)	- (C)
	PM	4.7 (23.3)	- (C)	4.8 (23.7)	- (C)	4.8 (23.8)	- (C)
5. SR 46E/Mill Rd	AM	0.1 (16.3)	- (C)	0.1 (16.4)	- (C)	0.1 (16.5)	- (C)
	PM	0.2 (19.3)	- (C)	0.2 (19.3)	- (C)	0.2 (19.4)	- (C)
6. Golden Hill Rd/Union Rd	AM	**51.3**	**F**	**81.5**	**F**	**90.7**	**F**
	PM	**50.5**	**F**	**72.5**	**F**	**72.5**	**F**
7. Penman Springs Rd/Union Rd	AM	1.8 (9.4)	- (A)	1.8 (9.4)	- (A)	1.8 (9.4)	- (A)
	PM	0.9 (9.6)	- (A)	0.9 (9.6)	- (A)	0.9 (9.6)	- (A)
8. 13th St/Riverside Ave	AM	30.0	C	32.7	C	33.7	C
	PM	37.6	D	40.9	D	41.2	D
9. 13th St/Paso Robles St	AM	15.5	B	16.0	B	16.1	B
	PM	18.0	B	18.7	B	18.7	B
10. River Rd/Creston Rd	AM	23.1	C	24.5	C	24.7	C
	PM	19.3	B	19.9	B	20.0	B
11. Creston Rd/Golden Hill Rd	AM	19.6	B	22.1	C	23.1	C
	PM	17.1	B	19.1	B	19.4	B
12. Creston Rd/Niblick Rd	AM	25.9	C	39.9	D	46.6	D
	PM	24.0	C	39.0	D	41.3	D
13. Creston Rd/Scott St	AM	2.2 (22.6)	- (C)	3.1 (29.6)	- (D)	3.3 (32.8)	- (D)
	PM	2.5 (22.9)	- (C)	3.3 (31.3)	- (D)	3.5 (32.7)	- (D)
14. Creston Rd/Stoney Creek Rd	AM	8.1 (40.8)	- (E)	10.0 (58.5)	- (F)	11.3 (69.2)	- (F)
	PM	3.7 (19.9)	- (C)	4.1 (24.4)	- (C)	4.1 (24.9)	- (C)
15. Creston Rd/Meadowlark Rd	AM	12.7	B	17.5	C	20.9	C
	PM	9.8	A	11.6	B	11.8	B
16. Creston Rd/Charolais Rd	AM	4.7 (12.8)	- (B)	4.8 (13.6)	- (B)	5.1 (14.4)	- (B)
	PM	5.4 (11.6)	- (B)	6.3 (13.1)	- (B)	6.3 (13.1)	- (B)
17. Riverside Ave/Pine St/US 101 SB Ramp	AM	3.7 (12.3)	- (B)	3.8 (12.4)	- (B)	3.9 (12.5)	- (B)
	PM	5.2 (12.9)	- (B)	5.5 (13.3)	- (B)	5.6 (13.3)	- (B)
18. 1st St-Niblick Rd/Spring St	AM	29.3	C	33.1	C	35.1	D
	PM	34.5	C	37.2	D	37.4	D
19. Niblick Rd/South River Rd	AM	33.8	C	44.3	D	48.1	D
	PM	24.6	C	28.7	C	29.1	C
20. Sherwood Rd/Commerce Way	AM	6.8	A	7.2	A	7.3	A
	PM	7.3	A	8.1	A	8.2	A
21. Sherwood Rd/Fontana Rd	AM	Future intersection		0.7 (12.2)	- (B)	0.8 (13.6)	- (B)
	PM			1.8 (18.8)	- (C)	1.9 (19.8)	- (C)
22. Airport Rd/Sherwood Rd	AM	Future intersection		5.3	A	6.0	A
	PM			6.6	A	6.8	A
23. Airport Rd/Scott St	AM	7.7	A	8.0	A	8.2	A
	PM	7.7	A	8.2	A	8.2	A
24. Airport Rd/Meadowlark Rd	AM	7.4 (8.8)	- (A)	4.0 (11.2)	- (B)	3.6 (12.0)	- (B)
	PM	6.8 (8.5)	- (A)	3.2 (13.3)	- (B)	3.2 (13.6)	- (B)
25. Sherwood Rd/Linne Rd	AM	Future intersection		3.8	A	4.0	A
	PM			4.2	A	4.3	A
26. Penman Springs Rd/Linne Rd	AM	0.9 (8.9)	- (A)	0.7 (9.0)	- (A)	0.6 (9.1)	- (A)
	PM	1.1 (8.9)	- (A)	0.8 (9.2)	- (A)	0.8 (9.2)	- (A)

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 1, 11 and 17). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.

Note: Unacceptable operations (LOS deficiency and/or signal warrants met) shown in bold text.

The following Caltrans intersection operates below the LOS C threshold:

- State Route 46 E/Union Road (#3): the addition of traffic from either project would increase unacceptable delay on the side street approach during the PM peak hour. Restricting the northbound lefts at the intersection would improve operations to LOS C under either project scenario and reduce the conflict points at the intersection. Currently 5 and 9 vehicles make this turn in the AM and PM peak hour, respectively. Restricting westbound left turns is not required or recommended and could impact operations at SR 46 E/Golden Hill Road. A Project Study Report (PSR) has been prepared for this area which will ultimately construct an overcrossing and restrict left turns on SR 46 E. This improvement is consistent with the City's Circulation Element; however, the improvements are in the Caltrans right-of-way and subject to Caltrans review and approval.

  Recommendation: Restrict northbound left turns.

The following stop-controlled City intersections operate below LOS D:

- Golden Hill Road/Union Road (#6): the intersection currently operates at LOS F during the AM and PM peak hours and meets signal warrants. A single-lane roundabout would improve operations to LOS C and is consistent with the City's Circulation Element. This project is currently in design.

  Recommendation: Install single-lane roundabout.

- Creston Road/Stoney Creek Road (#14): the addition of traffic from either project would cause the intersection to operate at LOS F during the AM peak hour. However, the intersection would not meet signal warrants.

  Recommendation: None. Signal warrant not met.

2. Queues

Table 11 summarizes the vehicular queuing under Existing and Existing Plus Project conditions.

Table 11: Existing and Existing Plus Project Queues

Existing and Existing Plus Project Queues						
				95th Percentile Queues (ft)[1]		
Intersection	Movement	Storage Length (ft)	Peak Hour	Existing	Existing + 1293	Existing + 1293 + School
1. SR 46E/Buena Vista Dr	EBL[2]	345	AM	248	258	261
			PM	197	204	204
2. SR 46E/Golden Hill Rd	NBL	160	AM	142	**164**	**170**
			PM	125	142	143
	SBL	140	AM	63	64	65
			PM	108	114	114
	EBL[2]	225	AM	127	129	130
			PM	108	113	114
	WBL[2]	125	AM	29	29	29
			PM	39	41	41
3. SR 46E/Union Rd	WBL[2]	195	AM	55	58	58
			PM	60	65	65
4. SR 46E/Airport Rd	EBL[2]	580	AM	135	143	145
			PM	35	38	38
5. SR 46E/Mill Rd	WBL[2]	305	AM	0	0	0
			PM	0	0	0
6. Golden Hill Rd/Union Rd	NBR	190	AM	103	130	135
			PM	153	183	183
	WBL	250	AM	235	**260**	**278**
			PM	203	**263**	**265**
8. 13th St/Riverside Ave	WBL	125	AM	**332**	**333**	**333**
			PM	**266**	**266**	**266**
	WBT	295	AM	268	**299**	**307**
			PM	**342**	**366**	**369**
9. 13th St/Paso Robles St	NBL	130	AM	**200**	**200**	**200**
			PM	**221**	**221**	**221**
	NBR	110	AM	42	45	48
			PM	**268**	**274**	**274**
	EBL	120	AM	85	85	85
			PM	107	107	107
	EBT	295	AM	227	236	243
			PM	**381**	**420**	**421**
10. River Rd/Creston Rd	NBL	140	AM	**182**	**201**	**204**
			PM	134	**145**	**147**
11. Creston Rd/Golden Hill Rd	EBL	125	AM	103	103	103
			PM	86	88	88
12. Creston Rd/Niblick Rd	NBL	230	AM	#214	**#268**	**#279**
			PM	152	#182	#185
	SBL	245	AM	156	#238	**#304**
			PM	141	**#377**	**#391**
	EBL	150	AM	124	124	124
			PM	**#196**	**#196**	**#196**
	WBL	170	AM	43	65	70
			PM	90	101	103
13. Creston Rd/Scott St	SBL	60	AM	5	5	8
			PM	8	8	10
18. 1st St-Niblick Rd/Spring St	NBL	165	AM	122	122	122
			PM	148	149	149
	NBR	290	AM	48	59	69
			PM	213	290	**294**
	SBL	305	AM	187	196	204
			PM	291	**318**	**319**
19. Niblick Rd/South River Rd	NBL	150	AM	**264**	**285**	**289**
			PM	**177**	**189**	**191**
	SBL	110	AM	**#315**	**#344**	**#371**
			PM	**172**	**#233**	**#243**
	EBL	140	AM	73	73	73
			PM	139	139	139
	WBL	80	AM	**126**	**#159**	**#177**
			PM	**132**	**151**	**154**
20. Sherwood Rd/Commerce Way	WBL	75	AM	7	12	13
			PM	15	18	20
24. Airport Rd/Meadowlark Rd	SBL	50	AM	0	0	0
			PM	0	0	0

1. Queue length that would not be exceeded 95 percent of the time.
2. Deceleration length of 530 feet has been subtracted from the storage length per the HDM for 60 mph design speed.
indicates that 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.

The following queue deficiencies at City intersections are noted:

- Golden Hill Road/Union Road (#6): the westbound left turn queue length exceeds storage during both peak hours with the addition of traffic from either project. A single-lane roundabout is being designed for this intersection consistent with the City's Circulation Element.

  Recommendation: Install a single-lane roundabout.

- 13th Street/Riverside Avenue (#8): the westbound left turn and through queue lengths would further exceed storage length during both peak hours with the addition of traffic from either project. The addition of project traffic lengthens queues by one vehicle or less, an insignificant amount. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing should be reviewed, coordinated, and optimized. With retiming and overlaps, the reported queues would improve to no project conditions. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize corridor operations. Add westbound right and northbound right turn overlap phases.

- 13th Street/Paso Robles Street (#9): the northbound left and right turn and eastbound through queue lengths would further exceed storage length during at least one peak hour with the addition of traffic from either project. The addition of project traffic lengthens queues by two vehicles or fewer. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing should be reviewed, coordinated, and optimized. If parking is removed on the east side of Paso Robles Street north of 12th Street, the northbound right turn lane can be extended. With retiming, the reported queues would improve to no project conditions. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize corridor operations.

- River Road/Creston Road (#10): the northbound left turn queue length would further exceed storage length during at least one peak hour with the addition of traffic from either project. Additional storage is available in the striped median.

  Recommendation: None. Additional storage is available in the striped median.

- Creston Road/Niblick Road (#12): the north-, south-, and eastbound left turn queue lengths will exceed storage length during at least one peak hour with the addition of traffic from either project. With the addition of traffic from either project, the southbound left turn queue cannot be accommodated in the available storage. The City's Circulation Element includes the addition of a second southbound left turn lane and a southbound and eastbound right turn lane, allowing for two through lanes. The improvements to the southbound movements are needed with the addition of traffic from either project for the left turn queues to be accommodated in the available two-way left turn lane and bay taper storage.

  Recommendation: Add additional southbound left turn lane and right turn lane.

- 1st Street-Niblick Road/Spring Street (#18): the northbound right turn queue length would exceed storage length during the PM peak hour due to the addition of traffic from the plus

school project, while the southbound left turn queue length would exceed storage length during the PM peak hour due to the addition of traffic from either project.

Recommendation: None. Additional storage is available in both bay tapers.

- Niblick Road/South River Road (#19): the north-, south-, and westbound left turn queue lengths would further exceed storage length during both peak hours with the addition of traffic from either project. No mitigation has been identified to return queues to no project levels. The City's Circulation Element includes widening at this intersection and corridor improvements. The intersection would benefit from additional westbound left turn lane storage, additional right turn lanes, and right turn overlap phasing.

  Recommendation: Review, coordinate, and optimize corridor operations including Niblick Road complete streets corridor plan improvements.

Summary of Intersection Mitigations

Table 12 summarizes the required mitigation measures under either project.

Table 12: Existing Conditions Mitigations

Existing Conditions Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
3. SR 46 E/Union Rd[3]	LOS	Prohibit NB lefts	X	X	X	Yes	Caltrans
6. Golden Hill Rd/Union Rd	LOS, Queue	Install single lane roundabout	X	X	X	Yes	City
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
12. Creston Rd/Niblick Rd	Queue	Add SBL & SBR	-	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project.
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

3. Roadway Segment Operations

Table 13 shows the Existing and Existing Plus Project capacity utilization and LOS for the roadway study segments.

Table 13: Existing and Existing Plus Project Roadway Segment Operations

Existing and Existing Plus Project Roadway Segment Operations													
					Existing			Existing + 1293			Existing + 1293 + School		
Street	ID	Segment	Facility Type	Lanes	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization
Union Road	1	Priska Drive to Kit Fox Lane	Arterial	2	1,570	C	9%	1,570	C	9%	1,570	C	9%
Creston Road	2	East of Ferro Lane	Arterial	2*	16,049	D	74%	16,859	D	78%	16,925	D	78%
	3	East of Golden Hill Road	Arterial	4	13,675	A	37%	16,720	A	45%	16,964	A	45%
	4	South of Niblick Road	Arterial	4	14,856	A	40%	15,868	A	42%	15,952	A	43%
	5	North of Meadowlark Road	Arterial	4	6,008	A	16%	6,921	A	19%	6,996	A	19%
Golden Hill Road	6	South of Union Road	Arterial	3	12,676	C	58%	14,303	D	66%	14,434	D	67%
	7	North of Union Road	Arterial	3	9,805	C	45%	11,081	C	51%	11,184	C	52%
Niblick Road	8	East of Spring Street	Arterial	4	29,676	D	79%	32,907	D	88%	33,169	D	89%
	9	East of Quarterhorse	Arterial	4	20,115	A	54%	24,279	B	65%	24,616	B	66%
Sherwood Road	10	East of Creston Road	Arterial	4	9,659	A	26%	17,421	A	47%	18,038	A	48%
Linne Road	11	Poppy Lane to Hanson Road	Arterial	2	1,311	C	7%	2,449	C	14%	2,543	C	14%

* Note that an asterisk (*) indicates the prescence of a raised median or two-way left-turn lane on a two-lane arterial.
Source: City of Paso Robles General Plan Circulation Element, 2011; CCTC, 2019.

With the addition of traffic from either project, all City segments would have a capacity utilization below 90% and the County segment would operate at LOS C.

4. Freeway Segment Operations

Table 14 shows the Existing and Existing Plus Project peak hour volumes at the freeway mainline and ramp locations and **Table 15** shows the LOS, with calculation sheets in **Appendix C**.

Table 14: US 101 Existing and Existing Plus Project Peak Hour Volumes

US 101 Existing and Existing Plus Project Peak Hour Volumes					
Direction	Segment ID	Location		Existing	Existing + 1293	Existing + 1293 + School
US 101 NB	1	SR 46W Off Ramp		146 (114)	146 (114)	146 (114)
	2	SR 46W On Ramp		427 (755)	436 (785)	443 (786)
	3	Mainline North of SR 46W		2221 (3281)	2264 (3420)	2298 (3428)
	4	Spring St. Off Ramp		756 (1337)	799 (1476)	833 (1484)
	5	Paso Robles St. Off Ramp		323 (561)	323 (561)	323 (561)
	6	Paso Robles St. On Ramp		394 (326)	407 (335)	410 (336)
	7	Mainline South of SR 46E		1536 (1709)	1549 (1718)	1552 (1719)
	8	SR 46E Off Ramp		890 (947)	890 (947)	890 (947)
	9	SR 46E On Ramp		260 (249)	280 (262)	284 (263)
	10	Mainline North of SR 46E		906 (1011)	939 (1033)	946 (1035)
US 101 SB	11	Mainline North of SR 46E		850 (1361)	865 (1411)	878 (1414)
	12	SR 46E Off Ramp		248 (327)	259 (363)	268 (365)
	13	SR 46E to Riverside/17th St. Weave	On	892 (992)	892 (992)	892 (992)
	14		Off	218 (303)	218 (303)	218 (303)
	15	Mainline South of SR 46E		1276 (1723)	1280 (1737)	1284 (1738)
	16	Riverside/17th St. On Ramp		298 (205)	298 (205)	298 (205)
	17	Riverside/Pine St. Off Ramp		93 (126)	97 (140)	101 (141)
	18	Spring St. On Ramp		1190 (894)	1315 (979)	1345 (987)
	19	Mainline North of SR 46W		3020 (3046)	3145 (3131)	3175 (3139)
	20	SR 46W Off Ramp		510 (523)	536 (541)	542 (543)
	21	SR 46W On Ramp		92 (146)	92 (146)	92 (146)

AM (PM) Peak Hour Volumes

Table 15: Existing and Existing Plus Project Freeway Operations

Existing and Existing Plus Project Freeway Operations									
				Existing		Ex + 1293		Ex + 1293 + School	
Direction	Location	Segment Type	Peak Hour	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
US 101 NB	SR 46W Off Ramp	Diverge	AM	22.2	C	22.5	C	22.8	C
			PM	26.2	C	27.2	C	27.3	C
	SR 46W On Ramp	Merge	AM	23.8	C	24.2	C	24.5	C
			PM	**30.4**	**D**	**31.5**	**D**	**31.6**	**D**
	North of SR 46W	Mainline	AM	19.9	C	20.3	C	20.6	C
			PM	**28.0**	**D**	**29.8**	**D**	**30.0**	**D**
	Spring St Off Ramp	Diverge	AM	27.1	C	27.6	C	28.0	C
			PM	**33.6**	**D**	**34.9**	**D**	**35.0**	**D**
	Paso Robles St Off Ramp	Diverge	AM	16.9	B	16.9	B	16.9	B
			PM	19.6	B	19.6	B	19.6	B
	Paso Robles St On Ramp	Merge	AM	17.7	B	17.9	B	17.9	B
			PM	17.0	B	17.1	B	17.1	B
	South of SR 46E	Mainline	AM	13.6	B	13.7	B	13.8	B
			PM	13.4	B	13.5	B	13.5	B
	SR 46E Off Ramp	Diverge	AM	18.1	B	18.2	B	18.2	B
			PM	17.8	B	17.9	B	17.9	B
	SR 46E On Ramp	Merge	AM	13.5	B	13.9	B	14.0	B
			PM	13.1	B	13.3	B	13.4	B
	North of SR 46E	Mainline	AM	10.1	A	10.5	A	10.6	A
			PM	9.7	A	9.9	A	10.0	A
US 101 SB	North of SR 46E	Mainline	AM	8.1	A	8.3	A	8.4	A
			PM	13.4	B	13.9	B	13.9	B
	SR 46E Off Ramp	Diverge	AM	12.2	B	12.4	B	12.5	B
			PM	18.3	B	18.8	B	18.9	B
	SR 46E to Riverside/17th St[2]	Weave	AM	-	A	-	A	-	A
			PM	-	B	-	B	-	B
	South of SR 46E	Mainline	AM	11.1	B	11.1	B	11.2	B
			PM	14.8	B	15.0	B	15.0	B
	Riverside/17th St On Ramp	Merge	AM	17.6	B	17.6	B	17.7	B
			PM	20.9	C	21.1	C	21.1	C
	Riverside/Pine St Off Ramp	Diverge	AM	18.3	B	18.3	B	18.3	B
			PM	21.7	C	21.8	C	21.8	C
	Spring St On Ramp	Merge	AM	23.6	C	24.6	C	24.9	C
			PM	23.9	C	24.6	C	24.7	C
	North of SR 46W	Mainline	AM	**28.5**	**D**	**30.4**	**D**	**30.9**	**D**
			PM	**28.6**	**D**	**29.8**	**D**	**29.9**	**D**
	SR 46W Off Ramp	Diverge	AM	**32.5**	**D**	**33.8**	**D**	**34.1**	**D**
			PM	**32.6**	**D**	**33.4**	**D**	**33.5**	**D**
	SR 46W On Ramp	Merge	AM	27.1	C	28.0	C	**28.2**	**D**
			PM	27.6	C	**28.2**	**D**	**28.2**	**D**

1. HCM 6 density (passenger cars per mile per lane).
2. The Leisch method used for weave section analysis does not report density.
Note: Unacceptable operations shown in **bold** text.

The addition of traffic from either project would increase the density at the five freeway segments currently operating at unacceptable LOS and would cause a sixth segment to operate unacceptably during at least one peak hour. The addition of project traffic increases density by less than three passenger cars per mile per lane at the unacceptable locations.

Recommendation: Development of mitigation measures and recommendations will require Caltrans coordination. The freeway facility operations and recommendations are discussed in detail under Cumulative conditions.

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 project designs fail to meet appropriate standards, fail to provide adequate truck access, or would result in hazardous conditions.

Roadways within the development shall be designed consistent with the City's Circulation Element Policies and Standards and Specifications. Any improvements outside the City shall be consistent with San Luis Obispo County Public Improvement Standards. The circulation plan is shown on the land use and phasing plans in **Figures 2a and 2b**.

Project Driveways/Access Points

The South Chandler Ranch site is located northeast of Fontana Road and Linne Road. The Olsen Ranch site is bounded by Poppy Lane, Linne Road, Hanson Road, and Meadowlark Road. The following summarizes the access points on these roadways:

- *Airport Road Extension*: The project will extend Airport Road from Linne Road north to the project boundary. Two new four-leg intersections to the South Chandler Ranch site are proposed. A single lane roundabout is proposed at the new Airport Road/Sherwood Road intersection and the northern intersection of Airport Road/Linne Road will become a t-intersection. Additional access points to the Olsen Ranch site are proposed at Parkview Lane and Scott Street east of Airport Road.
- *Fontana Road*: Two new t-intersections accessing the South Chandler site are proposed.
- *Hanson Road*: Three new intersections are proposed for the Olsen Ranch site. Hanson Road is an existing unpaved road that will be upgraded by the project between Linne Road and Meadowlark Road.
- *Linne Road*: Two new intersections are proposed for the South Chandler site as well as the Olsen Ranch site. The intersection(s) with Airport Road will be modified and a new t-intersection at Linne Road (west)/Airport Road Extension will be created. A single lane roundabout is proposed at the Linne Road/Sherwood Road intersection with access to the Olsen Ranch site. An additional t-intersection is also proposed on Linne Road with access to the Olsen Ranch site.
- *Meadowlark Road:* One new t-intersection is proposed.
- *Parkview Lane:* Access to the Olsen Ranch site is proposed on Parkview Lane east of Airport Road.
- *Scott Street:* Access to the Olsen Ranch site is proposed on Scott Street east of Airport Road.
- *Niblick Road/Sherwood Road Extension:* The project will extend Sherwood Road from Fontana Road southeast to Linne Road with a connection to Meadowlark Road through the Olsen Ranch site. A portion of this extension is the existing Aaroe Road which will be replaced. Two new four-leg intersections to the South Chandler Ranch site are proposed. A single lane roundabout is proposed at the new Airport Road/Sherwood Road and Linne Road/Sherwood Road intersections and the northern intersection of Airport Road/Linne Road will become a t-intersection.

On-Site Circulation

In addition to the Airport Road and Niblick/Sherwood Road extensions, the proposed project will construct a network of internal streets. All proposed streets are two-lane except for the Airport Road

extension which will be four-lanes with a raised median and left turn lane. A raised median and left turn lane is also proposed on the Niblick Road/Sherwood Road extension and on Scott Street adjacent to the recreational area.

Pedestrian and bicycle facilities are proposed throughout the project. Class I paths provide a separate right-of-way for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Class II bike lanes typically provide for one-way bicycle travel adjacent to the motor vehicle lane. The following pedestrian and bicycle facilities are proposed in the Specific Plan:

- *Airport Road Extension*: Class I and II bikeways are proposed on Airport Road within the project limits. There are existing bike lanes on Airport Road from the southern project limits to the southern terminus of Airport Road at Meadowlark Road. A detached sidewalk is also proposed on the opposite side of the road as the Class I path.
- *Hanson Road*: Class I and II bikeways are proposed on Hanson Road within the project limits from Linne Road to Meadowlark Road. No additional sidewalks are proposed.
- *Fontana Road*: There are no existing or proposed bikeways. A sidewalk is proposed along the property frontage between Niblick Road/Sherwood Road and Linne Road.
- *Linne Road*: Class I and II bikeways are proposed on Linne Road from the Niblick Road/Sherwood Road extension to the eastern project limits at Hanson Road. No sidewalk is proposed on this section. A sidewalk is proposed along the property frontage on Linne Road between Fontana Road and Airport Road.
- *Meadowlark Road:* Class I and II bikeways are proposed on Meadowlark Road from the western project limits to the eastern project limits at Hanson Road. No additional sidewalks are proposed.
- *Parkview Lane:* The Specific Plan proposes a 10-foot paved pedestrian and bike trail which meets the City's definition of a Class I bikeway per the Master Plan. In addition, the existing Turtle Creek Park Trail located west of Airport Road near Parkview Lane is also a 10-foot paved trail. Sidewalks are proposed.
- *Scott Street:* A shared lane for vehicular parking and a bike lane is proposed with detached sidewalks on both sides.
- *Niblick Road/Sherwood Road Extension:* Class I and II bikeways are proposed on the extension within the project limits from Fontana Road to Meadowlark Road. A detached sidewalk is also proposed on the opposite side of the road as the Class I path.

In addition, a series of 10 -foot wide pedestrian and bike trails are proposed throughout the project. Detached sidewalks are proposed on all local roads except alleys. It should be noted that the April 2019 Circulation Plan is not consistent with the May 2019 Wallace Group road sections. The road sections included additional bikeways not shown on the Circulation Plan.

In general, the Specific Plan is consistent with the City of Paso Robles Bicycle and Pedestrian Master Plan with the exception of Scott Street. There are existing Class II bike lanes on Scott Street west of Airport Road and the Master Plan proposes bike lanes extending east to Hanson Road. The Specific Plan proposes an eight-foot shared parking and bike lane on Scott Street which does not meet City Standards and is not wide enough to accommodate both uses.

It is recommended the project provide 13 feet where parking and a bike lane are desired, consistent with the City's Standard Construction Drawings, on Scott Street and other roadways identified in the plan.

It is also recommended that 11-foot travel lanes be provided on all arterial roadways consistent with the City's Standard Construction Drawings. Airport Road, Linne Road, Niblick Road, and Sherwood Road are designated as arterials in the City's Circulation Element. The Standard Construction Drawings do not specify cross-sections for collectors.

Near Term Conditions

Near Term conditions reflect the development of approved and pending projects in the study area.

METHODOLOGY

A list of approved, pending, and reasonably foreseeable projects was obtained from City staff. The following projects were assumed to be in place under Near Term conditions:

- Beechwood Specific Plan (676 SF units, 235 MF units, 47,000 s.f. commercial)
- Dallons Drive Homewood Suites (105 rooms)
- Black Oak Lodge Hotel (96 rooms, 2717 Black Oak Drive)
- Golden Hill Residential Care Assisted Living Facility (125 beds converted to equivalent MF units, Golden Hill Road south of Union Road)
- Furlotti Annexation/Gateway Project, NW quadrant of SR 46W/US 101 interchange (425 rooms in three hotels, 97 residential units, 73,700 s.f. commercial uses)
- Justin Vineyards Wine Storage Warehouse (54,000 s.f. warehouse on Wisteria Lane)
- Vintner's Vault wine processing/storage (56,000 s.f. warehouse on Germaine Way)
- Spring Street Village (42 MF units, 3328 Spring Street)
- Hotel Cheval Phase 2 (20 rooms, 1020 Pine Street)
- Hotel Alexa (38 rooms, Alexa Court)
- Oak Park Residential (75 MF units, 29th/Park Street)
- Truck Sales/Installation (4,950 s.f., 3527 Combine Street)
- River Oaks The Next Generation (271 SF units, Club House Drive)
- Cabernet Links RV Resort (290 RV spaces, golf course, 5151 Jardine Road)
- Mullahey Dodge expansion (3,000 s.f., Tractor/Golden Hill Road)
- Bejar Industrial (4,981 s.f., Combine Street)
- Gym/Office (4,958 s.f., 3523 Combine Street)
- Mariott Residence Inn (128 rooms, S Vine Street)
- Habitat Vine Street (9 MF units, Vine Street)
- Oaks Assisted Living (101 beds, S River/Serenade)
- Oaks Hotel Expansion (66 rooms, 3002 Riverside Drive)
- Fairfield Inn (119 rooms, 2940 Union Road)
- Sonic Burger Drive-Thru (2,000 s.f., Golden Hills Plaza)
- 301 Creston Tentative Map (4 MF units)
- Paso Robles Public Market (6 MF units, 16,500 s.f. commercial, 1803 Spring Street)
- Bellissimo Restaurant and Apartments (4 MF units, 6,000 s.f. commercial, 4th Street/Spring Street)
- Tidwell office/maintenance (9,960 s.f. office, Dallons Drive)
- Pine Street Hotel (151 rooms, 944 Pine Street)
- Riverside Wine Storage (18,500 s.f. warehouse, 3230 Riverside Avenue)
- Westco Industrial (3,948 s.f. industrial, Combine Street)
- Viborg Industrial (7,200 s.f. industrial, 1621 N River Road)
- Blue Oaks Apartments (142 MF units, 802 Experimental Station Road)

- Oxford Suites Hotel (127 rooms, 4th Street/Pine Street)
- North Vine Apartments (8 MF units, North Vine Street)
- Webb Apartments (10 MF units, 36th Street/Oak Street)
- Cava Robles RV Resort (310 RV sites, 32 cottages, north end of Golden Hill Road)
- 6th Street/Spring Street retail (4,600 s.f.)
- TTM 3098 (9 MF units, Union Road/Golden Hill Road)
- Oak Park Phase 3 Apartments (75 MF units, 3000 Park Street)
- Firestone Warehouse/Cold Block (69,000 s.f. warehouse, Ramada Drive)
- Paso Robles Inn Expansion (23 rooms, 600 12th Street)
- Buttonwillow Product Warehouse (5,000 s.f., 2203 Wisteria Lane)
- Lone Oak Hotel Conversion (37 rooms, 715 24th Street)
- Destino Resort Hotel Phase 1 (73 rooms, 3340 Airport Road)

These projects were added to the base year TDM to develop 2025 Near Term conditions. An ambient annual growth rate of one percent per year was applied to US 101 volumes and a growth rate of two percent per year was applied to SR 46 E to account for regional growth to year 2025.

Figure 8 shows the Near Term weekday peak hour traffic volumes at the study intersections and the Near Term ADT on the study segments.

Under Near Term conditions a PHF of 0.92 was used for the intersection analysis and a PHF of 0.94 was used for the freeway analysis consistent with methodologies in the HCM 6th Edition. However, if the existing PHF exceeded these respective values, the higher PHF was used.

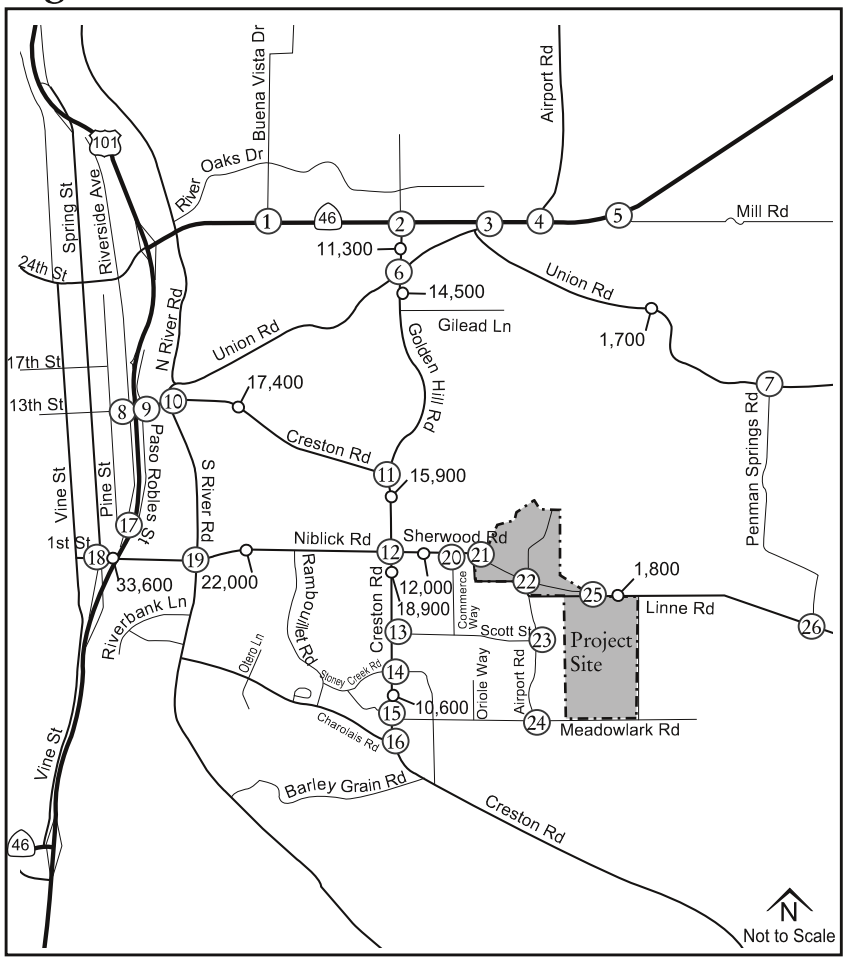
Transportation Network

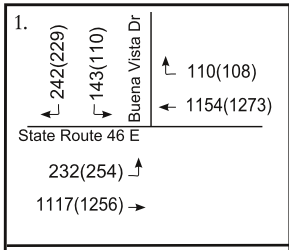
The following roadways improvements were assumed to be in place under Near Term conditions:

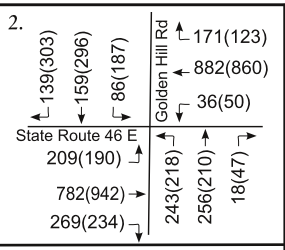
- Golden Hill Road/Union Road (#6): A single-lane roundabout is scheduled to be designed in 2019 and was assumed to be in place under Near Term conditions.
- Beechwood site buildout: Roadways internal to the Beechwood Specific Plan were assumed to be in place under Near Term conditions, including the Airport Road Extension from Meadowlark Road to Creston Road.

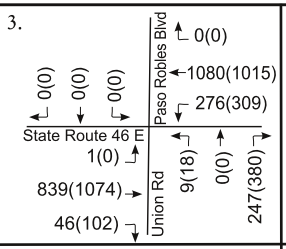
The SR 46 E overcrossing at Union Road was not assumed to be in place under Near Term conditions.

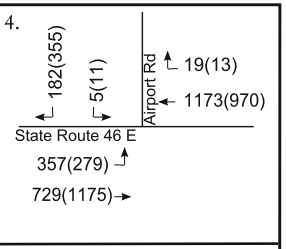
Figure 8: Near Term Traffic Volumes

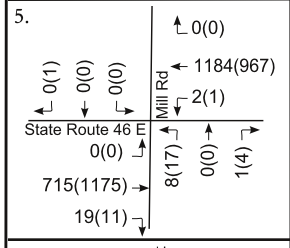


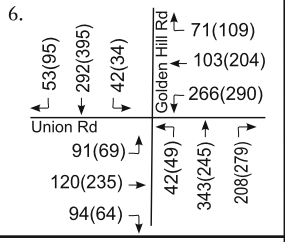
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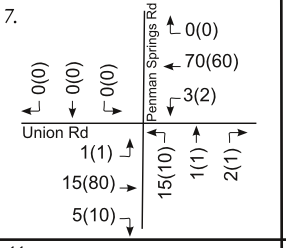
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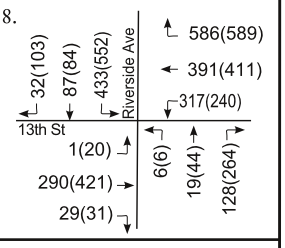
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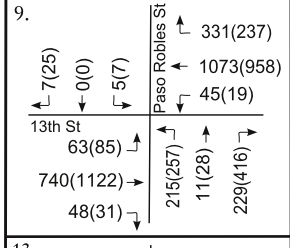
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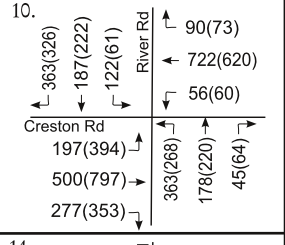
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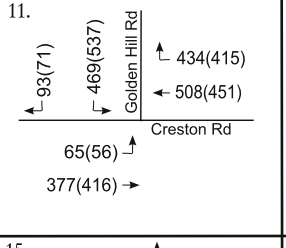
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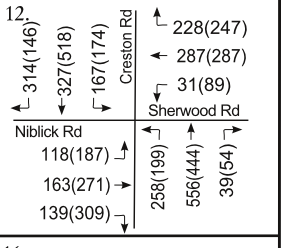
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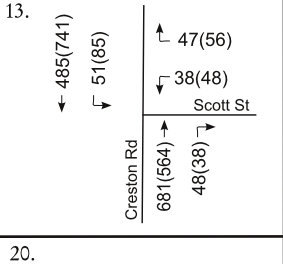
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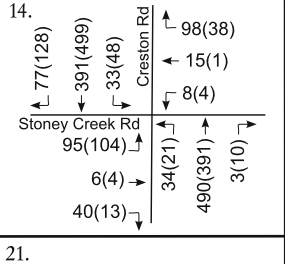
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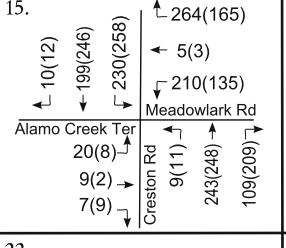
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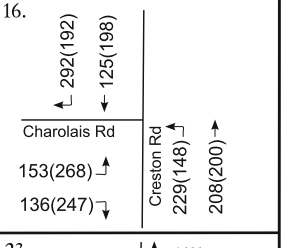
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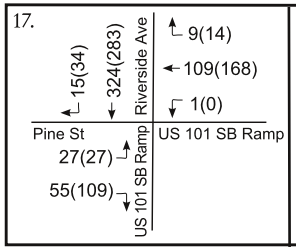
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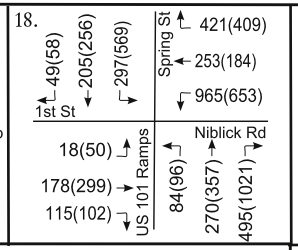
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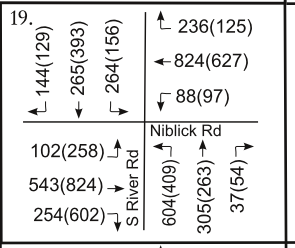
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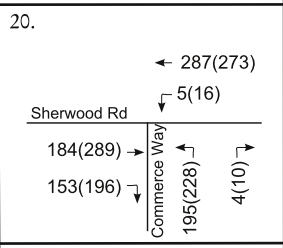
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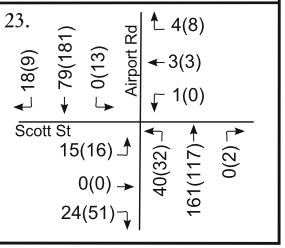
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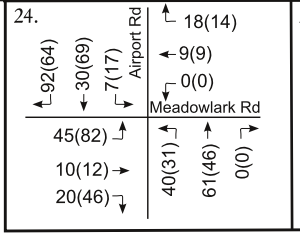
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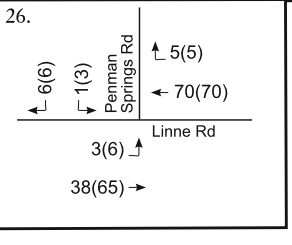
21. Future Intersection

22. Future Intersection

23.


24.


25. Future Intersection

26.


Legend:

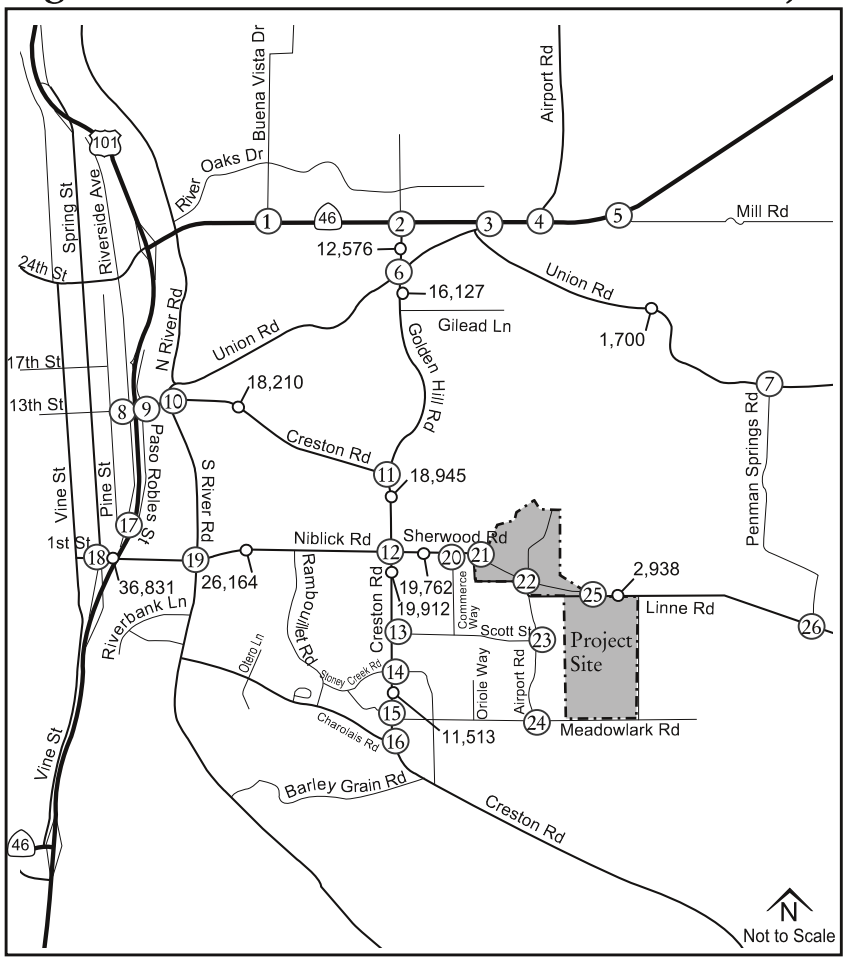
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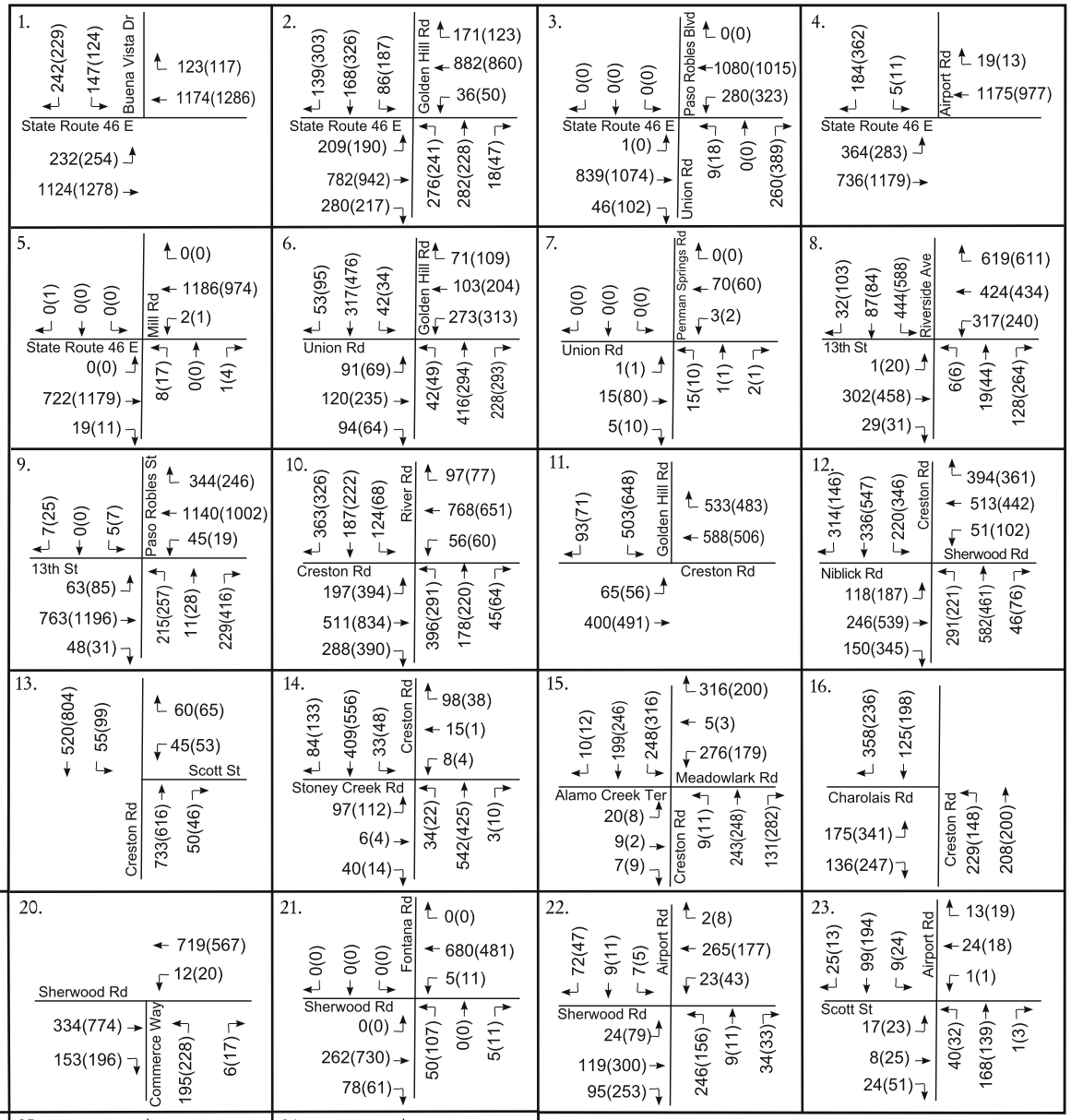
(x) - Study Intersection

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

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Figure 9a: Near Term Plus 1,293-Unit Project Traffic Volumes





Legend:

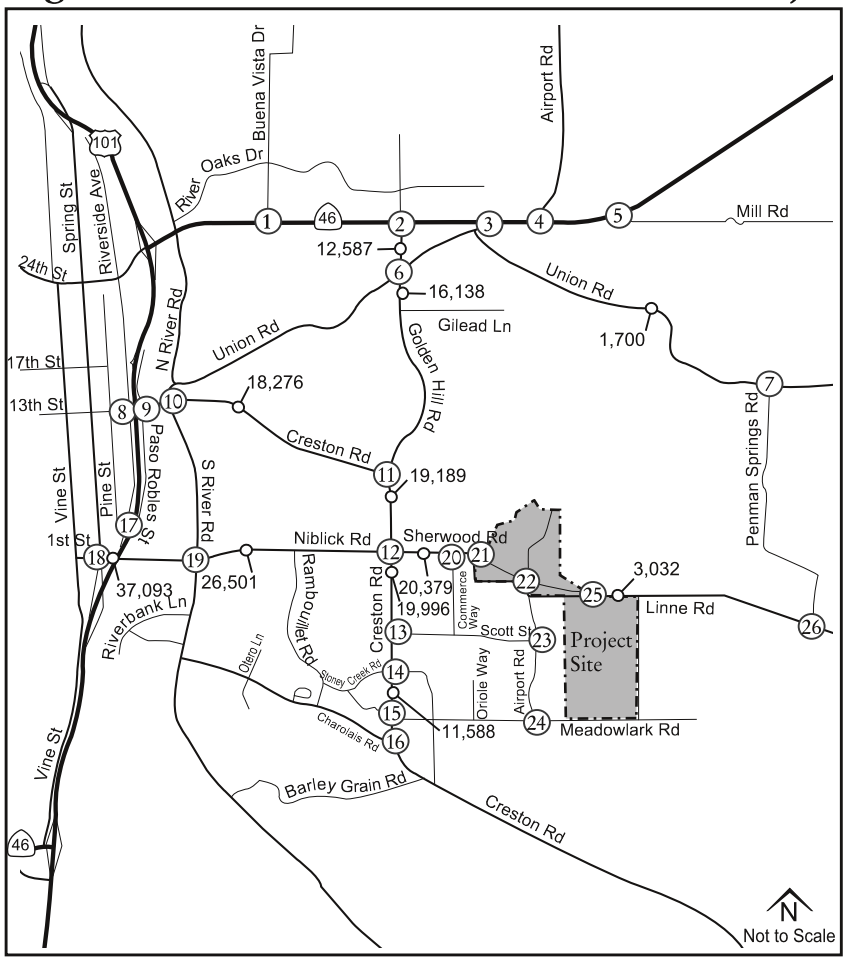
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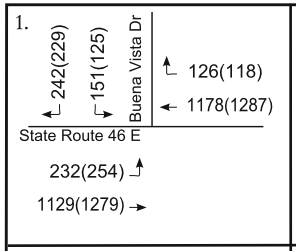
(x) - Study Intersection

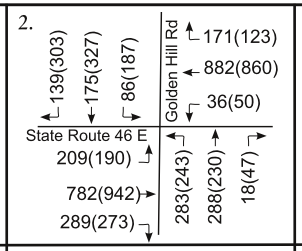
xx(yy) - AM(PM) Peak Hour Traffic Volumes

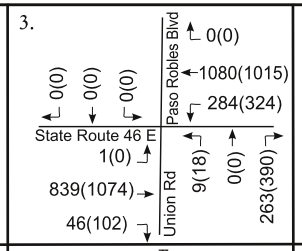
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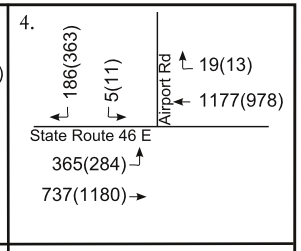
Figure 9b: Near Term Plus 1,293-Unit Project and School Traffic Volumes

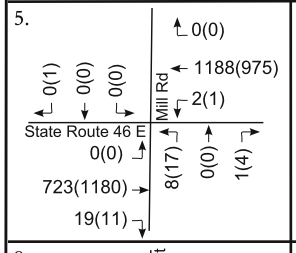


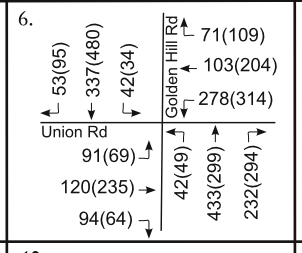


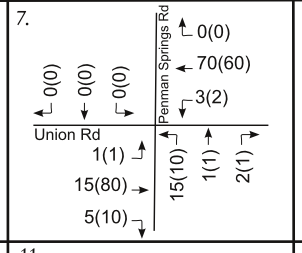


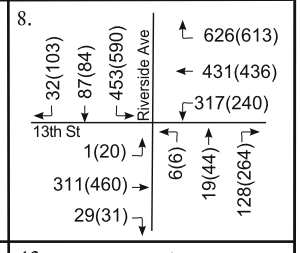


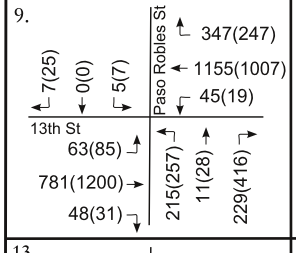


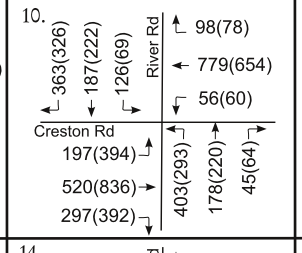


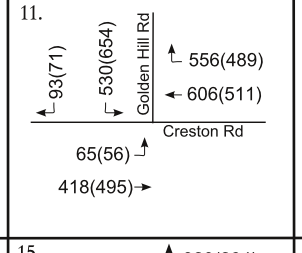


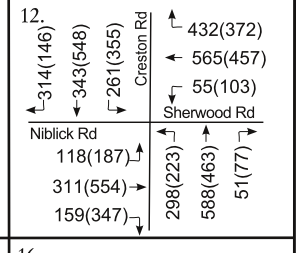


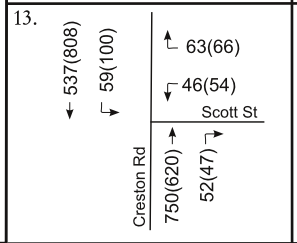


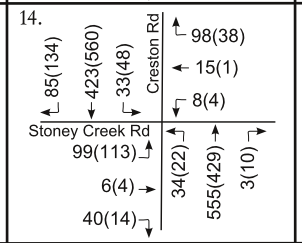


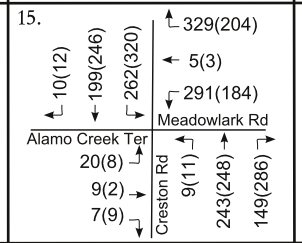


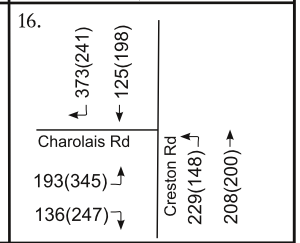


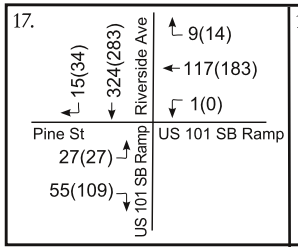


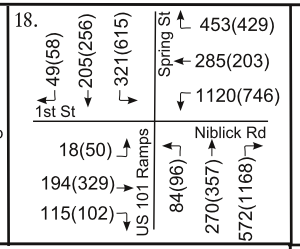


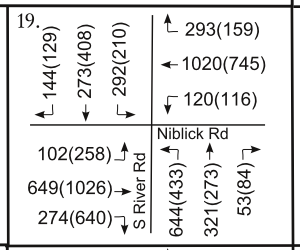


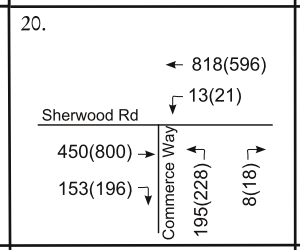


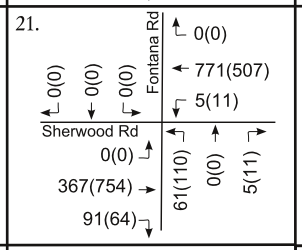


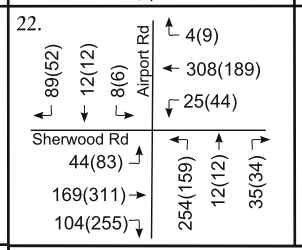


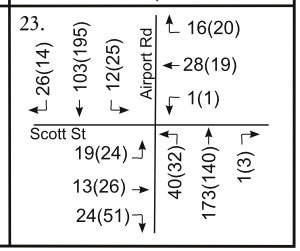


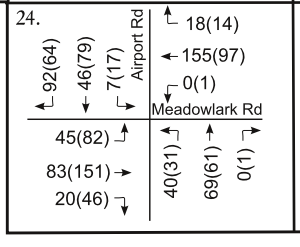


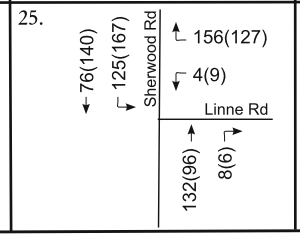


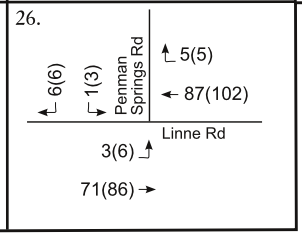












Legend:

o– - Average Daily Traffic Volumes

(x) - Study Intersection

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

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NEAR TERM PLUS PROJECT IMPACT ANALYSIS

1. Intersection Operations

Figures 9a and 9b show the traffic volumes for the study intersections during the weekday peak hours and ADT on the study segments under Near Term Plus Project conditions.

Table 16 summarizes the intersection operating conditions under Near Term and Near Term Plus Project conditions with detailed calculation sheets in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 16: Near Term and Near Term Plus Project Intersection Auto Levels of Service

Near Term and Near Term Plus Project Intersection Auto Levels of Service							
Intersection	Peak Hour	Near Term		NT + 1293		NT + 1293 + School	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1. SR 46E/Buena Vista Dr	AM	18.9	B	19.4	B	19.6	B
	PM	16.6	B	17.2	B	17.3	B
2. SR 46E/Golden Hill Rd	AM	25.4	C	26.4	C	26.8	C
	PM	30.0	C	30.7	C	30.8	C
3. SR 46E/Union Rd	AM	**5.1 (33.4)**	**- (D)**	**5.3 (33.5)**	**- (D)**	**5.5 (34.8)**	**- (D)**
	PM	**16.6 (105.2)**	**- (F)**	**18.4 (115.2)**	**- (F)**	**18.5 (115.5)**	**- (F)**
4. SR 46E/Airport Rd	AM	6.9 (24.6)	- (C)	**7.3 (25.2)**	**- (D)**	**7.4 (25.5)**	**- (D)**
	PM	**6.1 (34.5)**	**- (D)**	**6.4 (36.3)**	**- (E)**	**6.5 (36.6)**	**- (E)**
5. SR 46E/Mill Rd	AM	0.1 (18.7)	- (C)	0.1 (18.8)	- (C)	0.1 (18.8)	- (C)
	PM	**0.3 (26.8)**	**- (D)**	**0.3 (27.0)**	**- (D)**	**0.3 (27.0)**	**- (D)**
6. Golden Hill Rd/Union Rd	AM	13.0	B	15.6	C	16.6	C
	PM	17.6	C	24.6	C	25.1	D
7. Penman Springs Rd/Union Rd	AM	1.7 (9.2)	- (A)	1.7 (9.2)	- (A)	1.7 (9.2)	- (A)
	PM	0.8 (9.6)	- (A)	0.8 (9.6)	- (A)	0.8 (9.6)	- (A)
8. 13th St/Riverside Ave	AM	27.8	C	29.9	C	30.6	C
	PM	47.5	D	51.4	D	51.7	D
9. 13th St/Paso Robles St	AM	14.2	B	14.6	B	14.7	B
	PM	19.6	B	20.8	C	20.8	C
10. River Rd/Creston Rd	AM	21.8	C	22.8	C	23.1	C
	PM	21.0	C	21.7	C	21.8	C
11. Creston Rd/Golden Hill Rd	AM	20.9	C	23.4	C	24.7	C
	PM	18.7	B	22.4	C	22.6	C
12. Creston Rd/Niblick Rd	AM	30.1	C	47.5	D	55.2	E
	PM	29.4	C	50.5	D	53.8	D
13. Creston Rd/Scott St	AM	2.4 (32.1)	- (D)	3.6 (44.9)	- (E)	4.1 (51.5)	- (F)
	PM	4.1 (52.6)	- (F)	**7.4 (97.6)**	**- (F)**	**8.1 (105.9)**	**- (F)**
14. Creston Rd/Stoney Creek Rd	AM	**15.8 (123.1)**	**- (F)**	**21.7 (184.7)**	**- (F)**	**25.2 (>200)**	**- (F)**
	PM	5.9 (52.3)	- (F)	8.5 (80.5)	- (F)	9.0 (85.3)	- (F)
15. Creston Rd/Meadowlark Rd	AM	30.4	D	**61.9**	**F**	**75.5**	**F**
	PM	18.8	C	33.5	D	**35.5**	**E**
16. Creston Rd/Charolais Rd	AM	7.7 (23.1)	- (C)	8.9 (28.4)	- (D)	10.6 (33.9)	- (D)
	PM	10.7 (23.6)	- (C)	**18.4 (40.7)**	**- (E)**	**19.0 (42.1)**	**- (E)**
17. Riverside Ave/Pine St/US 101 SB Ramp	AM	4.7 (12.8)	- (B)	4.8 (12.9)	- (B)	4.9 (13.0)	- (B)
	PM	6.6 (13.6)	- (B)	6.9 (14.0)	- (B)	6.9 (14.0)	- (B)
18. 1st St-Niblick Rd/Spring St	AM	29.1	C	32.4	C	34.2	C
	PM	38.8	D	43.2	D	43.6	D
19. Niblick Rd/South River Rd	AM	37.6	D	49.2	D	53.2	D
	PM	39.4	D	43.6	D	44.2	D
20. Sherwood Rd/Commerce Way	AM	6.9	A	7.3	A	7.4	A
	PM	7.4	A	8.4	A	8.8	A
21. Sherwood Rd/Fontana Rd	AM	Future intersection		0.7 (12.6)	- (B)	0.8 (14.2)	- (B)
	PM			1.9 (21.2)	- (C)	2.0 (22.4)	- (C)
22. Airport Rd/Sherwood Rd	AM	Future intersection		5.8	A	6.7	A
	PM			7.6	A	7.9	A
23. Airport Rd/Scott St	AM	8.4	A	8.7	A	8.9	A
	PM	8.5	A	9.1	A	9.1	A
24. Airport Rd/Meadowlark Rd	AM	8.1 (11.3)	- (B)	6.6 (13.8)	- (B)	6.4 (15.1)	- (C)
	PM	8.1 (12.4)	- (B)	6.9 (16.8)	- (C)	6.9 (17.2)	- (C)
25. Sherwood Rd/Linne Rd	AM	Future intersection		3.9	A	4.2	A
	PM			4.4	A	4.5	A
26. Penman Springs Rd/Linne Rd	AM	0.7 (8.8)	- (A)	0.5 (8.9)	- (A)	0.5 (8.9)	- (A)
	PM	0.8 (9.0)	- (A)	0.6 (9.2)	- (A)	0.6 (9.2)	- (A)

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 1, 11 and 17). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.
Note: Unacceptable operations (LOS deficiency and/or signal warrants met) shown in bold text.

The following Caltrans intersections operate below the LOS C threshold:

- State Route 46 E/Union Road (#3): the addition of traffic from either project would increase unacceptable delay on the side street approach during the PM peak hour. Restricting the northbound lefts at the intersection would improve operations to at least Near Term conditions and reduce conflict points at the intersection. The restriction would impact 9 and 18 vehicles in the AM and PM peak hour, respectively. Restricting westbound left turns is not required or recommended and could impact operations at SR 46 E/Golden Hill Road. A Project Study Report has been prepared for this area which will ultimately construct an overcrossing and restrict left turns on SR 46 E. This improvement is consistent with the City's Circulation Element; however, the improvements are in the Caltrans right-of-way and subject to approval.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents.

- State Route 46 E/Airport Road (#4): the intersection would operate with unacceptable delay under Near Term conditions. Restricting the southbound lefts at the intersection would improve operations and reduce conflict points at the intersection. The restriction would impact 5 and 11 vehicles in the AM and PM peak hour, respectively. These vehicles could U-turn at Union Road. Restricting eastbound left turns is not recommended. Adding a southbound right turn lane would not improve LOS and is not recommended. A Project Study Report has been prepared for this area which will ultimately construct an overcrossing at Union Road and restrict left turns on SR 46 E at Union Road and Airport Road. This improvement is consistent with the City's Circulation Element; however, the improvements are in the Caltrans right-of-way and subject to approval.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents.

- State Route 46 E/Mill Road (#5): the intersection would operate at LOS D in the PM peak hour under Near Term conditions. Restricting the northbound lefts, installing a traffic signal, or implementing grade separation at the intersection would improve operations to at least Near Term conditions.

  Recommendation: None, traffic signal or grade separation not recommended. Secondary access is recommended if left turns are prohibited.

The following stop-controlled City intersections operate below LOS D:

- Creston Road/Scott Street (#13): the intersection operates below LOS D during the PM peak hour and the addition of traffic from either project would cause the intersection to meet signal warrants. The City's Circulation Element includes a traffic signal at this location. The intersection should be reviewed for coordination with the existing traffic signal located approximately 400' south of Scott Street at Cedarwood Drive.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Stoney Creek Road (#14): the intersection would operate below LOS D in the AM and PM peak hours under Near Term conditions with and without the projects. The intersection meets signal warrants during the AM peak hour without the addition of either project. The City's Circulation Element includes a traffic signal at this location. The bulb-out on the northwest corner is not recommended. The existing dedicated left, through, and right southbound turn lanes are desired for signal operations. The eastbound approach should be restriped with a dedicated left-through and right turn lane consistent with the Circulation Element. The northbound left turn lane storage should be maximized.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Meadowlark Road (#15): the addition of traffic from either project would cause the intersection to operate unacceptably during at least one peak hour. The intersection would meet signal warrants with either project. A traffic signal and restriping at this location are consistent with the City's Circulation Element. Storage for the southbound left turn lane should be extended.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Charolais Road (#16): the addition of traffic from either project would cause the intersection to operate at LOS E in the PM peak hour. The intersection would meet signal warrants with either project; however, the intersection operates at LOS C or better with installation of all-way stop control. Where traffic signals are warranted, all-way stop control is an interim measure.

  Recommendation: Recommend installation of all-way stop control with either project.

2. Queues

Table 17 summarizes the vehicular queuing under Near Term and Near Term Plus Project conditions.

Table 17: Near Term and Near Term Plus Project Queues

Near Term and Near Term Plus Project Queues						
				95th Percentile Queues (ft)[1]		
Intersection	Movement	Storage Length (ft)	Peak Hour	Near Term	Near Term + 1293	Near Term + 1293 + School
1. SR 46E/Buena Vista Dr	EBL[2]	345	AM	#340	**#353**	**#359**
			PM	300	312	312
2. SR 46E/Golden Hill Rd	NBL	160	AM	**165**	**189**	**195**
			PM	154	**170**	**171**
	SBL	140	AM	71	72	73
			PM	136	138	138
	EBL[2]	225	AM	146	148	149
			PM	138	139	139
	WBL[2]	125	AM	34	34	35
			PM	47	48	48
3. SR 46E/Union Rd	WBL[2]	195	AM	60	60	63
			PM	93	103	103
4. SR 46E/Airport Rd	EBL[2]	580	AM	183	193	195
			PM	65	68	68
5. SR 46E/Mill Rd	WBL[2]	305	AM	0	0	0
			PM	0	0	0
6. Golden Hill Rd/Union Rd	Intersection is a roundabout under Near Term Conditions					
8. 13th St/Riverside Ave	WBL	125	AM	**328**	**328**	**332**
			PM	**268**	**268**	**268**
	WBT	295	AM	**316**	**350**	**356**
			PM	**372**	**398**	**401**
9. 13th St/Paso Robles St	NBL	130	AM	**216**	**216**	**216**
			PM	**233**	**233**	**233**
	NBR	110	AM	57	57	57
			PM	**285**	**290**	**290**
	EBL	120	AM	88	88	88
			PM	109	109	109
	EBT	295	AM	251	260	267
			PM	**435**	**479**	**482**
10. River Rd/Creston Rd	NBL	140	AM	**203**	**221**	**225**
			PM	**156**	**169**	**#170**
11. Creston Rd/Golden Hill Rd	EBL	125	AM	103	103	103
			PM	88	88	88
12. Creston Rd/Niblick Rd	NBL	230	AM	**#297**	**#347**	**#358**
			PM	#219	**#252**	**#255**
	SBL	245	AM	165	**#250**	**#313**
			PM	165	**#415**	**#428**
	EBL	150	AM	124	124	124
			PM	**#200**	**#200**	**#200**
	WBL	170	AM	48	68	73
			PM	100	112	113
13. Creston Rd/Scott St	SBL	60	AM	5	5	8
			PM	8	10	10
18. 1st St-Niblick Rd/Spring St	NBL	165	AM	#158	#158	#158
			PM	154	154	154
	NBR	290	AM	57	69	80
			PM	286	**398**	**#413**
	SBL	305	AM	203	212	219
			PM	**335**	**363**	**364**
19. Niblick Rd/South River Rd	NBL	150	AM	**#359**	**#392**	**#401**
			PM	**221**	**#244**	**#246**
	SBL	110	AM	**#329**	**#358**	**#385**
			PM	**191**	**#271**	**#277**
	EBL	140	AM	74	74	74
			PM	**148**	**148**	**148**
	WBL	80	AM	**126**	**#157**	**#174**
			PM	**132**	**151**	**154**
20. Sherwood Rd/Commerce Way	WBL	75	AM	7	12	13
			PM	14	19	20
24. Airport Rd/Meadowlark Rd	SBL	50	AM	0	0	0
			PM	3	3	3

1. Queue length that would not be exceeded 95 percent of the time.
2. Deceleration length of 530 feet has been subtracted from the storage length per the HDM for 60 mph design speed.
indicates that 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.

The following queue deficiencies at City intersections are noted:

- 13th Street/Riverside Avenue (#8): the westbound left turn and through movement queue lengths would further exceed storage length during both peak hours with the addition of traffic from either project. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing should be reviewed, coordinated, and optimized. With retiming and overlaps, the reported queues would improve to no project levels. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize corridor operations. Add westbound right and northbound right turn overlap phases.

- 13th Street/Paso Robles Street (#9): the northbound left and right turn and eastbound through queue lengths would further exceed storage length during at least one peak hour with the addition of traffic from either project. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing will need to be reviewed, coordinated, and optimized. If parking is removed on the east side of Paso Robles Street north of 12th Street the northbound right turn lane could be extended. With retiming, the reported queues would improve to no project levels. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize corridor operations.

- River Road/Creston Road (#10): the northbound left turn queue length would further exceed storage length during both peak hours with the addition of traffic from either project. Additional storage is available in the striped median.

  Recommendation: None. Additional storage is available in the striped median.

- Creston Road/Niblick Road (#12): the northbound, southbound, and eastbound left turn queue lengths exceed storage in at least one peak hour under Near Term conditions. With the addition of traffic from either project, the southbound left turn queue cannot be accommodated in the available storage. The City's Circulation Element includes the addition of a second southbound left turn lane and a southbound and eastbound right turn lane, allowing for two through lanes. With these improvements, the left turn queues could be accommodated in available two-way left turn lane and bay taper storage.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for improvements at this intersection.

- 1st Street-Niblick Road/Spring Street (#18): the southbound left turn and northbound right turn queue length would exceed the storage length during the PM peak hour under Near Term conditions. No feasible mitigation has been identified to return queues to no project levels. The City's Circulation Element includes corridor improvements on Niblick Road and Spring Street.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for corridor improvements.

- Niblick Road/South River Road (#19): all left turn queue lengths would further exceed the storage length during one or more peak hours with the addition of traffic from either project.

No feasible mitigation has been identified to return queues to no project levels. The City's Circulation Element includes widening at this intersection and corridor improvements. The intersection would benefit from additional westbound left turn lane storage, additional right turn lanes, and right turn overlap phasing.

Recommendation: Project makes a fair share contribution through the City's impact fee program for improvements at this intersection.

Summary of Intersection Mitigations

Table 18 summarizes the required mitigation measures under either project.

Table 18: Near Term Mitigations

Near Term Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
3. SR 46 E/Union Rd[3]	LOS	Prohibit NB lefts, RTP improvements	X	X	X	Yes	Caltrans
4. SR 46 E/Airport Rd[3]	LOS	RTP improvements	X	X	X	Yes	Caltrans
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
12. Creston Rd/Niblick Rd	Queue	Add additional SBL, SBR, and EBT	-	X	X	Yes	City
13. Creston Rd/Scott St	LOS	Install traffic signal	-	X	X	Yes	City
14. Creston Rd/Stoney Creek Rd	LOS	Install traffic signal	X	X	X	Yes	City
15. Creston Rd/Meadowlark Rd	LOS	Install traffic signal	-	X	X	Yes	City
16. Creston Rd/Charolais Rd	LOS	Install all-way stop	-	X	X	No	City
18. 1st St-Niblick Rd/Spring St	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project except Creston Rd/Charloais Rd (#16).
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

3. Roadway Segment Operations

Table 19 shows the Near Term and Near Term Plus Project capacity utilization and LOS for the roadway study segments.

Table 19: Near Term and Near Term Plus Project Roadway Segment Operations

Near Term and Near Term Plus Project Roadway Segment Operations													
					Near Term			NT + 1293			NT + 1293 + School		
Street	ID	Segment	Facility Type	Lanes	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization
Union Road	1	Priska Drive to Kit Fox Lane	Arterial	2	1,700	C	10%	1,700	C	10%	1,700	C	10%
Creston Road	2	East of Ferro Lane	Arterial	2*	17,400	D	80%	18,210	D	84%	18,276	D	84%
	3	East of Golden Hill Road	Arterial	4	15,900	A	43%	18,945	A	51%	19,189	A	51%
	4	South of Niblick Road	Arterial	4	18,900	A	51%	19,912	A	53%	19,996	A	53%
	5	North of Meadowlark Road	Arterial	4	10,600	A	28%	11,513	A	31%	11,588	A	31%
Golden Hill Road	6	South of Union Road	Arterial	3	14,500	D	67%	16,127	D	74%	16,258	D	75%
	7	North of Union Road	Arterial	3	11,300	C	52%	12,576	C	58%	12,679	C	58%
Niblick Road	8	East of Spring Street	Arterial	4	33,600	D	90%	36,831	E	98%	37,093	E	99%
	9	East of Quarterhorse	Arterial	4	22,000	A	59%	26,164	C	70%	26,501	C	71%
Sherwood Road	10	East of Creston Road	Arterial	4	12,000	A	32%	19,762	A	53%	20,379	A	54%
Linne Road	11	Poppy Lane to Hanson Road	Arterial	2	1,800	C	10%	2,938	C	17%	3,032	C	17%

* Note that an asterisk (*) indicates the prescence of a raised median or two-way left-turn lane on a two-lane arterial.
Source: City of Paso Robles General Plan Circulation Element, 2011; CCTC, 2019.

The following roadway segment operates above 90% capacity utilization:

- Niblick Road (east of Spring Street): This segment operates at 90% capacity under Near Term conditions. With the addition of traffic from either project, the capacity utilization would increase but remain at or below 100%. The projected capacity utilization of 99% on Niblick Road does not justify the widening of this roadway. Widening the bridge to a six-lane arterial would result in a capacity utilization below 70%, which would reduce vehicle delays, but would also support higher vehicle speeds and would conflict with the City's multimodal goals and desire to maintain its small-town character.

  Recommendation: None. Maximize signal operations along corridor and implement TDM measures.

4. Freeway Segment Operations

Table 20 shows the Near Term and Near Term Plus Project peak hour volumes at the freeway mainline and ramp locations and **Table 21** shows the LOS, with calculation sheets in **Appendix C**.

Table 20: US 101 Near Term and Near Term Plus Project Peak Hour Volumes

US 101 Near Term and Near Term Plus Project Peak Hour Volumes						
Direction	Segment ID	Location		Near Term	Near Term + 1293	Near Term + 1293 + School
US 101 NB	1	SR 46W Off Ramp		250 (232)	250 (232)	250 (232)
	2	SR 46W On Ramp		461 (858)	470 (888)	477 (889)
	3	Mainline North of SR 46W		2495 (3662)	2538 (3801)	2572 (3809)
	4	Spring St. Off Ramp		849 (1474)	892 (1613)	926 (1621)
	5	Paso Robles St. Off Ramp		342 (578)	342 (578)	342 (578)
	6	Paso Robles St. On Ramp		405 (350)	418 (359)	421 (360)
	7	Mainline South of SR 46E		1709 (1960)	1722 (1969)	1725 (1970)
	8	SR 46E Off Ramp		1017 (1140)	1017 (1140)	1017 (1140)
	9	SR 46E On Ramp		287 (273)	307 (286)	311 (287)
	10	Mainline North of SR 46E		979 (1093)	1012 (1115)	1019 (1117)
US 101 SB	11	Mainline North of SR 46E		908 (1457)	923 (1507)	936 (1510)
	12	SR 46E Off Ramp		264 (346)	275 (382)	284 (384)
	13	SR 46E to Riverside/17th St. Weave	On	1104 (1150)	1104 (1150)	1104 (1150)
	14		Off	218 (303)	218 (303)	218 (303)
	15	Mainline South of SR 46E		1530 (1958)	1534 (1972)	1538 (1973)
	16	Riverside/17th St. On Ramp		298 (205)	298 (205)	298 (205)
	17	Riverside/Pine St. Off Ramp		119 (182)	123 (196)	127 (197)
	18	Spring St. On Ramp		1285 (1011)	1410 (1096)	1440 (1104)
	19	Mainline North of SR 46W		3374 (3384)	3499 (3469)	3529 (3477)
	20	SR 46W Off Ramp		640 (643)	666 (661)	672 (663)
	21	SR 46W On Ramp		139 (211)	139 (211)	139 (211)
AM (PM) Peak Hour Volumes						

Table 21: Near Term and Near Term Plus Project Freeway Operations

Near Term and Near Term Plus Project Freeway Operations									
				Near Term		NT + 1293		NT + 1293 + School	
Direction	Location	Segment Type	Peak Hour	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
US 101 NB	SR 46W Off Ramp	Diverge	AM	24.7	C	25.0	C	25.3	C
			PM	**29.8**	**D**	**30.8**	**D**	**30.9**	**D**
	SR 46W On Ramp	Merge	AM	25.4	C	25.8	C	26.1	C
			PM	**33.3**	**D**	**34.5**	**D**	**34.6**	**D**
	North of SR 46W	Mainline	AM	21.6	C	22.0	C	22.4	C
			PM	**33.5**	**D**	**36.0**	**E**	**36.1**	**E**
	Spring St Off Ramp	Diverge	AM	**29.0**	**D**	**29.4**	**D**	**29.8**	**D**
			PM	**37.2**	**E**	**38.5**	**E**	**38.6**	**E**
	Paso Robles St Off Ramp	Diverge	AM	18.1	B	18.1	B	18.1	B
			PM	21.8	C	21.8	C	21.8	C
	Paso Robles St On Ramp	Merge	AM	17.9	B	18.0	B	18.0	B
			PM	19.1	B	19.1	B	19.1	B
	South of SR 46E	Mainline	AM	14.5	B	14.6	B	14.6	B
			PM	15.4	B	15.4	B	15.4	B
	SR 46E Off Ramp	Diverge	AM	19.1	B	19.2	B	19.3	B
			PM	20.1	C	20.2	C	20.2	C
	SR 46E On Ramp	Merge	AM	12.4	B	12.7	B	12.8	B
			PM	13.0	B	13.2	B	13.2	B
	North of SR 46E	Mainline	AM	9.1	A	9.4	A	9.5	A
			PM	9.6	A	9.8	A	9.8	A
US 101 SB	North of SR 46E	Mainline	AM	8.6	A	8.7	A	8.8	A
			PM	14.0	B	14.5	B	14.5	B
	SR 46E Off Ramp	Diverge	AM	12.7	B	12.9	B	13.0	B
			PM	19.0	B	19.5	B	19.6	B
	SR 46E to Riverside/17th St[2]	Weave	AM	-	A	-	A	-	B
			PM	-	B	-	B	-	B
	South of SR 46E	Mainline	AM	13.1	B	13.2	B	13.2	B
			PM	16.5	B	16.6	B	16.6	B
	Riverside/17th St On Ramp	Merge	AM	19.7	B	19.8	B	19.8	B
			PM	22.5	C	22.6	C	22.6	C
	Riverside/Pine St Off Ramp	Diverge	AM	20.6	C	20.6	C	20.7	C
			PM	23.5	C	23.7	C	23.7	C
	Spring St On Ramp	Merge	AM	26.2	C	27.2	C	27.4	C
			PM	26.1	C	26.7	C	26.8	C
	North of SR 46W	Mainline	AM	**33.6**	**D**	**36.0**	**E**	**36.7**	**E**
			PM	**32.7**	**D**	**34.2**	**D**	**34.4**	**D**
	SR 46W Off Ramp	Diverge	AM	**35.7**	**E**	**36.9**	**E**	**37.2**	**E**
			PM	**35.2**	**E**	**36.0**	**E**	**36.1**	**E**
	SR 46W On Ramp	Merge	AM	**29.2**	**D**	**30.1**	**D**	**30.3**	**D**
			PM	**29.4**	**D**	**30.0**	**D**	**30.0**	**D**

1. HCM 6 density (passenger cars per mile per lane).
2. The Leisch method used for weave section analysis does not report density.
Note: Unacceptable operations shown in **bold** text.

The addition of traffic from either project would increase the density at the seven freeway segments operating at unacceptable LOS. No additional freeway segments would operate unacceptably. The addition of project traffic increases density by less than four passenger cars per mile per lane at the unacceptable locations.

Recommendation: Development of mitigation measures and recommendations will require Caltrans coordination. The freeway facility operations and recommendations are discussed in detail under Cumulative conditions.

Cumulative Conditions

Cumulative conditions represent build-out of the land uses in the region.

METHODOLOGY

Cumulative conditions for the year 2045 were developed using the City and SLOCOG TDMs, which include planned network and land use changes expected upon buildout of the City's General Plan. As with Near Term conditions, the Beechwood Specific Plan 911-unit project was assumed to be in place. **Figure 10** shows the Cumulative weekday peak hour traffic volumes at the study intersections and the Cumulative ADT on the study segments. **Figures 11a and 11b** display the trip assignment for the project under Cumulative conditions.

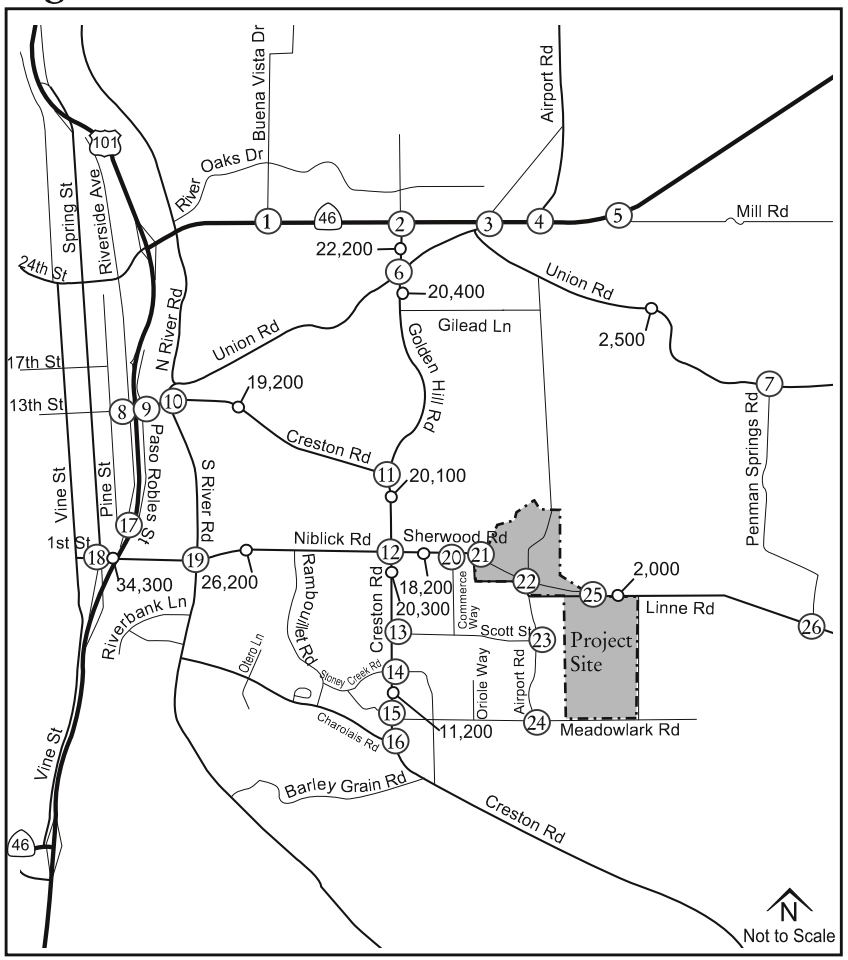
As with Near Term conditions, under Cumulative conditions a PHF of 0.92 was used for the intersection analysis and a PHF of 0.94 was used for the freeway analysis. However, if the existing PHF exceeded these respective values the higher PHF was used.

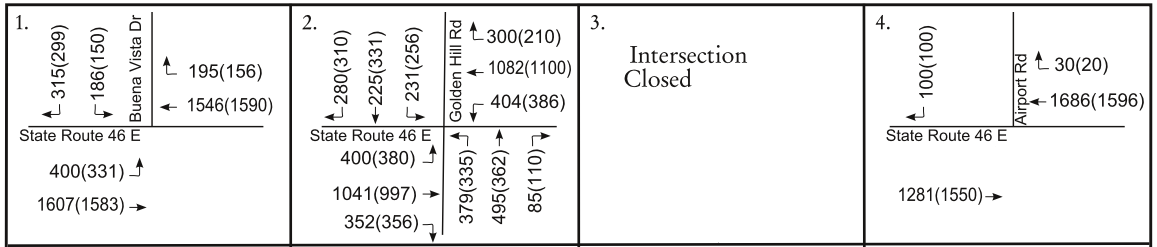
Transportation Network

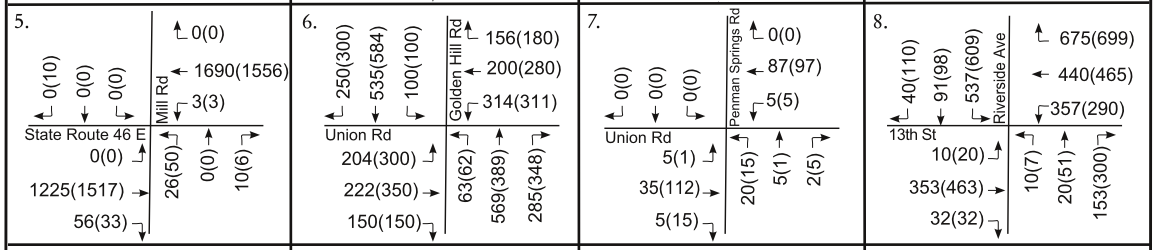
In addition to the changes for the Near Term network, the following roadways improvements were assumed to be in place under Cumulative conditions. Alternative 1 of the on-going Union Road/SR 46 E PA/ED was assumed to be in place under Cumulative conditions.

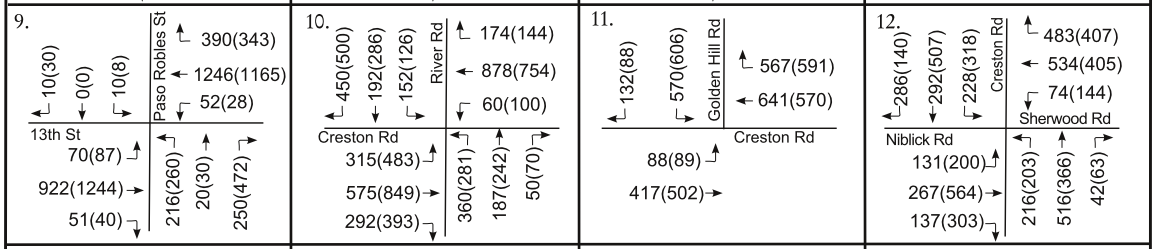
- SR 46 E/Buena Vista Drive (#1): Second eastbound left turn lane installed
- SR 46 E/Union Road (#3): Intersection closed, eastbound on and off ramps constructed
- SR 46 E/Airport Road (#4): Turns restricted to right-in-right-out
- Golden Hill Road/Union Road (#6): Multi-lane roundabout
- Creston Road/Niblick Road (#12): Second eastbound through lane, second southbound left turn lane, dedicated southbound right turn lane
- Riverside Avenue/Pine Street/US 101 SB Ramp (#17): Pine Street converted to one-way westbound
- Golden Hill Road widened to 4-lane arterial from SR 46 E to Rolling Hills Road
- Airport Road Extension from Olsen-Chandler site to Union Road
- Gilead Lane extended east to Airport Road
- Paso Robles Boulevard overcrossing of SR 46 E and northeasterly extension to Airport Road
- US 101/SR 46W interchange: Roundabouts at northbound and southbound ramps, Vine Street realigned with Theatre Drive

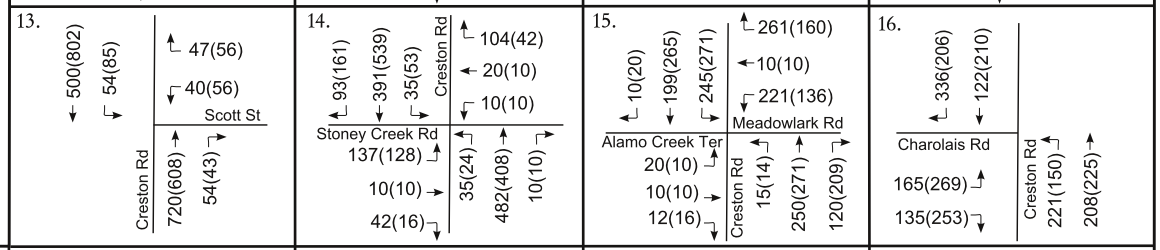
Figure 10: Cumulative Traffic Volumes

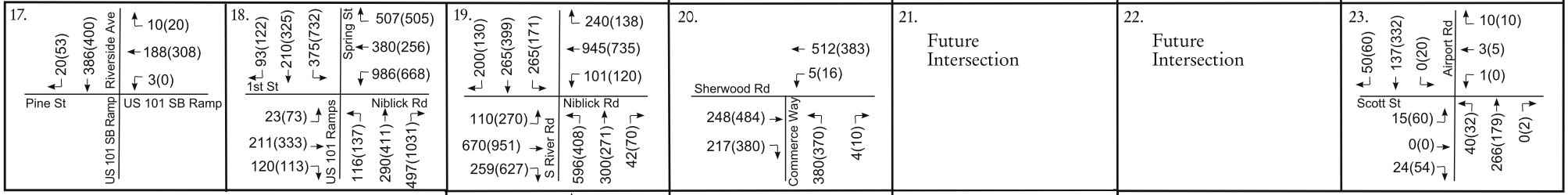


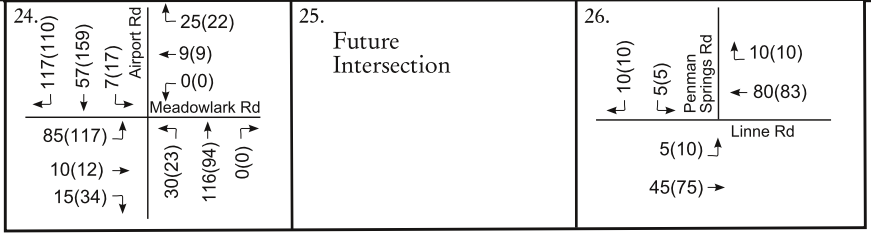












Legend:

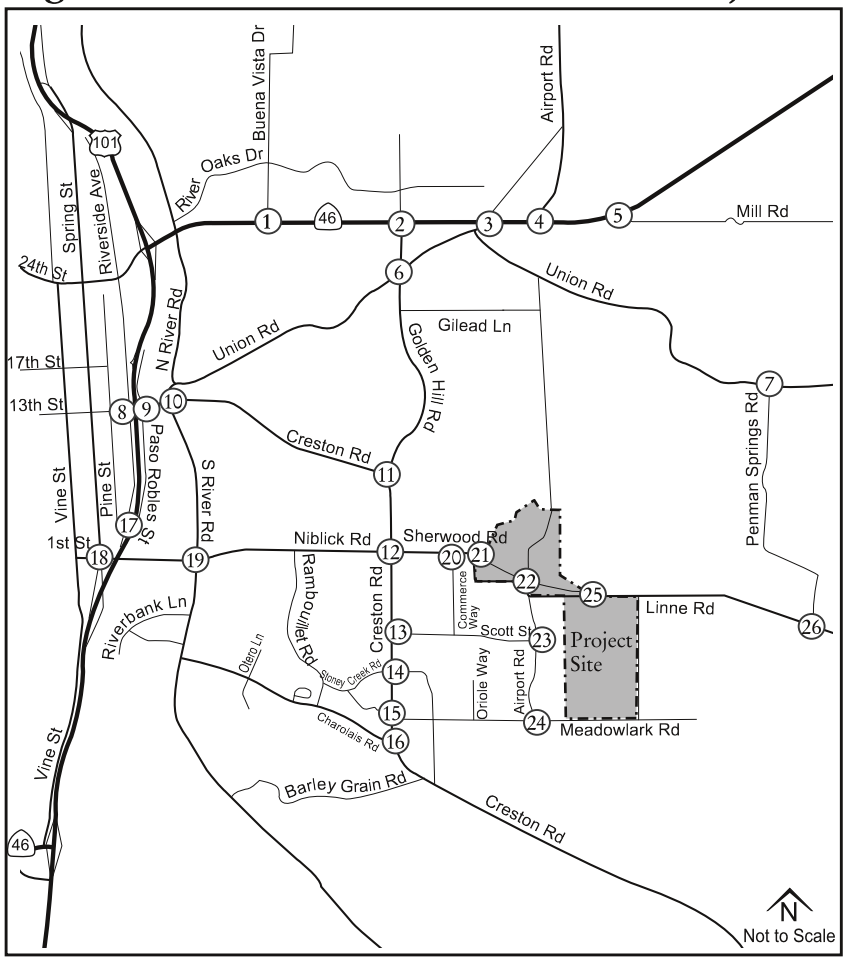
o– - Average Daily Traffic Volumes

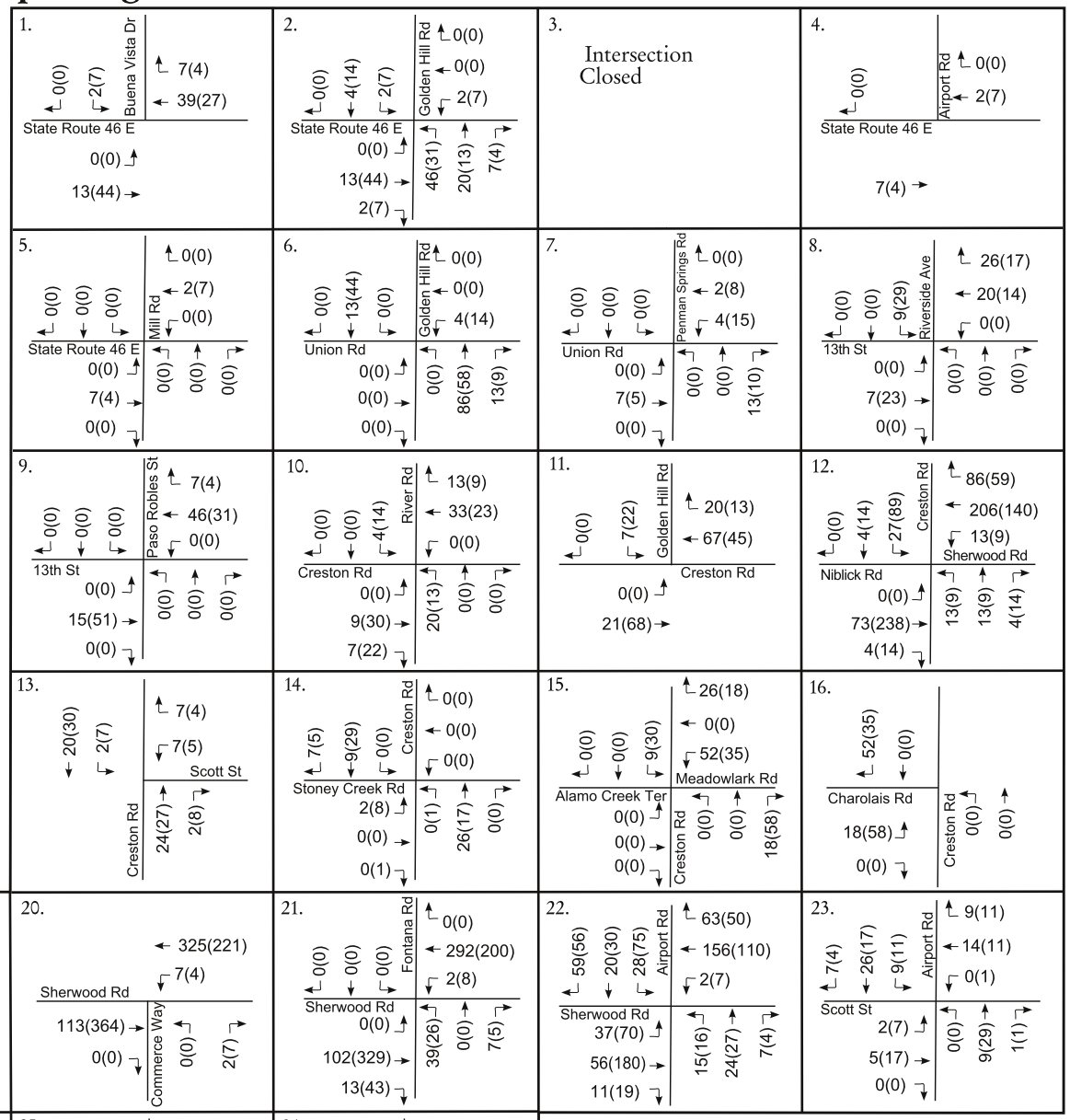
(x) - Study Intersection

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

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Figure 11a: Cumulative 1,293-Unit Project Trip Assignment





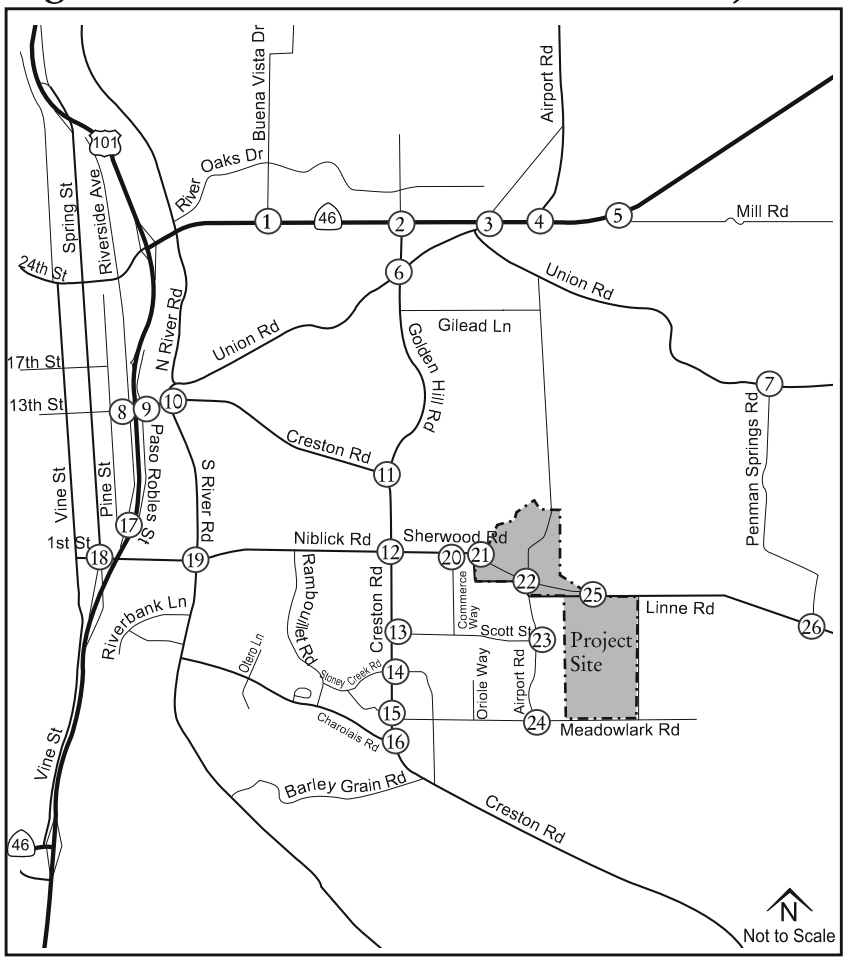
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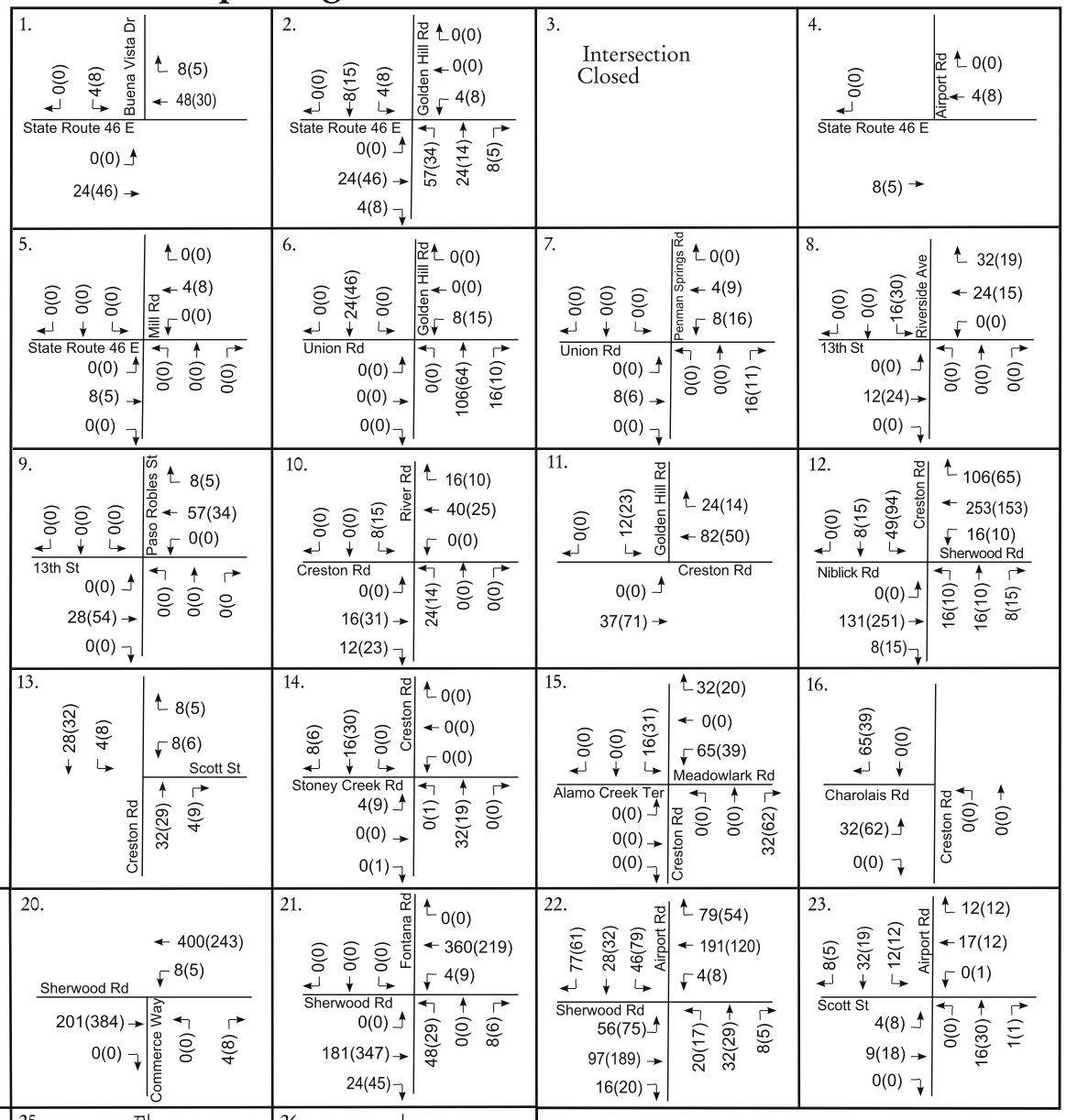
(x) - Study Intersection

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

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Figure 11b: Cumulative 1,293-Unit Project and School Trip Assignment





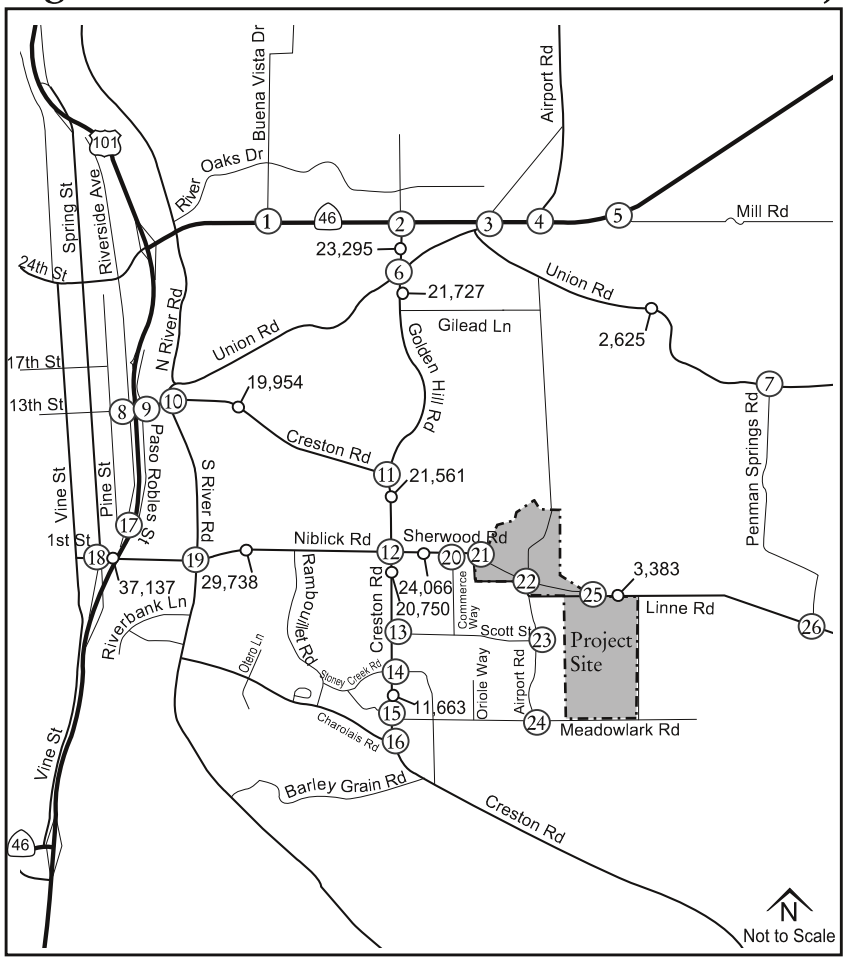
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(x) - Study Intersection

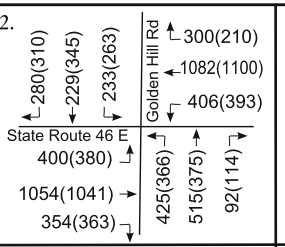
xx(yy) - AM(PM) Peak Hour Traffic Volumes

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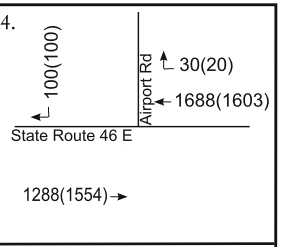
Figure 12a: Cumulative Plus 1,293-Unit Project Traffic Volumes

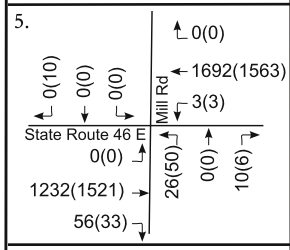


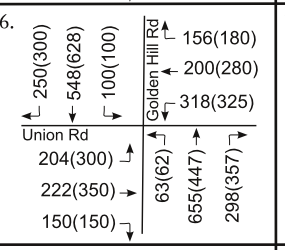
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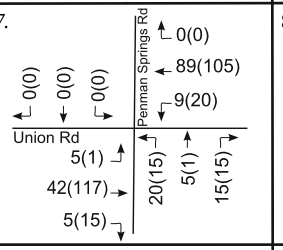

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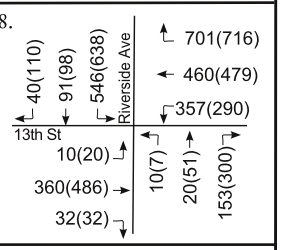
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Intersection Closed

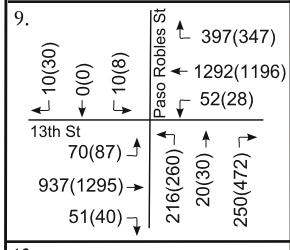
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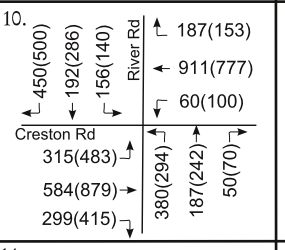
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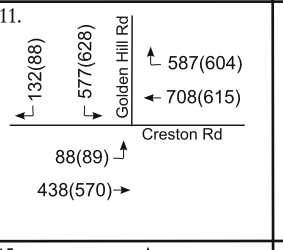
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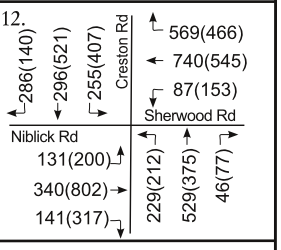
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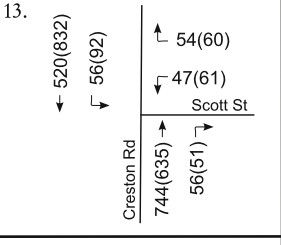
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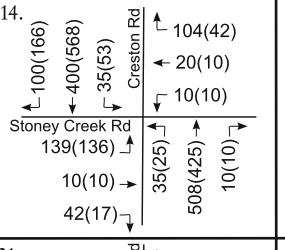
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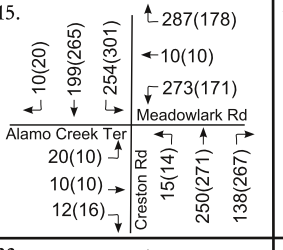
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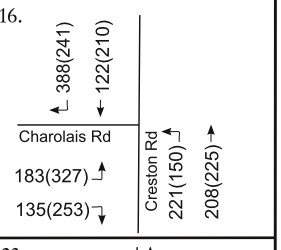
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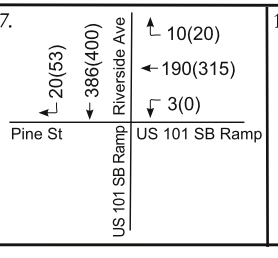
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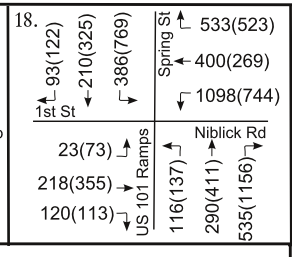
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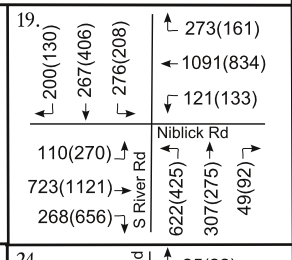
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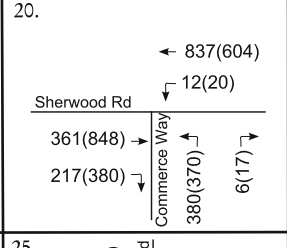
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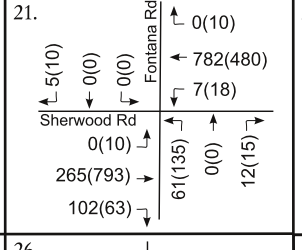
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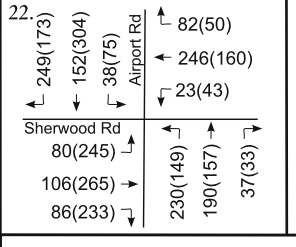
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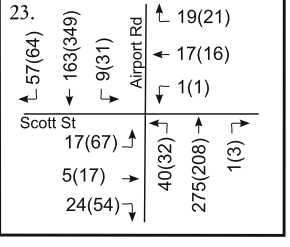
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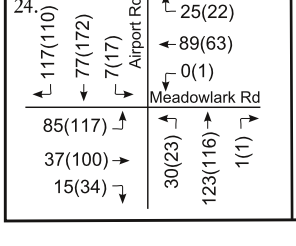
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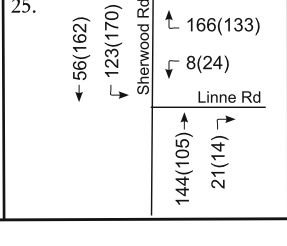
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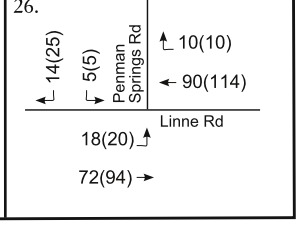
21.


22.


23.


24.


25.


26.


Legend:

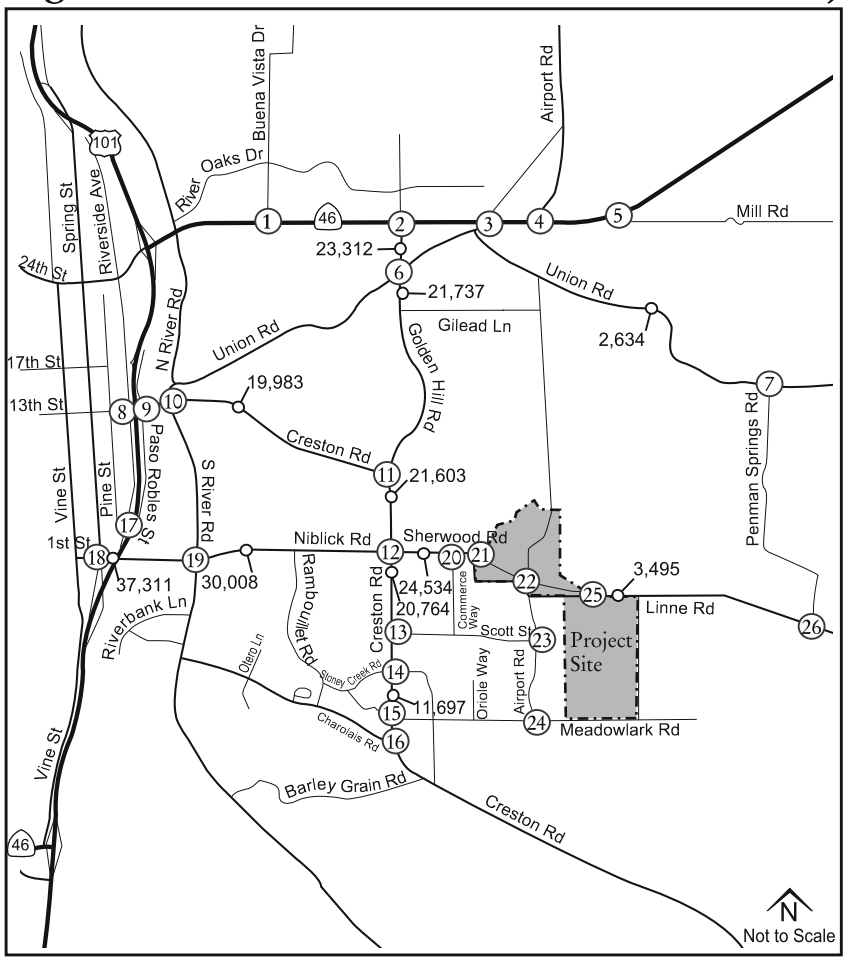
o– - Average Daily Traffic Volumes

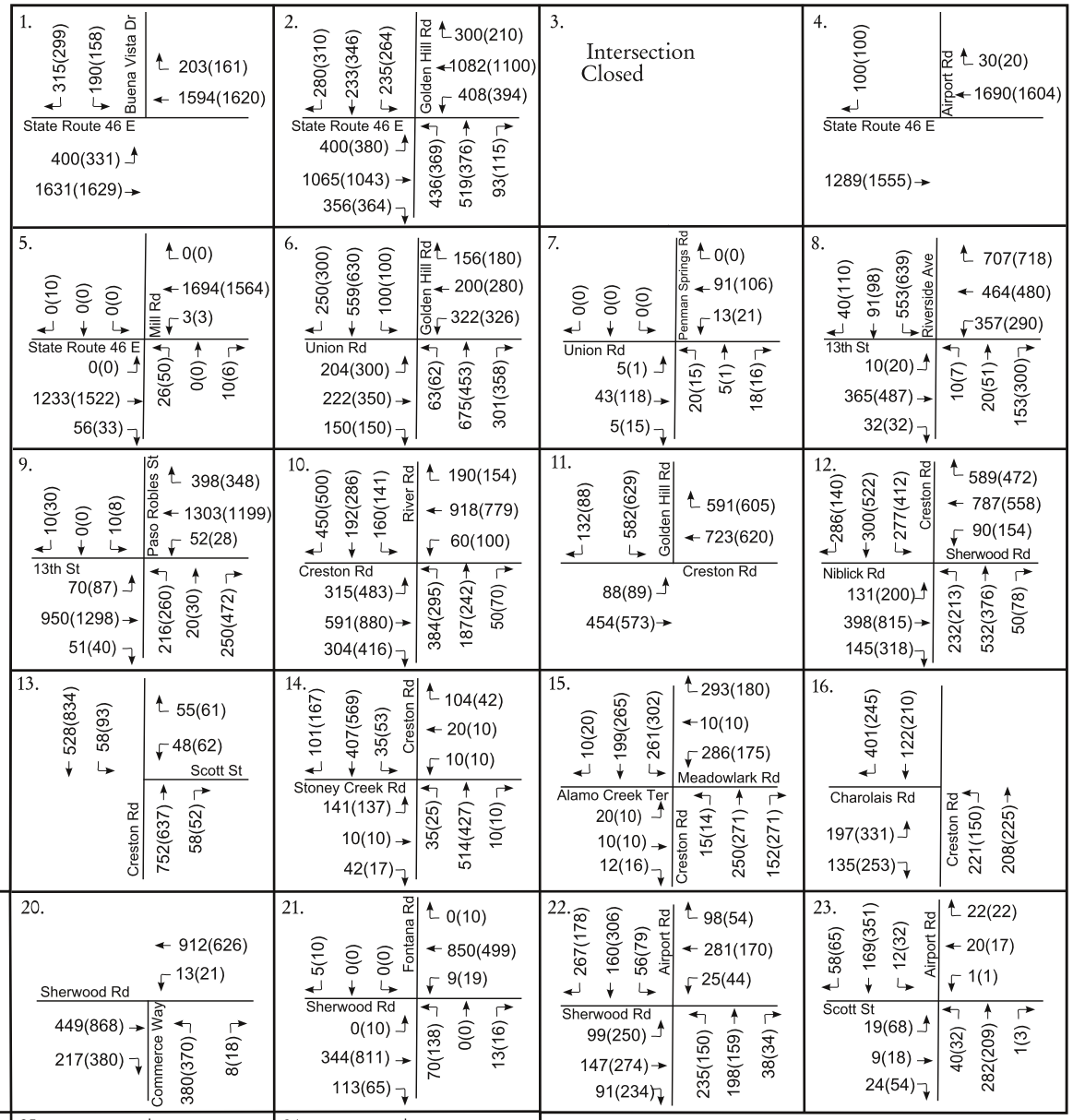
(x) - Study Intersection

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

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Figure 12b: Cumulative Plus 1,293-Unit Project and School Traffic Volumes





Legend:

o— - Average Daily Traffic Volumes

(x) - Study Intersection

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

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CUMULATIVE PLUS PROJECT IMPACT ANALYSIS

1. Intersection Operations

Figures 12a and 12b show the traffic volumes for the study intersections during the weekday peak hours and ADT on the study segments under Cumulative Plus Project conditions.

Table 22 summarizes the intersection operating conditions under Cumulative and Cumulative Plus Project conditions with detailed calculation sheets in **Appendix B** and warrant analysis sheets in **Appendix D**.

Table 22: Cumulative and Cumulative Plus Project Intersection Auto Levels of Service

Cumulative and Cumulative Plus Project Intersection Auto Levels of Service							
Intersection	Peak Hour	Cumulative		CM + 1293		CM + 1293 + School	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1. SR 46E/Buena Vista Dr	AM	27.7	C	28.8	C	29.2	C
	PM	19.7	B	20.3	C	20.4	C
2. SR 46E/Golden Hill Rd	AM	**77.4**	**E**	**82.4**	**F**	**84.6**	**F**
	PM	**56.7**	**E**	**62.2**	**E**	**62.7**	**E**
3. SR 46E/Union Rd	AM	Intersection closed					
	PM						
4. SR 46E/Airport Rd	AM	**0.9 (28.6)**	**- (D)**	**0.9 (28.6)**	**- (D)**	**0.9 (28.6)**	**- (D)**
	PM	0.8 (24.5)	- (C)	0.8 (24.7)	- (C)	0.8 (24.7)	- (C)
5. SR 46E/Mill Rd	AM	**0.4 (35.3)**	**- (E)**	**0.4 (35.6)**	**- (E)**	**0.4 (35.6)**	**- (E)**
	PM	**1.4 (73.9)**	**- (F)**	**1.4 (75.3)**	**- (F)**	**1.4 (75.3)**	**- (F)**
6. Golden Hill Rd/Union Rd	AM	24.8	C	33.2	D	36.8	E
	PM	29.4	D	38.7	E	39.6	E
7. Penman Springs Rd/Union Rd	AM	2.0 (9.7)	- (A)	2.6 (9.6)	- (A)	2.7 (9.6)	- (A)
	PM	1.1 (10.0)	- (B)	1.6 (10.0)	- (B)	1.7 (10.0)	- (B)
8. 13th St/Riverside Ave	AM	44.6	D	47.7	D	48.7	D
	PM	70.7	E	75.3	E	75.7	E
9. 13th St/Paso Robles St	AM	16.0	B	16.3	B	16.4	B
	PM	27.6	C	28.8	C	28.9	C
10. River Rd/Creston Rd	AM	27.6	C	29.3	C	29.8	C
	PM	27.2	C	28.2	C	28.3	C
11. Creston Rd/Golden Hill Rd	AM	27.5	C	29.3	C	29.7	C
	PM	24.8	C	25.7	C	25.8	C
12. Creston Rd/Niblick Rd	AM	42.3	D	50.3	D	52.4	D
	PM	33.3	C	38.2	D	38.7	D
13. Creston Rd/Scott St	AM	2.7 (38.2)	- (E)	3.7 (49.0)	- (E)	4.0 (52.7)	- (F)
	PM	**6.5 (89.2)**	**- (F)**	**10.4 (141.8)**	**- (F)**	**11.1 (149.3)**	**- (F)**
14. Creston Rd/Stoney Creek Rd	AM	**43.9 (>200)**	**- (F)**	**51.6 (>200)**	**- (F)**	**54.9 (>200)**	**- (F)**
	PM	**14.7 (122.7)**	**- (F)**	**20.3 (170.8)**	**- (F)**	**20.9 (176.2)**	**- (F)**
15. Creston Rd/Meadowlark Rd	AM	**36.7**	**E**	**56.3**	**F**	**64.5**	**F**
	PM	22.7	C	32.1	D	33.1	D
16. Creston Rd/Charolais Rd	AM	7.9 (24.2)	- (C)	9.0 (28.7)	- (D)	10.2 (32.8)	- (D)
	PM	11.4 (26.1)	- (D)	**18.0 (41.4)**	**- (E)**	**18.6 (42.9)**	**- (E)**
17. Riverside Ave/Pine St/US 101 SB Ramp	AM	5.4 (16.4)	- (C)	5.5 (16.6)	- (C)	5.6 (16.6)	- (C)
	PM	**11.9 (28.3)**	**- (D)**	**12.5 (29.3)**	**- (D)**	**12.5 (29.5)**	**- (D)**
18. 1st St-Niblick Rd/Spring St	AM	34.3	C	38.2	D	39.9	D
	PM	45.7	D	50.5	D	50.9	D
19. Niblick Rd/South River Rd	AM	45.5	D	56.9	E	60.0	E
	PM	40.9	D	46.5	D	47.0	D
20. Sherwood Rd/Commerce Way	AM	8.5	A	9.2	A	9.5	A
	PM	9.3	A	15.2	B	16.2	B
21. Sherwood Rd/Fontana Rd	AM	Future intersection		1.0 (13.3)	- (B)	1.0 (14.7)	- (B)
	PM			3.1 (28.6)	- (D)	3.3 (30.6)	- (D)
22. Airport Rd/Sherwood Rd	AM	Future intersection		10.8	B	13.5	B
	PM			25.6	D	28.5	D
23. Airport Rd/Scott St	AM	9.7	A	10.2	B	10.4	B
	PM	11.6	B	13.5	B	13.6	B
24. Airport Rd/Meadowlark Rd	AM	9.5 (13.4)	- (B)	9.2 (16.0)	- (C)	9.2 (17.4)	- (C)
	PM	11.3 (15.3)	- (C)	12.2 (21.0)	- (C)	12.4 (21.5)	- (C)
25. Sherwood Rd/Linne Rd	AM	Future intersection		4.3	A	4.6	A
	PM			4.7	A	4.8	A
26. Penman Springs Rd/Linne Rd	AM	1.1 (9.0)	- (A)	1.5 (9.2)	- (A)	1.6 (9.2)	- (A)
	PM	1.1 (9.1)	- (A)	1.6 (9.3)	- (A)	1.7 (9.3)	- (A)

1. HCM 6th average control delay in seconds per vehicle (HCM 2000 used for Intersections 1, 11 and 17). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.
Note: Unacceptable operations (LOS deficiency and/or signal warrants met) shown in bold text.

The following Caltrans intersections operate below the LOS C threshold:

- State Route 46 E/Golden Hill Road (#2): the addition of traffic from either project would increase unacceptable delay at the intersection during the AM and PM peak hours. Installation of a southbound right turn overlap phase and time of day operations would improve intersection operations to at least Cumulative conditions. Eastbound U-turns would need to be prohibited with implementation of a southbound right turn overlap. 285 vehicles make a southbound right turn under existing PM peak hour conditions and intersection operations will benefit. Northbound U-turns are allowed at Golden Hill Road and the commercial project driveway north of SR 46 E. A Project Study Report has been prepared for this area which will ultimately construct an overcrossing east of this location. The full interchange alternative is needed to improve operations at this location which would restrict access at this intersection to right-in, right-out. This improvement is consistent with the City's Circulation Element; however, the improvements are in the Caltrans right-of-way and subject to approval.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents.

- State Route 46 E/Airport Road (#4): the intersection would operate with unacceptable delay in the AM peak hour under Cumulative conditions with right-in-right-out operations. The addition of project traffic does not degrade the intersection operations during the AM peak hour. A Project Study Report has been prepared for this area which will ultimately construct an overcrossing at Union Road and restrict left turns on SR 46 E at Union Road and Airport Road. The full interchange alternative is needed to improve operations at this location which would close the intersection. This improvement is consistent with the City's Circulation Element.

  Recommendation: None.

- State Route 46 E/Mill Road (#5): the intersection would operate with unacceptable delay in both peak hours under Cumulative conditions. Restricting the northbound lefts, installing a traffic signal, or implementing grade separation at the intersection would improve operations to at least Cumulative conditions.

  Recommendation: None, traffic signal or grade separation not recommended. Secondary access is recommended if left turns are prohibited.

- Riverside Avenue/Pine Street/US 101 Southbound Ramps (#17): the intersection would operate at LOS D in the PM peak hour under Cumulative conditions with Pine Street west of Riverside Avenue one-way westbound. Although the typical all-way stop control and traffic signal warrants would not be met, the intersection has two legs with equal volumes and would operate at LOS C or better with all-way (southbound and westbound) stop control.

  Recommendation: Install all-way stop control.

The following stop-controlled City intersections operate below LOS D:

- Golden Hill Road/Union Road (#6): the intersection would operate at LOS E during the PM peak hour with the addition of traffic from either project under Cumulative conditions. Cumulative conditions assume the multi-lane roundabout in the City's Circulation Element.

The ultimate lane configuration of the roundabout will depend on access to SR 46 E at Golden Hill Road and Union Road.

Recommendation: Project makes a fair share contribution through the City's impact fee program for a roundabout at this intersection.

- Creston Road/Scott Street (#13): the addition of traffic from either project would worsen unacceptable operations during the PM peak hour, which meets signal warrants with or without the projects. The City's Circulation Element includes a traffic signal at this location. The intersection should be reviewed for coordination with the existing traffic signal located approximately 400' south of Scott Street at Cedarwood Drive.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Stoney Creek Road (#14): the addition of traffic from either project would worsen unacceptable operations during both peak hours. This intersection meets signal warrants with or without the projects in both peak hours. The City's Circulation Element includes a traffic signal at this location. The bulb-out on the northwest corner is not recommended. The existing dedicated left, through, and right southbound turn lanes are desired for signal operations. The eastbound approach should be restriped with a dedicated left-through and right turn lane consistent with the Circulation Element. The northbound left turn lane storage should be maximized.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Meadowlark Road (#15): the addition of traffic from either project would worsen unacceptable operations during the AM peak hour, which meets signal warrants with or without the projects. A traffic signal and restriping at this location are consistent with the City's Circulation Element. Storage for the southbound left turn lane should be extended.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for installation of a traffic signal.

- Creston Road/Charolais Road (#16): the intersection would operate at LOS E during the PM peak with the addition of traffic from either project and would meet signal warrants. However, the intersection operates at LOS C in both peak hours with the installation of all-way stop control. Where traffic signals are warranted, all-way stop control is an interim measure.

  Recommendation: Install all-way stop control with either project.

2. Queues

Table 23 summarizes the vehicular queuing under Cumulative and Cumulative Plus Project conditions.

Table 23: Cumulative and Cumulative Plus Project Queues

Cumulative and Cumulative Plus Project Queues						
				95th Percentile Queues (ft)[1]		
Intersection	Movement	Storage Length (ft)	Peak Hour	Cumulative	Cumulative + 1293	Cumulative + 1293 + School
1. SR 46E/Buena Vista Dr	EBL[2]	345	AM	298	298	298
			PM	223	224	225
2. SR 46E/Golden Hill Rd	NBL	160	AM	**#382**	**#446**	**#461**
			PM	**#289**	**#330**	**#334**
	SBL	140	AM	**192**	**193**	**194**
			PM	**200**	**205**	**206**
	EBL[2]	225	AM	**#434**	**#434**	**#434**
			PM	**#372**	**#372**	**#372**
	WBL[2]	125	AM	**#439**	**#441**	**#445**
			PM	**#360**	**#388**	**#390**
3. SR 46E/Union Rd	Intersection closed					
4. SR 46E/Airport Rd	Intersection is right-in-right-out under Cumulative Conditions					
5. SR 46E/Mill Rd	WBL[2]	305	AM	0	0	0
			PM	0	0	0
6. Golden Hill Rd/Union Rd	Intersection is a roundabout under Cumulative Conditions					
8. 13th St/Riverside Ave	WBL	125	AM	**#419**	**#419**	**#419**
			PM	**#358**	**#358**	**#358**
	WBT	295	AM	**376**	**398**	**403**
			PM	**445**	**463**	**464**
9. 13th St/Paso Robles St	NBL	130	AM	**228**	**228**	**228**
			PM	**246**	**246**	**246**
	NBR	110	AM	95	97	99
			PM	**#415**	**#418**	**#418**
	EBL	120	AM	98	98	98
			PM	**#122**	**#122**	**#122**
	EBT	295	AM	**305**	**312**	**318**
			PM	**490**	**522**	**524**
10. River Rd/Creston Rd	NBL	140	AM	**#229**	**#249**	**#253**
			PM	**#175**	**#187**	**#189**
	SBL	225	AM	#222	**#230**	**#240**
			PM	#177	#204	#207
11. Creston Rd/Golden Hill Rd	EBL	125	AM	**#183**	**#183**	**#183**
			PM	**#168**	**#168**	**#168**
12. Creston Rd/Niblick Rd	NBL	230	AM	**#277**	**#303**	**#309**
			PM	**239**	**252**	**254**
	SBL	245	AM	139	154	#175
			PM	171	219	221
	EBL	150	AM	**#190**	**#190**	**#190**
			PM	**239**	**241**	**241**
	WBL	170	AM	110	127	130
			PM	**183**	**195**	**196**
13. Creston Rd/Scott St	SBL	60	AM	5	8	8
			PM	8	10	10
18. 1st St-Niblick Rd/Spring St	NBL	165	AM	**189**	**189**	**189**
			PM	**207**	**207**	**207**
	NBR	290	AM	75	86	94
			PM	**317**	**431**	**#442**
	SBL	305	AM	256	264	270
			PM	**444**	**#496**	**#498**
19. Niblick Rd/South River Rd	NBL	150	AM	**#398**	**#424**	**#430**
			PM	**#235**	**#251**	**#253**
	SBL	110	AM	**#373**	**#396**	**#415**
			PM	**209**	**#283**	**#287**
	EBL	140	AM	#104	#104	#104
			PM	**#170**	**#170**	**#170**
	WBL	80	AM	**145**	**#188**	**#196**
			PM	**#177**	**#206**	**#208**
20. Sherwood Rd/Commerce Way	WBL	75	AM	7	12	13
			PM	14	23	24
24. Airport Rd/Meadowlark Rd	SBL	50	AM	0	3	3
			PM	3	5	5

1. Queue length that would not be exceeded 95 percent of the time.
2. Deceleration length of 530 feet has been subtracted from the storage length per the HDM for 60 mph design speed.
indicates that 95th percentile volume exceeds capacity, queue may be longer.
Bold indicates queue length longer than storage length.

The following queue deficiencies at City intersections are noted:

- 13th Street/Riverside Avenue (#8): the westbound left turn and through movement queue lengths would further exceed storage during both peak hours with the addition of traffic from either project. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing should be coordinated and optimized. With retiming and overlaps, queues would improve to no project levels. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize traffic signal operations. Add westbound right and northbound right turn overlap phases.

- 13th Street/Paso Robles Street (#9): the northbound and eastbound queue lengths would further exceed storage length during at least one peak hour with the addition of traffic from either project. Bridge widening at this location is not included in the City's Circulation Element and any widening in this location is unlikely; signal timing should be reviewed, coordinated, and optimized. If parking is removed on the east side of Paso Robles Street north of 12th Street the northbound right turn lane could be extended. With retiming and overlaps, queues would improve to no project levels. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize traffic signal operations.

- River Road/Creston Road (#10): the northbound and southbound left turn queue lengths would further exceed storage during both peak hours with the addition of traffic from either project. Bridge widening at this location is not included in the City's Circulation Element; signal timing should be reviewed, coordinated, and optimized. The intersection would benefit from restriping of the southbound lanes to a dedicated left, through, and right turn lane. With retiming and restriping, queues could be accommodated in the existing bay taper. The City's Circulation Element accepts that this location will reach capacity.

  Recommendation: Review, coordinate, and optimize traffic signal operations.

- Creston Road/Golden Hill Road (#11): the eastbound left turn queue length exceeds storage under Cumulative conditions. The addition of project traffic does not degrade the intersection operations. The intersection would benefit from a dedicated westbound right turn lane.

  Recommendation: None.

- Creston Road/Niblick Road (#12): the northbound, westbound, and eastbound left turn queue length exceeds storage in at least one peak hour under Cumulative conditions with the proposed widening included in the City's Circulation Element. The left turn queues could be accommodated in the existing two-way left turn lane and bay taper storage.

  Recommendation: None. Available storage in the existing two-way left turn lanes.

- 1st Street-Niblick Road/Spring Street (#18): the southbound left turn and northbound right and left turn queue lengths would further exceed the storage length during the PM peak hour under Cumulative conditions. No feasible mitigation has been identified to return queues to no project levels. The City's Circulation Element includes corridor improvements on Niblick Road and Spring Street.

Recommendation: Project makes a fair share contribution through the City's impact fee program for corridor improvements.

- Niblick Road/South River Road (#19): all left turn lengths would exceed storage in one or more peak hours under Cumulative conditions. No feasible mitigation has been identified to return queues to no project levels. The City's Circulation Element includes widening at this intersection and corridor improvements. The intersection would benefit from additional westbound left turn lane storage, additional right turn lanes, and right turn overlap phasing.

  Recommendation: Project makes a fair share contribution through the City's impact fee program for improvements at this intersection.

Summary of Intersection Mitigations

Table 24 summarizes the required mitigation under either project.

Table 24: Cumulative Mitigations

Cumulative Mitigations							
			No	School		Cir. Elem.	Responsible
Intersection	Impact	Mitigation	Project	No[1]	Yes	and TIF[2]	Agency
2. SR 46 E/Golden Hill Rd[3]	LOS	Optimize traffic signal, SBR overlap	X	X	X	Yes	Caltrans
8. 13th St/Riverside Ave	Queue	Optimize corridor operations, WBR and NBR overlap	X	X	X	No	City
9. 13th St/Paso Robles St	Queue	Optimize corridor operations	X	X	X	No	City
10. River Rd/Creston Rd	Queue	Optimize corridor operations	X	X	X	No	City
13. Creston Rd/Scott St	LOS	Install traffic signal	X	X	X	Yes	City
14. Creston Rd/Stoney Creek Rd	LOS	Install traffic signal	X	X	X	Yes	City
15. Creston Rd/Meadowlark Rd	LOS	Install traffic signal	X	X	X	Yes	City
16. Creston Rd/Charolais Rd	LOS	Install all-way stop	-	X	X	No	City
17. Riverside Ave/Pine St/ US 101 SB Ramp	LOS	Install all-way stop	X	X	X	No	Caltrans
18. 1st St-Niblick Rd/Spring St	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City
19. Niblick Rd/South River Rd	Queue	Optimize corridor operations, corridor improvements	X	X	X	Yes	City

X - Mitigation required.
1. All intersection improvements are warranted with Phase 1 of the project.
2. Intersection improvements are included in the Paso Robles Circulation Element and Traffic Impact Fee (TIF).
3. The Paso Robles Circulation Element includes improvements on State Route 46 East and in the vicinity between Buena Vista Drive and Dry Creek Road. Recommend project make a fair share contribution through the City's impact fee program for ultimate improvements on SR 46 E consistent with the RTP and other applicable documents. Ultimate improvements will be determined in the project documents.

3. Roadway Segment Operations

Table 25 shows the Cumulative and Cumulative Plus Project capacity utilization and LOS for the roadway study segments.

Table 25: Cumulative and Cumulative Plus Project Roadway Segment Operations

Cumulative and Cumulative Plus Project Roadway Segment Operations													
					Cumulative			CM + 1293			CM + 1293 + School		
Street	ID	Segment	Facility Type	Lanes	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization	ADT	LOS	Capacity Utilization
Union Road	1	Priska Drive to Kit Fox Lane	Arterial	2	2,500	C	14%	2,625	C	15%	2,634	C	15%
Creston Road	2	East of Ferro Lane	Arterial	2*	19,200	D	88%	19,954	D	92%	19,983	D	92%
	3	East of Golden Hill Road	Arterial	4	20,100	A	54%	21,561	A	58%	21,603	A	58%
	4	South of Niblick Road	Arterial	4	20,300	A	54%	20,750	A	55%	20,764	A	56%
	5	North of Meadowlark Road	Arterial	4	11,200	A	30%	11,663	A	31%	11,697	A	31%
Golden Hill Road	6	South of Union Road	Arterial	4	20,400	A	55%	21,727	A	58%	21,737	A	58%
	7	North of Union Road	Arterial	4	22,200	B	59%	23,295	B	62%	23,312	B	62%
Niblick Road	8	East of Spring Street	Arterial	4	34,300	D	92%	37,137	E	99%	37,311	E	100%
	9	East of Quarterhorse	Arterial	4	26,200	C	70%	29,738	D	80%	30,008	D	80%
Sherwood Road	10	East of Creston Road	Arterial	4	18,200	A	49%	24,066	B	64%	24,534	B	66%
Linne Road	11	Poppy Lane to Hanson Road	Arterial	2	2,000	C	11%	3,383	C	19%	3,495	C	20%

* Note that an asterisk (*) indicates the prescence of a raised median or two-way left-turn lane on a two-lane arterial.
Source: City of Paso Robles General Plan Circulation Element, 2011; CCTC, 2019.

The following roadway segments operate above 90% capacity utilization:

- Niblick Road (east of Spring Street): This segment operates at 92% capacity under Cumulative conditions. With the addition of traffic from either project, the capacity utilization would increase but remain at or below 100%. The projected capacity utilization of 100% on Niblick Road does not justify the widening of this roadway per the City's Circulation Element. Widening the bridge to a six-lane arterial would result in a capacity utilization below 70%, which would reduce vehicle delays, but would also support higher vehicle speeds and would conflict with the City's multimodal goals and desire to maintain its small-town character.

  Recommendation: None. Maximize signal operations along corridor.

- Creston Road (east of Ferro Lane): This segment would operate at 88% capacity under Cumulative conditions. With the addition of traffic from either project, the capacity utilization would increase above 90% but remain at or below 100%. The projected capacity utilization of 92% does not justify widening per the City's multimodal goals. Corridor improvements including a center left turn lane and bike lanes have been adopted by the City.

  Recommendation: None. Maximize signal operations along corridor.

4. Freeway Segment Operations

Table 26 shows the Cumulative and Cumulative Plus Project peak hour volumes at the freeway mainline and ramp locations and **Table 27** shows the LOS, with calculation sheets in **Appendix C**.

Table 26: US 101 Cumulative and Cumulative Plus Project Peak Hour Volumes

US 101 Cumulative and Cumulative Plus Project Peak Hour Volumes					
Direction	Segment ID	Location	Cumulative	Cumulative + 1293	Cumulative + 1293 + School
US 101 NB	1	SR 46W Off Ramp	300 (300)	300 (300)	300 (300)
	2	SR 46W On Ramp	571 (1017)	582 (1054)	591 (1056)
	3	Mainline North of SR 46W	2857 (4092)	2895 (4217)	2926 (4224)
	4	Spring St. Off Ramp	903 (1579)	941 (1704)	972 (1711)
	5	Paso Robles St. Off Ramp	423 (734)	423 (734)	423 (734)
	6	Paso Robles St. On Ramp	480 (460)	487 (464)	488 (465)
	7	Mainline South of SR 46E	2011 (2239)	2018 (2243)	2019 (2244)
	8	SR 46E Off Ramp	1164 (1239)	1164 (1239)	1164 (1239)
	9	SR 46E On Ramp	345 (330)	358 (339)	361 (340)
	10	Mainline North of SR 46E	1192 (1330)	1212 (1343)	1216 (1345)
US 101 SB	11	Mainline North of SR 46E	1115 (1791)	1121 (1812)	1127 (1814)
	12	SR 46E Off Ramp	326 (434)	330 (448)	334 (449)
	13	SR 46E to Riverside/17th St. Weave On	1167 (1298)	1167 (1298)	1167 (1298)
	14	SR 46E to Riverside/17th St. Weave Off	285 (396)	285 (396)	285 (396)
	15	Mainline South of SR 46E	1671 (2259)	1673 (2266)	1675 (2267)
	16	Riverside/17th St. On Ramp	390 (268)	390 (268)	390 (268)
	17	Riverside/Pine St. Off Ramp	201 (328)	203 (335)	205 (336)
	18	Spring St. On Ramp	1316 (1106)	1428 (1182)	1454 (1190)
	19	Mainline North of SR 46W	3565 (3705)	3677 (3781)	3703 (3789)
	20	SR 46W Off Ramp	692 (703)	725 (726)	732 (728)
	21	SR 46W On Ramp	200 (300)	200 (300)	200 (300)
AM (PM) Peak Hour Volumes					

Table 27: Cumulative and Cumulative Plus Project Freeway Operations

Cumulative and Cumulative Plus Project Freeway Operations									
				Cumulative		CM + 1293		CM + 1293 + School	
Direction	Location	Segment Type	Peak Hour	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
US 101 NB	SR 46W Off Ramp	Diverge	AM	27.7	C	28.0	C	**28.2**	**D**
			PM	**32.9**	**D**	**33.7**	**D**	**33.8**	**D**
	SR 46W On Ramp	Merge	AM	**28.6**	**D**	**28.9**	**D**	**29.2**	**D**
			PM	**36.9**	**E**	**v/c > 1**	**F**	**v/c > 1**	**F**
	North of SR 46W	Mainline	AM	25.7	C	**26.2**	**D**	**26.6**	**D**
			PM	**42.1**	**E**	**v/c > 1**	**F**	**v/c > 1**	**F**
	Spring St Off Ramp	Diverge	AM	**32.8**	**D**	**33.2**	**D**	**33.6**	**D**
			PM	**v/c > 1**	**F**	**v/c > 1**	**F**	**v/c > 1**	**F**
	Paso Robles St Off Ramp	Diverge	AM	21.1	C	21.1	C	21.1	C
			PM	24.7	C	24.7	C	24.7	C
	Paso Robles St On Ramp	Merge	AM	20.5	C	20.6	C	20.6	C
			PM	21.3	C	21.3	C	21.3	C
	South of SR 46E	Mainline	AM	17.1	B	17.1	B	17.1	B
			PM	17.5	B	17.6	B	17.6	B
	SR 46E Off Ramp	Diverge	AM	22.1	C	22.2	C	22.2	C
			PM	22.7	C	22.7	C	22.7	C
	SR 46E On Ramp	Merge	AM	14.5	B	14.7	B	14.7	B
			PM	15.2	B	15.3	B	15.3	B
	North of SR 46E	Mainline	AM	11.0	A	11.2	B	11.3	B
			PM	11.7	B	11.8	B	11.8	B
US 101 SB	North of SR 46E	Mainline	AM	10.6	A	10.6	A	10.7	A
			PM	17.2	B	17.4	B	17.5	B
	SR 46E Off Ramp	Diverge	AM	15.0	B	15.1	B	15.1	B
			PM	22.7	C	22.9	C	22.9	C
	SR 46E to Riverside/17th St[2]	Weave	AM	-	B	-	B	-	B
			PM	-	C	-	C	-	C
	South of SR 46E	Mainline	AM	14.3	B	14.4	B	14.4	B
			PM	19.1	C	19.2	C	19.2	C
	Riverside/17th St On Ramp	Merge	AM	21.7	C	21.8	C	21.8	C
			PM	25.7	C	25.7	C	25.7	C
	Riverside/Pine St Off Ramp	Diverge	AM	22.9	C	22.9	C	22.9	C
			PM	27.1	C	27.1	C	27.1	C
	Spring St On Ramp	Merge	AM	27.9	C	**28.7**	**D**	**28.9**	**D**
			PM	**28.8**	**D**	**29.4**	**D**	**29.5**	**D**
	North of SR 46W	Mainline	AM	**37.4**	**E**	**39.8**	**E**	**40.5**	**E**
			PM	**39.0**	**E**	**40.7**	**E**	**40.9**	**E**
	SR 46W Off Ramp	Diverge	AM	**37.6**	**E**	**38.7**	**E**	**38.9**	**E**
			PM	**38.3**	**E**	**39.0**	**E**	**39.1**	**E**
	SR 46W On Ramp	Merge	AM	**31.0**	**D**	**31.7**	**D**	**31.9**	**D**
			PM	**32.4**	**D**	**32.9**	**D**	**32.9**	**D**

1. HCM 6 density (passenger cars per mile per lane).
2. The Leisch method used for weave section analysis does not report density.
Note: Unacceptable operations shown in **bold** text.

The addition of traffic from either project would worsen operations at the eight freeway segments operating at unacceptable LOS. No additional freeway segments would operate unacceptably. The addition of project traffic increases density by less than four passenger cars per mile per lane at the unacceptable locations within capacity and increases V/C by 0.03 or less at the unacceptable locations that exceed capacity.

Recommendation: Development of mitigation measures and recommendations will require Caltrans coordination. See below for additional discussion on the findings and recommendations.

Summary of Freeway Operations and Recommendations

A summary of freeway segments operating at LOS D or worse is shown in **Table 28**.

Table 28: Summary of Freeway Operations

Summary of Freeway Operations									
Direction	Location	Segment Type	Peak Hour	Existing	Ex. + Proj.	Near Term	NT + Proj.	Cumu-lative	CM + Proj.
US 101 NB	SR 46W Off Ramp	Diverge	AM	-	-	-	-	-	D
			PM	-	-	D	D	D	D
	SR 46W On Ramp	Merge	AM	-	-	-	-	D	D
			PM	D	D	D	D	E	F
	North of SR 46W	Mainline	AM	-	-	-	-	-	D
			PM	D	D	D	E	E	F
	Spring St. Off Ramp	Diverge	AM	-	-	D	D	D	D
			PM	D	D	E	E	F	F
US 101 SB	Spring St. On Ramp	Merge	AM	-	-	-	-	-	D
			PM	-	-	-	-	D	D
	North of SR 46W	Mainline	AM	D	D	D	E	E	E
			PM	D	D	D	D	E	E
	SR 46W Off Ramp	Diverge	AM	D	D	E	E	E	E
			PM	D	D	E	E	E	E
	SR 46W On Ramp	Merge	AM	-	D	D	D	D	D
			PM	-	D	D	D	D	D

Note: Segments operating acceptably are not shown in table.

Widening the mainline to a six-lane facility between Spring Street and Main Street would improve mainline and ramp operations to LOS C or better for all segments except the US 101 NB Spring Street off-ramp with or without the proposed project under Near Term or Cumulative conditions. An additional lane at the US 101 NB Spring Street off-ramp is needed under Near Term and Cumulative conditions for acceptable operations. However, widening to a six-lane facility has not been identified in SLOCOG or Caltrans studies.

The US 101 Corridor Mobility Study identified LOS D-E for the northbound segments and LOS D for the southbound off-ramp diverge under 2035 conditions; however, no improvements were identified.

The US 101 Transportation Concept Report for this segment found that in the year 2035, demand is projected to exceed capacity in both the northbound and southbound directions between the urbanized area of Atascadero and south of the Paso Robles urban boundary. The report identifies the following improvement options:

- Interchange improvements
- Parallel route development
- Ramp and auxiliary lane improvements
- Enhanced transit and rail service
- Transportation Demand Management (TDM)
- Transportation System Management (TSM)

The SLOCOG Regional Transportation Plan identifies a future SR 46 Urban Multi-Modal Corridor Study for this area.

Development of mitigation measures and recommendations will require Caltrans coordination. Ramp improvements or metering may be an alternative in addition to Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies.

References

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Appendix A: Traffic Counts

Intersection Turning Movement 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

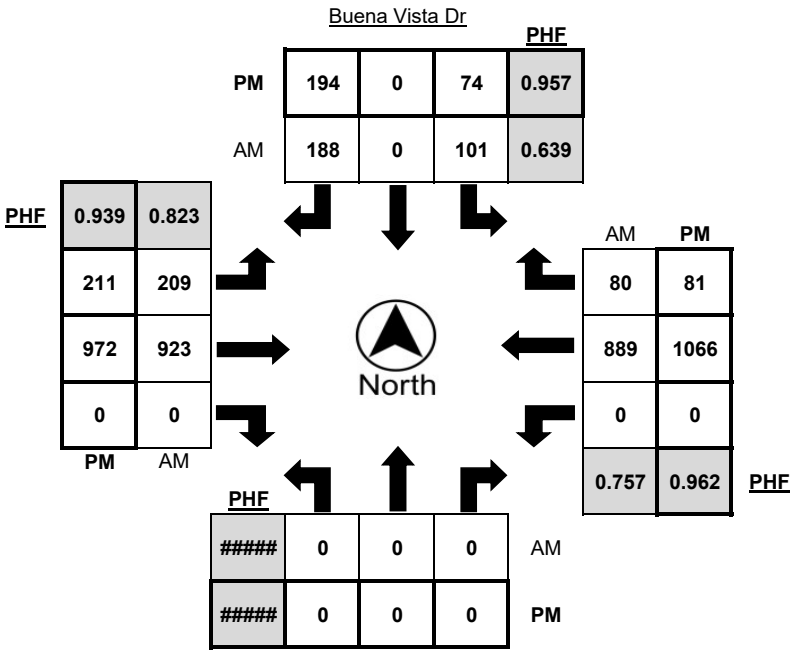
LOCATION SR46 @ Buena Vista Dr
LATITUDE 35.6446
COUNTY San Luis Obispo
LONGITUDE -120.6722
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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	5	0	22	0	18	147	0	21	0	178	7	26
7:15 AM - 7:30 AM	0	0	0	0	15	0	28	0	21	181	0	27	0	197	12	22
7:30 AM - 7:45 AM	0	0	0	0	15	0	27	1	34	171	0	26	0	215	19	23
7:45 AM - 8:00 AM	0	0	0	0	27	0	70	3	67	277	0	27	0	300	20	63
8:00 AM - 8:15 AM	0	0	0	0	53	0	60	4	62	243	0	41	0	191	24	34
8:15 AM - 8:30 AM	0	0	0	0	6	0	31	0	46	232	0	28	0	183	17	22
8:30 AM - 8:45 AM	0	0	0	0	13	0	33	1	38	200	0	30	0	170	11	33
8:45 AM - 9:00 AM	0	0	0	0	13	0	25	2	63	205	0	36	0	161	22	37
TOTAL	**0**	**0**	**0**	**0**	**147**	**0**	**296**	**11**	**349**	**1656**	**0**	**236**	**0**	**1595**	**132**	**260**

	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	11	0	40	1	39	220	0	33	0	262	26	24
2:15 PM - 2:30 PM	0	0	0	0	7	0	32	0	42	197	0	26	0	243	34	25
2:30 PM - 2:45 PM	0	0	0	0	36	0	39	3	39	240	0	44	0	233	34	24
2:45 PM - 3:00 PM	0	0	0	0	38	0	64	2	35	241	0	29	0	230	11	16
3:00 PM - 3:15 PM	0	0	0	0	19	0	43	1	33	231	0	25	0	227	9	27
3:15 PM - 3:30 PM	0	0	0	0	18	0	46	1	34	249	0	39	0	258	13	36
3:30 PM - 3:45 PM	0	0	0	0	14	0	52	1	39	240	0	24	0	285	12	24
3:45 PM - 4:00 PM	0	0	0	0	17	0	46	2	35	256	0	33	0	256	16	12
4:00 PM - 4:15 PM	0	0	0	0	15	0	55	3	62	225	0	26	0	261	24	21
4:15 PM - 4:30 PM	0	0	0	0	20	0	43	1	44	238	0	35	0	279	19	25
4:30 PM - 4:45 PM	0	0	0	0	18	0	48	1	53	262	0	26	0	260	14	21
4:45 PM - 5:00 PM	0	0	0	0	21	0	48	0	52	247	0	27	0	266	24	23
5:00 PM - 5:15 PM	0	0	0	0	20	0	47	1	60	256	0	23	0	232	23	17
5:15 PM - 5:30 PM	0	0	0	0	19	0	44	1	49	222	0	30	0	265	28	15
5:30 PM - 5:45 PM	0	0	0	0	30	0	36	1	35	228	0	20	0	194	14	17
5:45 PM - 6:00 PM	0	0	0	0	7	0	39	0	31	232	0	19	0	188	18	9
TOTAL	**0**	**0**	**0**	**0**	**310**	**0**	**722**	**19**	**682**	**3784**	**0**	**459**	**0**	**3939**	**319**	**336**

	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	101	0	188	8	209	923	0	122	0	889	80	142
4:00 PM - 5:00 PM	0	0	0	0	74	0	194	5	211	972	0	114	0	1066	81	90

	PHF	Trucks
AM	0.785	11.4%
PM	0.987	8.0%



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Morro Bay, CA 93442

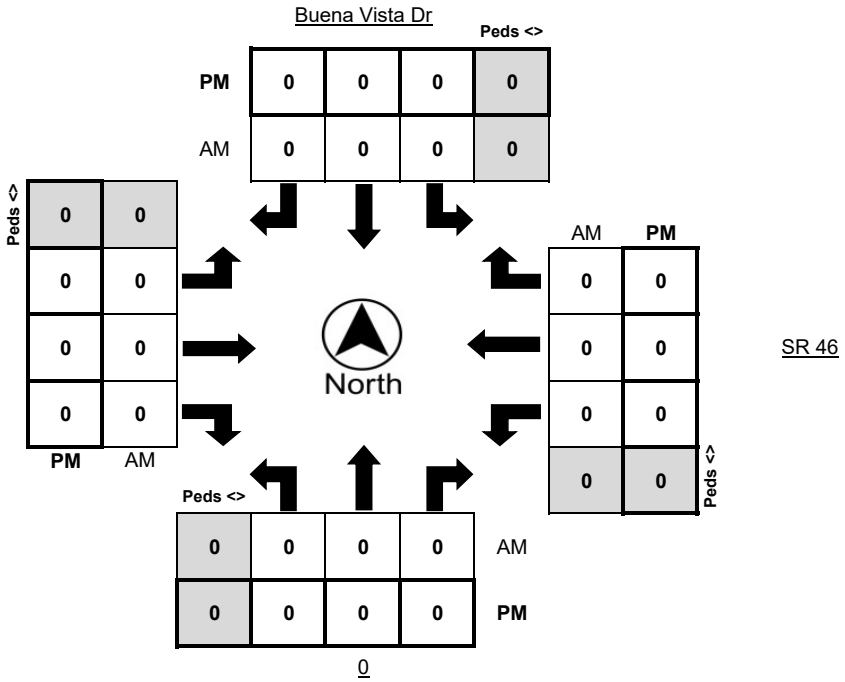
LOCATION SR46 @ Buena Vista Dr
LATITUDE 35.6446
COUNTY San Luis Obispo
LONGITUDE -120.6722
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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	2	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	2	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**	**2**	**0**	**2**	**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
4:00 PM - 5:00 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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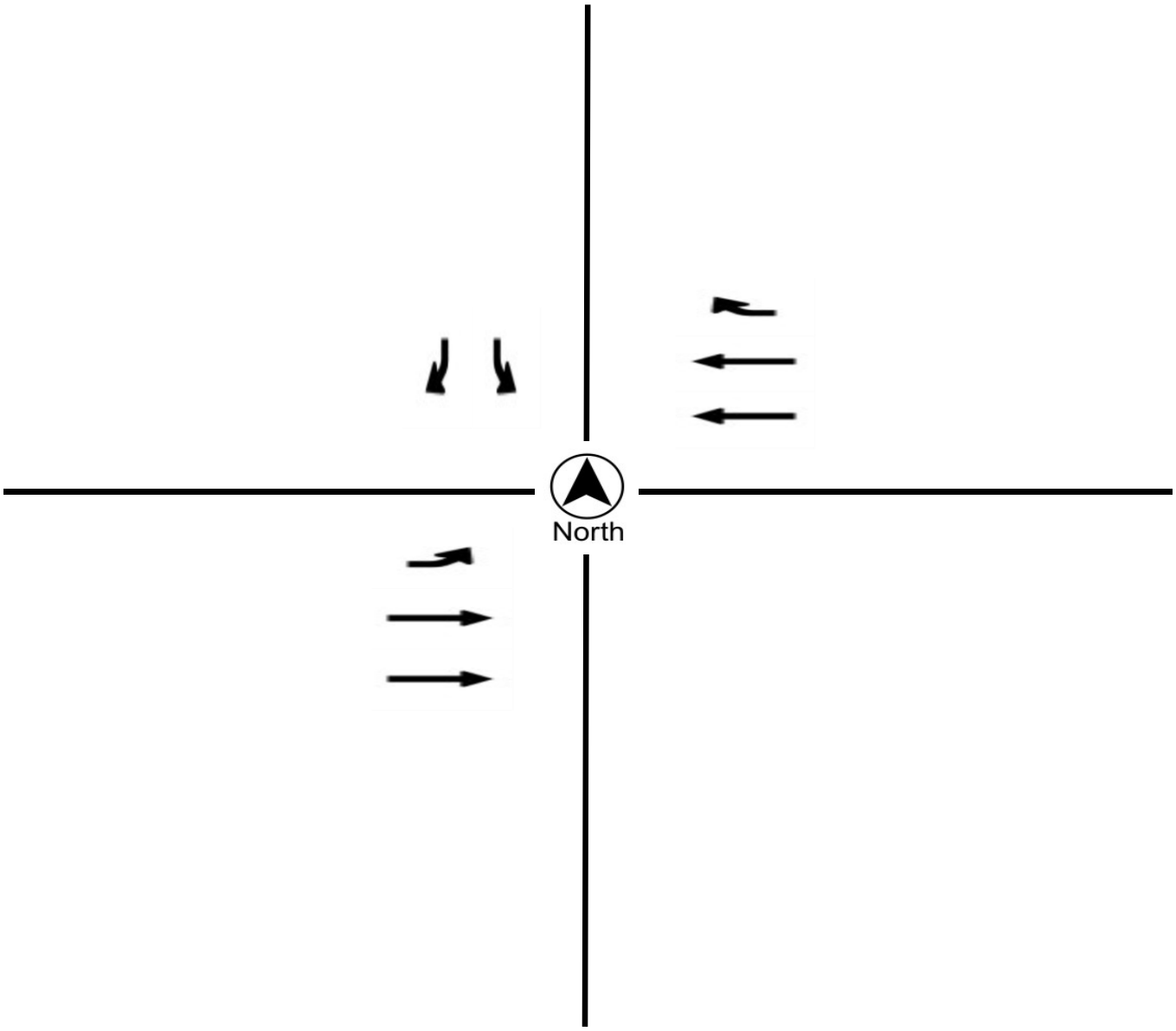
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Turning Movement Report

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

LOCATION	SR46 @ Buena Vista Dr	**N/S STREET**	Buena Vista Dr
COUNTY	San Luis Obispo	**E/W STREET**	SR 46
COLLECTION DATE	Tuesday, October 23, 2018	**WEATHER**	Clear
CYCLE TIME	95 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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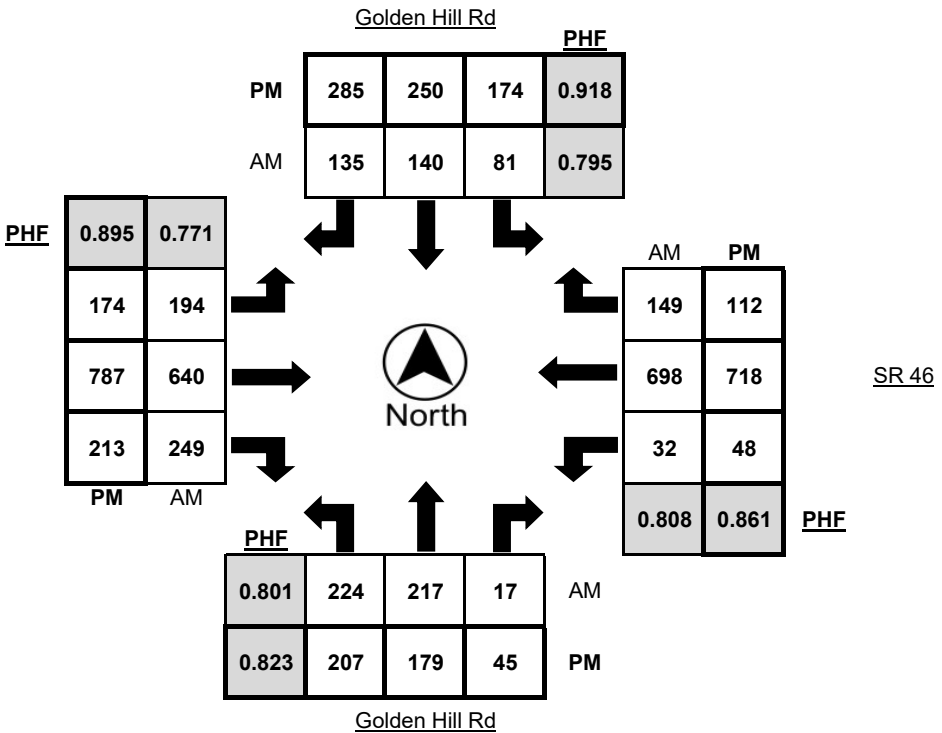
LOCATION SR 46 @ Golden Hill Rd
LATITUDE 35.6446
COUNTY San Luis Obispo
LONGITUDE -120.6581
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	21	43	1	3	16	12	34	10	43	72	20	13	9	122	29	22
7:15 AM - 7:30 AM	37	41	2	2	18	20	33	10	38	139	47	32	3	147	38	20
7:30 AM - 7:45 AM	50	49	6	5	16	33	36	7	31	132	46	24	12	182	44	26
7:45 AM - 8:00 AM	79	62	2	0	10	33	24	7	61	203	87	31	10	226	36	35
8:00 AM - 8:15 AM	64	45	5	2	31	37	44	9	50	156	62	38	7	140	44	22
8:15 AM - 8:30 AM	31	61	4	4	24	37	31	10	52	149	54	35	3	150	25	36
8:30 AM - 8:45 AM	23	37	6	3	25	33	44	17	34	145	40	34	4	131	22	36
8:45 AM - 9:00 AM	26	37	8	1	9	39	43	5	48	132	34	35	4	117	24	19
TOTAL	**331**	**375**	**34**	**20**	**149**	**244**	**289**	**75**	**357**	**1128**	**390**	**242**	**52**	**1215**	**262**	**216**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	49	42	3	1	32	50	67	7	43	158	41	20	13	180	30	19
4:15 PM - 4:30 PM	43	46	14	1	46	70	64	5	47	211	70	33	11	151	30	13
4:30 PM - 4:45 PM	49	54	9	1	35	64	69	8	50	184	51	24	11	206	38	23
4:45 PM - 5:00 PM	47	35	3	1	45	49	74	7	38	191	42	26	14	202	28	21
5:00 PM - 5:15 PM	68	44	19	2	48	67	78	0	39	201	50	23	12	159	16	15
5:15 PM - 5:30 PM	40	31	11	1	30	60	66	8	41	188	64	15	7	177	31	19
5:30 PM - 5:45 PM	42	57	18	0	40	52	48	3	24	246	43	21	11	145	19	17
5:45 PM - 6:00 PM	32	34	10	0	37	30	45	2	34	196	30	22	9	121	24	15
TOTAL	**370**	**343**	**87**	**7**	**313**	**442**	**511**	**40**	**316**	**1575**	**391**	**184**	**88**	**1341**	**216**	**142**

	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	224	217	17	11	81	140	135	33	194	640	249	128	32	698	149	119
4:15 PM - 5:15 PM	207	179	45	5	174	250	285	20	174	787	213	106	48	718	112	72

	PHF	Trucks
AM	0.833	10.5%
PM	0.973	6.4%



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Morro Bay, CA 93442

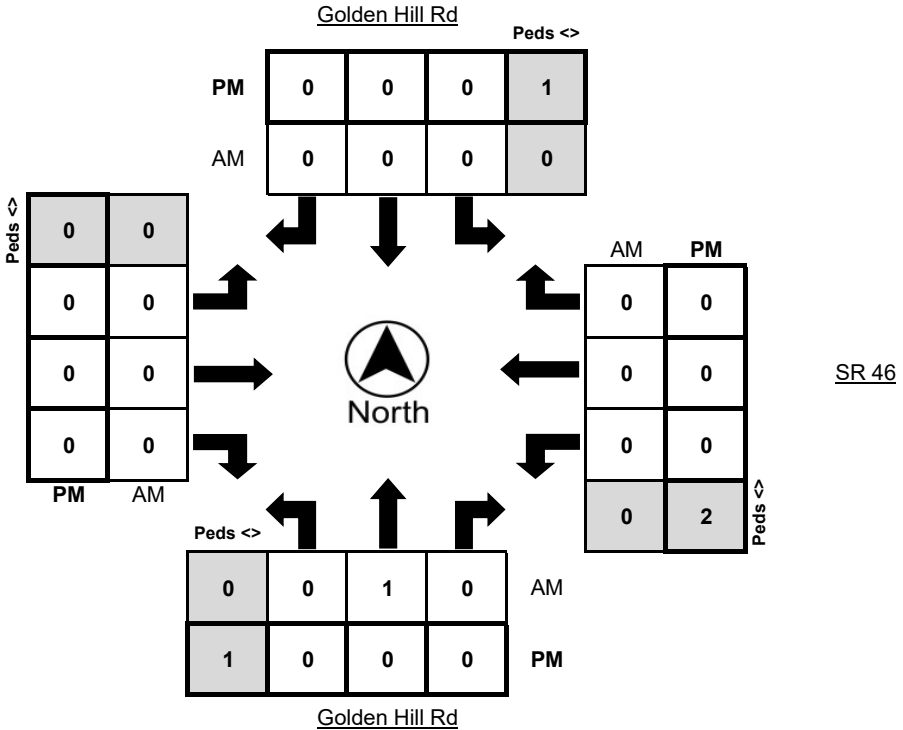
LOCATION SR 46 @ Golden Hill Rd
LATITUDE 35.6446
COUNTY San Luis Obispo
LONGITUDE -120.6581
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	1	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	1	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**1**	**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
4:00 PM - 4:15 PM	0	0	0	1	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	1	0	0	0	0	0	0	0	1	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	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	1	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**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0

	Bikes	Peds
AM Peak Total	1	0
PM Peak Total	0	4



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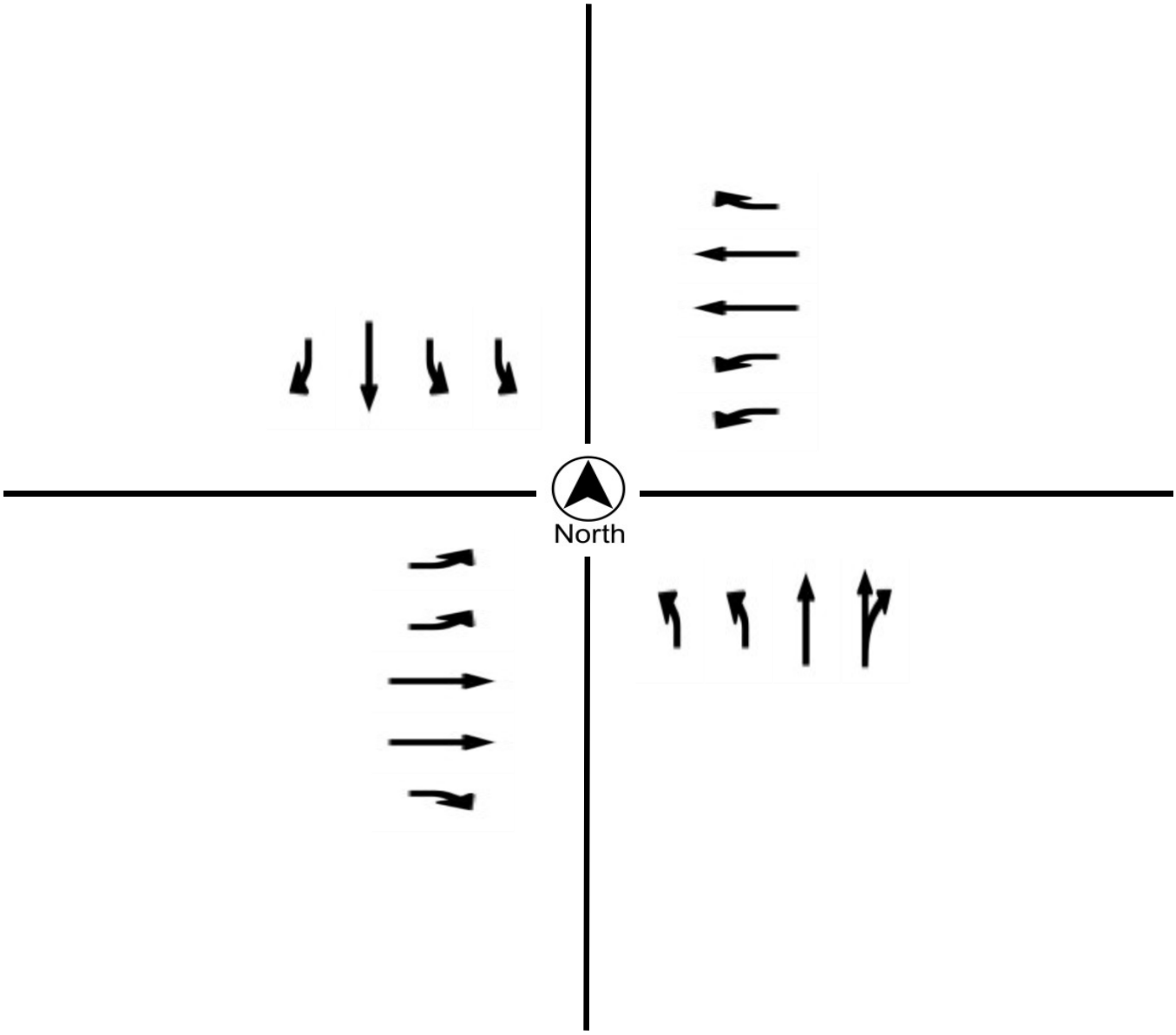
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Turning Movement Report

Prepared For:
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Morro Bay, CA 93442

LOCATION	SR 46 @ Golden Hill Rd	**N/S STREET**	Golden Hill Rd / Golden Hill Rd
COUNTY	San Luis Obispo	**E/W STREET**	SR 46 / SR 46
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	169 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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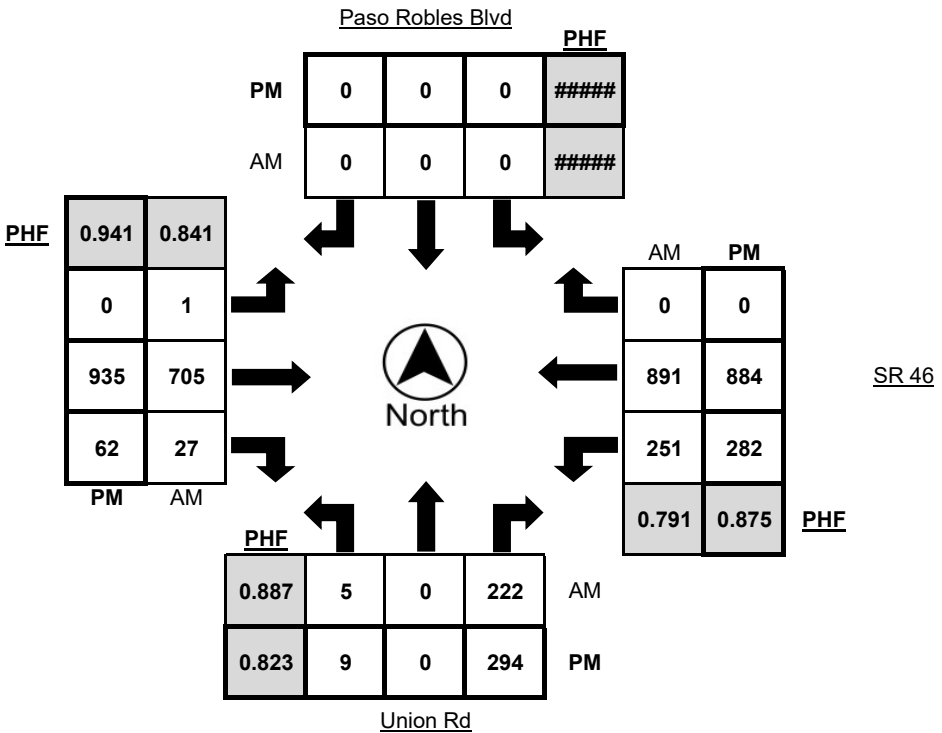
LOCATION SR 46 @ Union Rd
LATITUDE 35.6445
COUNTY San Luis Obispo
LONGITUDE -120.6494
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	42	1	0	0	0	0	0	90	2	11	34	177	0	25
7:15 AM - 7:30 AM	1	0	47	2	0	0	0	0	0	159	5	36	58	180	0	25
7:30 AM - 7:45 AM	1	0	41	1	0	0	0	0	0	143	3	22	91	245	0	23
7:45 AM - 8:00 AM	0	0	60	1	0	0	0	0	0	212	6	25	72	289	0	37
8:00 AM - 8:15 AM	3	0	58	1	0	0	0	0	0	183	10	32	48	180	0	24
8:15 AM - 8:30 AM	1	0	63	1	0	0	0	0	1	167	8	27	40	177	0	35
8:30 AM - 8:45 AM	0	0	39	2	0	1	0	0	0	167	5	37	53	165	0	36
8:45 AM - 9:00 AM	1	0	45	2	0	0	0	0	0	134	10	28	40	142	0	17
TOTAL	**7**	**0**	**395**	**11**	**0**	**1**	**0**	**0**	**1**	**1255**	**49**	**218**	**436**	**1555**	**0**	**222**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	1	0	74	2	0	0	0	0	0	188	9	18	52	228	0	20
4:15 PM - 4:30 PM	3	0	60	0	0	0	0	0	0	250	15	27	54	208	0	12
4:30 PM - 4:45 PM	2	0	65	0	0	0	0	0	0	222	13	21	76	257	0	23
4:45 PM - 5:00 PM	3	0	89	0	0	0	0	0	0	211	21	29	78	232	0	20
5:00 PM - 5:15 PM	1	0	80	0	0	0	0	0	0	252	13	23	74	187	0	10
5:15 PM - 5:30 PM	3	0	68	0	0	0	0	0	0	220	12	14	70	211	0	18
5:30 PM - 5:45 PM	5	0	67	0	0	0	0	0	0	279	22	17	59	167	0	16
5:45 PM - 6:00 PM	9	0	70	0	0	0	0	0	0	241	12	18	39	155	0	21
TOTAL	**27**	**0**	**573**	**2**	**0**	**0**	**0**	**0**	**0**	**1863**	**117**	**167**	**502**	**1645**	**0**	**140**

	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	5	0	222	4	0	0	0	0	1	705	27	106	251	891	0	119
4:15 PM - 5:15 PM	9	0	294	0	0	0	0	0	0	935	62	100	282	884	0	65

	PHF	Trucks
AM	0.822	10.9%
PM	0.971	6.7%



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Turning Movement Report

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

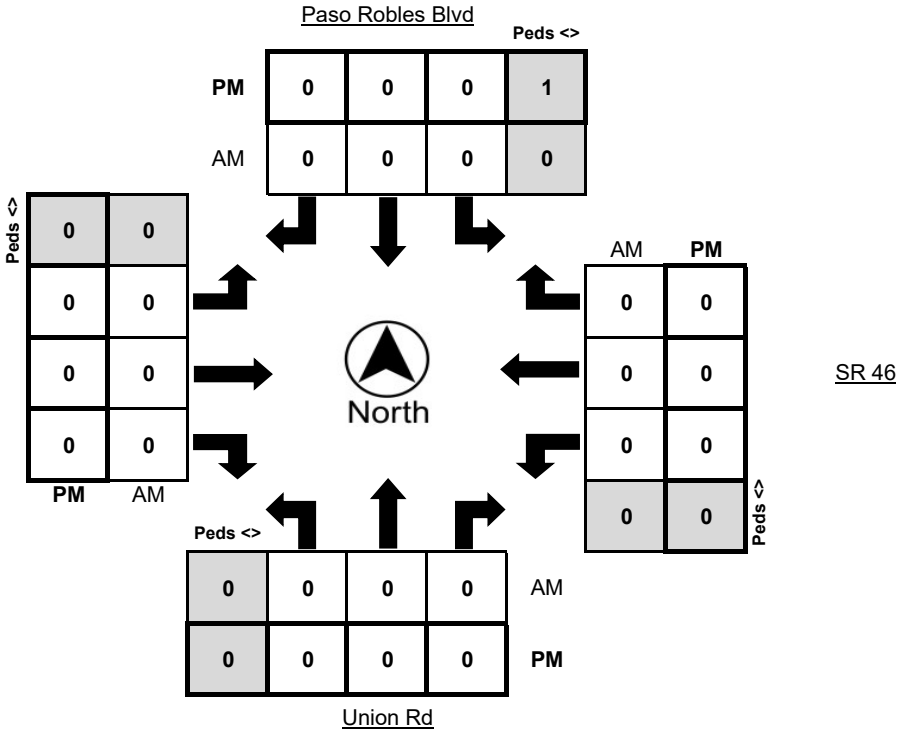
LOCATION SR 46 @ Union Rd
LATITUDE 35.6445
COUNTY San Luis Obispo
LONGITUDE -120.6494
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	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	1	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**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**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	1	0	0	0	0	0	0	0	0	0	0	0	0

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



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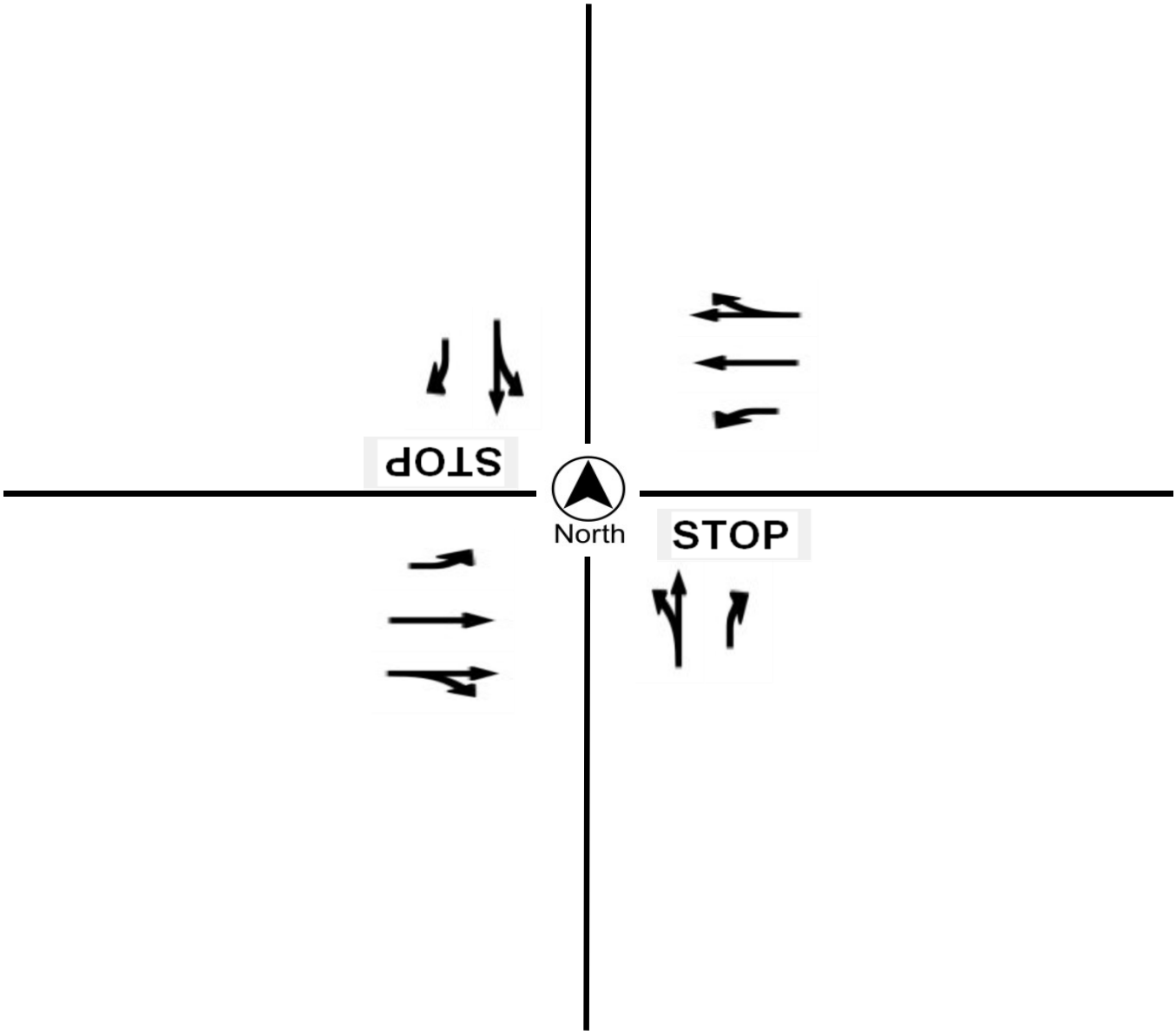
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Turning Movement Report

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

LOCATION	SR 46 @ Union Rd	**N/S STREET**	Paso Robles Blvd / Union Rd
COUNTY	San Luis Obispo	**E/W STREET**	SR 46 / SR 46
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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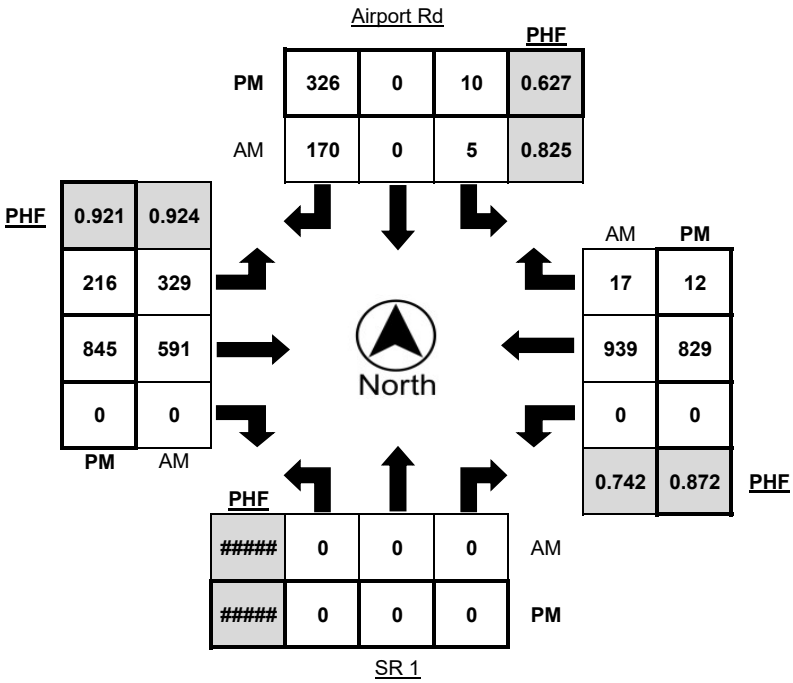
LOCATION SR46 @ Airport Rd
LATITUDE 35.6445
COUNTY San Luis Obispo
LONGITUDE -120.6433
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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	1	0	21	1	52	111	0	15	0	184	3	24
7:15 AM - 7:30 AM	0	0	0	0	0	0	36	3	41	122	0	26	0	203	2	22
7:30 AM - 7:45 AM	0	0	0	0	1	0	41	2	65	134	0	30	0	283	1	24
7:45 AM - 8:00 AM	0	0	0	0	0	0	53	1	111	123	0	25	0	311	11	21
8:00 AM - 8:15 AM	0	0	0	0	4	0	42	9	90	159	0	29	0	183	4	22
8:15 AM - 8:30 AM	0	0	0	0	0	0	34	2	63	175	0	19	0	162	1	20
8:30 AM - 8:45 AM	0	0	0	0	1	0	30	3	51	148	0	38	0	179	0	38
8:45 AM - 9:00 AM	0	0	0	0	3	0	34	4	40	125	0	28	0	156	1	28
TOTAL	**0**	**0**	**0**	**0**	**10**	**0**	**291**	**25**	**513**	**1097**	**0**	**210**	**0**	**1661**	**23**	**199**

	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	6	0	53	4	32	166	0	37	0	216	3	33
2:15 PM - 2:30 PM	0	0	0	0	2	0	55	4	49	185	0	27	0	227	0	25
2:30 PM - 2:45 PM	0	0	0	0	3	0	79	9	39	190	0	45	0	221	4	29
2:45 PM - 3:00 PM	0	0	0	0	4	0	45	3	51	232	0	27	0	190	2	21
3:00 PM - 3:15 PM	0	0	0	0	1	0	47	4	52	188	0	29	0	197	2	29
3:15 PM - 3:30 PM	0	0	0	0	1	0	50	6	58	215	0	30	0	195	6	39
3:30 PM - 3:45 PM	0	0	0	0	3	0	131	1	48	200	0	30	0	209	5	21
3:45 PM - 4:00 PM	0	0	0	0	2	0	67	8	64	224	0	29	0	192	3	17
4:00 PM - 4:15 PM	0	0	0	0	1	0	60	3	49	222	0	23	0	190	1	25
4:15 PM - 4:30 PM	0	0	0	0	4	0	68	3	55	199	0	29	0	238	3	23
4:30 PM - 4:45 PM	0	0	0	0	1	0	99	0	48	220	0	25	0	205	4	21
4:45 PM - 5:00 PM	0	0	0	0	2	0	81	3	41	234	0	25	0	197	1	27
5:00 PM - 5:15 PM	0	0	0	0	4	0	102	4	42	215	0	19	0	169	3	17
5:15 PM - 5:30 PM	0	0	0	0	4	0	58	2	36	226	0	34	0	175	1	13
5:30 PM - 5:45 PM	0	0	0	0	1	0	48	0	53	209	0	20	0	149	1	20
5:45 PM - 6:00 PM	0	0	0	0	1	0	35	0	52	204	0	18	0	146	2	8
TOTAL	**0**	**0**	**0**	**0**	**40**	**0**	**1078**	**54**	**769**	**3329**	**0**	**447**	**0**	**3116**	**41**	**368**

	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	5	0	170	14	329	591	0	103	0	939	17	87
3:30 PM - 4:30 PM	0	0	0	0	10	0	326	15	216	845	0	111	0	829	12	86

	PHF	Trucks
AM	0.842	9.9%
PM	0.939	9.5%



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Morro Bay, CA 93442

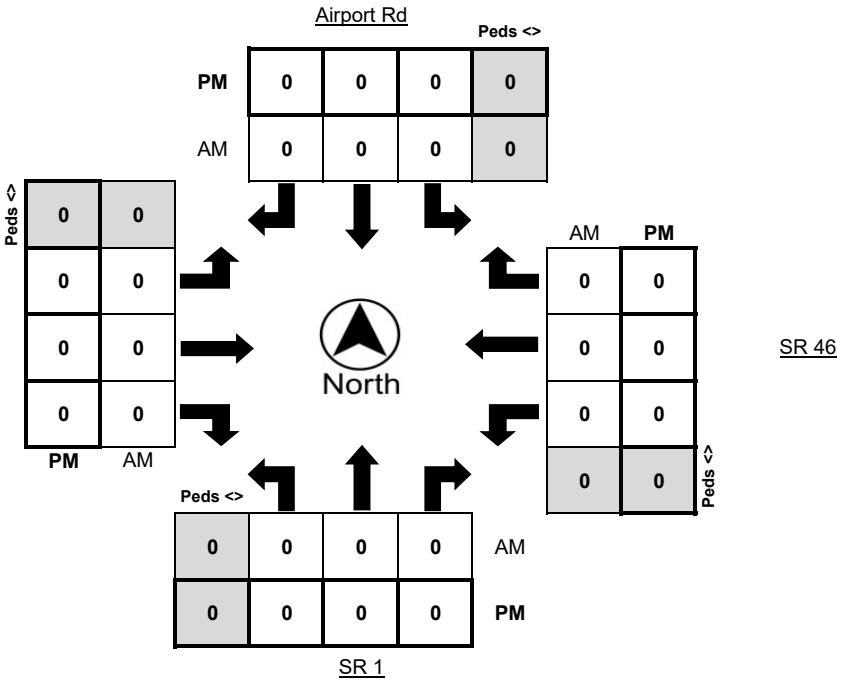
LOCATION SR46 @ Airport Rd
LATITUDE 35.6445
COUNTY San Luis Obispo
LONGITUDE -120.6433
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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
3:30 PM - 4:30 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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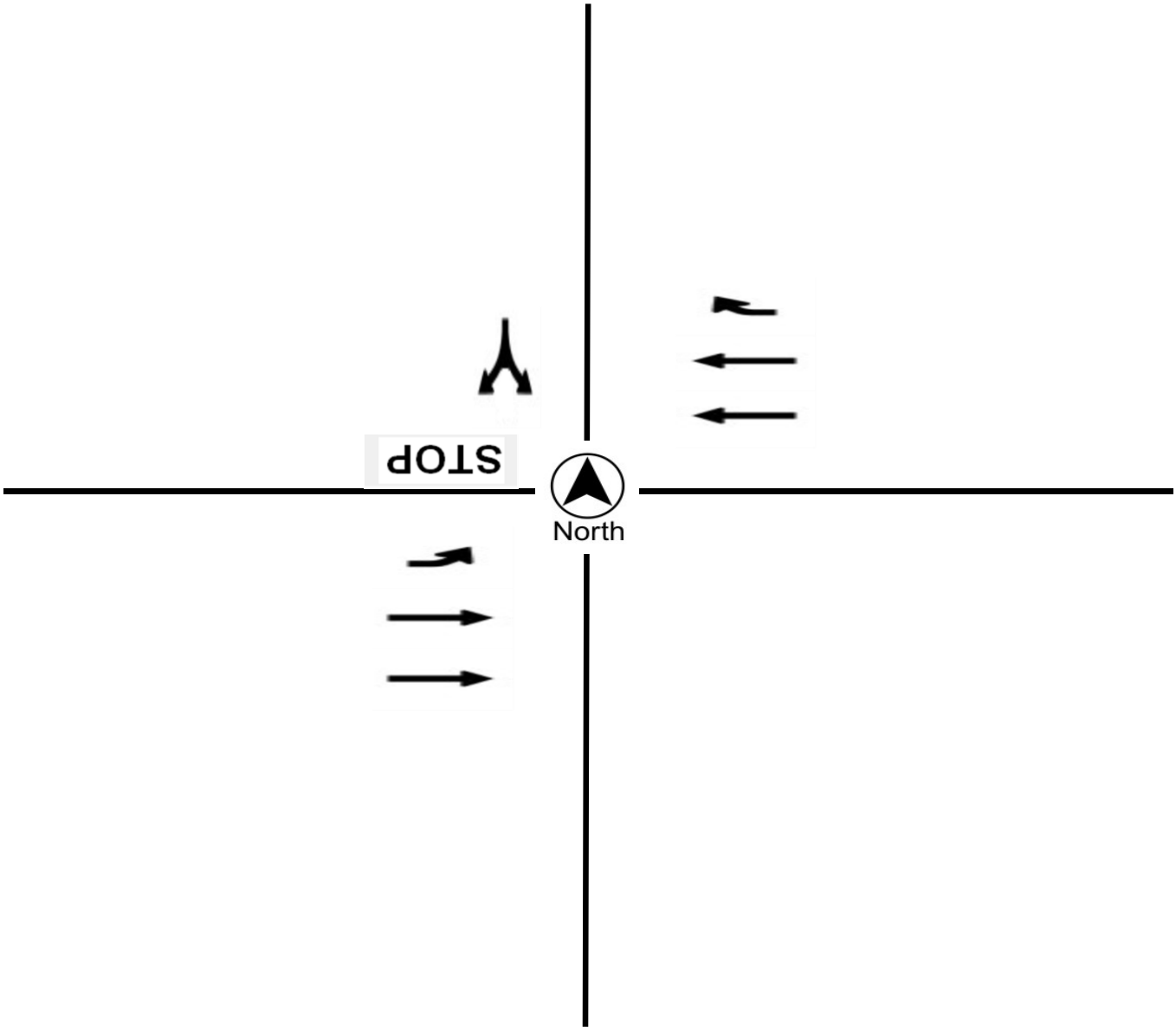
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www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	SR46 @ Airport Rd	**N/S STREET**	Airport Rd
COUNTY	San Luis Obispo	**E/W STREET**	SR 46
COLLECTION DATE	Tuesday, October 23, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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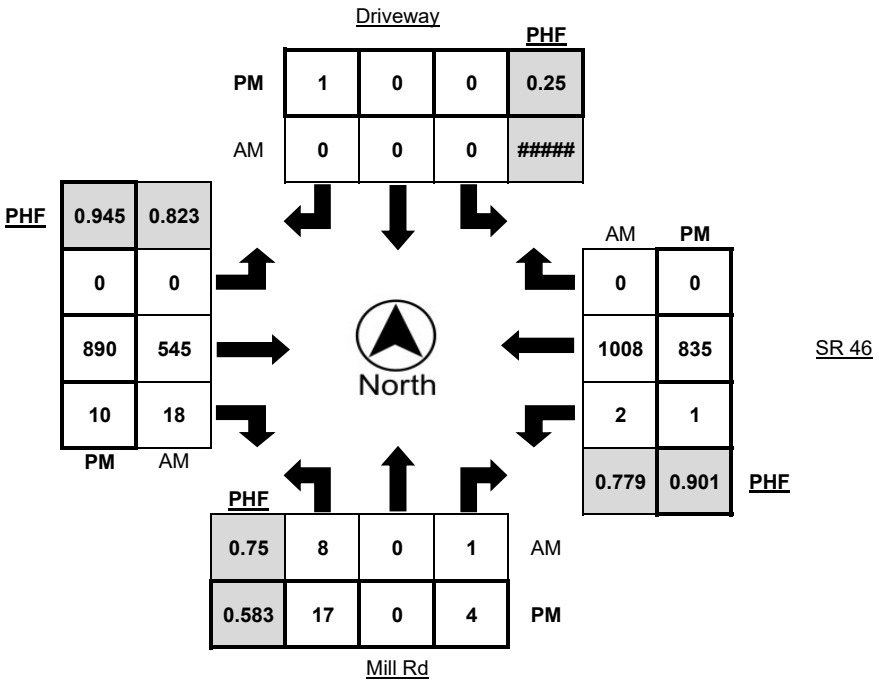
LOCATION SR46 @ Mill Rd
LATITUDE 35.6453
COUNTY San Luis Obispo
LONGITUDE -120.6342
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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	2	0	0	0	0	0	0	0	0	111	0	14	0	177	0	24
7:15 AM - 7:30 AM	3	0	0	0	0	0	0	0	0	126	3	25	0	208	0	21
7:30 AM - 7:45 AM	3	0	0	0	0	0	0	0	0	130	4	28	1	294	0	22
7:45 AM - 8:00 AM	1	0	0	0	0	0	0	0	0	124	5	24	1	323	0	18
8:00 AM - 8:15 AM	1	0	1	0	0	0	0	0	0	165	6	32	0	183	0	20
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	170	3	18	0	163	0	23
8:30 AM - 8:45 AM	3	0	1	2	0	0	0	0	0	149	3	34	0	188	0	31
8:45 AM - 9:00 AM	2	0	1	1	0	0	0	0	0	125	4	29	2	152	0	29
TOTAL	**15**	**0**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**1100**	**28**	**204**	**4**	**1688**	**0**	**188**

	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	2	0	3	0	0	0	0	0	0	166	6	37	1	225	0	31
2:15 PM - 2:30 PM	4	0	0	0	0	0	0	0	0	185	3	24	0	215	0	25
2:30 PM - 2:45 PM	1	0	1	0	0	0	0	0	0	182	3	44	2	231	0	29
2:45 PM - 3:00 PM	6	0	1	0	0	0	0	0	0	229	2	25	1	175	0	30
3:00 PM - 3:15 PM	11	0	2	3	0	0	0	0	0	193	7	21	2	195	0	30
3:15 PM - 3:30 PM	3	0	0	0	0	0	0	0	0	207	2	32	1	198	0	33
3:30 PM - 3:45 PM	6	0	1	0	0	0	0	0	0	197	3	23	1	209	0	20
3:45 PM - 4:00 PM	6	0	3	0	0	0	0	0	0	225	2	27	3	197	0	13
4:00 PM - 4:15 PM	2	0	1	0	0	0	1	0	0	224	2	23	0	202	0	29
4:15 PM - 4:30 PM	3	0	1	1	0	0	0	0	0	212	4	28	0	232	0	21
4:30 PM - 4:45 PM	8	0	1	0	0	0	0	0	0	217	3	24	1	198	0	22
4:45 PM - 5:00 PM	4	0	1	0	0	0	0	0	0	237	1	25	0	203	0	28
5:00 PM - 5:15 PM	5	0	0	0	0	0	0	0	0	233	1	19	0	166	0	15
5:15 PM - 5:30 PM	6	0	2	0	0	0	0	0	0	231	5	33	0	175	0	15
5:30 PM - 5:45 PM	5	0	0	0	0	0	0	0	0	215	2	18	1	146	0	17
5:45 PM - 6:00 PM	2	0	0	0	0	0	0	0	0	202	1	19	0	146	0	9
TOTAL	**74**	**0**	**17**	**4**	**0**	**0**	**1**	**0**	**0**	**3355**	**47**	**422**	**13**	**3113**	**0**	**367**

	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	8	0	1	0	0	0	0	0	0	545	18	109	2	1008	0	81
4:00 PM - 5:00 PM	17	0	4	1	0	0	1	0	0	890	10	100	1	835	0	100

	PHF	Trucks
AM	0.871	12.0%
PM	0.972	11.4%



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

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Turning Movement Report

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

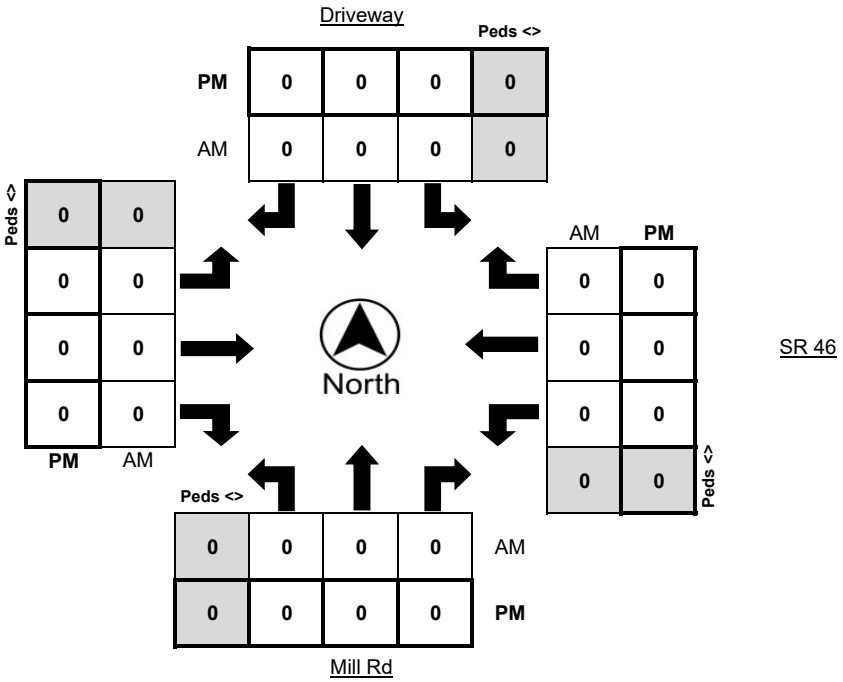
LOCATION SR46 @ Mill Rd
LATITUDE 35.6453
COUNTY San Luis Obispo
LONGITUDE -120.6342
COLLECTION DATE Tuesday, October 23, 2018
WEATHER Clear

	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
4:00 PM - 5:00 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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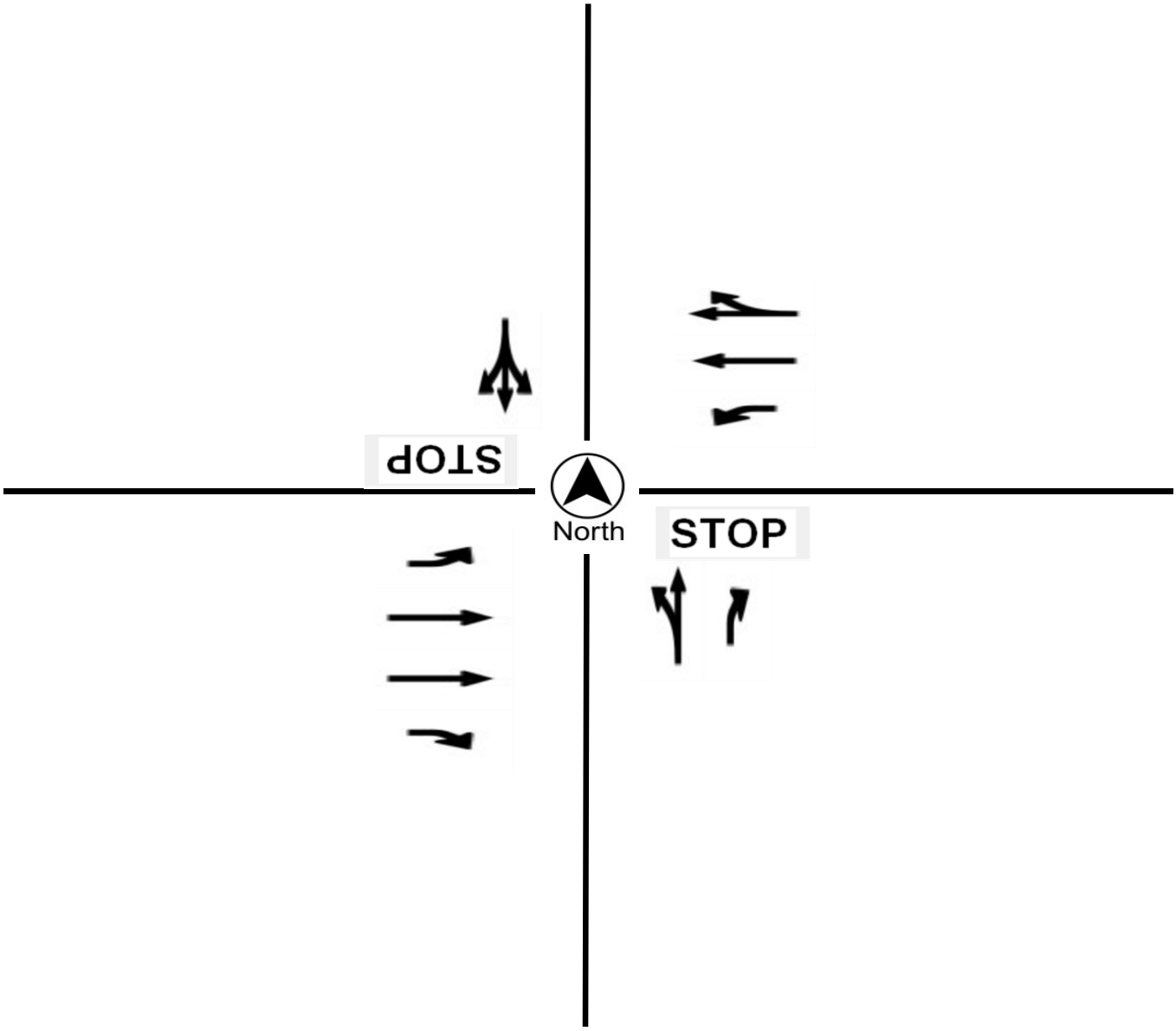
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Prepared For:
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895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION	SR46 @ Mill Rd	**N/S STREET**	Mill Rd
COUNTY	San Luis Obispo	**E/W STREET**	SR 46
COLLECTION DATE	Tuesday, October 23, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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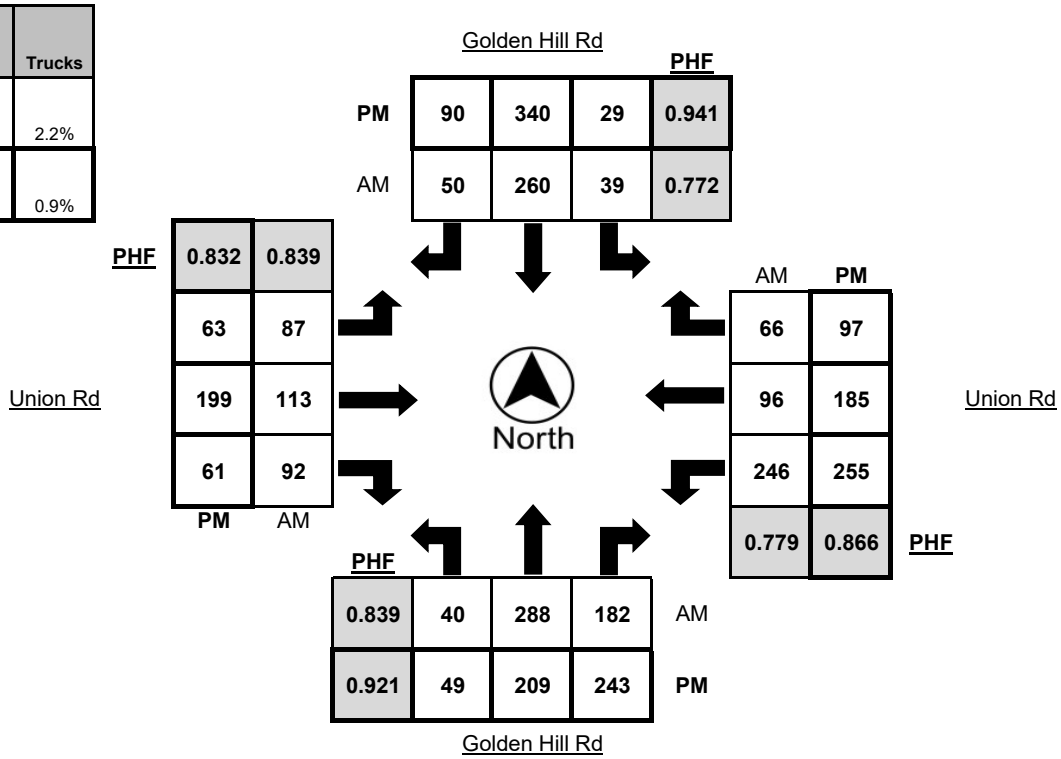
LOCATION Golden Hill Rd @ Union Rd
LATITUDE 35.6402
COUNTY San Luis Obispo
LONGITUDE -120.6581
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	39	29	4	5	30	3	3	17	19	9	2	33	15	13	2
7:15 AM - 7:30 AM	7	48	42	1	12	49	3	0	14	26	23	1	53	21	22	6
7:30 AM - 7:45 AM	6	74	32	2	3	60	11	2	19	29	27	0	74	25	10	2
7:45 AM - 8:00 AM	13	82	54	1	12	85	16	6	32	27	28	0	76	32	23	0
8:00 AM - 8:15 AM	14	84	54	2	12	66	20	5	22	31	14	2	43	18	11	5
8:15 AM - 8:30 AM	16	51	46	1	9	49	15	6	12	29	15	0	32	23	15	4
8:30 AM - 8:45 AM	15	37	32	2	9	45	12	6	15	19	9	1	44	27	12	4
8:45 AM - 9:00 AM	6	39	36	3	7	50	10	4	14	23	12	0	26	30	12	2
TOTAL	**82**	**454**	**325**	**16**	**69**	**434**	**90**	**32**	**145**	**203**	**137**	**6**	**381**	**191**	**118**	**25**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	9	50	54	3	13	53	23	2	24	50	14	2	60	40	20	2
4:15 PM - 4:30 PM	6	61	41	0	16	101	23	7	17	48	14	0	49	39	16	3
4:30 PM - 4:45 PM	12	61	50	0	10	85	24	3	11	47	10	1	61	41	29	2
4:45 PM - 5:00 PM	9	44	83	1	4	80	17	0	23	54	20	2	59	48	15	0
5:00 PM - 5:15 PM	15	54	65	1	10	85	27	0	15	48	16	1	69	50	36	1
5:15 PM - 5:30 PM	13	50	45	0	5	90	22	4	14	50	15	0	66	46	17	1
5:30 PM - 5:45 PM	10	66	57	0	8	83	13	2	15	31	16	0	45	40	23	0
5:45 PM - 6:00 PM	4	43	72	0	7	44	13	1	13	47	16	0	34	30	12	0
TOTAL	**78**	**429**	**467**	**5**	**73**	**621**	**162**	**19**	**132**	**375**	**121**	**6**	**443**	**334**	**168**	**9**

	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	40	288	182	6	39	260	50	13	87	113	92	3	246	96	66	13
4:30 PM - 5:30 PM	49	209	243	2	29	340	90	7	63	199	61	4	255	185	97	4

	PHF	Trucks
AM	0.812	2.2%
PM	0.929	0.9%



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Morro Bay, CA 93442

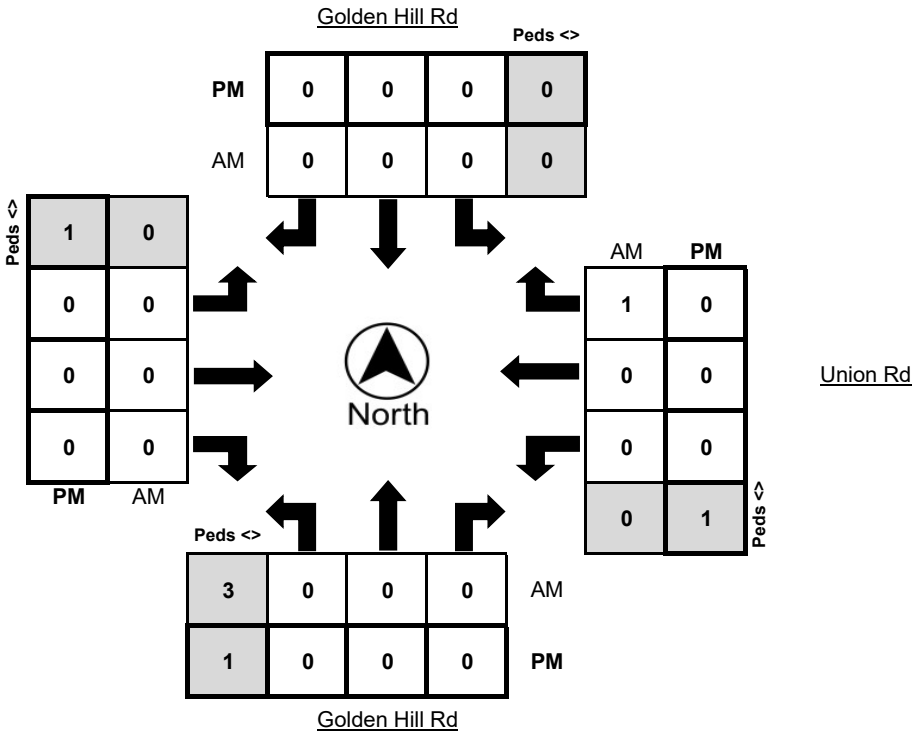
LOCATION Golden Hill Rd @ Union Rd
LATITUDE 35.6402
COUNTY San Luis Obispo
LONGITUDE -120.6581
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	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	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	3	0	0	0	0	0	0	1	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	1	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**	**0**	**0**	**0**	**6**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**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
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	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	1	0	0	0	1	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	1
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**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**1**

	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	3	0	0	0	0	0	0	1	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1

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



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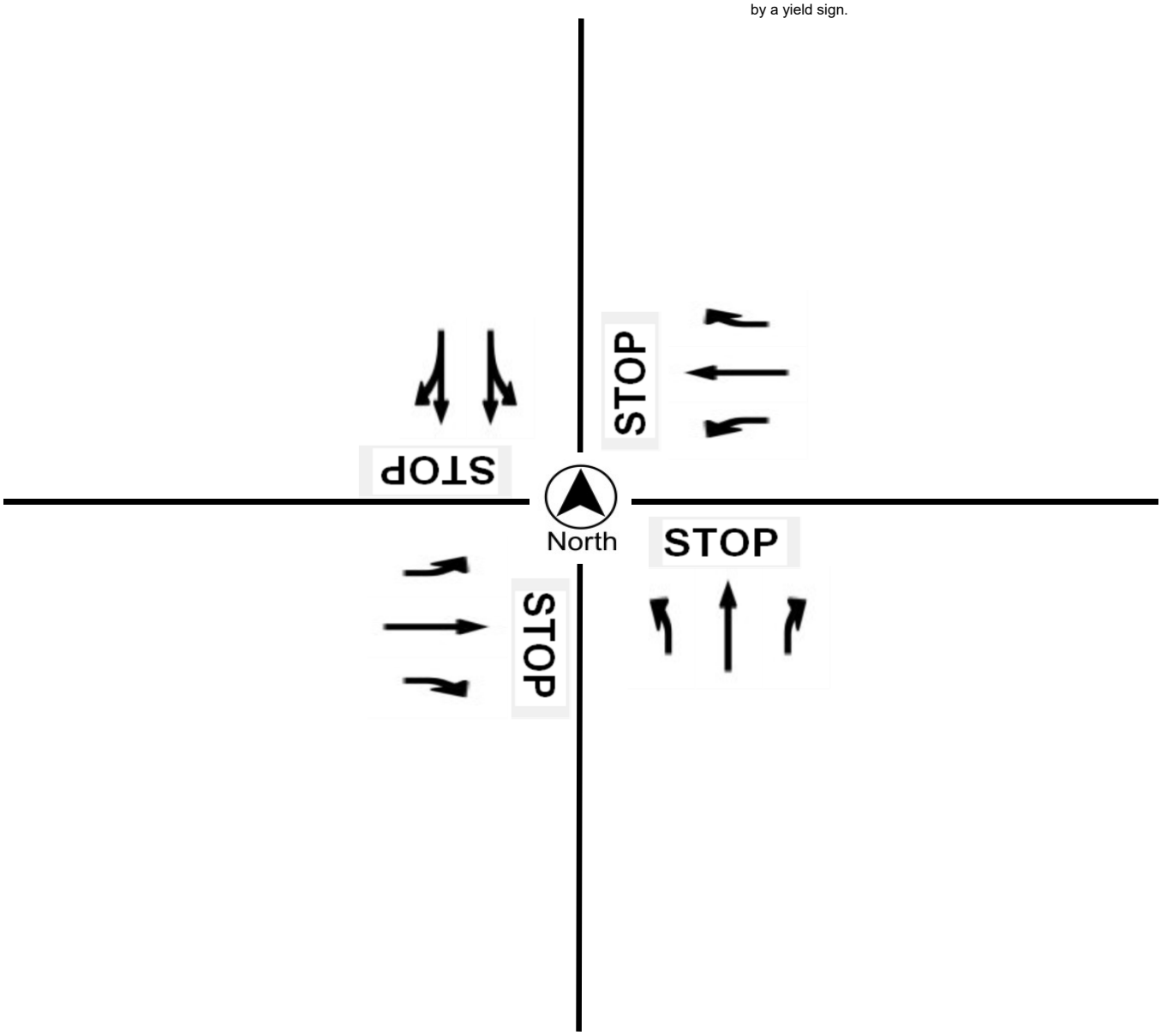
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Turning Movement Report

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

LOCATION	Golden Hill Rd @ Union Rd	**N/S STREET**	Golden Hill Rd / Golden Hill Rd
COUNTY	San Luis Obispo	**E/W STREET**	Union Rd / Union Rd
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS Eastbound and westbound right turns controlled by a yield sign.



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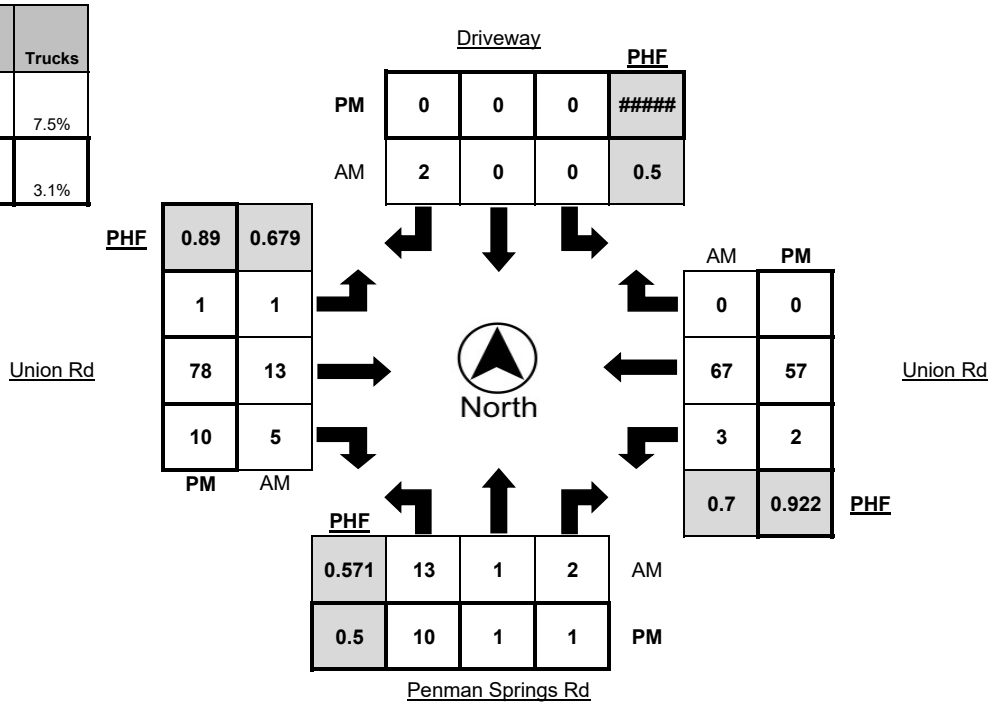
LOCATION Penman Springs Rd @ Union Rd
LATITUDE 35.6301
COUNTY San Luis Obispo
LONGITUDE -120.6143
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	4	0	0	0	0	0	0	0	1	3	3	1	0	15	0	2
7:15 AM - 7:30 AM	0	0	0	1	0	0	0	0	0	1	0	0	1	18	0	0
7:30 AM - 7:45 AM	6	1	0	1	0	0	1	0	0	4	1	0	1	24	0	3
7:45 AM - 8:00 AM	3	0	2	0	0	0	1	0	0	5	1	0	1	10	0	0
8:00 AM - 8:15 AM	1	0	0	0	0	0	0	0	1	10	0	0	2	8	0	0
8:15 AM - 8:30 AM	1	0	0	0	0	0	0	0	0	8	2	0	0	10	0	0
8:30 AM - 8:45 AM	1	0	1	0	0	0	0	0	1	11	0	0	2	7	0	0
8:45 AM - 9:00 AM	1	1	1	0	0	0	1	0	0	8	2	0	0	8	0	0
TOTAL	**17**	**2**	**4**	**2**	**0**	**0**	**3**	**0**	**3**	**50**	**9**	**1**	**7**	**100**	**0**	**5**

	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	1	0	1	0	0	0	1	0	0	6	2	0	0	11	0	0
2:15 PM - 2:30 PM	2	0	0	0	0	0	0	0	0	10	1	0	1	6	0	0
2:30 PM - 2:45 PM	2	0	1	0	0	0	0	0	0	11	2	0	1	12	0	0
2:45 PM - 3:00 PM	3	0	0	0	0	0	0	0	0	15	1	0	0	16	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	1	19	5	2	1	12	0	2
3:15 PM - 3:30 PM	1	1	1	0	0	0	0	0	0	20	3	0	0	14	0	0
3:30 PM - 3:45 PM	6	0	0	0	0	0	0	0	0	24	1	1	1	15	0	0
3:45 PM - 4:00 PM	3	1	0	0	0	0	0	0	0	17	2	0	1	9	0	0
4:00 PM - 4:15 PM	1	0	1	0	0	0	0	0	1	17	3	0	0	11	0	2
4:15 PM - 4:30 PM	0	0	1	0	0	0	1	0	1	16	2	0	0	9	0	1
4:30 PM - 4:45 PM	1	0	1	0	0	0	0	0	0	14	3	0	1	14	0	0
4:45 PM - 5:00 PM	3	0	0	0	0	0	0	0	0	21	1	0	1	13	0	0
5:00 PM - 5:15 PM	3	0	1	0	0	0	0	0	0	21	1	0	1	11	0	0
5:15 PM - 5:30 PM	3	0	0	0	0	0	0	0	0	16	0	0	2	14	0	0
5:30 PM - 5:45 PM	1	0	2	0	0	0	0	0	0	25	3	0	0	8	0	0
5:45 PM - 6:00 PM	0	0	1	0	0	0	0	0	0	8	1	0	0	8	0	0
TOTAL	**30**	**2**	**10**	**0**	**0**	**0**	**2**	**0**	**3**	**260**	**31**	**3**	**10**	**183**	**0**	**5**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	13	1	2	2	0	0	2	0	1	13	5	1	3	67	0	5
2:45 PM - 3:45 PM	10	1	1	0	0	0	0	0	1	78	10	3	2	57	0	2

	PHF	Trucks
AM	0.704	7.5%
PM	0.851	3.1%



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

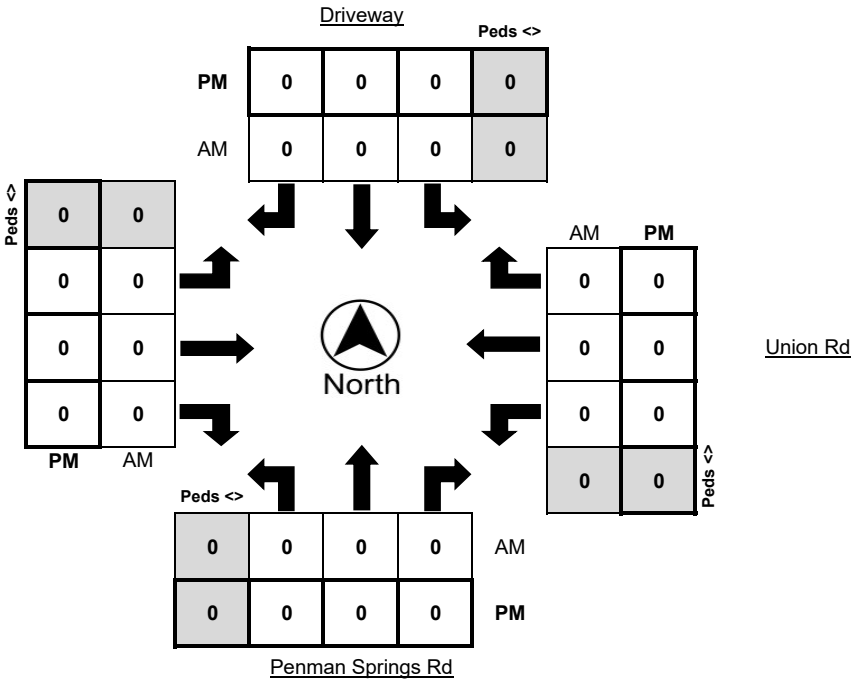
LOCATION Penman Springs Rd @ Union Rd
LATITUDE 35.6301
COUNTY San Luis Obispo
LONGITUDE -120.6143
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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
7:00 AM - 8:00 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

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



Metro Traffic Data Inc.
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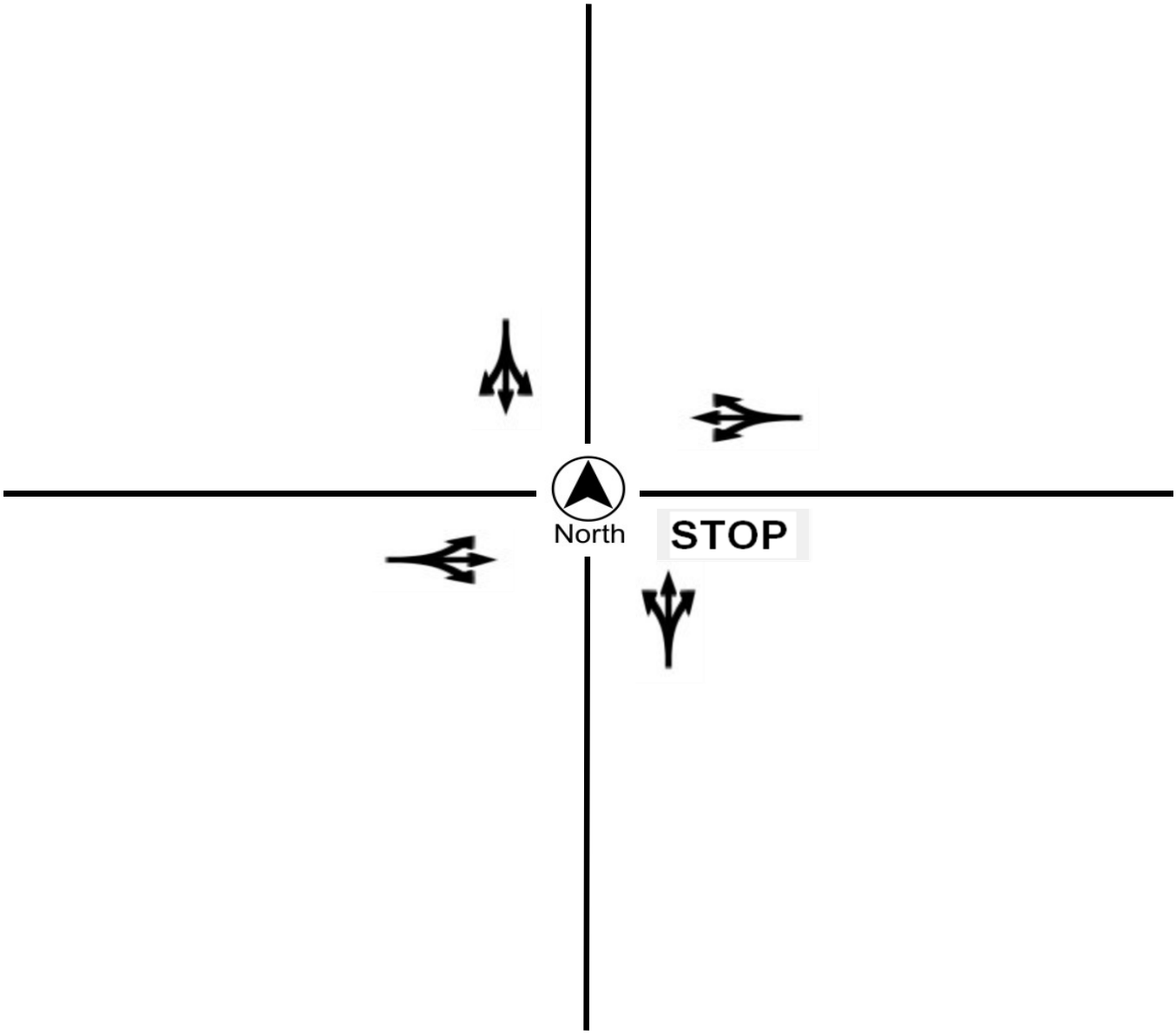
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	Penman Springs Rd @ Union Rd	**N/S STREET**	Driveway / Penman Springs Rd
COUNTY	San Luis Obispo	**E/W STREET**	Union Rd / Union Rd
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way stop

COMMENTS



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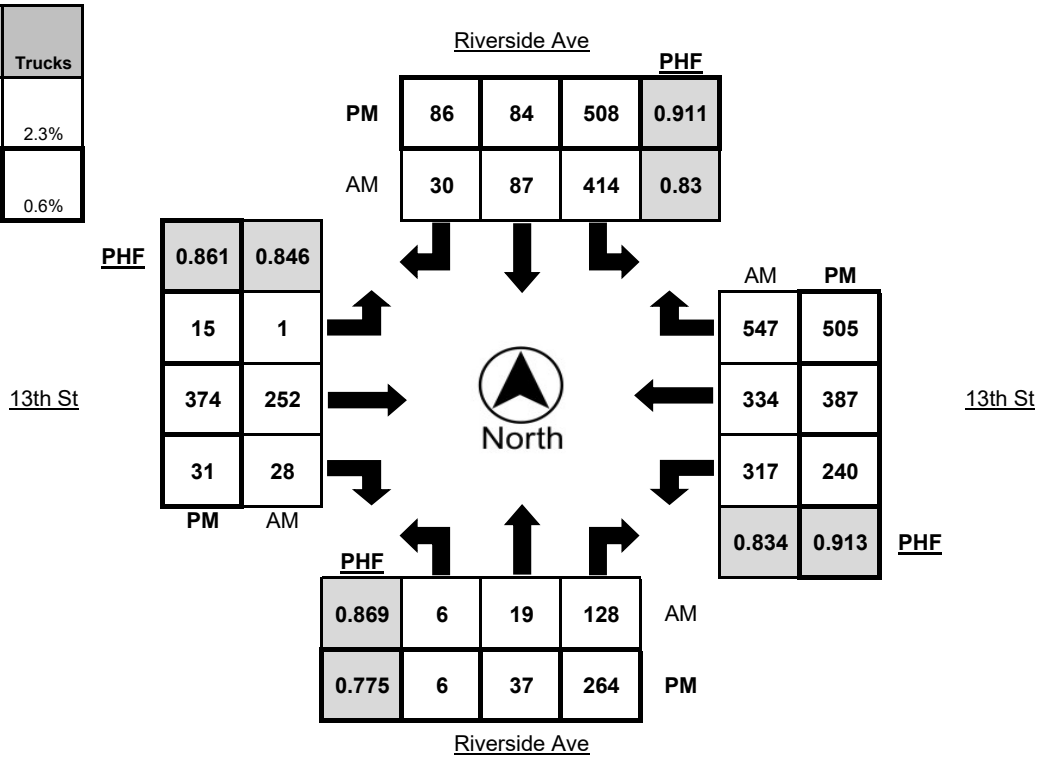
LOCATION 13th St @ Riverisde Ave
LATITUDE 35.6280
COUNTY San Luis Obispo
LONGITUDE -120.6870
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	7	14	1	42	14	3	3	0	31	8	1	52	43	60	9
7:15 AM - 7:30 AM	1	7	19	3	78	25	3	3	1	46	10	2	75	58	76	4
7:30 AM - 7:45 AM	2	2	30	4	126	17	8	3	0	53	7	1	80	61	117	5
7:45 AM - 8:00 AM	0	6	38	2	121	31	8	4	1	68	5	1	94	97	168	5
8:00 AM - 8:15 AM	1	6	26	0	84	19	6	4	0	57	7	1	81	90	156	6
8:15 AM - 8:30 AM	3	5	34	1	83	20	8	5	0	74	9	2	62	86	106	5
8:30 AM - 8:45 AM	1	8	26	4	55	23	12	3	5	50	12	1	58	77	88	7
8:45 AM - 9:00 AM	0	8	33	0	57	15	13	2	4	49	6	1	63	125	97	6
TOTAL	**8**	**49**	**220**	**15**	**646**	**164**	**61**	**27**	**11**	**428**	**64**	**10**	**565**	**637**	**868**	**47**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	9	69	0	89	18	14	6	2	98	10	3	55	101	93	1
4:15 PM - 4:30 PM	2	10	67	0	119	21	16	0	4	93	9	0	64	88	101	2
4:30 PM - 4:45 PM	1	7	61	1	91	22	13	1	2	93	12	0	62	104	98	1
4:45 PM - 5:00 PM	2	10	61	1	137	24	25	0	5	94	6	0	63	107	140	1
5:00 PM - 5:15 PM	0	9	90	1	135	19	26	3	7	74	5	0	50	83	134	1
5:15 PM - 5:30 PM	3	11	52	2	145	19	22	1	1	113	8	1	65	93	133	1
5:30 PM - 5:45 PM	1	10	67	1	105	9	16	1	5	74	6	0	60	100	106	4
5:45 PM - 6:00 PM	0	4	33	1	104	13	14	1	1	71	6	0	47	101	123	1
TOTAL	**9**	**70**	**500**	**7**	**925**	**145**	**146**	**13**	**27**	**710**	**62**	**4**	**466**	**777**	**928**	**12**

	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	6	19	128	7	414	87	30	16	1	252	28	5	317	334	547	21
4:30 PM - 5:30 PM	6	37	264	5	508	84	86	5	15	374	31	1	240	387	505	4

	PHF	Trucks
AM	0.849	2.3%
PM	0.941	0.6%



Metro Traffic Data Inc.
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Turning Movement Report

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

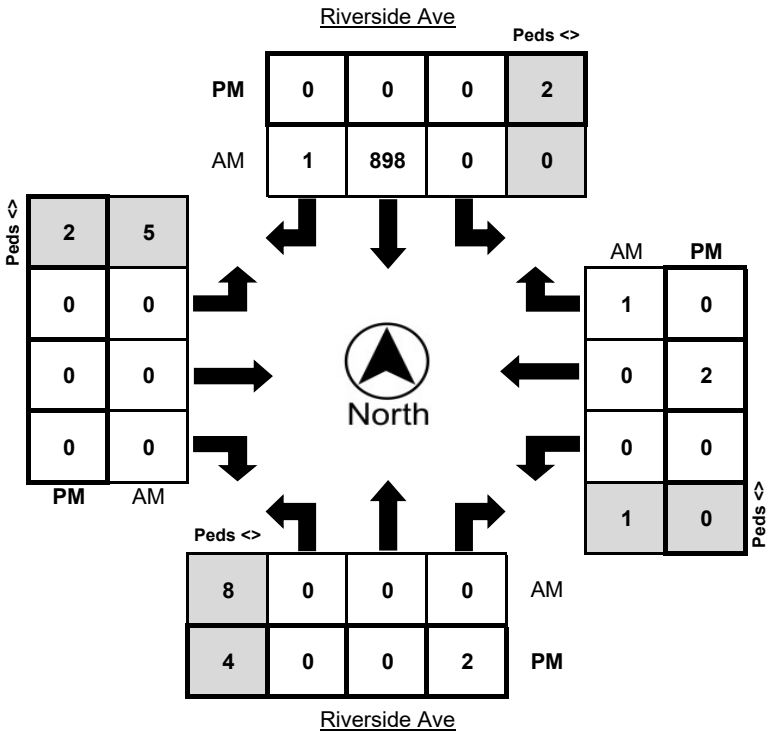
LOCATION 13th St @ Riverisde Ave
LATITUDE 35.6280
COUNTY San Luis Obispo
LONGITUDE -120.6870
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	1	0	0	344	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	308	3	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	232	0	1	0	0	0	0	0	0	0	1
7:45 AM - 8:00 AM	0	0	0	0	0	209	0	0	0	0	0	0	0	0	1	1
8:00 AM - 8:15 AM	0	0	0	0	0	228	0	2	0	0	0	0	0	0	0	2
8:15 AM - 8:30 AM	0	0	0	0	0	229	1	5	0	0	0	1	0	0	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	2	0	0	0	2	0	0	0	0	1	0	0	1
TOTAL	**0**	**0**	**1**	**2**	**0**	**1574**	**4**	**10**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**7**

	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
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	2
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	1	0	0	0	0	3	0	0	0	0	0	2	0	0
4:45 PM - 5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	0	1	1	0	0	0	5	0	0	0	0	1	0	0	0
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	3
TOTAL	**0**	**0**	**3**	**4**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**7**

	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	898	1	8	0	0	0	1	0	0	1	5
4:30 PM - 5:30 PM	0	0	2	2	0	0	0	4	0	0	0	0	0	2	0	2

	Bikes	Peds
AM Peak Total	900	14
PM Peak Total	4	8



Metro Traffic Data Inc.
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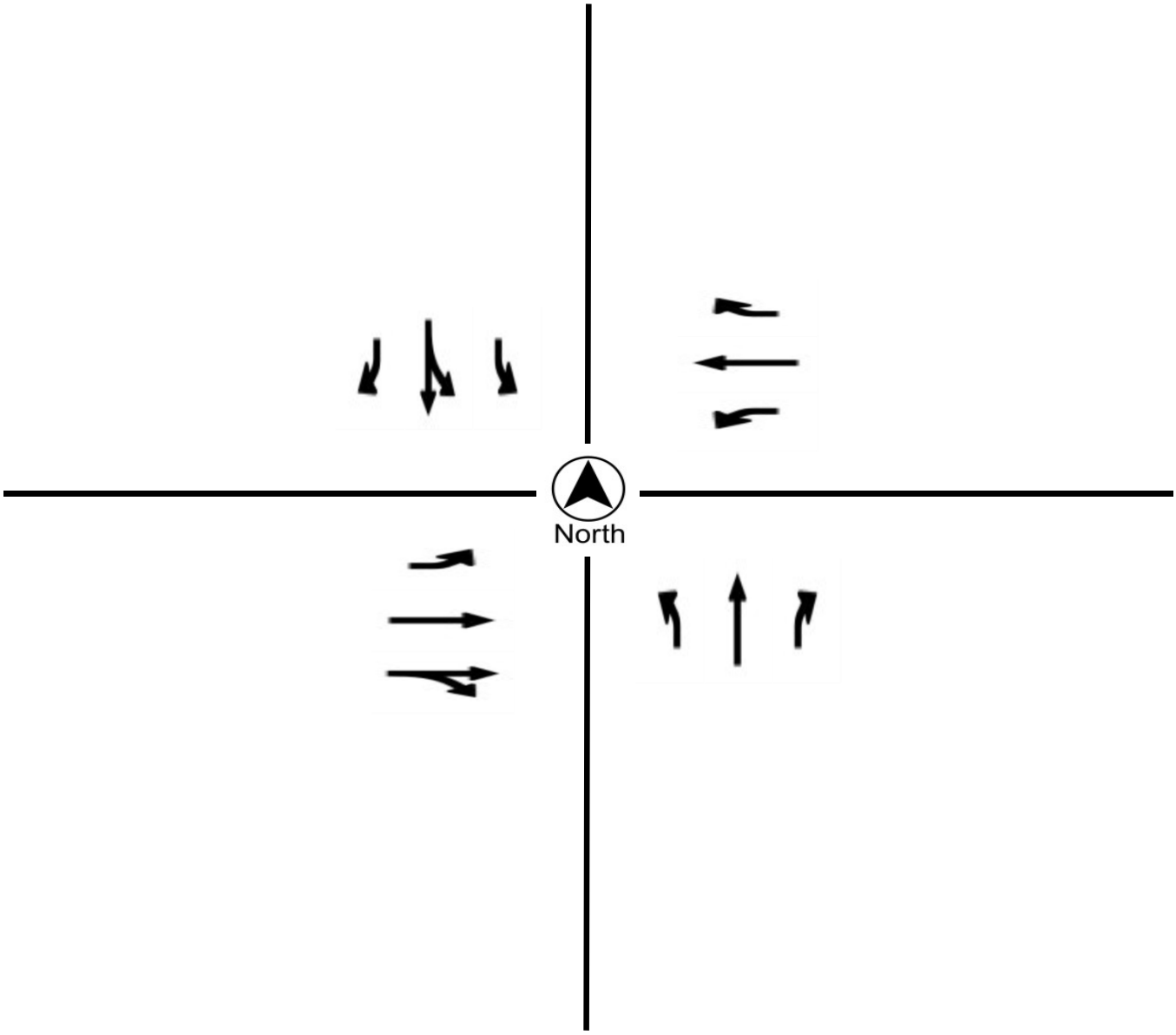
800-975-6938 Phone/Fax
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Turning Movement Report

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

LOCATION	13th St @ Riverisde Ave	**N/S STREET**	Riverside Ave / Riverside Ave
COUNTY	San Luis Obispo	**E/W STREET**	13th St / 13th St
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	104 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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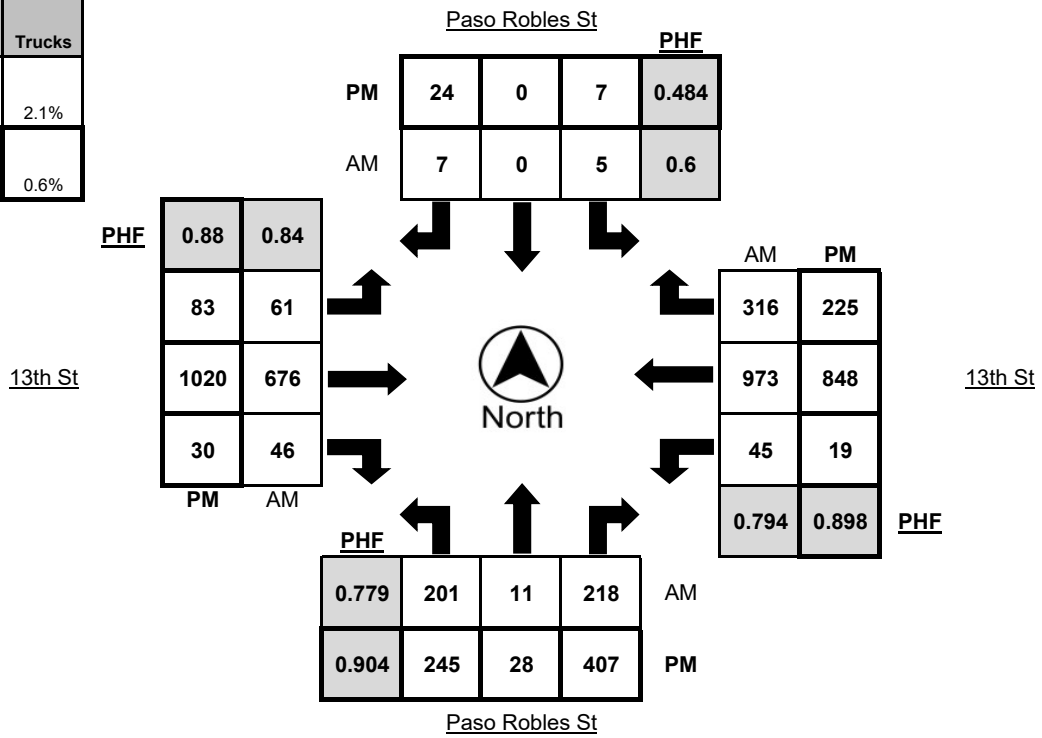
LOCATION 13th St @ Paso Robles St
LATITUDE 35.6281
COUNTY San Luis Obispo
LONGITUDE -120.6857
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	19	0	22	3	1	0	0	0	11	68	7	2	9	141	47	8
7:15 AM - 7:30 AM	29	5	35	1	1	0	1	1	14	125	6	6	6	165	51	2
7:30 AM - 7:45 AM	36	0	47	5	2	0	1	0	15	172	9	6	5	224	89	3
7:45 AM - 8:00 AM	55	4	79	5	2	0	2	1	24	192	17	6	18	291	111	4
8:00 AM - 8:15 AM	58	5	51	2	1	0	4	0	12	134	7	4	9	262	83	4
8:15 AM - 8:30 AM	52	2	41	4	0	0	0	0	10	178	13	5	13	196	33	6
8:30 AM - 8:45 AM	54	2	35	3	1	0	1	1	14	106	9	6	15	160	31	4
8:45 AM - 9:00 AM	70	5	52	5	0	0	4	0	15	105	14	4	11	211	39	6
TOTAL	**373**	**23**	**362**	**28**	**8**	**0**	**13**	**3**	**115**	**1080**	**82**	**39**	**86**	**1650**	**484**	**37**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	50	5	72	2	0	0	3	0	25	224	10	6	14	183	44	2
4:15 PM - 4:30 PM	61	5	98	2	2	0	2	0	23	242	2	1	4	183	51	0
4:30 PM - 4:45 PM	54	9	93	1	5	0	11	0	17	220	11	1	8	197	60	0
4:45 PM - 5:00 PM	52	5	105	2	0	0	3	0	20	261	10	1	4	245	55	1
5:00 PM - 5:15 PM	66	7	101	3	1	0	6	0	26	243	3	3	3	194	53	2
5:15 PM - 5:30 PM	73	7	108	1	1	0	4	0	20	296	6	2	4	212	57	0
5:30 PM - 5:45 PM	58	4	98	1	0	0	4	0	21	219	1	1	3	200	51	2
5:45 PM - 6:00 PM	50	3	77	0	0	0	2	0	8	201	3	3	3	215	40	1
TOTAL	**464**	**45**	**752**	**12**	**9**	**0**	**35**	**0**	**160**	**1906**	**46**	**18**	**43**	**1629**	**411**	**8**

	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	201	11	218	16	5	0	7	1	61	676	46	21	45	973	316	17
4:30 PM - 5:30 PM	245	28	407	7	7	0	24	0	83	1020	30	7	19	848	225	3

	PHF	Trucks
AM	0.805	2.1%
PM	0.931	0.6%



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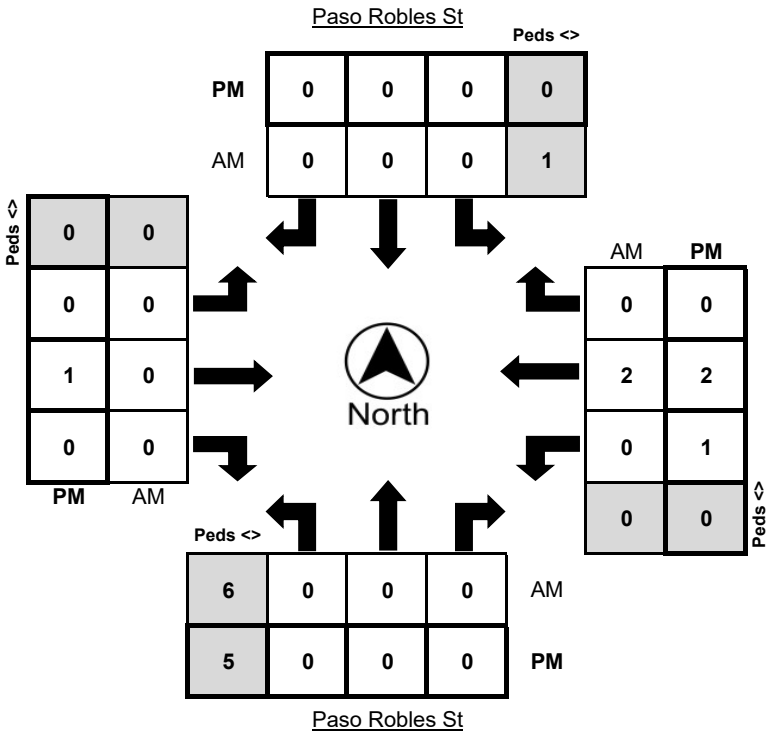
LOCATION 13th St @ Paso Robles St
LATITUDE 35.6281
COUNTY San Luis Obispo
LONGITUDE -120.6857
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	1	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	1	0	0	0	1	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	1	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8:45 AM - 9:00 AM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**0**	**1**	**0**	**0**	**0**	**3**	**1**	**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
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	2	0	1	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	3	0	1	0	0	0	2	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	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	1	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	3	1	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**12**	**1**	**2**	**0**	**0**	**1**	**2**	**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	1	0	0	0	6	0	0	0	0	0	2	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	5	0	1	0	0	1	2	0	0

	Bikes	Peds
AM Peak Total	2	7
PM Peak Total	4	5



Metro Traffic Data Inc.
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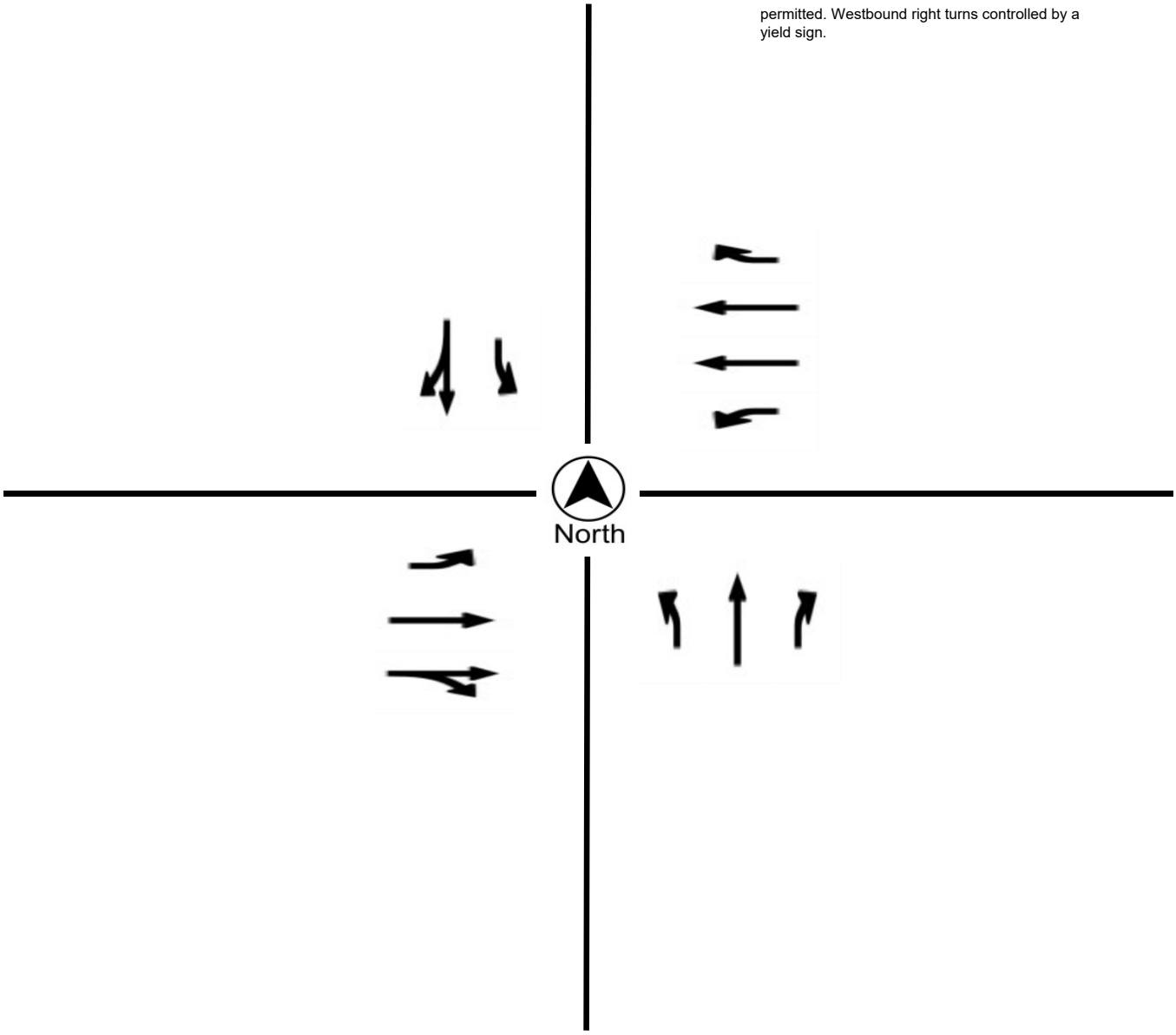
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	13th St @ Paso Robles St	**N/S STREET**	Paso Robles St / Paso Robles St
COUNTY	San Luis Obispo	**E/W STREET**	13th St / 13th St
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	89 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound and westbound left turns are protected. Northbound and southbound left turns are permitted. Westbound right turns controlled by a yield sign.



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Morro Bay, CA 93442

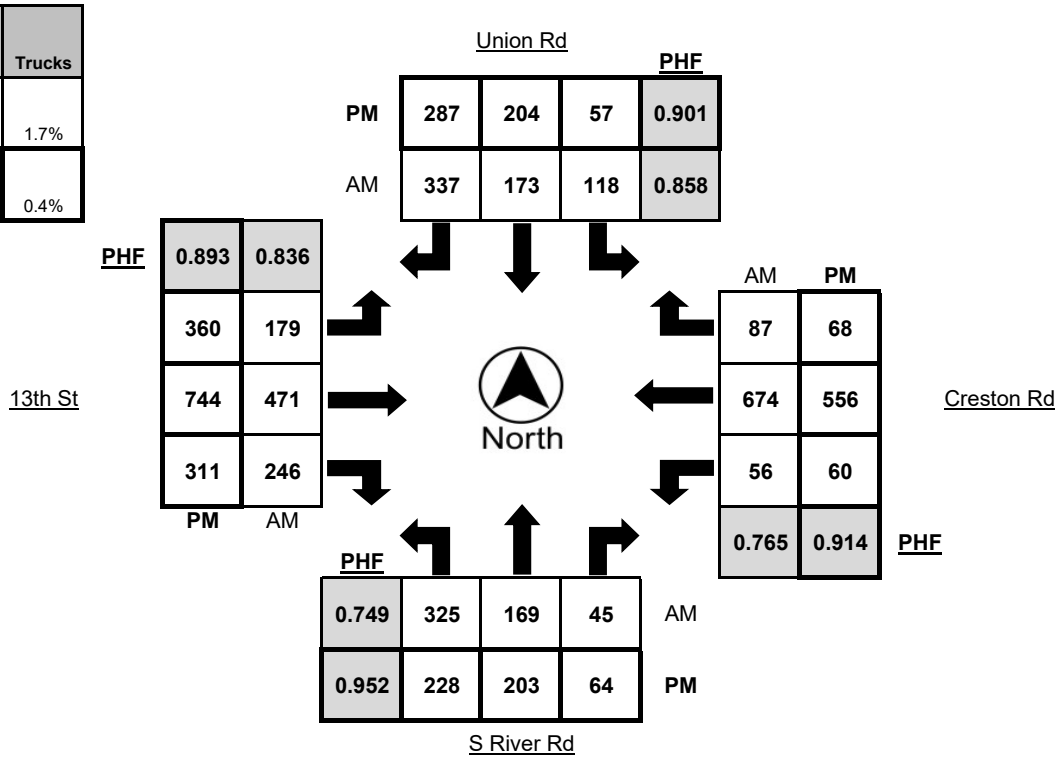
LOCATION Creston Rd @ Union Rd/River Rd
LATITUDE 35.6291
COUNTY San Luis Obispo
LONGITUDE -120.6833
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	38	18	4	1	6	20	62	8	18	46	25	2	8	91	5	1
7:15 AM - 7:30 AM	43	22	5	2	14	38	82	2	32	67	55	6	5	112	6	1
7:30 AM - 7:45 AM	80	42	13	1	27	53	79	2	32	119	71	6	14	165	21	0
7:45 AM - 8:00 AM	105	55	20	3	36	44	103	1	54	140	74	11	11	222	34	1
8:00 AM - 8:15 AM	88	46	6	1	37	49	89	3	38	101	55	4	22	155	19	2
8:15 AM - 8:30 AM	52	26	6	2	18	27	66	4	55	111	46	7	9	132	13	2
8:30 AM - 8:45 AM	39	21	5	2	4	34	58	3	47	71	27	8	13	113	8	2
8:45 AM - 9:00 AM	59	21	8	4	4	30	63	1	44	75	36	5	12	119	6	2
TOTAL	**504**	**251**	**67**	**16**	**146**	**295**	**602**	**24**	**320**	**730**	**389**	**49**	**94**	**1109**	**112**	**11**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	54	54	12	0	11	45	78	1	70	146	72	3	6	108	12	1
4:15 PM - 4:30 PM	54	46	20	1	12	43	71	1	96	196	65	1	21	117	15	0
4:30 PM - 4:45 PM	51	48	18	0	13	46	74	0	81	151	78	2	19	147	21	1
4:45 PM - 5:00 PM	61	47	18	0	12	42	73	1	90	192	76	0	17	149	21	0
5:00 PM - 5:15 PM	57	49	16	0	12	69	55	0	90	190	71	5	6	150	8	2
5:15 PM - 5:30 PM	59	59	12	1	20	47	85	0	99	211	86	2	18	110	18	0
5:30 PM - 5:45 PM	56	52	17	1	8	34	61	0	58	159	80	1	12	135	10	2
5:45 PM - 6:00 PM	48	53	17	2	8	42	77	0	67	146	79	0	15	126	17	0
TOTAL	**440**	**408**	**130**	**5**	**96**	**368**	**574**	**3**	**651**	**1391**	**607**	**14**	**114**	**1042**	**122**	**6**

	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	325	169	45	7	118	173	337	10	179	471	246	28	56	674	87	5
4:30 PM - 5:30 PM	228	203	64	1	57	204	287	1	360	744	311	9	60	556	68	3

	PHF	Trucks
AM	0.802	1.7%
PM	0.953	0.4%



Metro Traffic Data Inc.
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Hanford, CA 93230

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Turning Movement Report

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

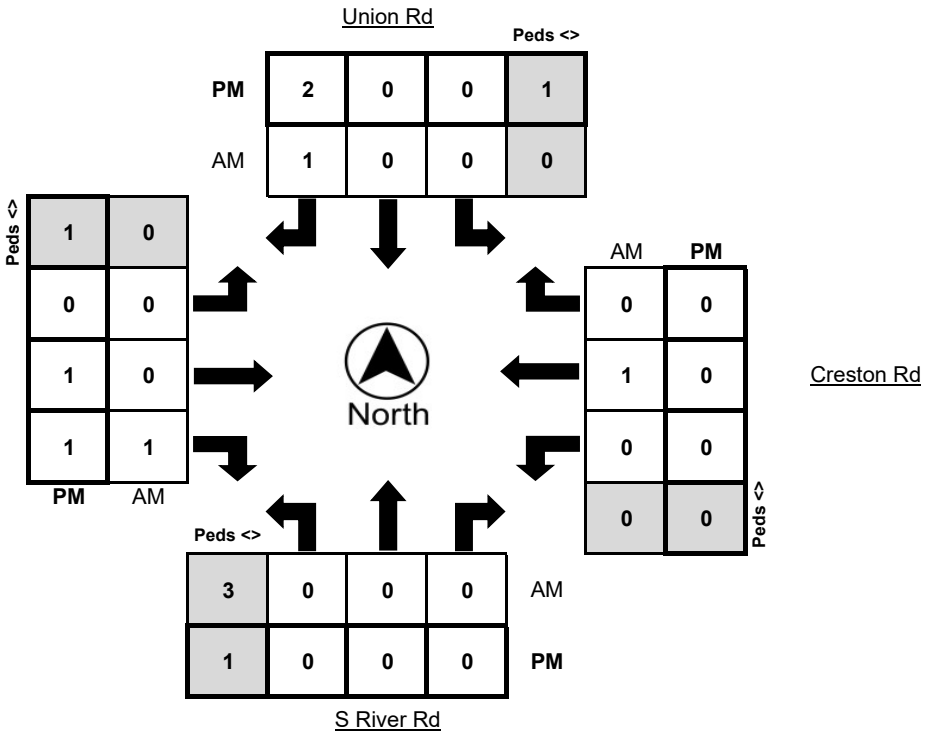
LOCATION Creston Rd @ Union Rd/River Rd
LATITUDE 35.6291
COUNTY San Luis Obispo
LONGITUDE -120.6833
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	1	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	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	1	0	0	1	0	0	1	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	1	0	0	0	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**	**1**	**0**	**0**	**2**	**4**	**0**	**1**	**1**	**0**	**0**	**1**	**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
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	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	1	0	0	2	0	0	0	1	0	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	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	1	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	1	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**1**

	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	1	3	0	0	1	0	0	1	0	0
4:30 PM - 5:30 PM	0	0	0	1	0	0	2	1	0	1	1	0	0	0	0	1

	Bikes	Peds
AM Peak Total	3	3
PM Peak Total	4	3



Metro Traffic Data Inc.
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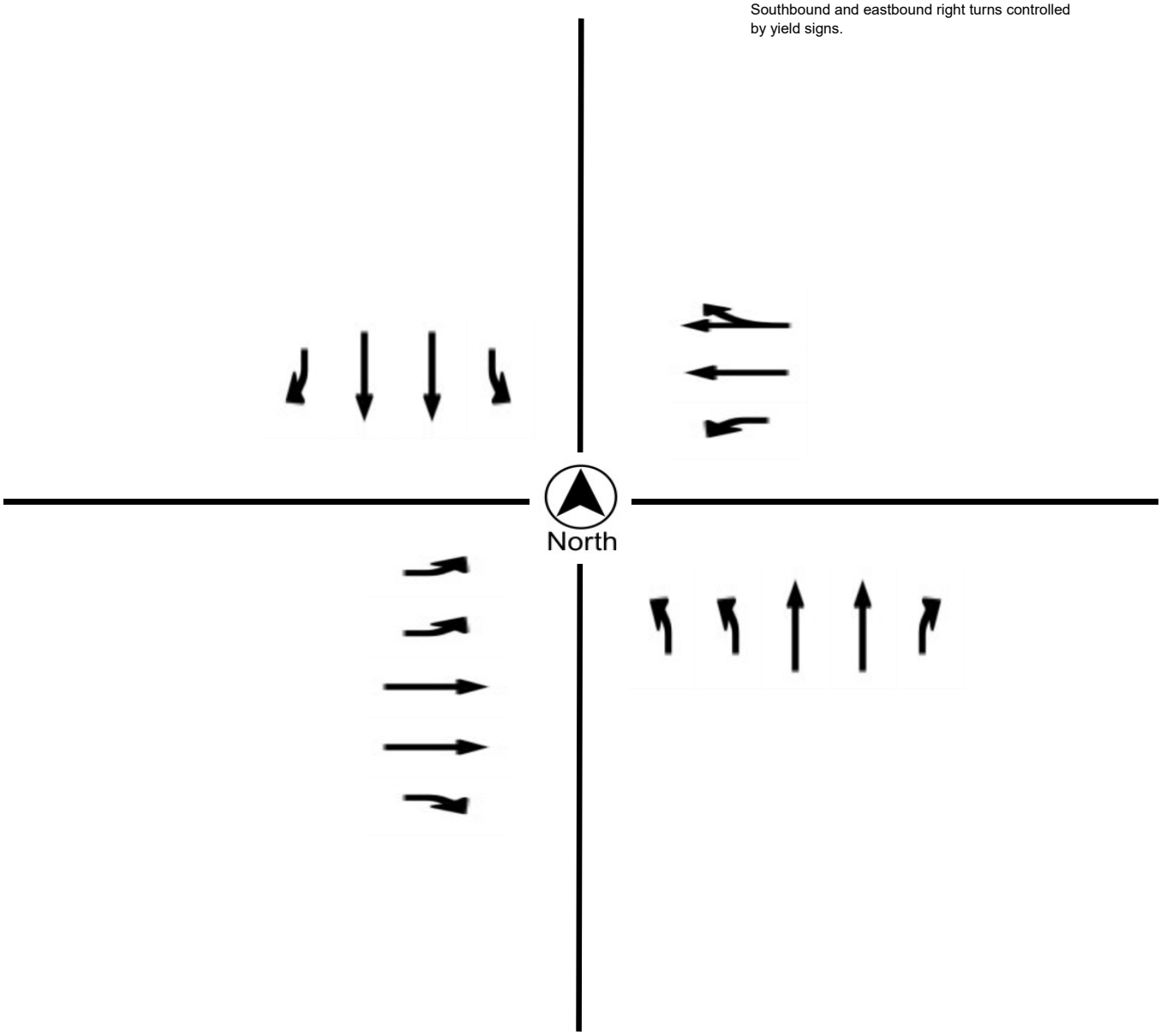
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	Creston Rd @ Union Rd/River Rd	**N/S STREET**	Union Rd / S River Rd
COUNTY	San Luis Obispo	**E/W STREET**	Creston Rd / 13th St
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	118 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns. Southbound and eastbound right turns controlled by yield signs.



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Morro Bay, CA 93442

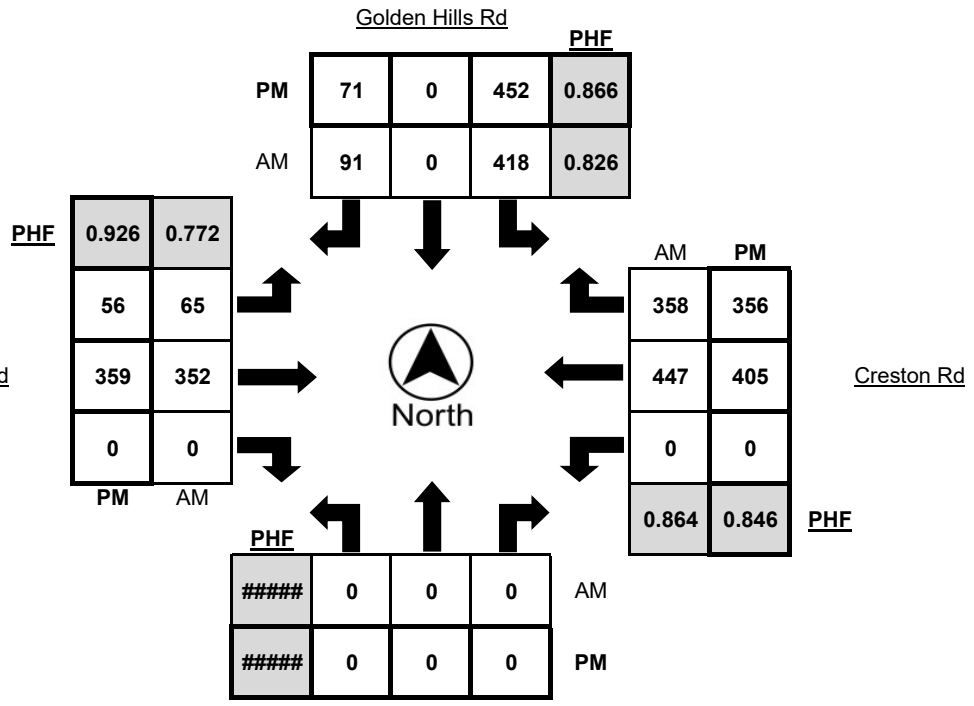
LOCATION Creston Rd @ Golden Hill Rd
LATITUDE 35.6223
COUNTY San Luis Obispo
LONGITUDE -120.6597
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	39	0	8	4	5	43	0	1	0	49	58	3
7:15 AM - 7:30 AM	0	0	0	0	65	0	12	4	9	52	0	4	0	62	53	0
7:30 AM - 7:45 AM	0	0	0	0	111	0	36	4	12	77	0	3	0	112	75	4
7:45 AM - 8:00 AM	0	0	0	0	127	0	27	5	22	89	0	1	0	116	117	4
8:00 AM - 8:15 AM	0	0	0	0	107	0	14	5	21	114	0	1	0	140	89	10
8:15 AM - 8:30 AM	0	0	0	0	73	0	14	3	10	72	0	5	0	79	77	5
8:30 AM - 8:45 AM	0	0	0	0	52	0	7	3	6	44	0	0	0	56	55	1
8:45 AM - 9:00 AM	0	0	0	0	54	0	4	4	7	56	0	1	0	83	57	1
TOTAL	**0**	**0**	**0**	**0**	**628**	**0**	**122**	**32**	**92**	**547**	**0**	**16**	**0**	**697**	**581**	**28**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	87	0	16	0	6	90	0	2	0	104	94	1
4:15 PM - 4:30 PM	0	0	0	0	99	0	12	2	6	85	0	1	0	116	88	0
4:30 PM - 4:45 PM	0	0	0	0	97	0	17	1	12	88	0	1	0	120	105	2
4:45 PM - 5:00 PM	0	0	0	0	132	0	19	1	19	76	0	0	0	89	79	1
5:00 PM - 5:15 PM	0	0	0	0	116	0	14	0	11	101	0	1	0	101	92	1
5:15 PM - 5:30 PM	0	0	0	0	107	0	21	1	14	94	0	1	0	95	80	0
5:30 PM - 5:45 PM	0	0	0	0	117	0	21	1	13	97	0	1	0	96	77	3
5:45 PM - 6:00 PM	0	0	0	0	88	0	18	1	12	79	0	1	0	74	75	0
TOTAL	**0**	**0**	**0**	**0**	**843**	**0**	**138**	**7**	**93**	**710**	**0**	**8**	**0**	**795**	**690**	**8**

	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	418	0	91	17	65	352	0	10	0	447	358	23
4:30 PM - 5:30 PM	0	0	0	0	452	0	71	3	56	359	0	3	0	405	356	4

	PHF	Trucks
AM	0.869	2.9%
PM	0.968	0.6%



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

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Turning Movement Report

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

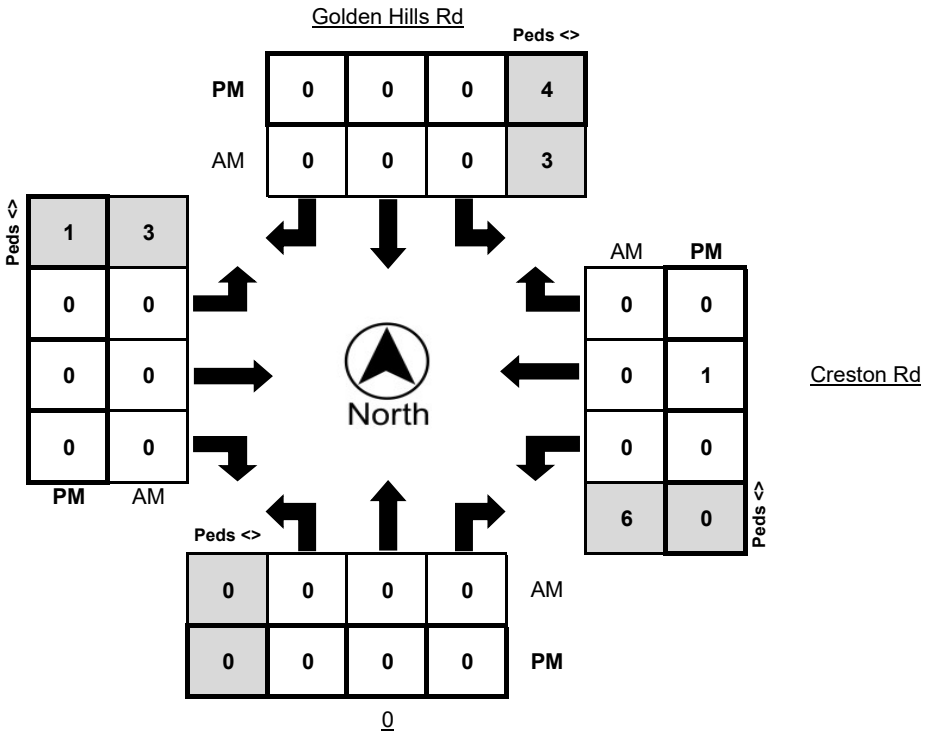
LOCATION Creston Rd @ Golden Hill Rd
LATITUDE 35.6223
COUNTY San Luis Obispo
LONGITUDE -120.6597
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	0	0	0	0	0	0	0	0	2	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	3	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	6	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	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	1	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**5**

	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
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0
4:45 PM - 5:00 PM	0	0	0	0	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	0
5:15 PM - 5:30 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**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
7:30 AM - 8:30 AM	0	0	0	3	0	0	0	0	0	0	0	6	0	0	0	3
4:30 PM - 5:30 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	1

	Bikes	Peds
AM Peak Total	0	12
PM Peak Total	1	5



Metro Traffic Data Inc.
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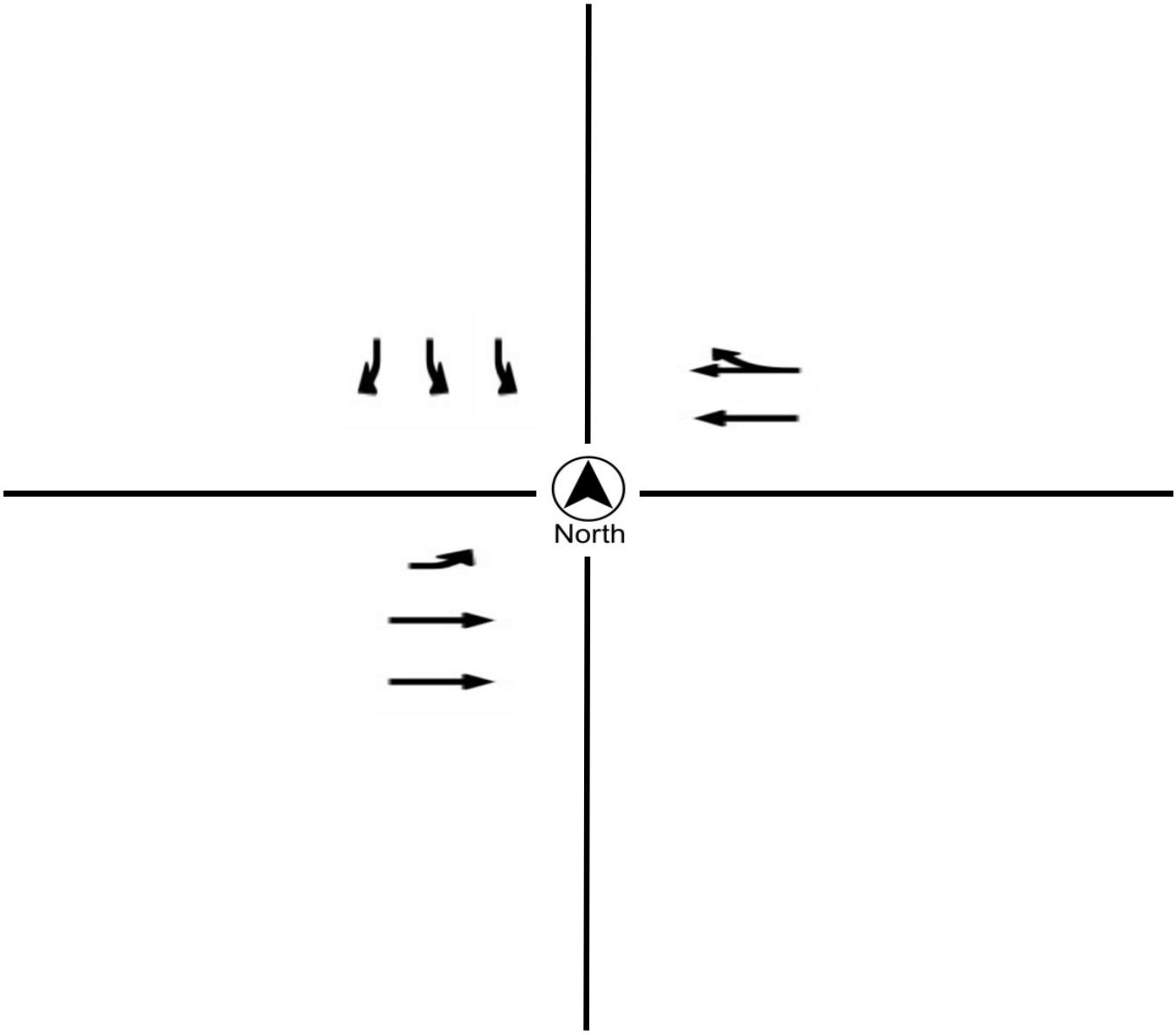
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	Creston Rd @ Golden Hill Rd	**N/S STREET**	Golden Hills Rd /
COUNTY	San Luis Obispo	**E/W STREET**	Creston Rd / Creston Rd
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
CYCLE TIME	76 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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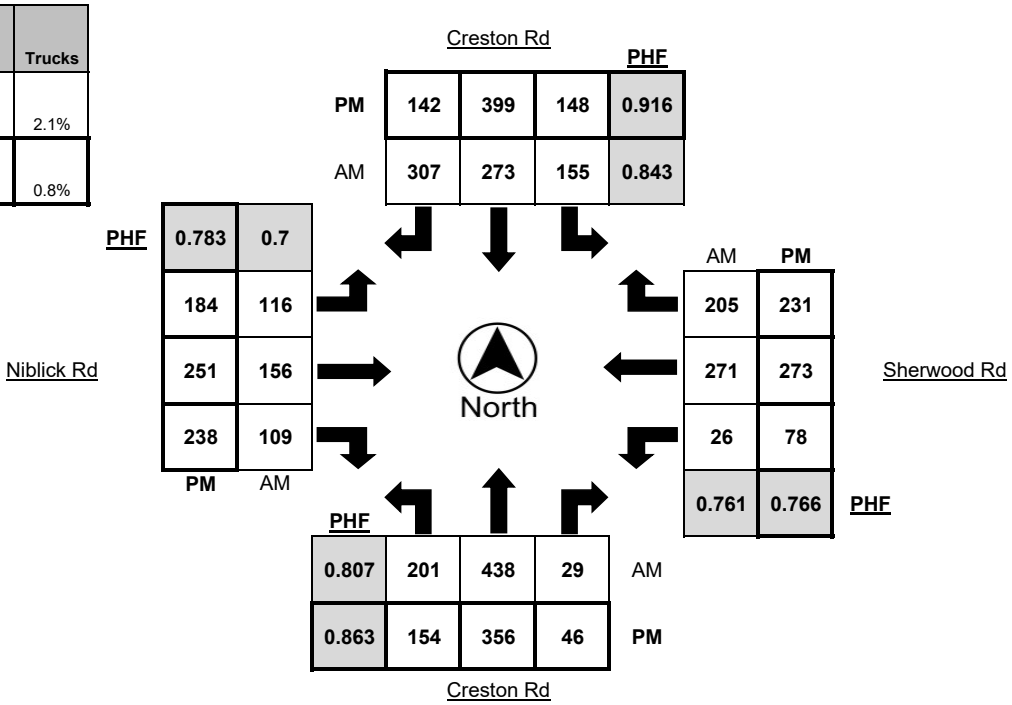
LOCATION Creston Rd @ Niblick Rd
LATITUDE 35.6157
COUNTY San Luis Obispo
LONGITUDE -120.6591
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	36	51	8	0	25	26	23	2	18	38	14	1	0	55	22	0
7:15 AM - 7:30 AM	51	89	7	2	19	32	63	4	28	37	20	1	3	80	36	1
7:30 AM - 7:45 AM	71	129	7	3	34	53	109	2	26	23	19	6	3	105	57	3
7:45 AM - 8:00 AM	37	118	4	1	57	90	60	7	36	61	39	4	10	43	62	2
8:00 AM - 8:15 AM	42	102	11	3	45	98	75	5	26	35	31	1	10	43	50	4
8:15 AM - 8:30 AM	44	63	10	5	32	50	27	0	18	46	24	0	11	47	27	2
8:30 AM - 8:45 AM	31	56	5	0	18	37	15	0	19	29	13	0	8	39	39	6
8:45 AM - 9:00 AM	24	54	8	4	13	29	27	0	22	23	15	2	13	46	38	2
TOTAL	**336**	**662**	**60**	**18**	**243**	**415**	**399**	**20**	**193**	**292**	**175**	**15**	**58**	**458**	**331**	**20**

	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	59	7	0	32	45	31	4	26	41	39	0	20	42	44	4
2:15 PM - 2:30 PM	22	62	5	2	26	62	37	4	28	40	28	0	7	46	33	3
2:30 PM - 2:45 PM	37	95	4	2	36	61	54	8	35	43	18	0	13	52	38	1
2:45 PM - 3:00 PM	51	102	10	3	53	60	66	13	32	41	35	3	16	57	47	3
3:00 PM - 3:15 PM	40	71	11	3	45	74	52	5	47	62	36	0	18	65	37	6
3:15 PM - 3:30 PM	37	69	9	0	37	73	34	3	39	81	53	5	18	53	46	7
3:30 PM - 3:45 PM	36	60	5	3	65	71	30	2	39	47	42	5	19	66	78	6
3:45 PM - 4:00 PM	46	70	12	3	51	85	41	5	29	51	35	1	20	60	57	3
4:00 PM - 4:15 PM	28	90	10	1	32	86	45	0	46	53	38	1	16	55	45	0
4:15 PM - 4:30 PM	48	58	14	2	44	70	29	2	37	60	44	0	16	62	38	2
4:30 PM - 4:45 PM	44	73	5	3	47	112	29	4	38	54	50	0	22	94	74	3
4:45 PM - 5:00 PM	33	101	19	0	23	82	39	0	40	63	55	0	20	57	55	2
5:00 PM - 5:15 PM	32	76	12	1	38	109	35	0	36	65	57	0	15	69	59	1
5:15 PM - 5:30 PM	45	106	10	0	40	96	39	4	70	69	76	0	21	53	43	1
5:30 PM - 5:45 PM	32	68	14	1	34	75	40	2	55	62	50	2	26	51	53	2
5:45 PM - 6:00 PM	29	74	18	1	28	71	32	0	30	58	32	0	21	38	40	1
TOTAL	**590**	**1234**	**165**	**25**	**631**	**1232**	**633**	**56**	**627**	**890**	**688**	**17**	**288**	**920**	**787**	**45**

	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	201	438	29	9	155	273	307	18	116	156	109	12	26	271	205	10
4:30 PM - 5:30 PM	154	356	46	4	148	399	142	8	184	251	238	0	78	273	231	7

	PHF	Trucks
AM	0.899	2.1%
PM	0.936	0.8%



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Turning Movement Report

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

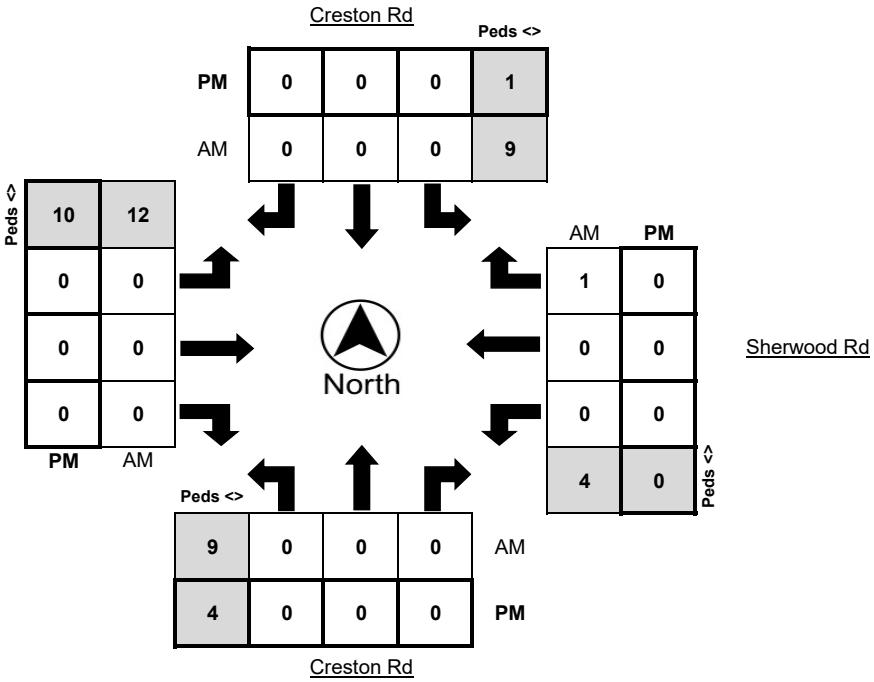
LOCATION Creston Rd @ Niblick Rd
LATITUDE 35.6157
COUNTY San Luis Obispo
LONGITUDE -120.6591
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	1	0	0	0	0	0	0	0	1	0	0	0	5
7:15 AM - 7:30 AM	0	0	0	3	0	0	0	4	0	0	0	3	0	0	0	5
7:30 AM - 7:45 AM	0	0	0	5	0	0	0	2	0	0	0	1	0	0	0	3
7:45 AM - 8:00 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	2
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	5	0	0	0	2	0	0	0	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1
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**	**10**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**20**

	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	1	0	0	0	1	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:30 PM - 2:45 PM	0	0	0	2	0	0	0	1	0	0	0	1	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	1
3:00 PM - 3:15 PM	0	1	0	0	0	0	0	5	0	0	0	1	0	0	0	6
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	15	0	0	0	0	0	1	0	13
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	11
3:45 PM - 4:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
4:00 PM - 4:15 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1
4:15 PM - 4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
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	0	0	0	0	3	0	0	0	0	0	0	0	4
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	**0**	**2**	**0**	**6**	**0**	**0**	**0**	**36**	**0**	**0**	**0**	**7**	**0**	**2**	**0**	**48**

	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	9	0	0	0	9	0	0	0	4	0	0	1	12
4:30 PM - 5:30 PM	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	10

	Bikes	Peds
AM Peak Total	1	34
PM Peak Total	0	15



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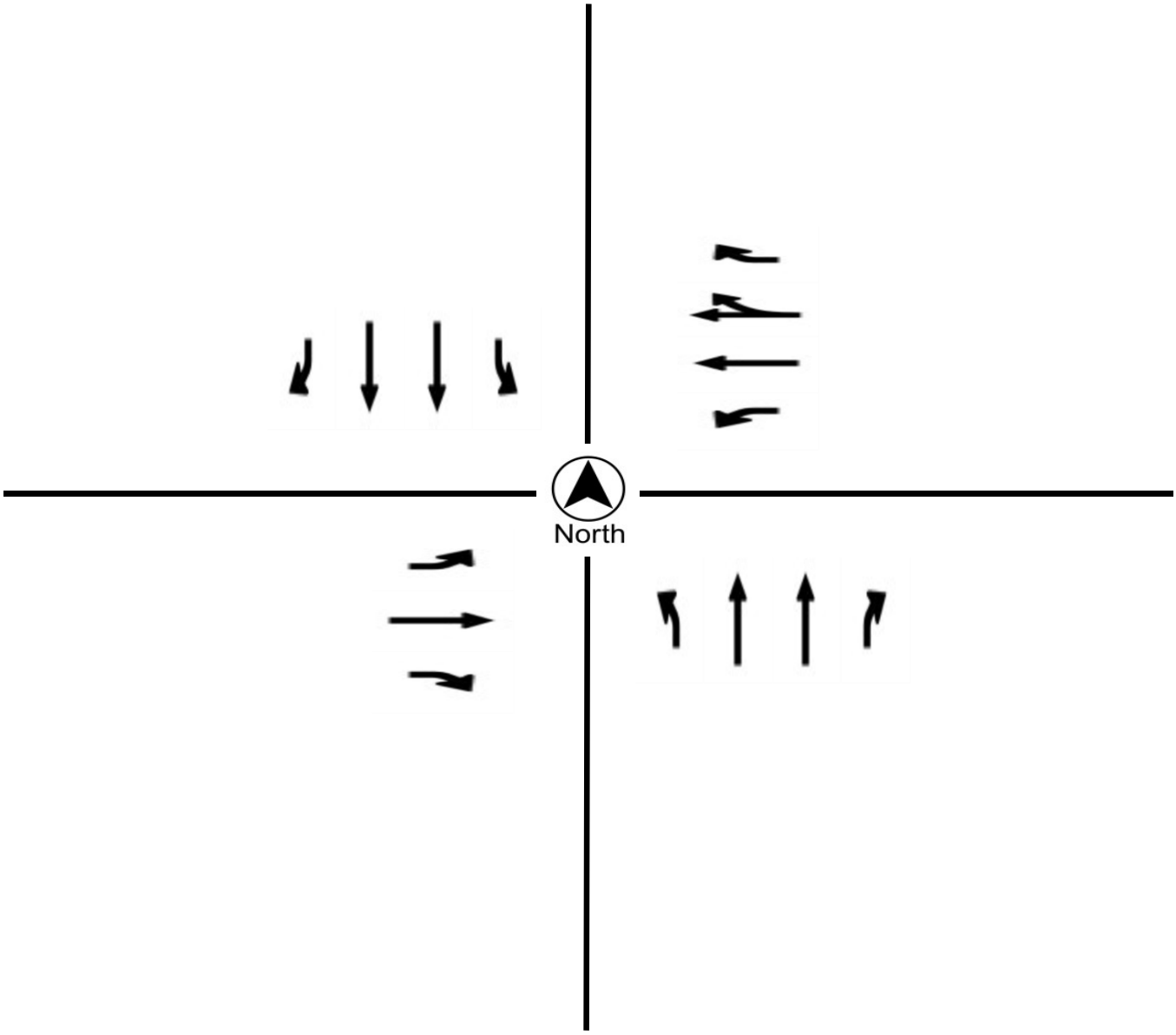
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Turning Movement Report

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

LOCATION	Creston Rd @ Niblick Rd	**N/S STREET**	Creston Rd / Creston Rd
COUNTY	San Luis Obispo	**E/W STREET**	Sherwood Rd / Niblick Rd
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	107 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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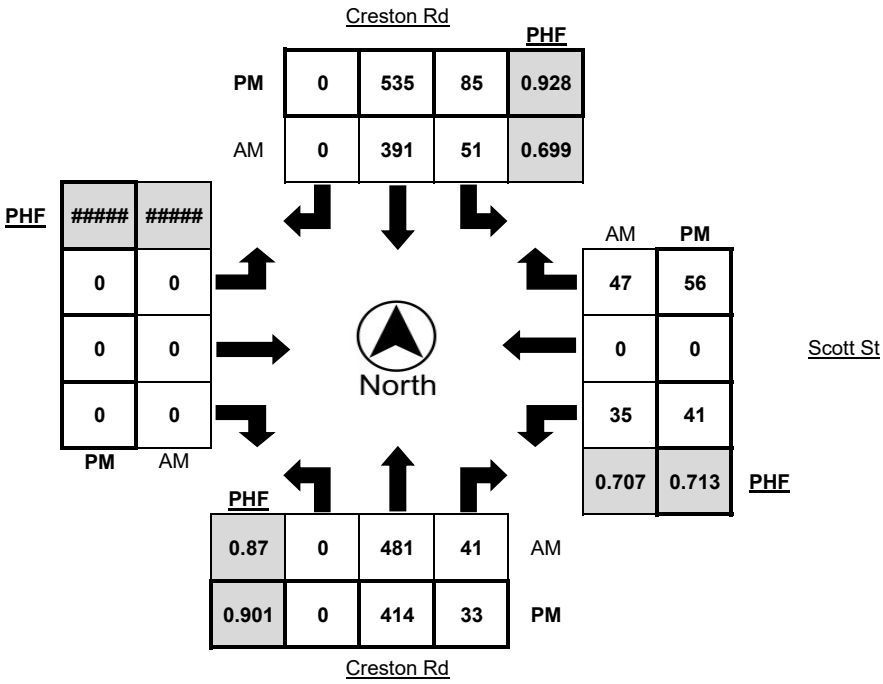
LOCATION Creston Rd @ Scott St
LATITUDE 35.6085
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	67	7	0	5	38	0	2	0	0	0	0	2	0	3	0
7:15 AM - 7:30 AM	0	111	4	0	4	51	0	0	0	0	0	0	7	0	15	2
7:30 AM - 7:45 AM	0	141	9	2	6	69	0	0	0	0	0	0	13	0	16	0
7:45 AM - 8:00 AM	0	120	12	1	19	139	0	2	0	0	0	0	8	0	12	0
8:00 AM - 8:15 AM	0	131	11	3	14	112	0	1	0	0	0	0	8	0	9	0
8:15 AM - 8:30 AM	0	89	9	3	12	71	0	0	0	0	0	0	6	0	10	1
8:30 AM - 8:45 AM	0	61	4	1	6	45	0	1	0	0	0	0	5	0	13	0
8:45 AM - 9:00 AM	0	69	9	3	10	48	0	0	0	0	0	0	5	0	5	1
TOTAL	**0**	**789**	**65**	**13**	**76**	**573**	**0**	**6**	**0**	**0**	**0**	**0**	**54**	**0**	**83**	**4**

	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	67	4	0	17	77	0	2	0	0	0	0	6	0	12	0
2:15 PM - 2:30 PM	0	62	6	1	12	86	0	3	0	0	0	0	13	0	13	0
2:30 PM - 2:45 PM	0	105	2	1	8	82	0	1	0	0	0	0	4	0	21	0
2:45 PM - 3:00 PM	0	123	7	2	16	79	0	2	0	0	0	0	4	0	21	0
3:00 PM - 3:15 PM	0	100	13	2	14	101	0	1	0	0	0	0	9	0	14	0
3:15 PM - 3:30 PM	0	94	14	0	15	107	0	0	0	0	0	0	4	0	10	0
3:30 PM - 3:45 PM	0	66	6	2	18	111	0	2	0	0	0	0	14	0	15	0
3:45 PM - 4:00 PM	0	89	6	1	13	109	0	0	0	0	0	0	6	0	17	0
4:00 PM - 4:15 PM	0	94	8	0	15	119	0	0	0	0	0	0	11	0	22	0
4:15 PM - 4:30 PM	0	86	9	1	15	105	0	0	0	0	0	0	8	0	18	0
4:30 PM - 4:45 PM	0	91	7	0	23	140	0	0	0	0	0	0	12	0	22	0
4:45 PM - 5:00 PM	0	113	8	0	17	110	0	0	0	0	0	0	12	0	14	0
5:00 PM - 5:15 PM	0	93	11	0	25	138	0	0	0	0	0	0	9	0	7	0
5:15 PM - 5:30 PM	0	117	7	1	20	147	0	0	0	0	0	0	8	0	13	1
5:30 PM - 5:45 PM	0	88	3	0	8	130	0	0	0	0	0	0	3	0	5	0
5:45 PM - 6:00 PM	0	92	2	0	9	96	0	0	0	0	0	0	5	0	8	0
TOTAL	**0**	**1480**	**113**	**11**	**245**	**1737**	**0**	**11**	**0**	**0**	**0**	**0**	**128**	**0**	**232**	**1**

	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	481	41	9	51	391	0	3	0	0	0	0	35	0	47	1
4:30 PM - 5:30 PM	0	414	33	1	85	535	0	0	0	0	0	0	41	0	56	1

	PHF	Trucks
AM	0.844	1.2%
PM	0.933	0.2%



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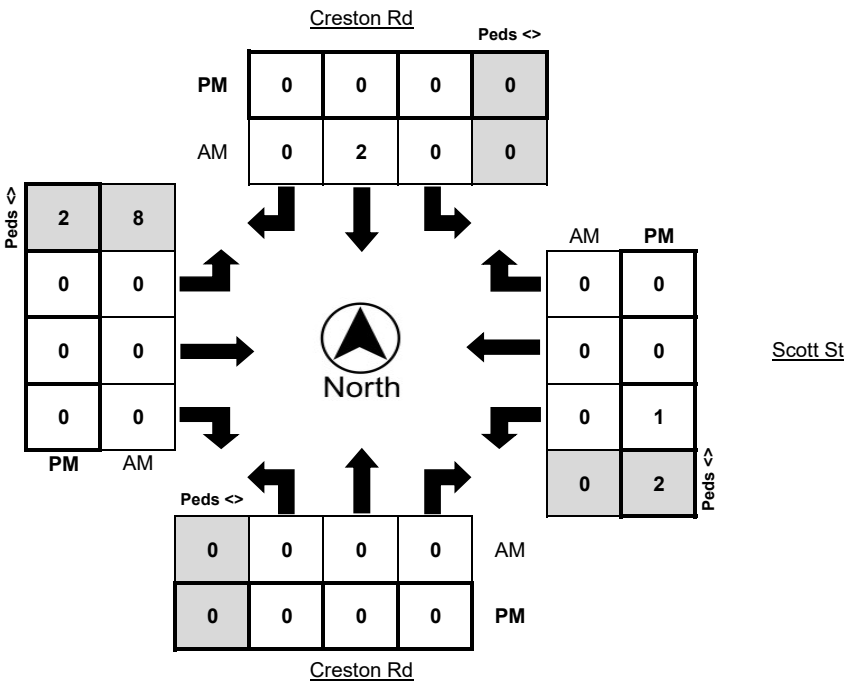
LOCATION Creston Rd @ Scott St
LATITUDE 35.6085
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	7
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	2	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	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**

	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	1	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	1
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	3
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	1	0	0	0	0	0	0	0	0	0	0	0	3
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	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	2
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**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**11**

	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	2	0	0	0	0	0	0	0	0	0	8
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	2

	Bikes	Peds
AM Peak Total	2	8
PM Peak Total	1	4



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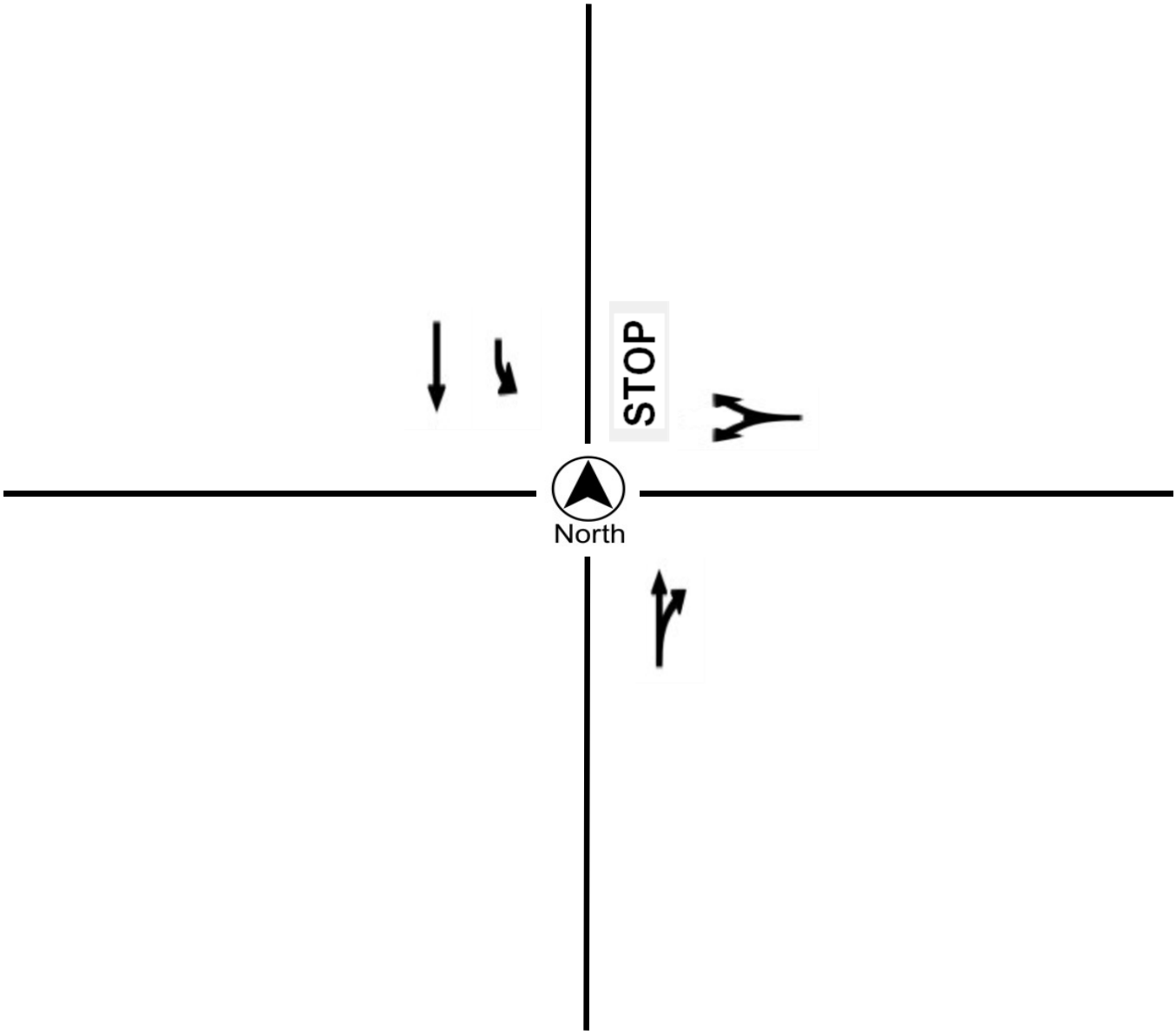
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Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
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Morro Bay, CA 93442

LOCATION	Creston Rd @ Scott St	**N/S STREET**	Creston Rd / Creston Rd
COUNTY	San Luis Obispo	**E/W STREET**	Scott St
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way stop

COMMENTS



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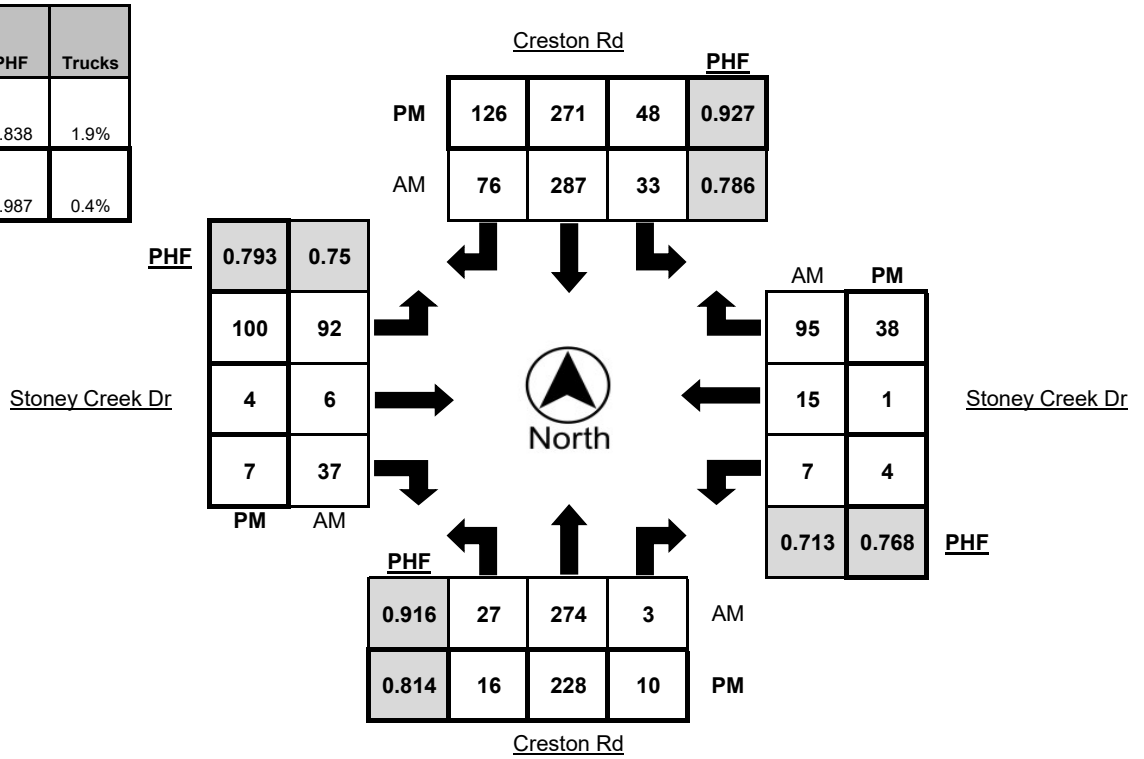
LOCATION Creston Rd @ Stoney Creek Rd
LATITUDE 35.6052
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	36	1	1	1	37	8	1	16	0	0	0	0	1	11	0
7:15 AM - 7:30 AM	2	53	0	0	6	37	11	1	14	1	2	1	1	4	11	0
7:30 AM - 7:45 AM	5	65	1	0	4	57	24	0	29	0	7	2	1	6	17	0
7:45 AM - 8:00 AM	6	71	1	0	9	89	22	5	26	0	19	1	4	6	28	0
8:00 AM - 8:15 AM	11	71	1	4	13	91	22	1	19	5	10	0	0	3	38	1
8:15 AM - 8:30 AM	5	67	0	2	7	50	8	2	18	1	1	0	2	0	12	0
8:30 AM - 8:45 AM	1	37	0	0	2	35	8	1	15	0	2	1	1	1	8	0
8:45 AM - 9:00 AM	1	36	0	0	6	39	7	2	16	1	0	0	0	1	9	0
TOTAL	**31**	**436**	**4**	**7**	**48**	**435**	**110**	**13**	**153**	**8**	**41**	**5**	**9**	**22**	**134**	**1**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	5	67	3	1	10	60	28	0	19	2	2	0	0	1	8	0
4:15 PM - 4:30 PM	6	79	1	0	8	45	34	1	27	2	3	1	0	0	3	0
4:30 PM - 4:45 PM	4	72	2	0	10	56	37	0	24	1	0	0	2	0	8	0
4:45 PM - 5:00 PM	4	50	0	0	9	77	34	0	20	0	1	0	0	1	12	0
5:00 PM - 5:15 PM	1	60	2	0	14	73	28	1	28	1	1	0	0	0	6	0
5:15 PM - 5:30 PM	7	46	6	0	15	65	27	1	28	2	5	1	2	0	12	0
5:30 PM - 5:45 PM	9	50	5	1	9	57	29	4	21	1	5	0	1	1	15	0
5:45 PM - 6:00 PM	0	49	2	0	10	55	37	0	32	2	0	0	1	0	12	0
TOTAL	**36**	**473**	**21**	**2**	**85**	**488**	**254**	**7**	**199**	**11**	**17**	**2**	**6**	**3**	**76**	**0**

	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	27	274	3	6	33	287	76	8	92	6	37	3	7	15	95	1
4:30 PM - 5:30 PM	16	228	10	0	48	271	126	2	100	4	7	1	4	1	38	0

	PHF	Trucks
AM	0.838	1.9%
PM	0.987	0.4%



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

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Turning Movement Report

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

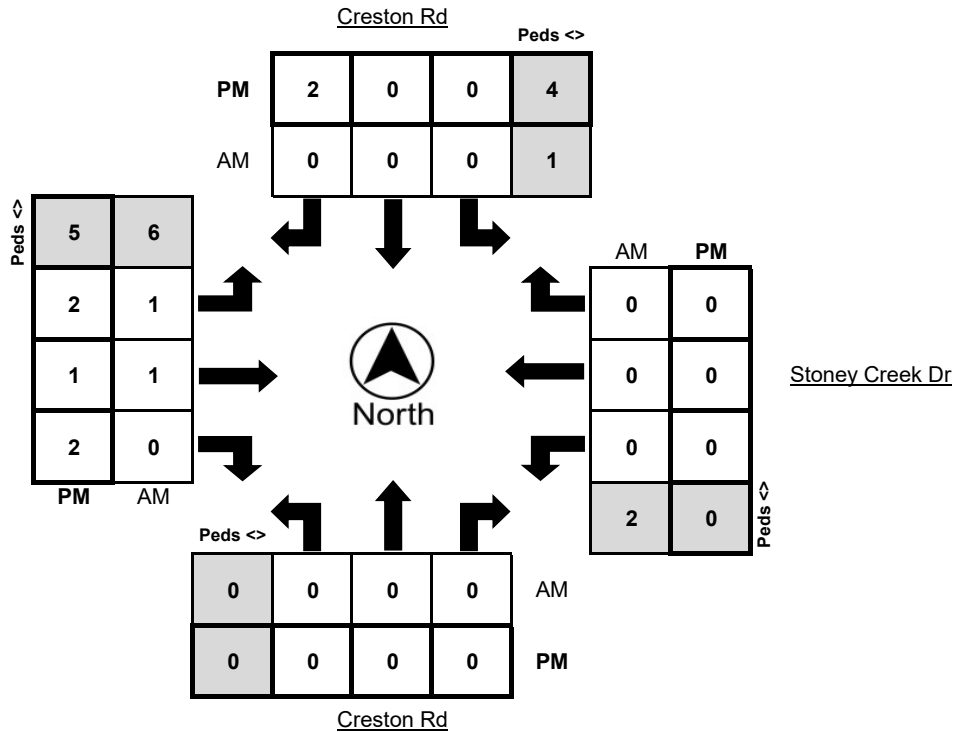
LOCATION Creston Rd @ Stoney Creek Rd
LATITUDE 35.6052
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	1	0	0	1	0	0	0	1
7:15 AM - 7:30 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	3
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	2	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	3
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	1	0	0	0	0	1	0	0	0	0	0	0	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**4**	**1**	**0**	**3**	**0**	**0**	**0**	**12**

	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
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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3
5:00 PM - 5:15 PM	0	0	0	2	0	0	1	0	0	0	2	0	0	0	0	2
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	4	0	0	0	3	1	0	0	3	0	0	0	3
5:45 PM - 6:00 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1
TOTAL	**1**	**0**	**0**	**9**	**0**	**1**	**3**	**3**	**3**	**1**	**2**	**3**	**0**	**1**	**0**	**10**

	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	1	0	0	0	0	1	1	0	2	0	0	0	6
4:30 PM - 5:30 PM	0	0	0	4	0	0	2	0	2	1	2	0	0	0	0	5

	Bikes	Peds
AM Peak Total	2	9
PM Peak Total	7	9



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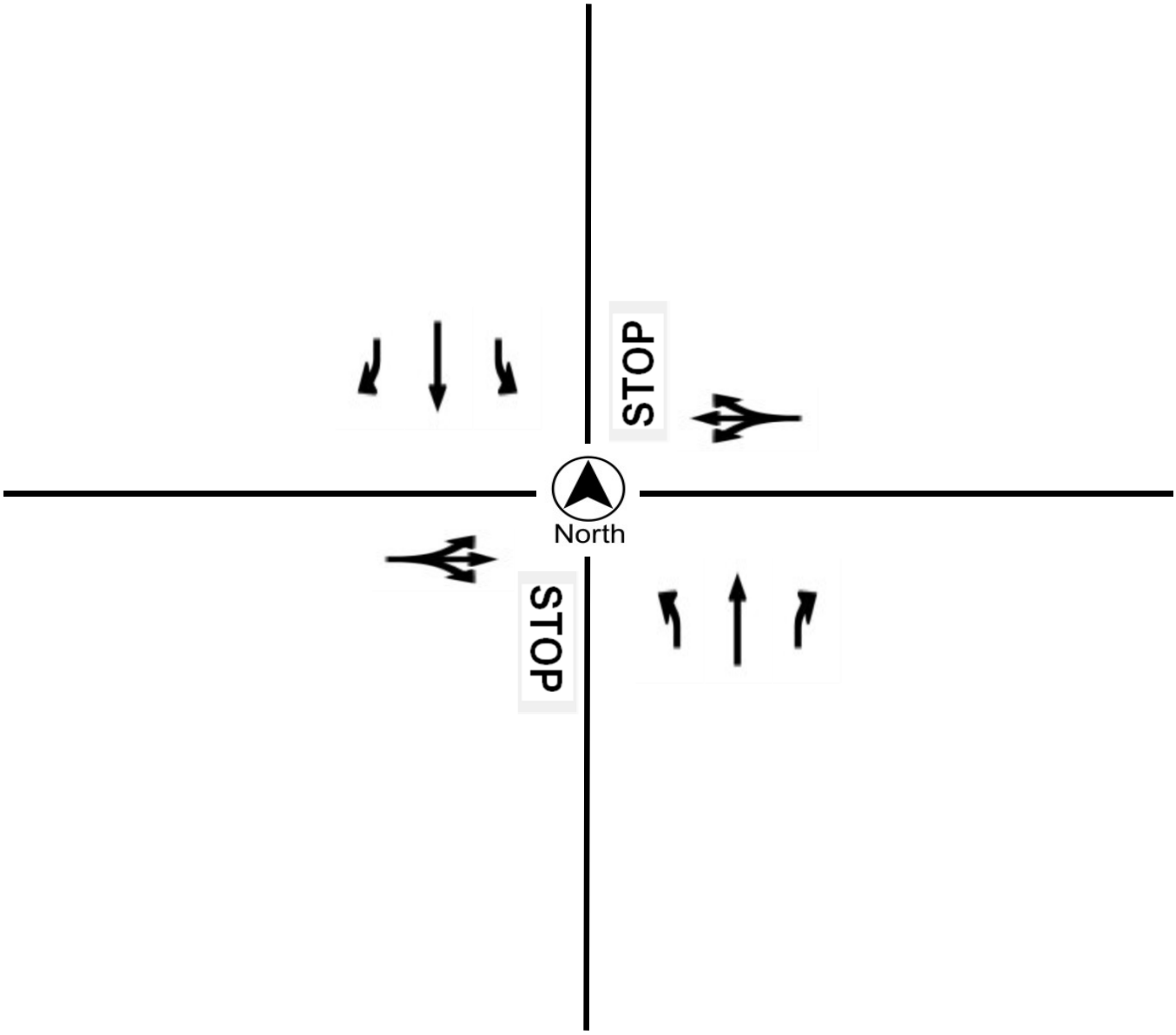
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Turning Movement Report

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

LOCATION	Creston Rd @ Stoney Creek Rd	**N/S STREET**	Creston Rd / Creston Rd
COUNTY	San Luis Obispo	**E/W STREET**	Stoney Creek Dr / Stoney Creek Dr
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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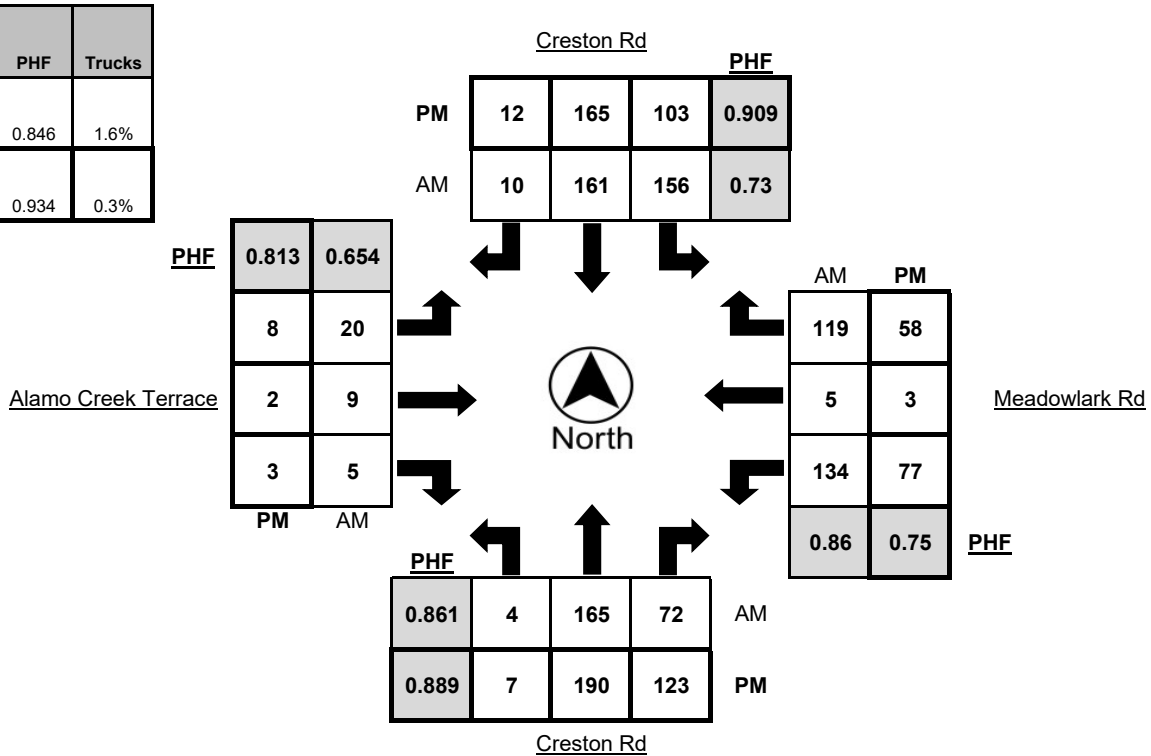
LOCATION Creston Rd @ Meadowlark Rd
LATITUDE 35.6013
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	31	3	1	7	31	1	1	0	0	4	0	20	0	10	0
7:15 AM - 7:30 AM	2	34	4	0	16	21	1	0	2	0	0	0	31	1	18	0
7:30 AM - 7:45 AM	0	42	14	0	29	32	1	1	7	0	3	0	44	1	30	0
7:45 AM - 8:00 AM	1	45	21	0	63	48	1	4	8	4	1	0	40	0	22	0
8:00 AM - 8:15 AM	1	44	25	5	53	42	7	1	3	4	1	0	28	2	37	0
8:15 AM - 8:30 AM	2	34	12	1	11	39	1	1	2	1	0	0	22	2	30	1
8:30 AM - 8:45 AM	0	25	12	0	11	25	2	1	0	0	2	0	16	1	10	0
8:45 AM - 9:00 AM	0	31	5	0	13	26	0	2	3	0	0	0	23	0	9	1
TOTAL	**7**	**286**	**96**	**7**	**203**	**264**	**14**	**11**	**25**	**9**	**11**	**0**	**224**	**7**	**166**	**2**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	2	52	29	1	15	41	4	0	3	1	1	0	12	0	23	0
4:15 PM - 4:30 PM	1	56	23	0	17	32	0	0	1	0	0	0	14	0	24	0
4:30 PM - 4:45 PM	0	62	28	0	21	33	3	0	0	1	1	0	16	0	16	0
4:45 PM - 5:00 PM	3	42	31	0	27	48	2	0	3	1	0	0	19	2	9	0
5:00 PM - 5:15 PM	3	44	30	0	23	48	3	1	3	0	1	0	27	0	19	0
5:15 PM - 5:30 PM	1	42	34	1	32	36	4	0	2	0	1	0	15	1	14	0
5:30 PM - 5:45 PM	0	33	28	1	24	34	5	1	2	0	0	0	10	0	24	0
5:45 PM - 6:00 PM	1	34	20	0	17	34	4	0	3	2	1	0	10	0	13	0
TOTAL	**11**	**365**	**223**	**3**	**176**	**306**	**25**	**2**	**17**	**5**	**5**	**0**	**123**	**3**	**142**	**0**

	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	4	165	72	6	156	161	10	7	20	9	5	0	134	5	119	1
4:30 PM - 5:30 PM	7	190	123	1	103	165	12	1	8	2	3	0	77	3	58	0

	PHF	Trucks
AM	0.846	1.6%
PM	0.934	0.3%



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Morro Bay, CA 93442

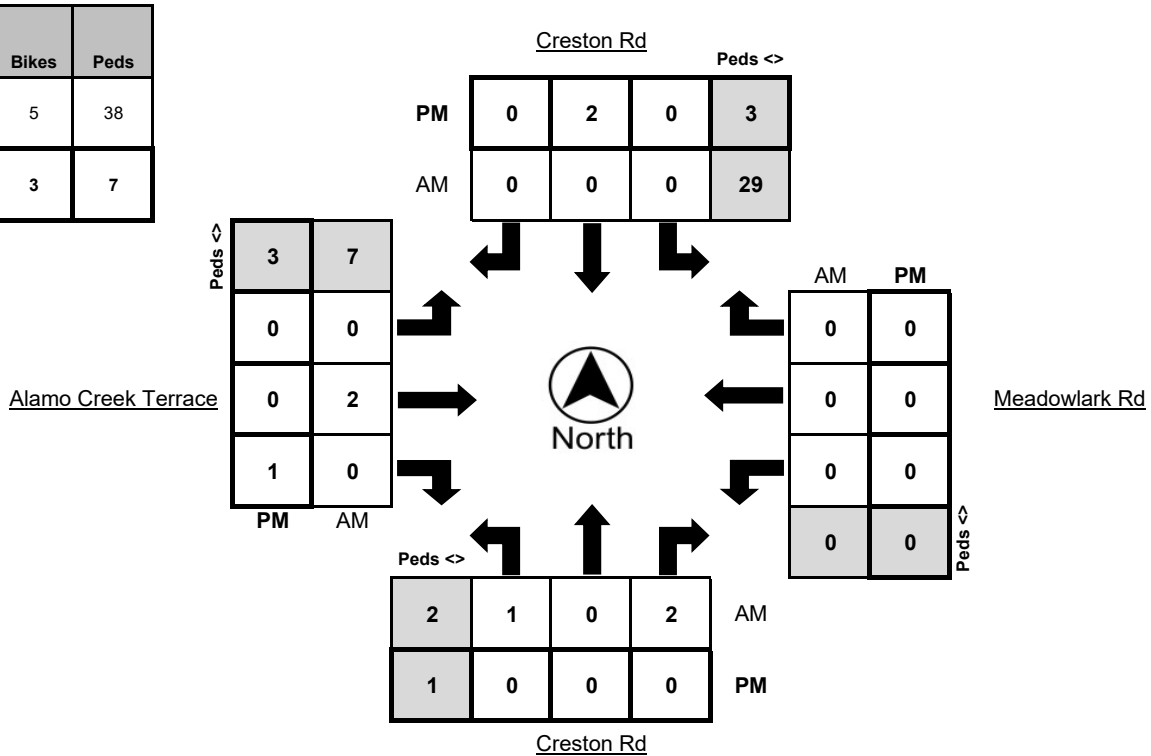
LOCATION Creston Rd @ Meadowlark Rd
LATITUDE 35.6013
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	4	0	0	0	0	0	0	0	0	2	0	0	5
7:30 AM - 7:45 AM	0	0	2	5	0	0	0	2	0	0	0	0	0	0	0	1
7:45 AM - 8:00 AM	0	0	0	19	0	0	0	0	0	2	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM - 8:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM - 8:45 AM	0	0	0	1	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	3
TOTAL	**1**	**0**	**2**	**34**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**15**

	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
4:00 PM - 4:15 PM	0	0	0	4	0	0	0	0	0	0	0	2	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	3	0	0	0	0	0	0	1	0	0	0	0	3
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	2	0	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	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	**0**	**0**	**0**	**8**	**0**	**2**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**6**

	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	1	0	2	29	0	0	0	2	0	2	0	0	0	0	0	7
4:30 PM - 5:30 PM	0	0	0	3	0	2	0	1	0	0	1	0	0	0	0	3

	Bikes	Peds
AM Peak Total	5	38
PM Peak Total	3	7



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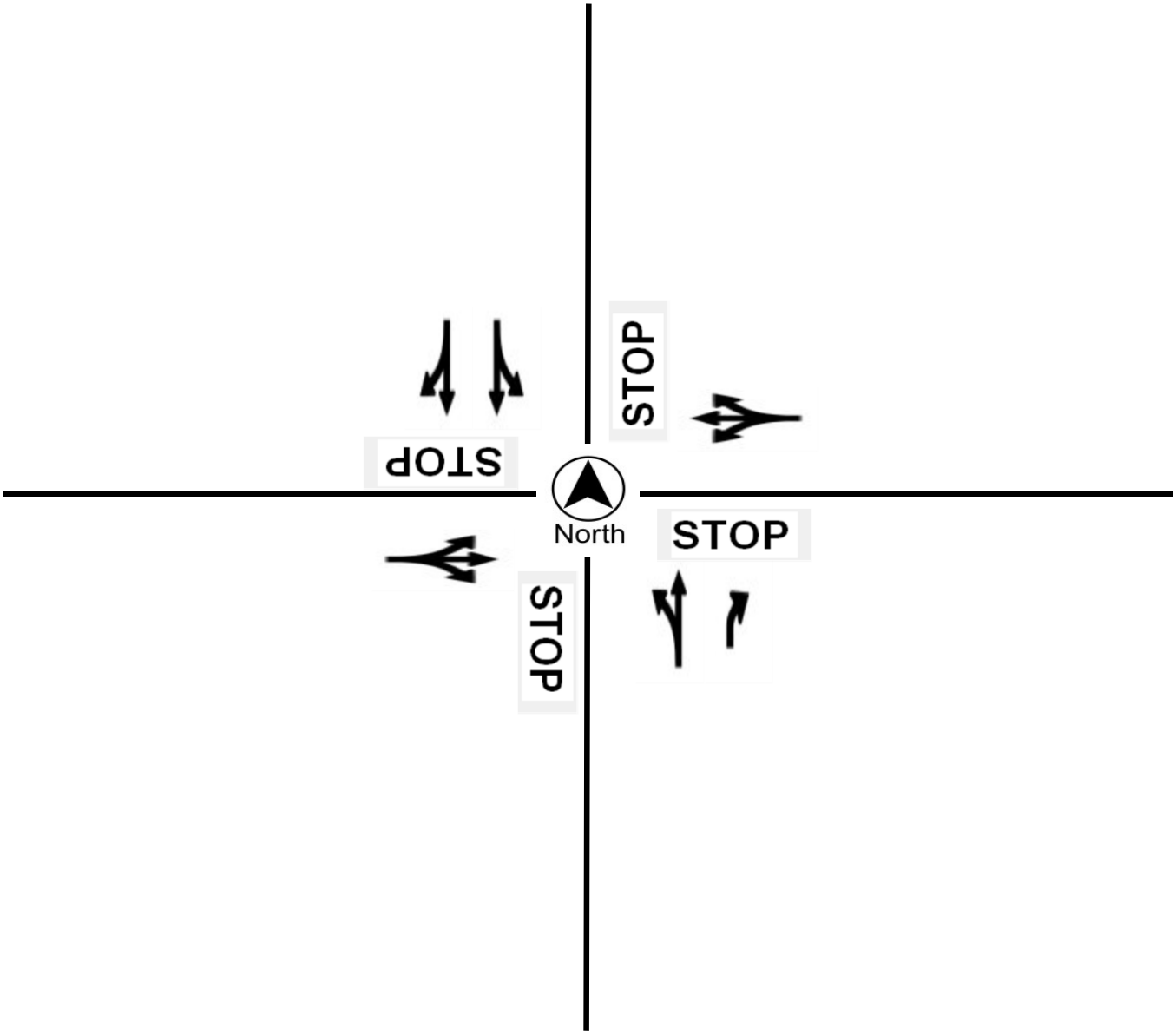
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Turning Movement Report

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

LOCATION	Creston Rd @ Meadowlark Rd	**N/S STREET**	Creston Rd / Creston Rd
COUNTY	San Luis Obispo	**E/W STREET**	Meadowlark Rd / Alamo Creek Terrace
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



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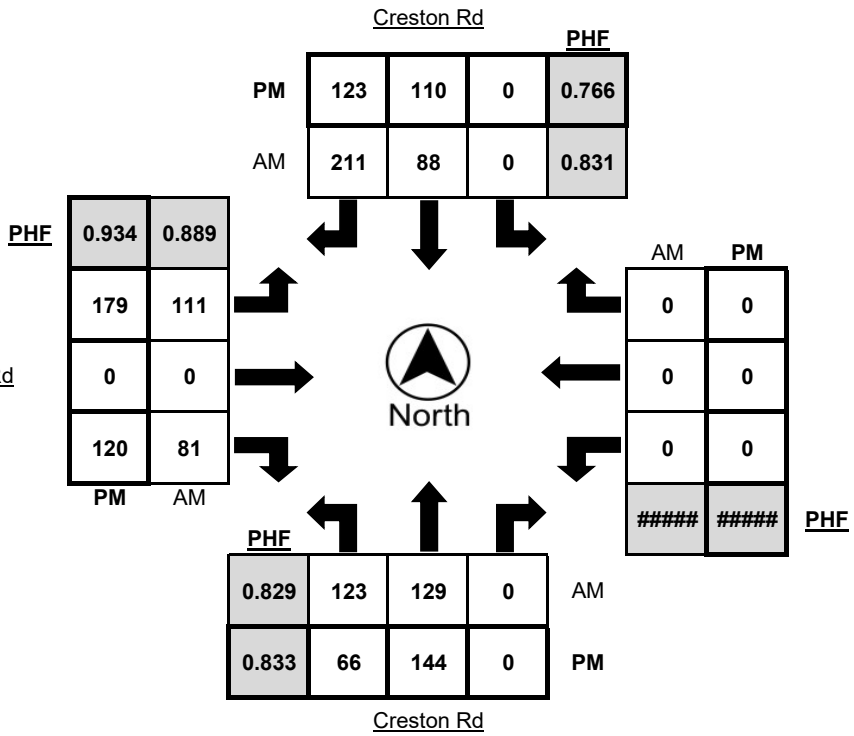
LOCATION Creston Rd @ Charolais Rd
LATITUDE 35.5991
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	12	24	0	2	0	23	31	1	11	0	8	1	0	0	0	0
7:15 AM - 7:30 AM	24	32	0	0	0	13	39	0	9	0	6	0	0	0	0	0
7:30 AM - 7:45 AM	28	29	0	1	0	12	66	1	31	0	17	2	0	0	0	0
7:45 AM - 8:00 AM	39	37	0	0	0	27	63	4	26	0	23	0	0	0	0	0
8:00 AM - 8:15 AM	36	38	0	4	0	25	42	0	31	0	23	2	0	0	0	0
8:15 AM - 8:30 AM	20	25	0	2	0	24	40	2	23	0	18	0	0	0	0	0
8:30 AM - 8:45 AM	23	21	0	0	0	18	25	1	18	0	11	0	0	0	0	0
8:45 AM - 9:00 AM	21	21	0	0	0	16	30	1	14	0	6	0	0	0	0	0
TOTAL	**203**	**227**	**0**	**9**	**0**	**158**	**336**	**10**	**163**	**0**	**112**	**5**	**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
4:00 PM - 4:15 PM	20	38	0	1	0	28	30	1	45	0	26	0	0	0	0	0
4:15 PM - 4:30 PM	20	43	0	0	0	23	21	0	36	0	35	0	0	0	0	0
4:30 PM - 4:45 PM	15	47	0	1	0	20	29	0	45	0	26	0	0	0	0	0
4:45 PM - 5:00 PM	19	27	0	0	0	30	34	0	47	0	33	0	0	0	0	0
5:00 PM - 5:15 PM	12	27	0	0	0	37	39	2	51	0	26	0	0	0	0	0
5:15 PM - 5:30 PM	15	28	0	0	0	30	24	0	48	0	30	0	0	0	0	0
5:30 PM - 5:45 PM	21	20	0	0	0	29	17	1	48	0	34	0	0	0	0	0
5:45 PM - 6:00 PM	18	19	0	0	0	24	19	0	34	0	29	0	0	0	0	0
TOTAL	**140**	**249**	**0**	**2**	**0**	**221**	**213**	**4**	**354**	**0**	**239**	**0**	**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
7:30 AM - 8:30 AM	123	129	0	7	0	88	211	7	111	0	81	4	0	0	0	0
4:15 PM - 5:15 PM	66	144	0	1	0	110	123	2	179	0	120	0	0	0	0	0

	PHF	Trucks
AM	0.864	2.4%
PM	0.966	0.4%



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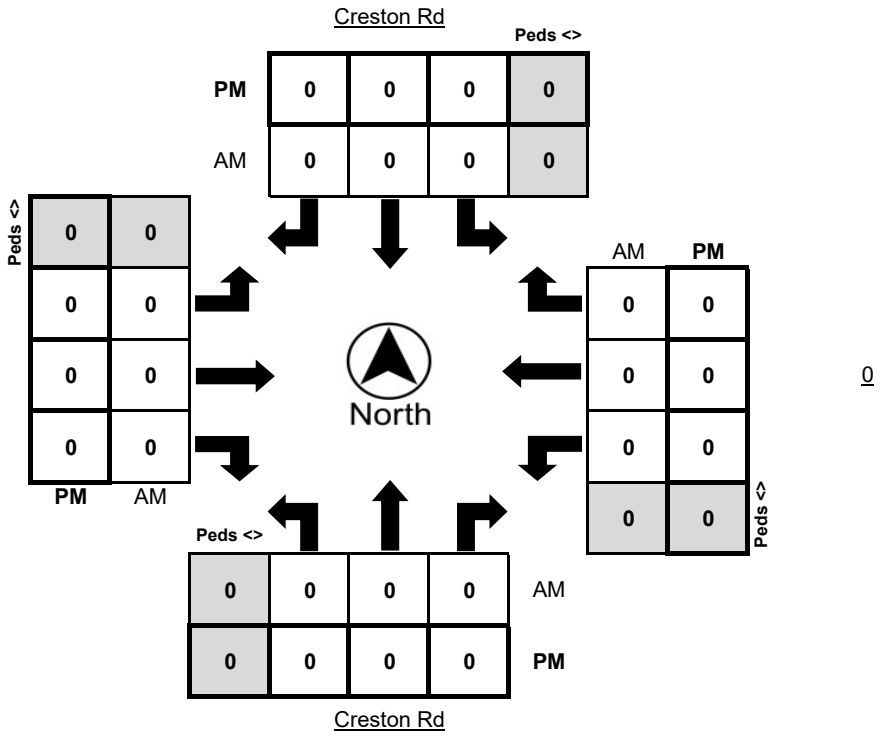
LOCATION Creston Rd @ Charolais Rd
LATITUDE 35.5991
COUNTY San Luis Obispo
LONGITUDE -120.6590
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	1	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	**1**	**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
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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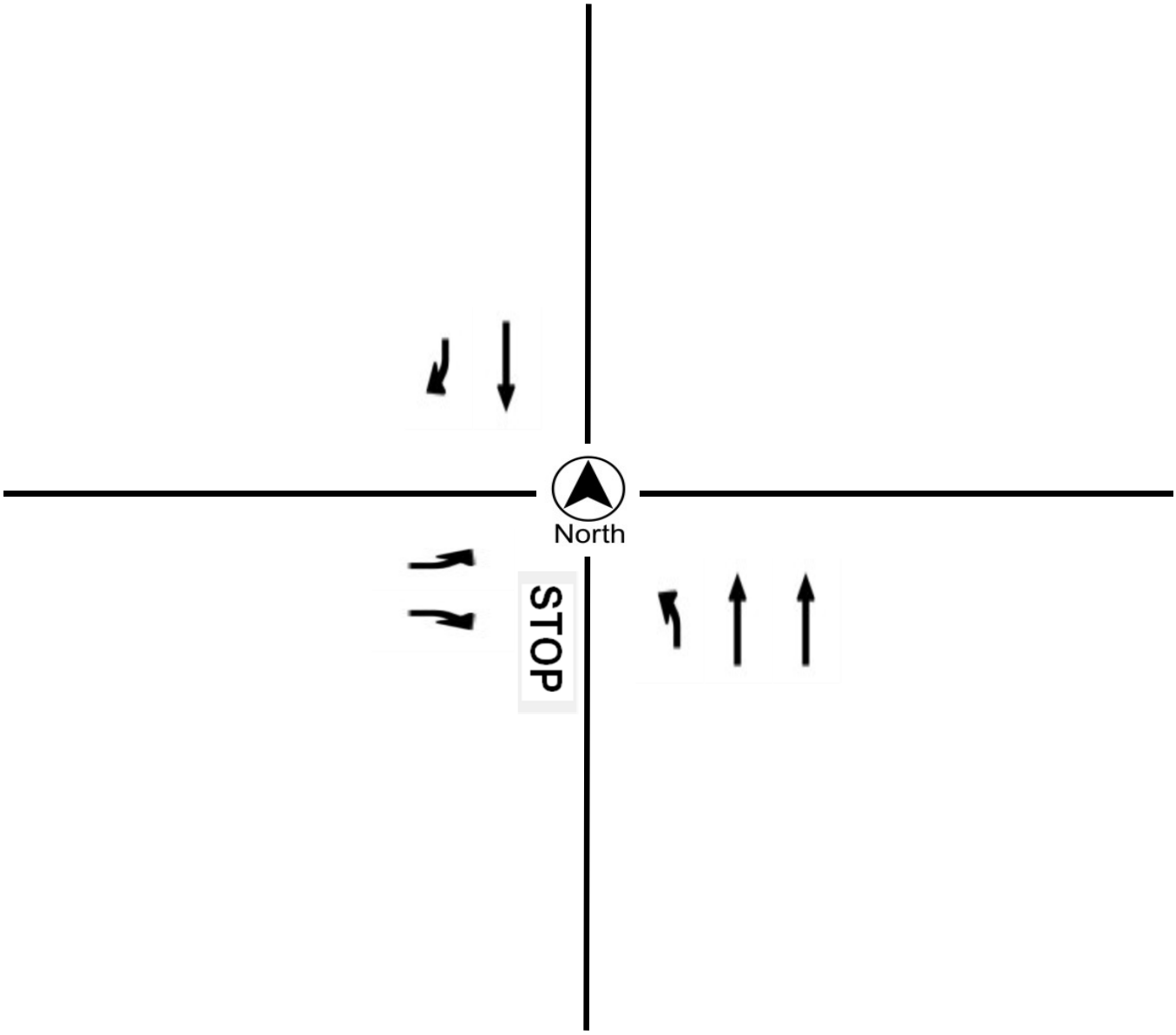
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Turning Movement Report

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

LOCATION	Creston Rd @ Charolais Rd	**N/S STREET**	Creston Rd / Creston Rd
COUNTY	San Luis Obispo	**E/W STREET**	/ Charolais Rd
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Morro Bay, CA 93442

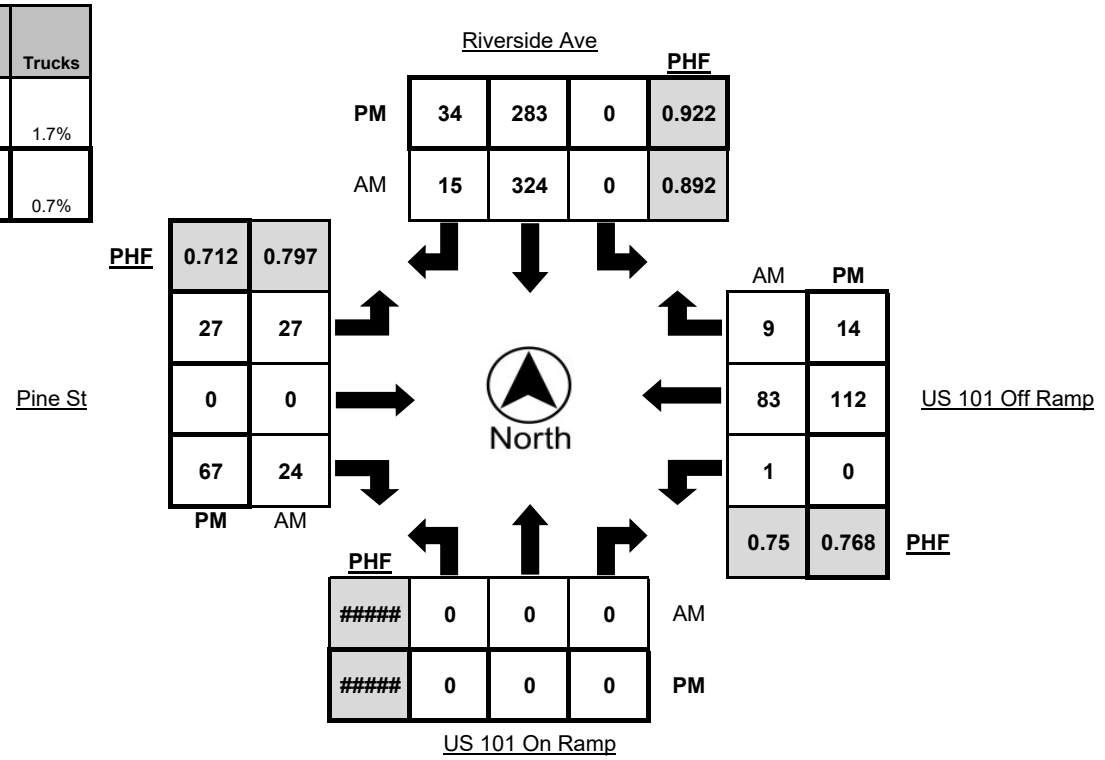
LOCATION Riverside Ave @ Pine St/101 SB Ramps
LATITUDE 35.6177
COUNTY San Luis Obispo
LONGITUDE -120.6876
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	0	51	2	0	3	0	5	0	0	9	3	1
7:15 AM - 7:30 AM	0	0	0	0	0	77	5	3	4	0	8	0	0	16	2	1
7:30 AM - 7:45 AM	0	0	0	0	0	93	2	1	5	0	3	0	0	19	1	0
7:45 AM - 8:00 AM	0	0	0	0	0	71	5	0	7	0	8	0	1	21	2	1
8:00 AM - 8:15 AM	0	0	0	0	0	83	3	2	11	0	5	0	0	27	4	0
8:15 AM - 8:30 AM	0	0	0	0	0	68	2	4	4	0	11	0	0	20	2	0
8:30 AM - 8:45 AM	0	0	0	0	0	59	2	5	7	0	13	0	0	15	5	4
8:45 AM - 9:00 AM	0	0	0	0	0	57	3	2	2	0	6	0	0	21	11	1
TOTAL	**0**	**0**	**0**	**0**	**0**	**559**	**24**	**17**	**43**	**0**	**59**	**0**	**1**	**148**	**30**	**8**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	0	0	0	56	4	1	5	0	17	0	0	13	2	0
4:15 PM - 4:30 PM	0	0	0	0	0	74	9	1	7	0	9	0	0	30	3	0
4:30 PM - 4:45 PM	0	0	0	0	0	66	10	1	8	0	16	0	0	23	3	0
4:45 PM - 5:00 PM	0	0	0	0	0	63	9	0	5	0	16	0	0	25	1	0
5:00 PM - 5:15 PM	0	0	0	0	0	80	6	1	7	0	26	0	0	34	7	1
5:15 PM - 5:30 PM	0	0	0	0	0	64	10	0	4	0	19	0	0	18	5	0
5:30 PM - 5:45 PM	0	0	0	0	0	60	10	0	7	0	11	0	0	10	5	0
5:45 PM - 6:00 PM	0	0	0	0	0	59	7	0	0	0	11	0	0	25	4	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**522**	**65**	**4**	**43**	**0**	**125**	**0**	**0**	**178**	**30**	**1**

	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	0	324	15	6	27	0	24	0	1	83	9	2
4:15 PM - 5:15 PM	0	0	0	0	0	283	34	3	27	0	67	0	0	112	14	1

	PHF	Trucks
AM	0.908	1.7%
PM	0.839	0.7%



Metro Traffic Data Inc.
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Hanford, CA 93230

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Turning Movement Report

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

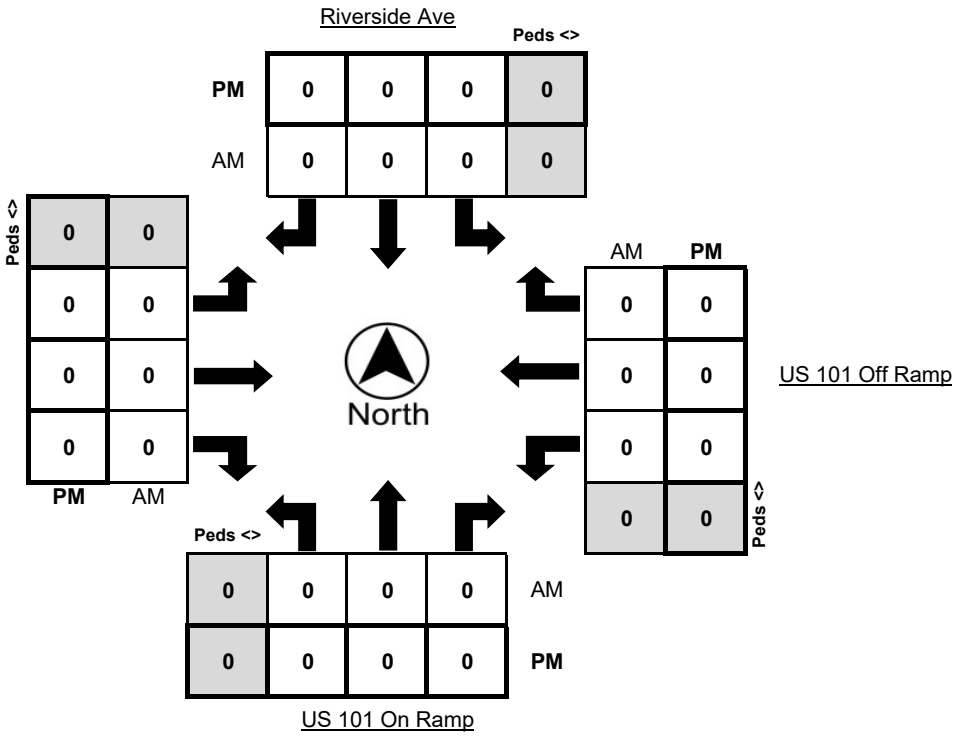
LOCATION Riverside Ave @ Pine St/101 SB Ramps
LATITUDE 35.6177
COUNTY San Luis Obispo
LONGITUDE -120.6876
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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
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	1	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**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
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



Metro Traffic Data Inc.
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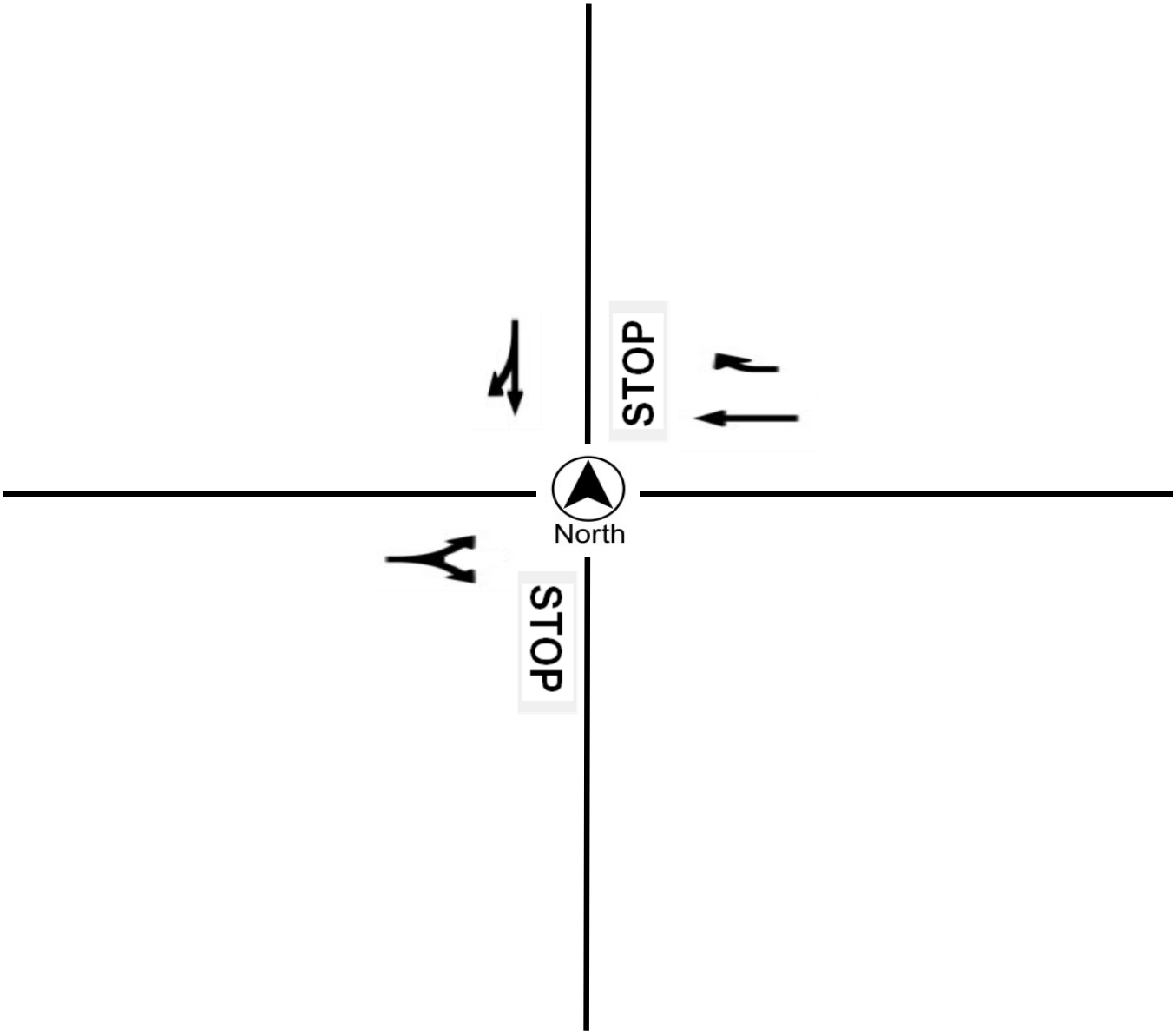
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Turning Movement Report

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

LOCATION	Riverside Ave @ Pine St/101 SB Ramps	**N/S STREET**	Riverside Ave / US 101 On Ramp
COUNTY	San Luis Obispo	**E/W STREET**	US 101 Off Ramp / Pine St
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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Morro Bay, CA 93442

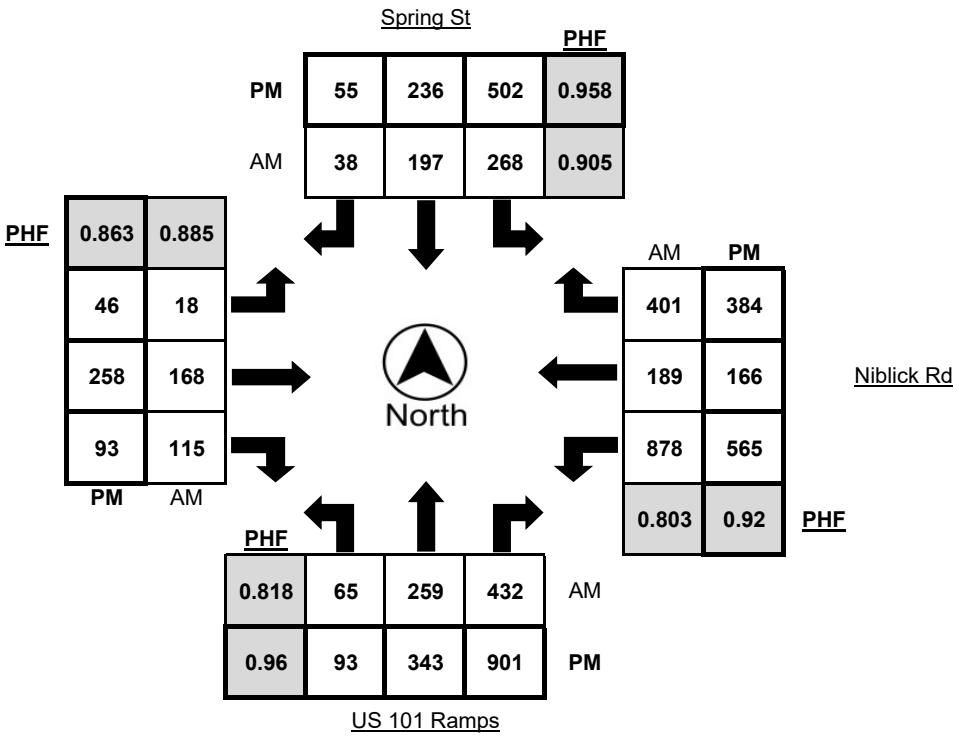
LOCATION 1st St / Niblick Rd @ Spring St
LATITUDE 35.6153
COUNTY San Luis Obispo
LONGITUDE -120.6905
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	8	41	58	8	24	29	8	1	4	9	13	0	190	7	30	1
7:15 AM - 7:30 AM	12	41	83	3	42	43	7	4	4	24	19	3	223	20	50	3
7:30 AM - 7:45 AM	11	40	103	3	75	43	9	3	10	37	34	2	260	38	71	3
7:45 AM - 8:00 AM	24	81	126	5	73	54	12	2	1	48	25	0	255	65	137	11
8:00 AM - 8:15 AM	13	80	103	2	58	48	8	0	3	51	31	1	197	49	121	4
8:15 AM - 8:30 AM	17	58	100	4	62	52	9	2	4	32	25	1	166	37	72	2
8:30 AM - 8:45 AM	9	70	94	1	64	41	7	3	5	32	29	2	167	26	73	5
8:45 AM - 9:00 AM	18	91	90	4	64	44	8	3	5	32	20	0	121	33	63	2
TOTAL	**112**	**502**	**757**	**30**	**462**	**354**	**68**	**18**	**36**	**265**	**196**	**9**	**1579**	**275**	**617**	**31**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	28	99	212	3	109	56	16	3	7	48	22	1	131	33	94	3
4:15 PM - 4:30 PM	13	85	220	3	97	69	11	4	12	51	18	1	127	38	106	1
4:30 PM - 4:45 PM	28	82	201	4	127	69	11	1	12	45	18	1	146	55	102	6
4:45 PM - 5:00 PM	22	93	223	2	116	51	19	0	17	76	22	0	148	27	118	3
5:00 PM - 5:15 PM	18	87	235	3	128	55	15	0	7	79	29	0	108	37	79	1
5:15 PM - 5:30 PM	25	81	242	1	131	61	10	2	10	58	24	1	163	47	85	0
5:30 PM - 5:45 PM	19	76	241	1	79	56	17	1	12	59	16	0	146	53	96	3
5:45 PM - 6:00 PM	15	68	199	1	80	37	7	1	9	37	15	1	129	40	85	1
TOTAL	**168**	**671**	**1773**	**18**	**867**	**454**	**106**	**12**	**86**	**453**	**164**	**5**	**1098**	**330**	**765**	**18**

	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	65	259	432	14	268	197	38	7	18	168	115	4	878	189	401	20
4:30 PM - 5:30 PM	93	343	901	10	502	236	55	3	46	258	93	2	565	166	384	10

	PHF	Trucks
AM	0.840	1.5%
PM	0.972	0.7%



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Turning Movement Report

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Morro Bay, CA 93442

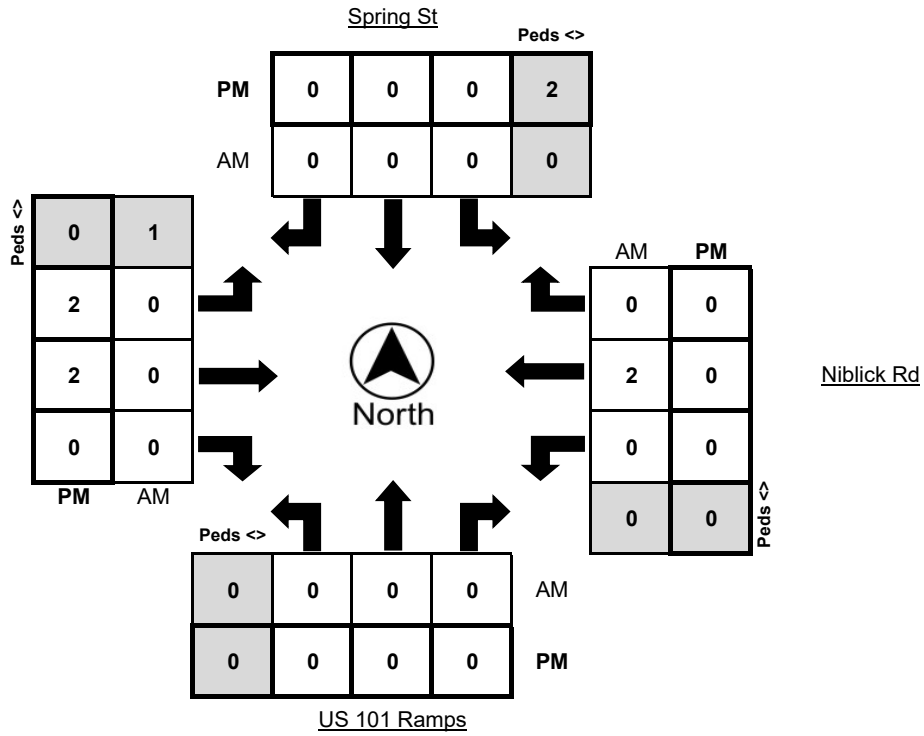
LOCATION 1st St / Niblick Rd @ Spring St
LATITUDE 35.6153
COUNTY San Luis Obispo
LONGITUDE -120.6905
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear

	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	4	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	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	1	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	1	0	0
8:30 AM - 8:45 AM	0	0	0	3	0	0	0	0	0	5	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	1	1	0	1	0	0	1	0	0	0	2	0	0
TOTAL	**0**	**0**	**0**	**9**	**1**	**0**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**4**	**0**	**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
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	1	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	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	2	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**	**4**	**0**	**0**	**0**	**0**	**3**	**2**	**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	2	0	1
4:30 PM - 5:30 PM	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	2	1
PM Peak Total	4	2



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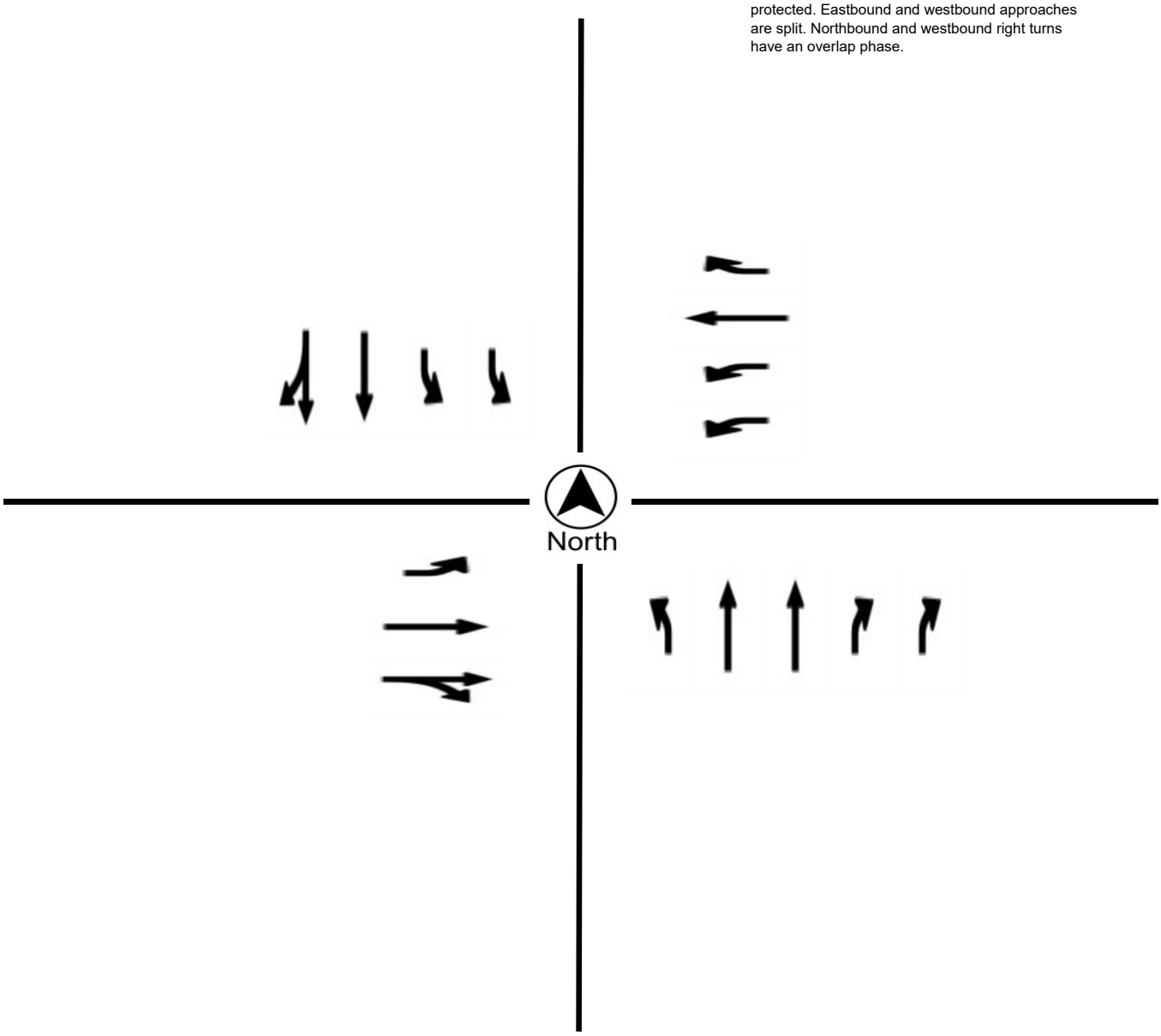
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www.metrotrafficdata.com

Turning Movement Report

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

LOCATION	1st St / Niblick Rd @ Spring St	**N/S STREET**	Spring St / US 101 Ramps
COUNTY	San Luis Obispo	**E/W STREET**	Niblick Rd / 1st st
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
CYCLE TIME	138 Seconds	**CONTROL TYPE**	Signal

COMMENTS Northbound and southbound left turns are protected. Eastbound and westbound approaches are split. Northbound and westbound right turns have an overlap phase.



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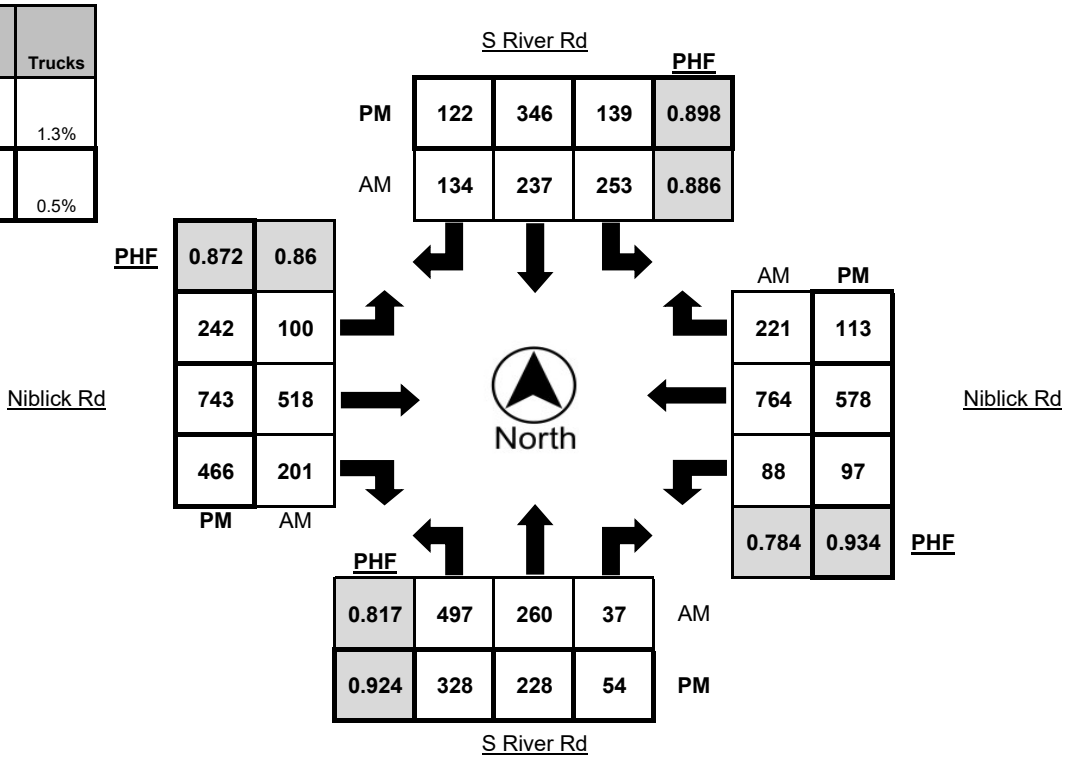
LOCATION Niblick Rd @ S River Rd
LATITUDE 35.6150
COUNTY San Luis Obispo
LONGITUDE -120.6802
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	81	27	1	0	17	35	25	0	9	67	19	7	10	103	16	2
7:15 AM - 7:30 AM	102	48	23	0	50	28	26	4	14	106	29	8	11	156	29	0
7:30 AM - 7:45 AM	138	73	13	4	86	47	23	2	25	166	47	6	12	212	56	3
7:45 AM - 8:00 AM	160	74	9	1	63	63	32	2	22	140	46	2	18	243	81	5
8:00 AM - 8:15 AM	109	73	6	2	59	71	46	2	26	110	53	1	29	170	56	3
8:15 AM - 8:30 AM	90	40	9	0	45	56	33	3	27	102	55	5	29	139	28	2
8:30 AM - 8:45 AM	93	36	7	0	31	52	27	1	23	98	44	4	16	138	24	6
8:45 AM - 9:00 AM	77	56	6	1	16	54	22	3	15	73	37	4	25	104	21	4
TOTAL	**850**	**427**	**74**	**8**	**367**	**406**	**234**	**17**	**161**	**862**	**330**	**37**	**150**	**1265**	**311**	**25**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	63	54	9	1	22	82	42	1	51	163	97	1	18	133	17	0
4:15 PM - 4:30 PM	78	45	12	0	21	89	20	0	70	185	91	3	23	144	22	3
4:30 PM - 4:45 PM	76	46	12	1	36	70	27	0	57	171	95	2	23	137	28	5
4:45 PM - 5:00 PM	86	62	17	0	33	76	34	1	55	159	106	1	24	142	32	2
5:00 PM - 5:15 PM	103	51	11	2	30	104	26	1	58	189	130	1	22	147	33	2
5:15 PM - 5:30 PM	65	54	16	0	39	76	20	0	66	228	122	1	30	158	23	2
5:30 PM - 5:45 PM	74	61	10	0	37	90	42	2	63	167	108	1	21	131	25	0
5:45 PM - 6:00 PM	69	42	12	0	45	73	28	0	55	168	89	1	20	122	34	0
TOTAL	**614**	**415**	**99**	**4**	**263**	**660**	**239**	**5**	**475**	**1430**	**838**	**11**	**181**	**1114**	**214**	**14**

	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	497	260	37	7	253	237	134	9	100	518	201	14	88	764	221	13
4:45 PM - 5:45 PM	328	228	54	2	139	346	122	4	242	743	466	4	97	578	113	6

	PHF	Trucks
AM	0.870	1.3%
PM	0.956	0.5%



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Turning Movement Report

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

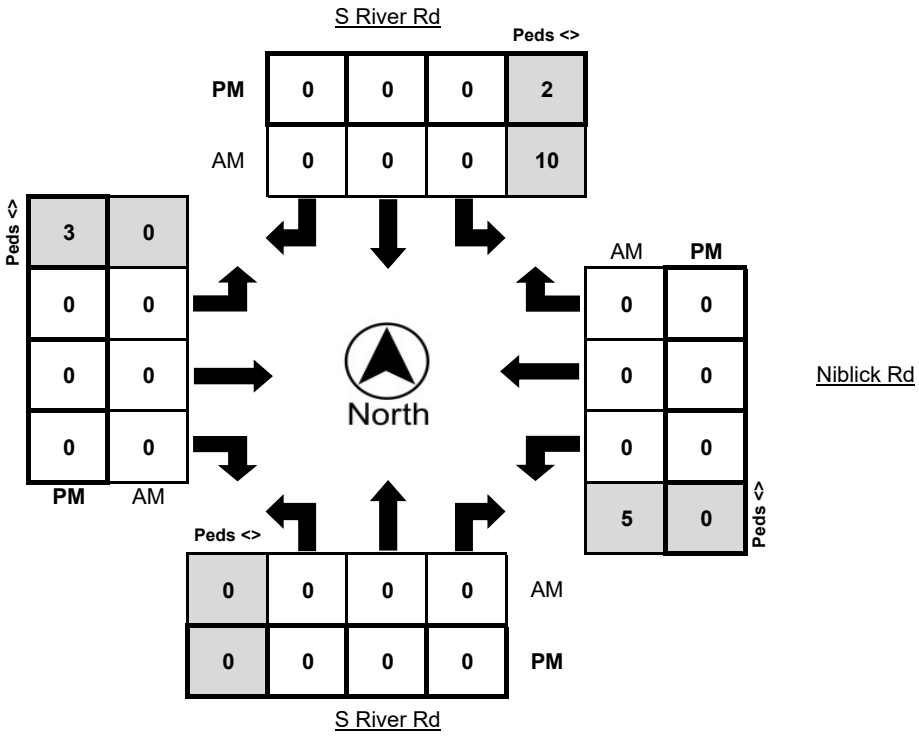
LOCATION Niblick Rd @ S River Rd
LATITUDE 35.6150
COUNTY San Luis Obispo
LONGITUDE -120.6802
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear

	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1
7:30 AM - 7:45 AM	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	3	0	0	0	0	0	0	0	1	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	3	0	0	0	0	0	0	0	2	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**11**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**3**

	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
4:00 PM - 4:15 PM	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	2
4:15 PM - 4:30 PM	0	0	0	5	0	0	0	1	0	0	0	0	0	1	0	7
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**12**

	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	10	0	0	0	0	0	0	0	5	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3

	Bikes	Peds
AM Peak Total	0	15
PM Peak Total	0	5



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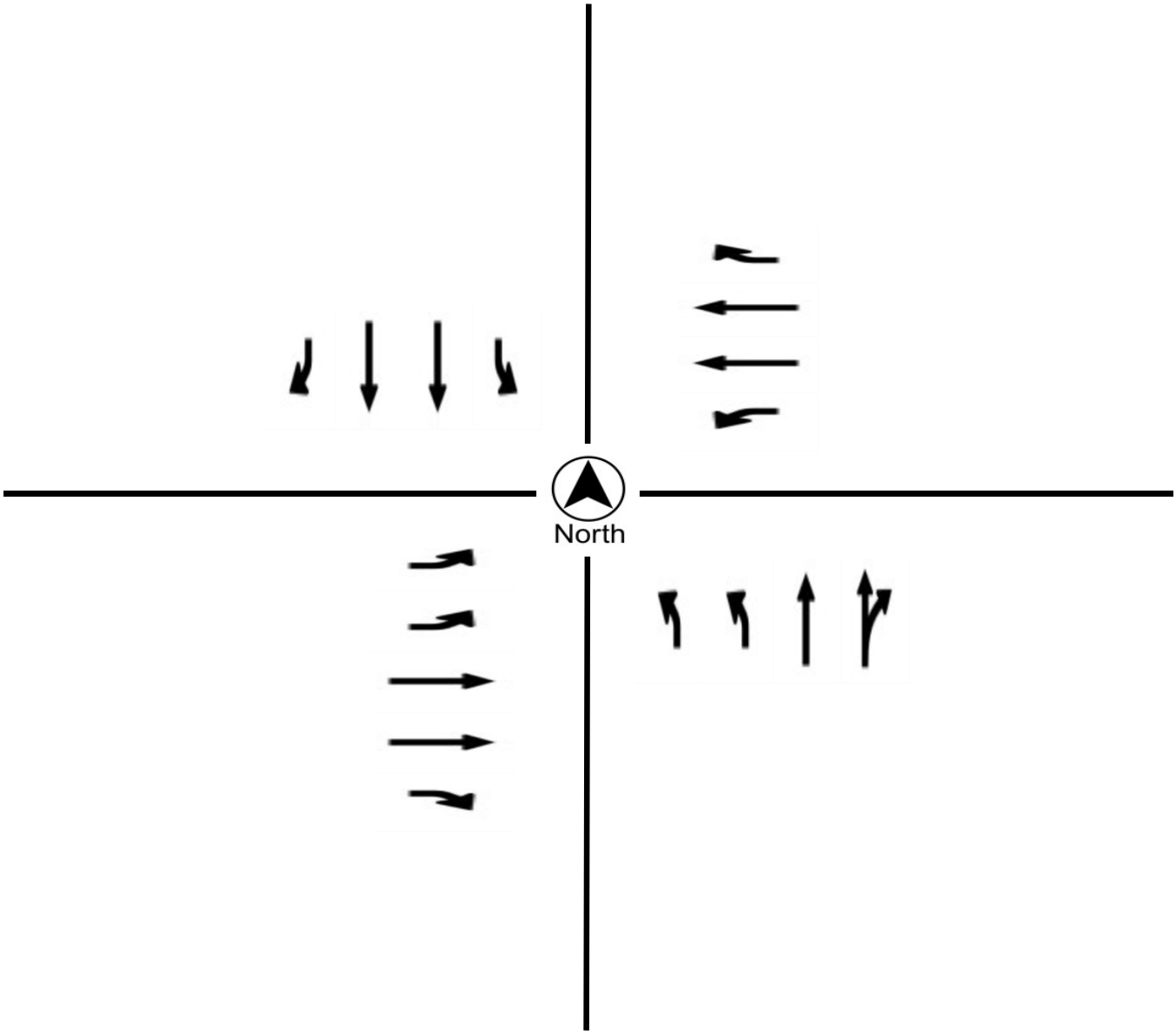
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Turning Movement Report

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

LOCATION	Niblick Rd @ S River Rd	**N/S STREET**	S River Rd / S River Rd
COUNTY	San Luis Obispo	**E/W STREET**	Niblick Rd / Niblick Rd
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
CYCLE TIME	125 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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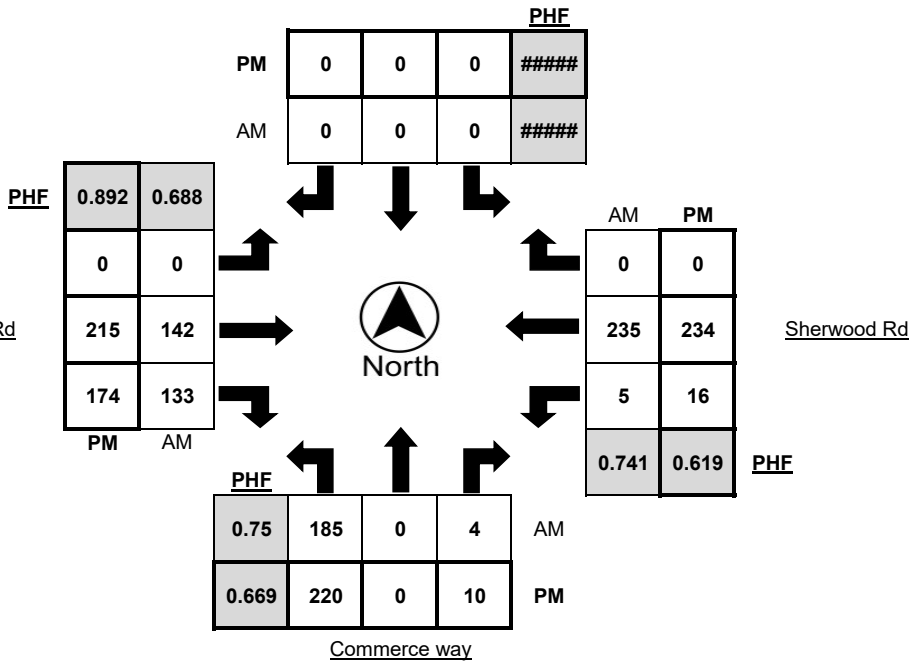
LOCATION Sherwood Rd @ Commerce Wy
LATITUDE 35.6157
COUNTY San Luis Obispo
LONGITUDE -120.6523
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	27	0	1	0	0	0	0	0	0	9	55	0	1	39	0	0
7:15 AM - 7:30 AM	43	0	1	1	0	0	0	0	0	26	24	3	1	63	0	0
7:30 AM - 7:45 AM	63	0	0	1	0	0	0	0	0	26	22	2	1	80	0	2
7:45 AM - 8:00 AM	41	0	2	2	0	0	0	0	0	47	53	4	2	49	0	0
8:00 AM - 8:15 AM	38	0	1	1	0	0	0	0	0	43	34	2	1	43	0	1
8:15 AM - 8:30 AM	25	0	2	3	0	0	0	0	0	41	29	4	0	29	0	2
8:30 AM - 8:45 AM	31	0	3	0	0	0	0	0	0	25	21	4	3	47	0	1
8:45 AM - 9:00 AM	32	0	4	0	0	0	0	0	0	21	16	0	1	42	0	1
TOTAL	**300**	**0**	**14**	**8**	**0**	**0**	**0**	**0**	**0**	**238**	**254**	**19**	**10**	**392**	**0**	**7**

	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	29	0	1	2	0	0	0	0	0	33	29	3	2	27	0	0
2:15 PM - 2:30 PM	18	0	5	2	0	0	0	0	0	36	28	4	3	33	0	0
2:30 PM - 2:45 PM	40	0	3	0	0	0	0	0	0	40	17	8	3	50	0	1
2:45 PM - 3:00 PM	37	0	4	3	0	0	0	0	0	58	30	4	4	40	0	0
3:00 PM - 3:15 PM	34	0	4	3	0	0	0	0	0	43	38	1	9	92	0	4
3:15 PM - 3:30 PM	35	0	0	2	0	0	0	0	0	71	38	5	3	48	0	1
3:30 PM - 3:45 PM	83	0	3	1	0	0	0	0	0	53	47	4	3	54	0	4
3:45 PM - 4:00 PM	68	0	3	3	0	0	0	0	0	48	51	1	1	40	0	1
4:00 PM - 4:15 PM	43	0	5	0	0	0	0	0	0	41	37	2	3	45	0	0
4:15 PM - 4:30 PM	50	0	2	1	0	0	0	0	0	50	39	2	1	41	0	1
4:30 PM - 4:45 PM	89	0	3	1	0	0	0	0	0	54	38	0	4	81	0	2
4:45 PM - 5:00 PM	52	0	0	2	0	0	0	0	0	50	30	2	0	42	0	0
5:00 PM - 5:15 PM	82	0	3	0	0	0	0	0	0	50	32	1	1	46	0	0
5:15 PM - 5:30 PM	34	0	1	1	0	0	0	0	0	55	39	2	2	45	0	0
5:30 PM - 5:45 PM	50	0	0	1	0	0	0	0	0	50	42	0	0	46	0	1
5:45 PM - 6:00 PM	29	0	0	2	0	0	0	0	0	48	36	0	0	40	0	0
TOTAL	**773**	**0**	**37**	**24**	**0**	**0**	**0**	**0**	**0**	**780**	**571**	**39**	**39**	**770**	**0**	**15**

	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	185	0	4	5	0	0	0	0	0	142	133	11	5	235	0	3
3:00 PM - 4:00 PM	220	0	10	9	0	0	0	0	0	215	174	11	16	234	0	10

	PHF	Trucks
AM	0.907	2.7%
PM	0.894	3.5%



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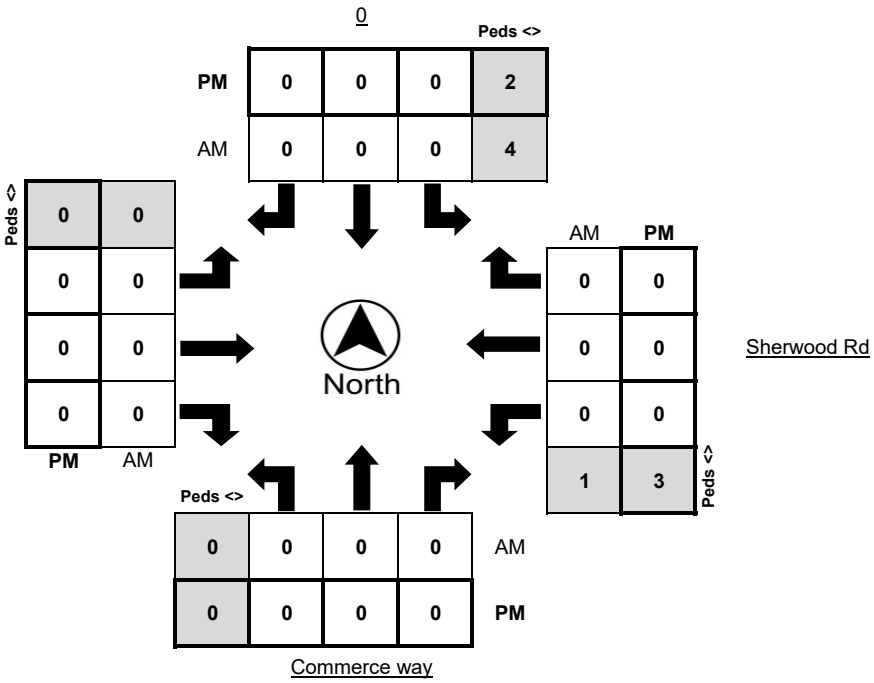
LOCATION Sherwood Rd @ Commerce Wy
LATITUDE 35.6157
COUNTY San Luis Obispo
LONGITUDE -120.6523
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	2	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	1	0	0	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	1	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	2	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**	**6**	**0**	**0**	**0**	**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
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	1	0	0	0	0	0	0	0	1	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	1	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	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	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	1	0	0	0	0	0	0	0	3	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	1	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**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**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	4	0	0	0	0	0	0	0	1	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0

	Bikes	Peds
AM Peak Total	0	5
PM Peak Total	0	5



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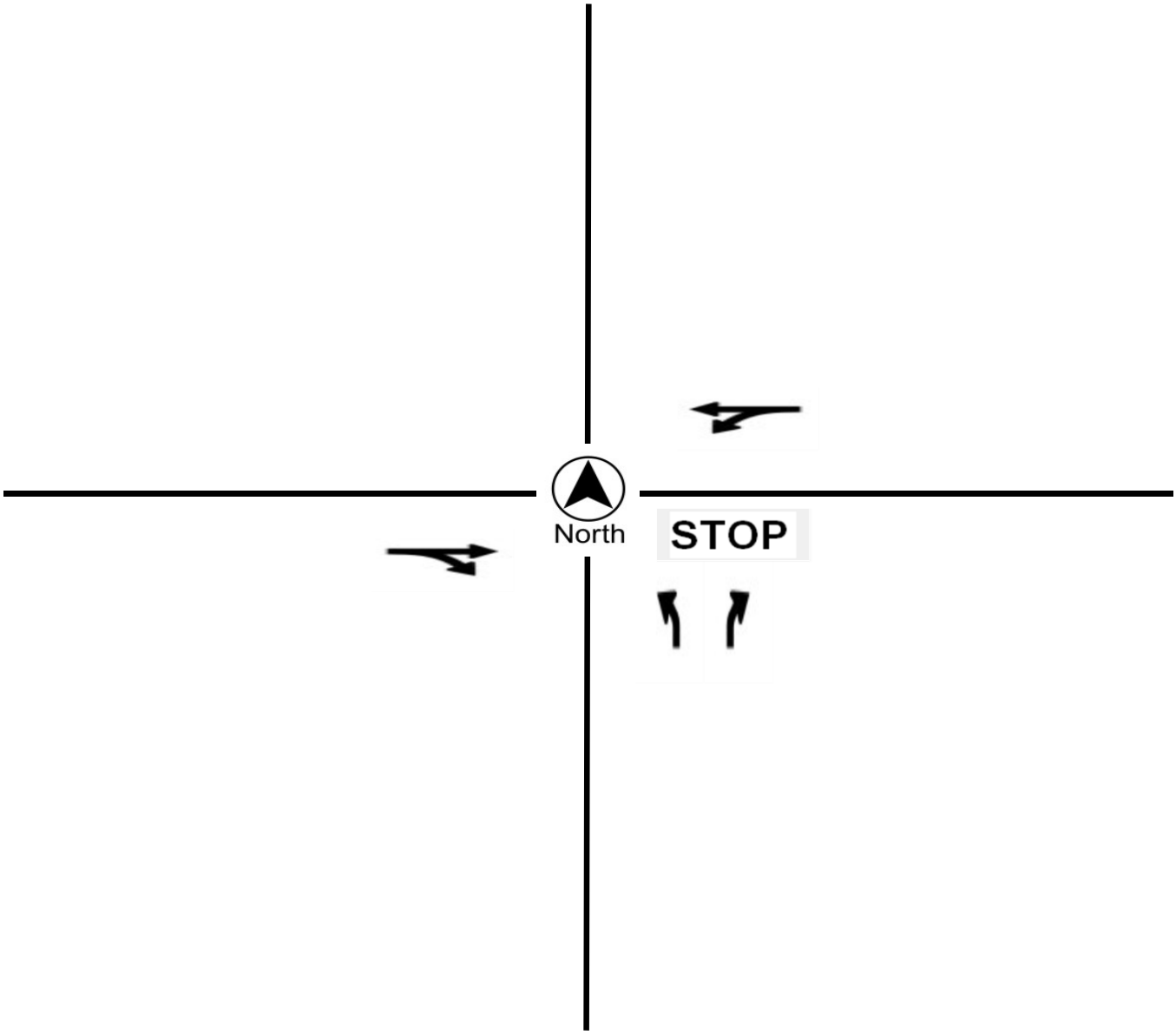
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Turning Movement Report

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

LOCATION	Sherwood Rd @ Commerce Wy	**N/S STREET**	/ Commerce way
COUNTY	San Luis Obispo	**E/W STREET**	Sherwood Rd / Sherwood Rd
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way stop

COMMENTS



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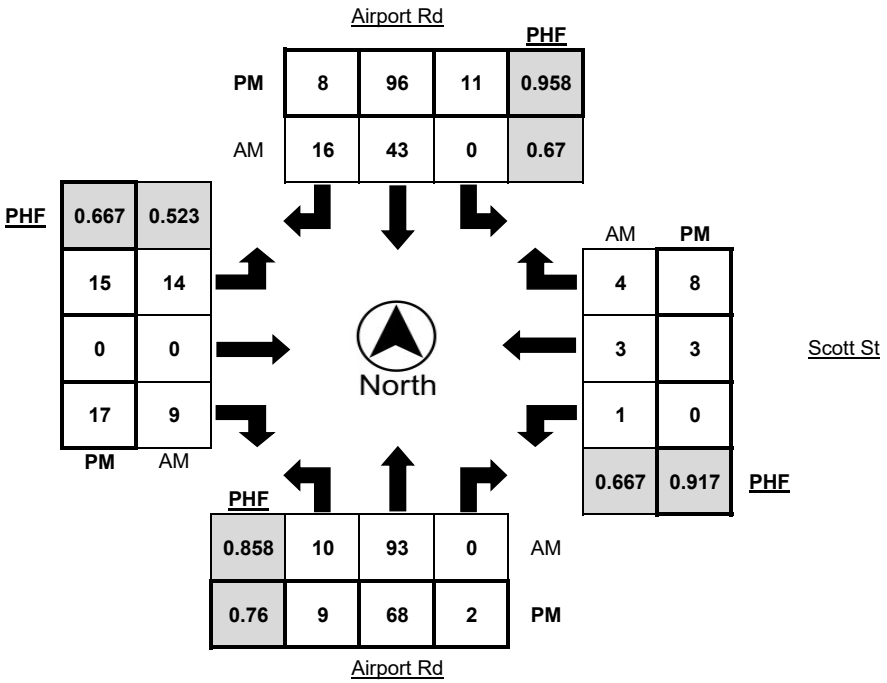
LOCATION Airport Rd @ Scott St
LATITUDE 35.6079
COUNTY San Luis Obispo
LONGITUDE -120.6435
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	3	16	0	0	1	3	1	0	1	0	0	0	0	0	1	0
7:15 AM - 7:30 AM	3	25	0	1	0	4	6	1	2	0	1	1	1	0	1	0
7:30 AM - 7:45 AM	3	27	0	0	0	11	3	2	6	0	5	4	0	2	1	0
7:45 AM - 8:00 AM	2	22	0	1	0	16	6	2	2	0	1	0	0	0	1	0
8:00 AM - 8:15 AM	2	19	0	0	0	12	1	1	4	0	2	1	0	1	1	0
8:15 AM - 8:30 AM	1	13	0	1	0	9	1	1	0	0	3	1	0	0	0	0
8:30 AM - 8:45 AM	1	22	0	0	0	8	2	0	3	1	2	2	1	1	2	1
8:45 AM - 9:00 AM	0	9	0	0	1	1	1	0	3	0	1	0	3	2	2	0
TOTAL	**15**	**153**	**0**	**3**	**2**	**64**	**21**	**7**	**21**	**1**	**15**	**9**	**5**	**6**	**9**	**1**

	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	1	10	0	0	3	10	4	1	4	1	3	0	0	0	3	0
2:15 PM - 2:30 PM	2	11	0	1	2	16	3	0	3	6	2	0	1	3	2	0
2:30 PM - 2:45 PM	0	11	1	0	0	11	3	0	3	1	7	1	0	2	1	0
2:45 PM - 3:00 PM	2	13	0	0	3	8	1	0	3	0	6	0	0	0	2	0
3:00 PM - 3:15 PM	4	14	0	1	1	14	3	0	3	2	4	0	0	0	0	0
3:15 PM - 3:30 PM	1	14	0	1	3	22	6	0	2	1	4	0	2	0	2	0
3:30 PM - 3:45 PM	1	14	2	0	0	22	5	0	4	0	3	2	0	1	1	0
3:45 PM - 4:00 PM	2	14	0	1	1	16	3	1	0	0	2	0	0	0	2	0
4:00 PM - 4:15 PM	2	6	1	0	2	20	2	0	4	1	6	0	0	0	1	0
4:15 PM - 4:30 PM	2	10	0	0	3	17	5	0	5	0	4	0	0	0	1	0
4:30 PM - 4:45 PM	1	10	1	0	3	17	5	1	4	1	5	1	1	0	2	0
4:45 PM - 5:00 PM	0	12	0	0	3	12	3	0	3	0	2	0	1	1	1	0
5:00 PM - 5:15 PM	2	11	1	0	2	24	2	0	4	0	4	0	0	2	1	0
5:15 PM - 5:30 PM	2	18	1	0	3	22	2	1	4	0	5	0	0	1	1	0
5:30 PM - 5:45 PM	2	24	0	0	2	27	1	0	5	0	7	1	0	0	3	0
5:45 PM - 6:00 PM	3	15	0	0	4	23	3	0	2	0	1	0	0	0	3	0
TOTAL	**27**	**207**	**7**	**4**	**35**	**281**	**51**	**4**	**53**	**13**	**65**	**5**	**5**	**10**	**26**	**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	10	93	0	2	0	43	16	6	14	0	9	6	1	3	4	0
5:00 PM - 6:00 PM	9	68	2	0	11	96	8	1	15	0	17	1	0	3	8	0

	PHF	Trucks
AM	0.832	7.3%
PM	0.835	0.8%



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Turning Movement Report

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

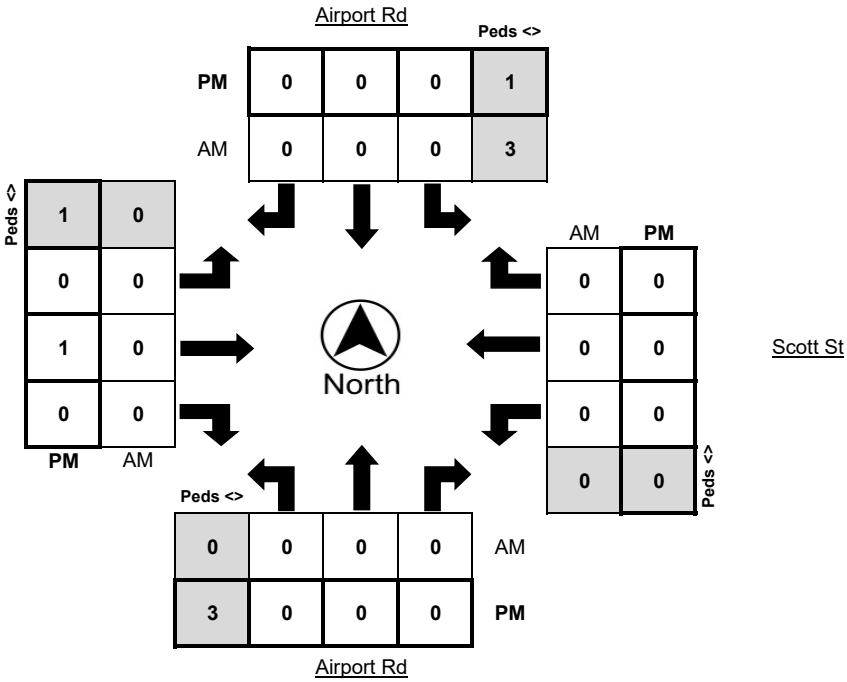
LOCATION Airport Rd @ Scott St
LATITUDE 35.6079
COUNTY San Luis Obispo
LONGITUDE -120.6435
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	3	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	1	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	1	0	0	0	0
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**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**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	1	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	4	0	0	0	3
3:30 PM - 3:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	1	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	1	0	0	0	0	0	3	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	3	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM - 5:30 PM	0	0	0	1	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	2	0	1	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**	**3**	**0**	**2**	**0**	**3**	**0**	**1**	**0**	**11**	**0**	**0**	**0**	**4**

	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	3	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	1	0	0	0	3	0	1	0	0	0	0	0	1

	Bikes	Peds
AM Peak Total	0	3
PM Peak Total	1	5



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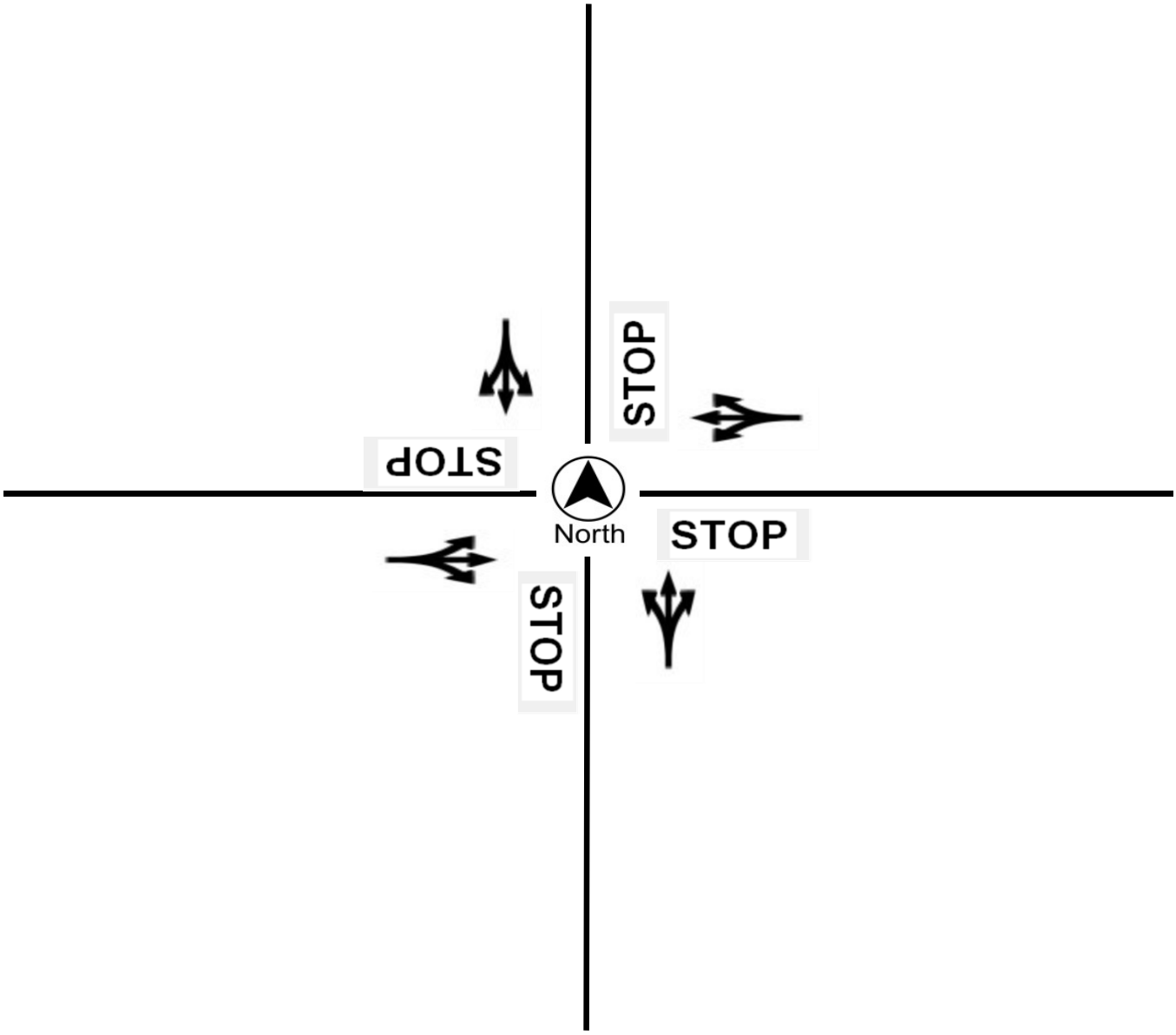
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Turning Movement Report

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

LOCATION	Airport Rd @ Scott St	**N/S STREET**	Airport Rd / Airport Rd
COUNTY	San Luis Obispo	**E/W STREET**	Scott St / Scott St
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



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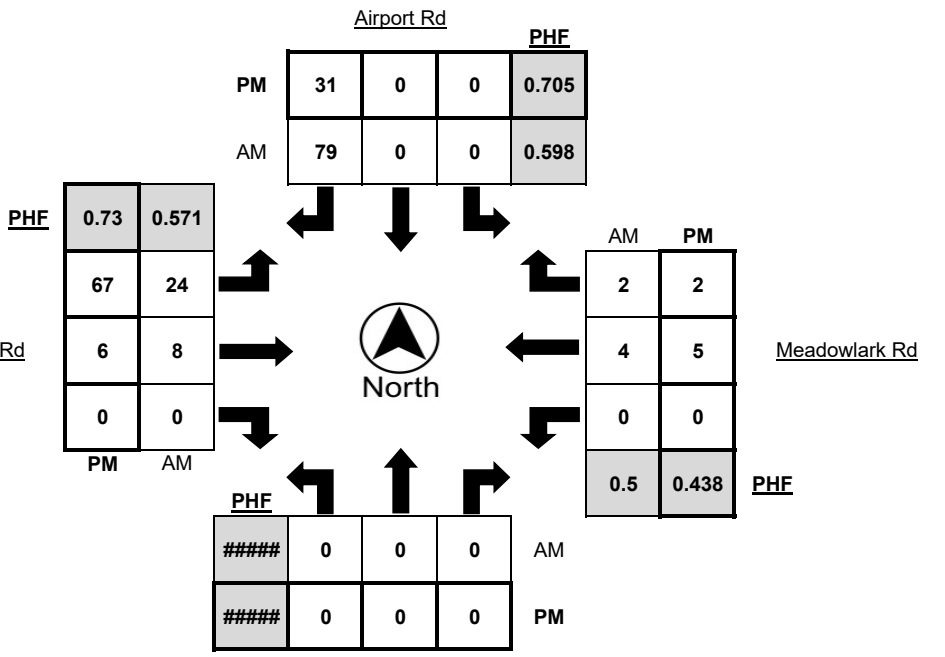
LOCATION Airport Rd @ Meadowlark Rd
LATITUDE 35.6011
COUNTY San Luis Obispo
LONGITUDE -120.6437
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	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	25	0	4	0	0	0	0	2	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	33	2	5	2	0	0	0	1	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	14	1	10	4	0	1	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	7	0	5	2	0	0	0	1	2	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	7	0	4	2	0	0	0	2	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	10	0	4	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**96**	**3**	**32**	**10**	**0**	**1**	**0**	**6**	**2**	**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	0	0	0	0	0	0	6	0	5	2	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	1	0	17	1	5	1	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	1	0	9	0	11	0	0	0	0	2	0	0
2:45 PM - 3:00 PM	0	0	0	0	1	0	9	0	13	3	0	0	0	4	1	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	11	1	10	1	0	0	0	0	1	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	7	0	12	2	0	1	0	2	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	10	0	12	0	0	0	0	2	0	0
4:45 PM - 5:00 PM	0	0	0	0	2	0	6	0	6	1	0	0	0	2	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	3	0	15	3	0	0	0	0	1	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	8	0	14	0	0	0	0	4	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	11	0	23	2	0	0	0	1	1	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	9	0	15	1	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**5**	**0**	**106**	**2**	**141**	**16**	**0**	**1**	**0**	**17**	**4**	**0**

	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	0	0	79	3	24	8	0	1	0	4	2	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	31	0	67	6	0	0	0	5	2	0

	PHF	Trucks
AM	0.713	3.4%
PM	0.730	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

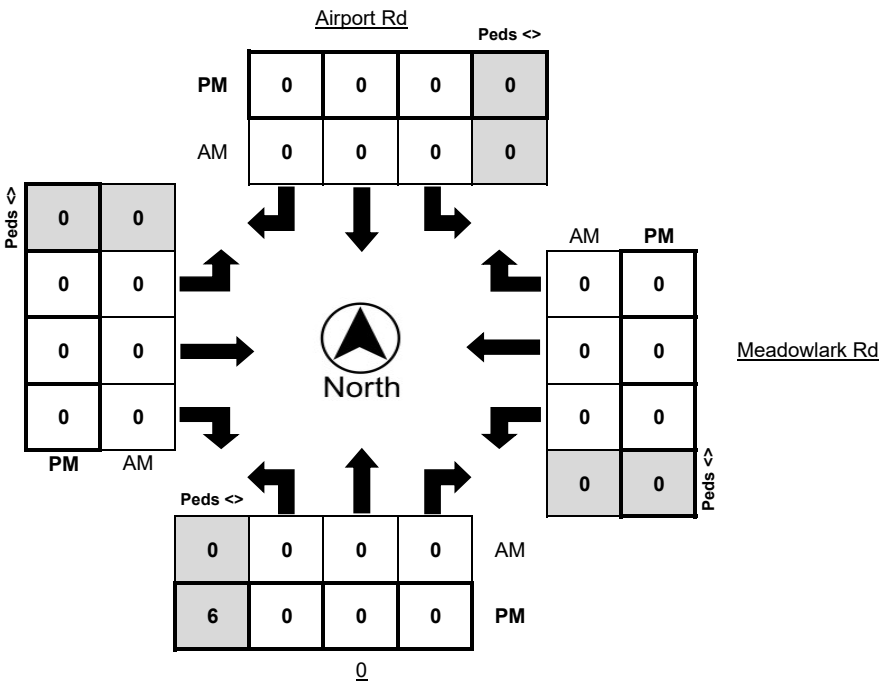
LOCATION Airport Rd @ Meadowlark Rd
LATITUDE 35.6011
COUNTY San Luis Obispo
LONGITUDE -120.6437
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	1	0
3:45 PM - 4:00 PM	0	0	0	0	1	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	2	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	2	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**	**1**	**0**	**0**	**8**	**0**	**0**	**0**	**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
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**6**



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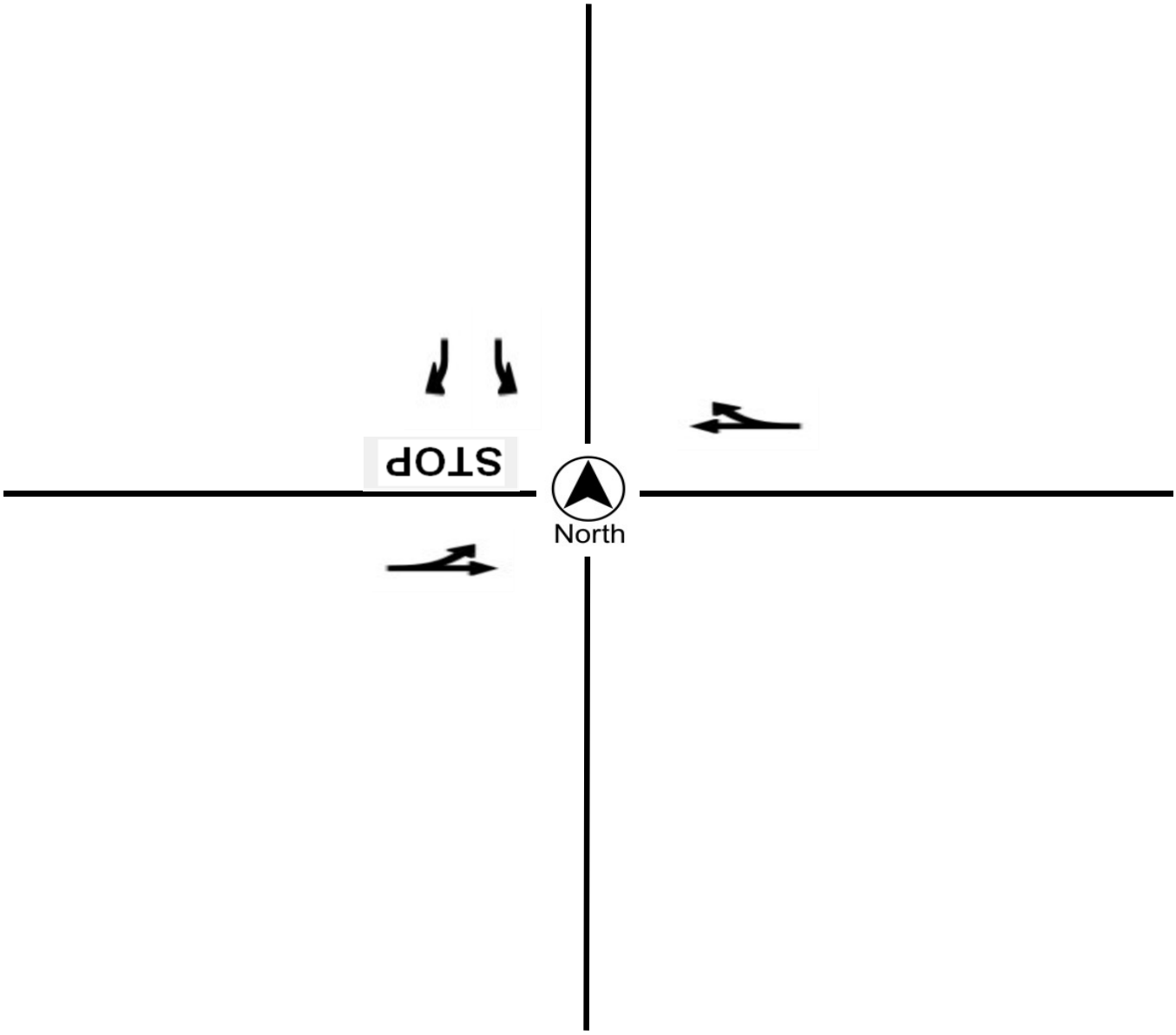
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Turning Movement Report

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

LOCATION	Airport Rd @ Meadowlark Rd	**N/S STREET**	Airport Rd /
COUNTY	San Luis Obispo	**E/W STREET**	Meadowlark Rd / Meadowlark Rd
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way stop

COMMENTS



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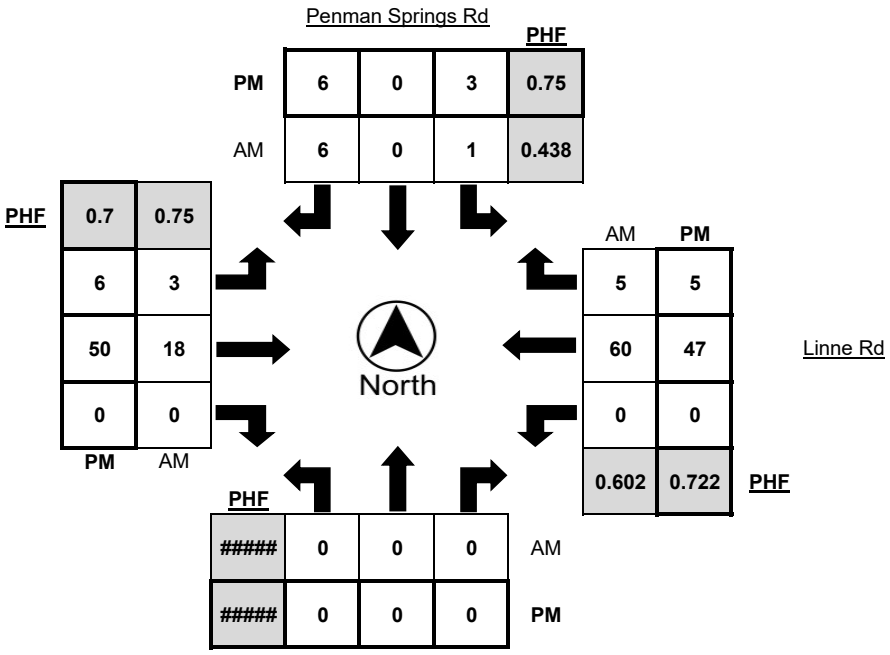
LOCATION Penman Springs Rd @ Linne Rd
LATITUDE 35.6081
COUNTY San Luis Obispo
LONGITUDE -120.6095
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	0	0	1	0	0	1	0	1	0	10	1	1
7:15 AM - 7:30 AM	0	0	0	0	1	0	0	0	1	1	0	0	0	20	1	1
7:30 AM - 7:45 AM	0	0	0	0	0	0	4	1	1	5	0	0	0	25	2	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	1	0	1	5	0	0	0	8	2	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	1	0	0	7	0	0	0	7	0	0
8:15 AM - 8:30 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	7	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	1	0	0	7	0	0	0	7	0	0
8:45 AM - 9:00 AM	0	0	0	0	1	0	3	0	0	7	0	0	0	14	2	0
TOTAL	**0**	**0**	**0**	**0**	**4**	**0**	**11**	**1**	**3**	**36**	**0**	**1**	**0**	**98**	**8**	**2**

	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	2	0	2	8	0	0	0	6	1	0
2:15 PM - 2:30 PM	0	0	0	0	1	0	1	0	0	12	0	0	0	8	1	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	6	1	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	1	10	0	0	0	10	1	0
3:00 PM - 3:15 PM	0	0	0	0	2	0	1	0	0	12	0	0	0	10	0	0
3:15 PM - 3:30 PM	0	0	0	0	1	0	1	0	2	8	0	0	0	9	1	0
3:30 PM - 3:45 PM	0	0	0	0	2	0	1	0	2	11	0	0	0	7	0	0
3:45 PM - 4:00 PM	0	0	0	0	1	0	2	0	2	12	0	1	0	7	2	1
4:00 PM - 4:15 PM	0	0	0	0	1	0	0	1	2	18	0	0	0	17	1	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	2	0	2	8	0	0	0	12	1	0
4:30 PM - 4:45 PM	0	0	0	0	1	0	2	1	0	12	0	0	0	11	1	0
4:45 PM - 5:00 PM	0	0	0	0	2	0	1	0	1	11	0	0	0	8	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	1	0	0	13	0	0	0	8	2	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	2	0	1	18	0	0	0	8	0	0
5:30 PM - 5:45 PM	0	0	0	0	1	0	2	0	4	7	0	0	0	8	1	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	2	0	2	5	0	1	0	2	0	0
TOTAL	**0**	**0**	**0**	**0**	**13**	**0**	**20**	**2**	**21**	**174**	**0**	**2**	**0**	**137**	**13**	**1**

	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	1	0	6	1	3	18	0	0	0	60	5	1
3:45 PM - 4:45 PM	0	0	0	0	3	0	6	2	6	50	0	1	0	47	5	1

	PHF	Trucks
AM	0.628	2.2%
PM	0.750	3.4%



Metro Traffic Data Inc.
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Hanford, CA 93230

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Turning Movement Report

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

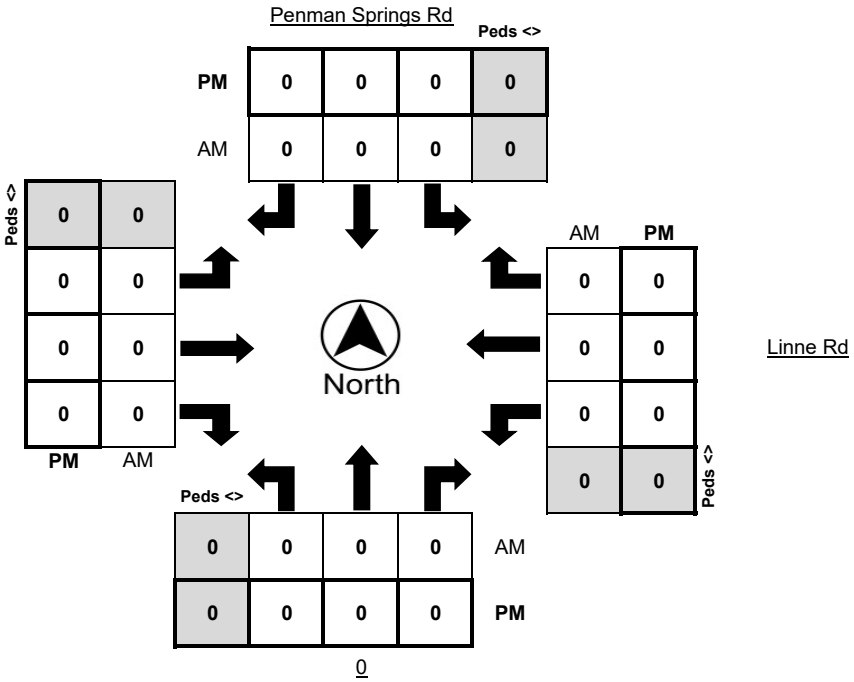
LOCATION Penman Springs Rd @ Linne Rd
LATITUDE 35.6081
COUNTY San Luis Obispo
LONGITUDE -120.6095
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear

	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	1	0
3:30 PM - 3:45 PM	0	0	0	0	1	0	0	0	0	1	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**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:45 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	0	0



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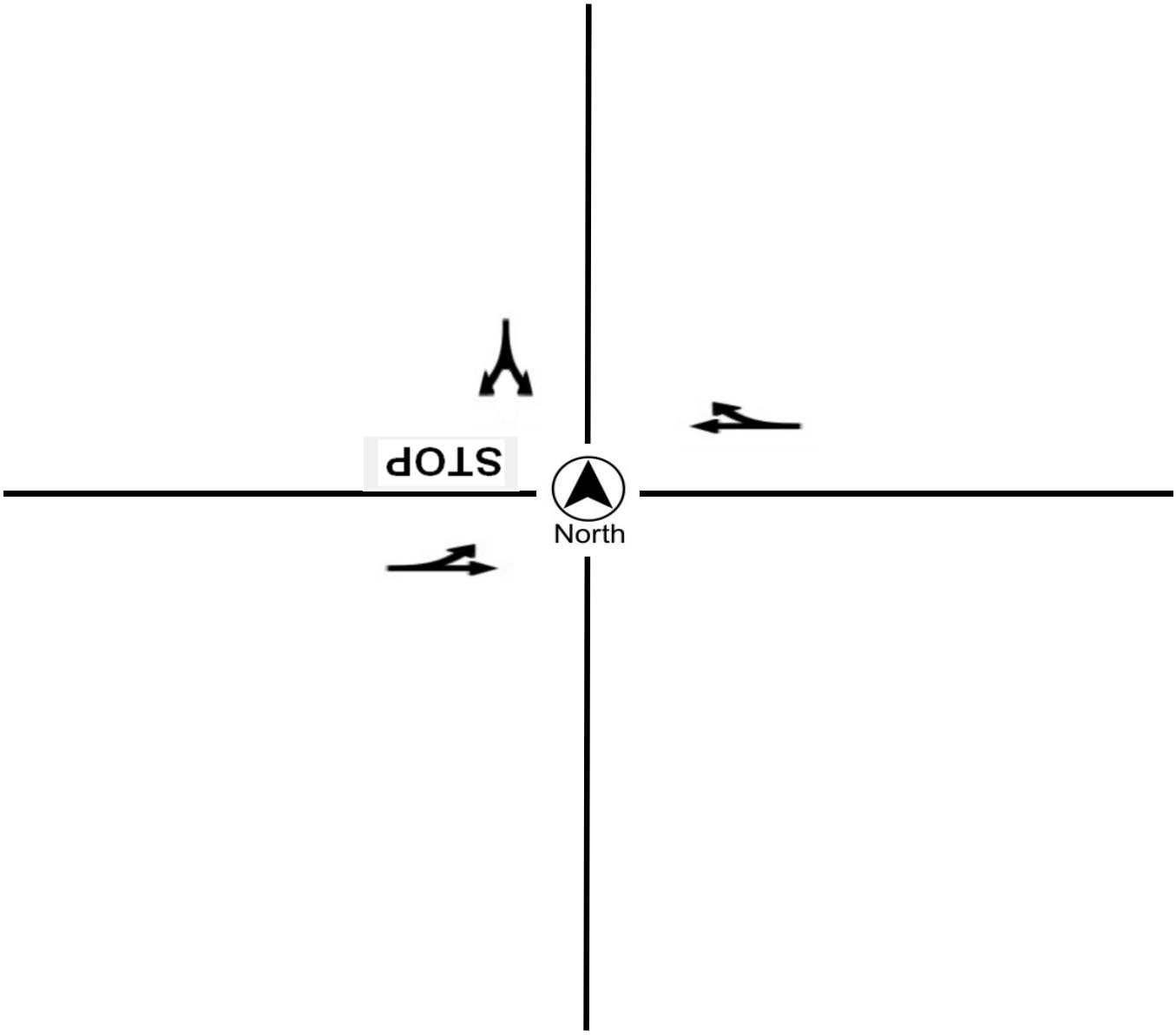
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Turning Movement Report

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

LOCATION	Penman Springs Rd @ Linne Rd	**N/S STREET**	Penman Springs Rd /
COUNTY	San Luis Obispo	**E/W STREET**	Linne Rd / Linne Rd
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way stop

COMMENTS



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Hanford, CA 93230

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Turning Movement Report

Prepared For:

OMNI-Means
943 Reserve Drive
Roseville, CA 95678

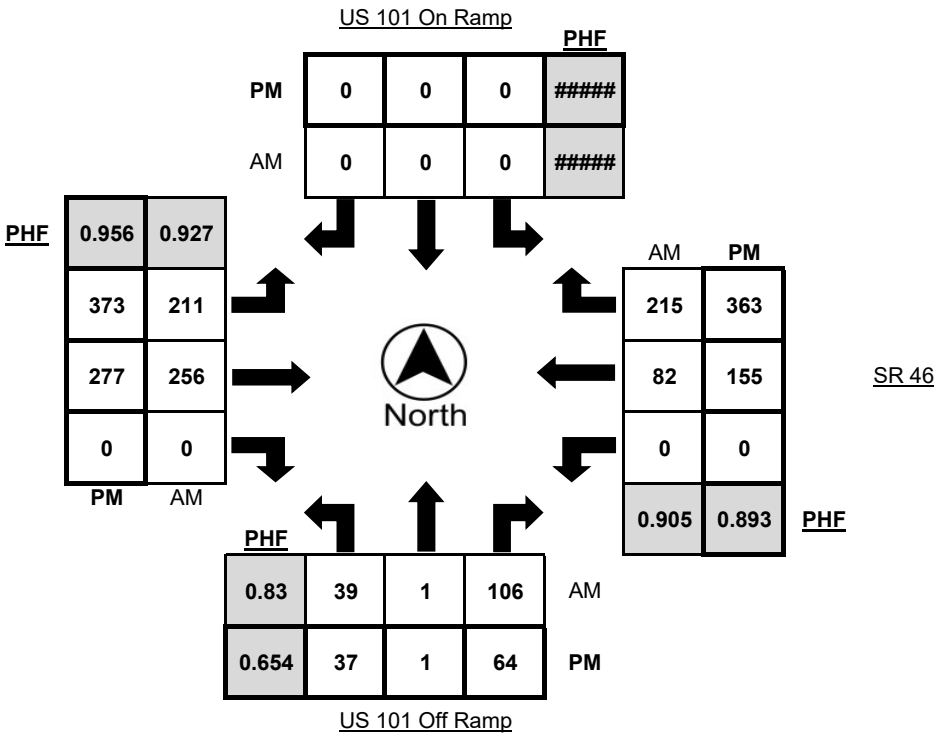
LOCATION SR 46W @ US 101 NB Ramps
LATITUDE 35.5893
COUNTY San Luis Obispo
LONGITUDE -120.6950
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	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	4	0	20	0	0	0	0	0	36	54	0	6	0	15	27	8
7:15 AM - 7:30 AM	4	0	37	1	0	0	0	0	22	62	0	10	0	11	35	12
7:30 AM - 7:45 AM	2	0	25	3	0	0	0	0	40	90	0	5	0	17	39	8
7:45 AM - 8:00 AM	10	1	24	3	0	0	0	0	44	91	0	8	0	18	34	7
8:00 AM - 8:15 AM	11	0	26	4	0	0	0	0	65	61	0	11	0	17	47	21
8:15 AM - 8:30 AM	9	1	34	1	0	0	0	0	55	51	0	8	0	19	60	13
8:30 AM - 8:45 AM	6	0	17	0	0	0	0	0	38	81	0	14	0	28	44	11
8:45 AM - 9:00 AM	13	0	29	3	0	0	0	0	53	63	0	10	0	18	64	17
TOTAL	**59**	**2**	**212**	**15**	**0**	**0**	**0**	**0**	**353**	**553**	**0**	**72**	**0**	**143**	**350**	**97**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	6	0	16	0	0	0	0	0	89	81	0	5	0	31	88	4
4:15 PM - 4:30 PM	13	0	26	1	0	0	0	0	90	76	0	12	0	38	75	7
4:30 PM - 4:45 PM	11	1	10	0	0	0	0	0	101	56	0	9	0	42	103	4
4:45 PM - 5:00 PM	7	0	12	0	0	0	0	0	93	64	0	7	0	44	97	8
5:00 PM - 5:15 PM	13	1	20	0	0	0	0	0	104	44	0	16	0	47	73	6
5:15 PM - 5:30 PM	17	0	11	1	0	0	0	0	103	46	0	14	0	41	79	6
5:30 PM - 5:45 PM	6	1	10	0	0	0	0	0	111	24	0	9	0	42	60	4
5:45 PM - 6:00 PM	11	0	12	0	0	0	0	0	96	29	0	4	0	24	58	4
TOTAL	**84**	**3**	**117**	**2**	**0**	**0**	**0**	**0**	**787**	**420**	**0**	**76**	**0**	**309**	**633**	**43**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
8:00 AM - 9:00 AM	39	1	106	8	0	0	0	0	211	256	0	43	0	82	215	62
4:00 PM - 5:00 PM	37	1	64	1	0	0	0	0	373	277	0	33	0	155	363	23

	PHF	Trucks
AM	0.948	12.4%
PM	0.980	4.5%



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Turning Movement Report

Prepared For:

OMNI-Means
943 Reserve Drive
Roseville, CA 95678

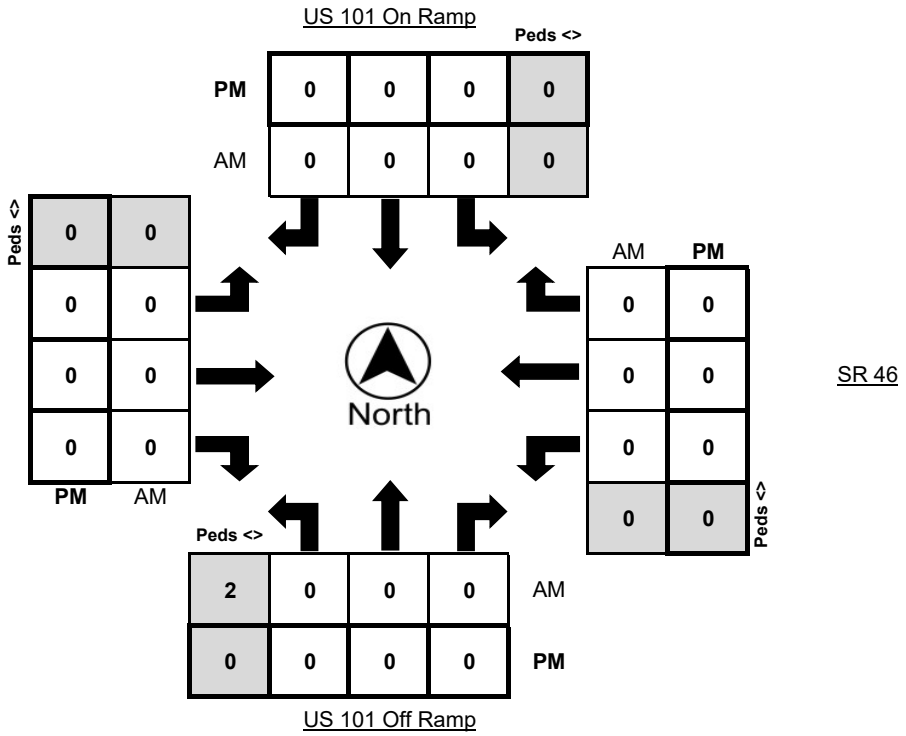
LOCATION SR 46W @ US 101 NB Ramps
LATITUDE 35.5893
COUNTY San Luis Obispo
LONGITUDE -120.6950
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	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	1	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	1	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	1	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**	**1**	**0**	**0**	**0**	**2**	**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
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	1	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**	**1**	**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
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	2
PM Peak Total	0	0



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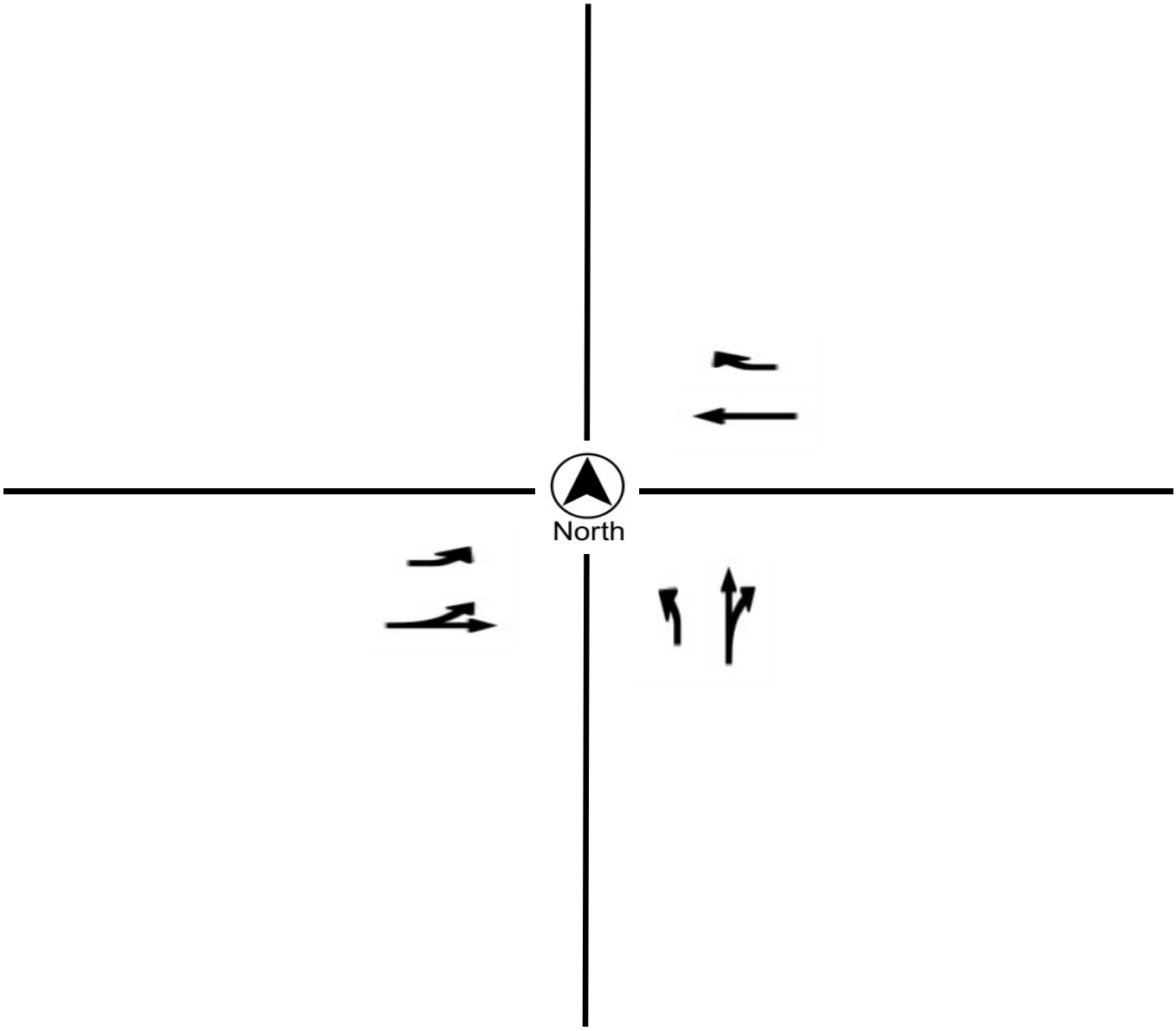
Turning Movement Report

Prepared For:

OMNI-Means
943 Reserve Drive
Roseville, CA 95678

LOCATION	SR 46W @ US 101 NB Ramps	**N/S STREET**	US 101 On Ramp / US 101 Off Ramp
COUNTY	San Luis Obispo	**E/W STREET**	SR 46 / SR 46
COLLECTION DATE	Tuesday, May 22, 2018	**WEATHER**	Clear
CYCLE TIME	98 Seconds	**CONTROL TYPE**	Signal

COMMENTS Eastbound left turns are protected.



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Roseville, CA 95678

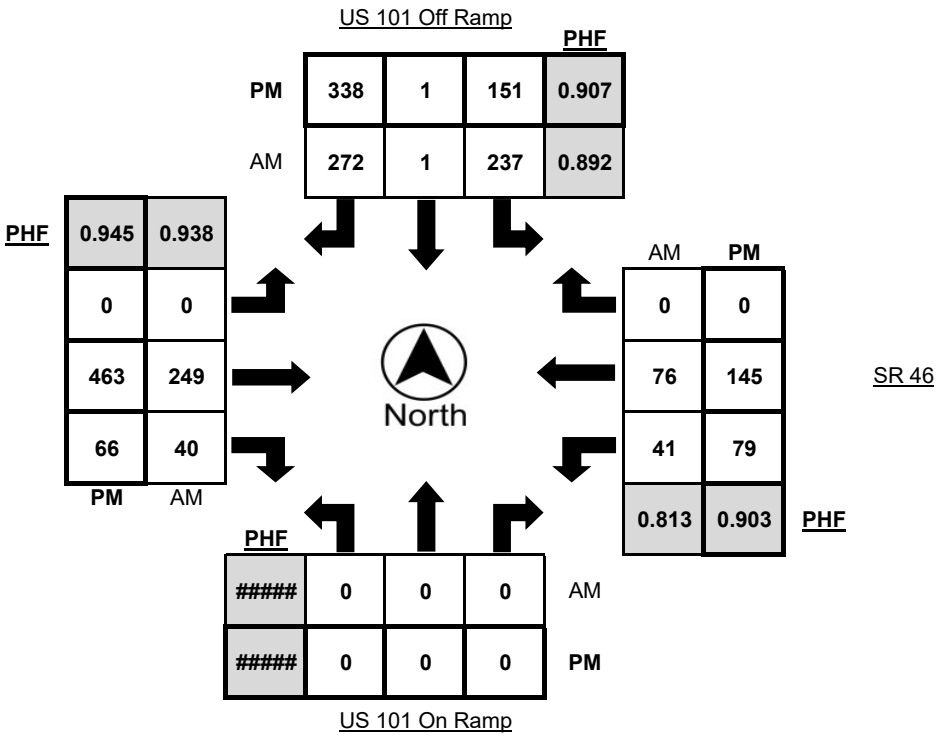
LOCATION SR 46W @ US 101 SB Ramps
LATITUDE 35.5894
COUNTY San Luis Obispo
LONGITUDE -120.6961
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	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	0	0	53	1	33	5	0	35	5	0	2	14	0	2
7:15 AM - 7:30 AM	0	0	0	0	51	1	49	8	0	33	21	3	5	9	0	2
7:30 AM - 7:45 AM	0	0	0	0	46	0	51	14	0	83	15	2	7	14	0	3
7:45 AM - 8:00 AM	0	0	0	0	69	0	74	7	0	66	9	1	7	20	0	3
8:00 AM - 8:15 AM	0	0	0	0	65	0	74	8	0	61	10	2	9	19	0	1
8:15 AM - 8:30 AM	0	0	0	0	54	0	69	8	0	53	13	2	9	17	0	4
8:30 AM - 8:45 AM	0	0	0	0	49	1	55	5	0	69	8	4	16	20	0	2
8:45 AM - 9:00 AM	0	0	0	0	58	0	79	14	0	57	15	5	11	23	0	1
TOTAL	**0**	**0**	**0**	**0**	**445**	**3**	**484**	**69**	**0**	**457**	**96**	**19**	**66**	**136**	**0**	**18**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	44	0	108	7	0	126	6	3	12	26	0	1
4:15 PM - 4:30 PM	0	0	0	0	44	0	89	7	0	119	15	4	18	30	0	1
4:30 PM - 4:45 PM	0	0	0	0	37	0	76	6	0	120	13	1	20	35	0	2
4:45 PM - 5:00 PM	0	0	0	0	39	0	82	5	0	120	10	3	21	28	0	0
5:00 PM - 5:15 PM	0	0	0	0	39	1	95	4	0	107	19	3	18	40	0	4
5:15 PM - 5:30 PM	0	0	0	0	36	0	85	2	0	116	24	3	20	42	0	1
5:30 PM - 5:45 PM	0	0	0	0	38	0	108	2	0	93	8	1	14	29	0	1
5:45 PM - 6:00 PM	0	0	0	0	20	0	75	3	0	105	7	2	9	24	0	2
TOTAL	**0**	**0**	**0**	**0**	**297**	**1**	**718**	**36**	**0**	**906**	**102**	**20**	**132**	**254**	**0**	**12**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:45 AM - 8:45 AM	0	0	0	0	237	1	272	28	0	249	40	9	41	76	0	10
4:30 PM - 5:30 PM	0	0	0	0	151	1	338	17	0	463	66	10	79	145	0	7

	PHF	Trucks
AM	0.935	5.1%
PM	0.962	2.7%



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Roseville, CA 95678

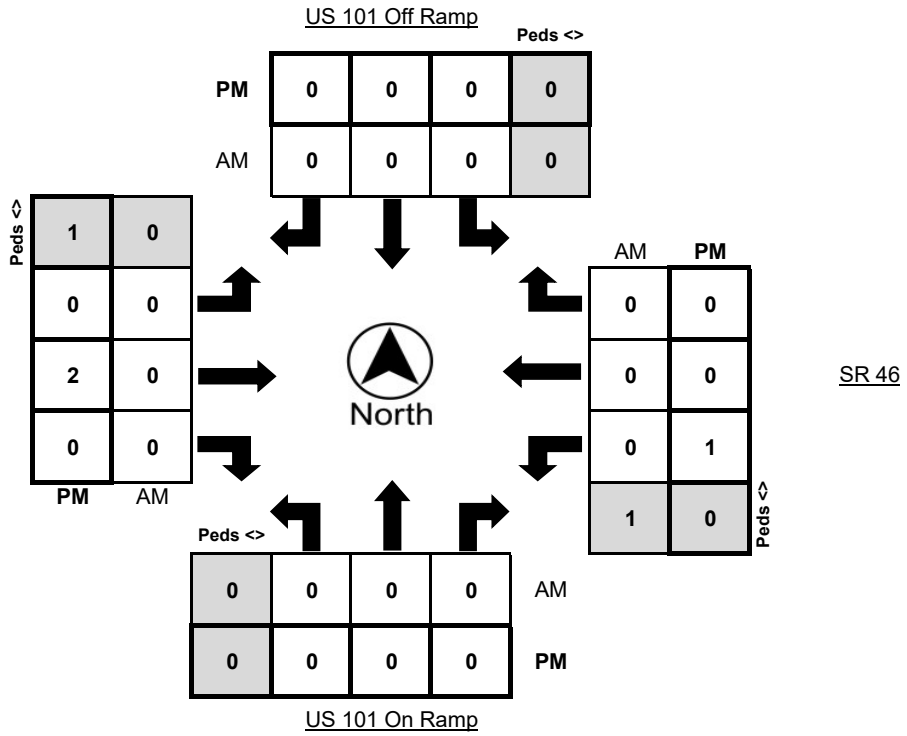
LOCATION SR 46W @ US 101 SB Ramps
LATITUDE 35.5894
COUNTY San Luis Obispo
LONGITUDE -120.6961
COLLECTION DATE Tuesday, May 22, 2018
WEATHER Clear

	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	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	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	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**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**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
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	1	0	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	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**	**2**	**0**	**0**	**2**	**0**	**0**	**1**

	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
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1

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



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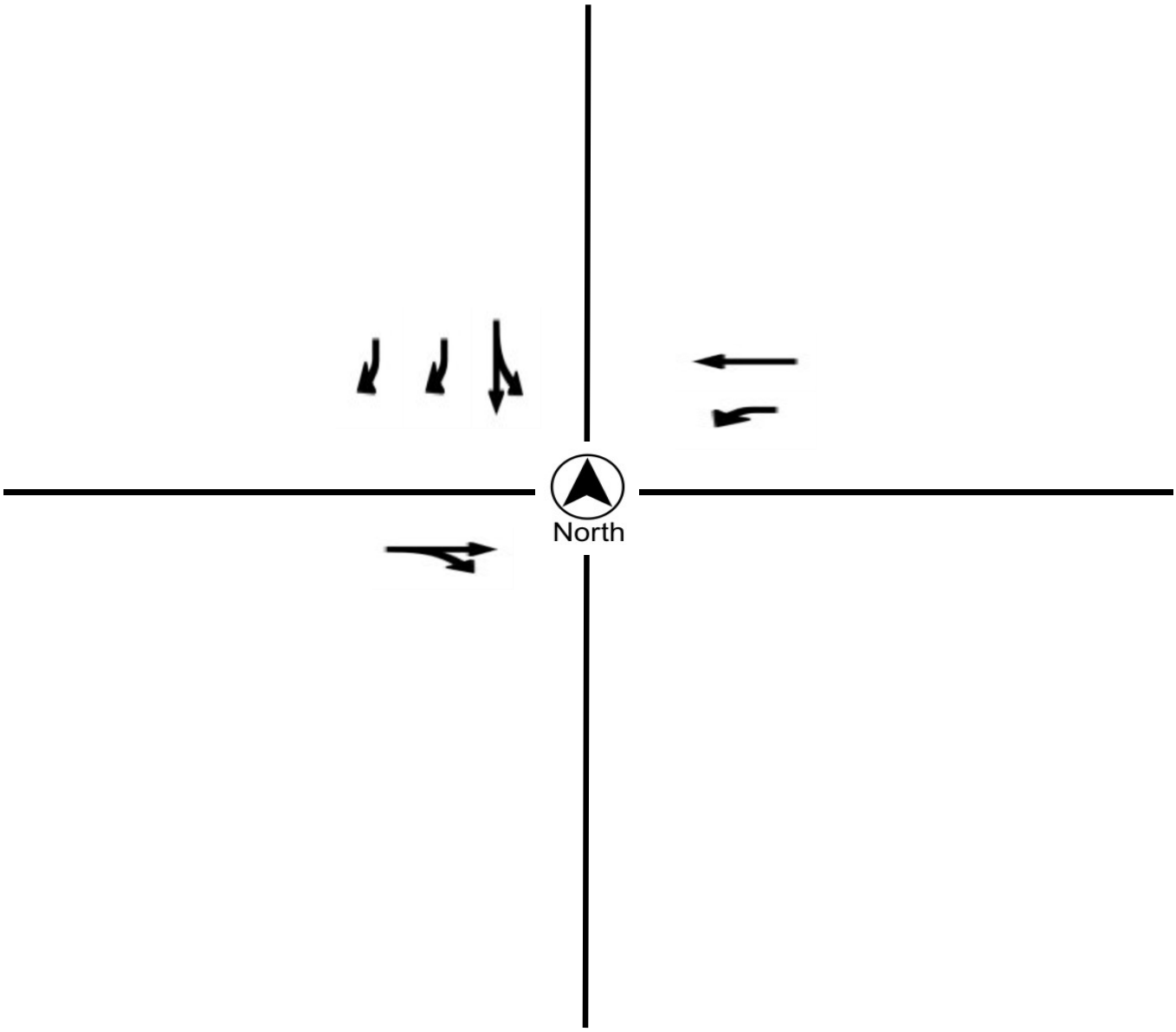
Turning Movement Report

Prepared For:

OMNI-Means
943 Reserve Drive
Roseville, CA 95678

LOCATION	SR 46W @ US 101 SB Ramps	**N/S STREET**	US 101 Off Ramp / US 101 On Ramp
COUNTY	San Luis Obispo	**E/W STREET**	SR 46 / SR 46
COLLECTION DATE	Tuesday, May 22, 2018	**WEATHER**	Clear
CYCLE TIME	71 Seconds	**CONTROL TYPE**	Signal

COMMENTS Westbound left turns are protected.



Freeway Counts

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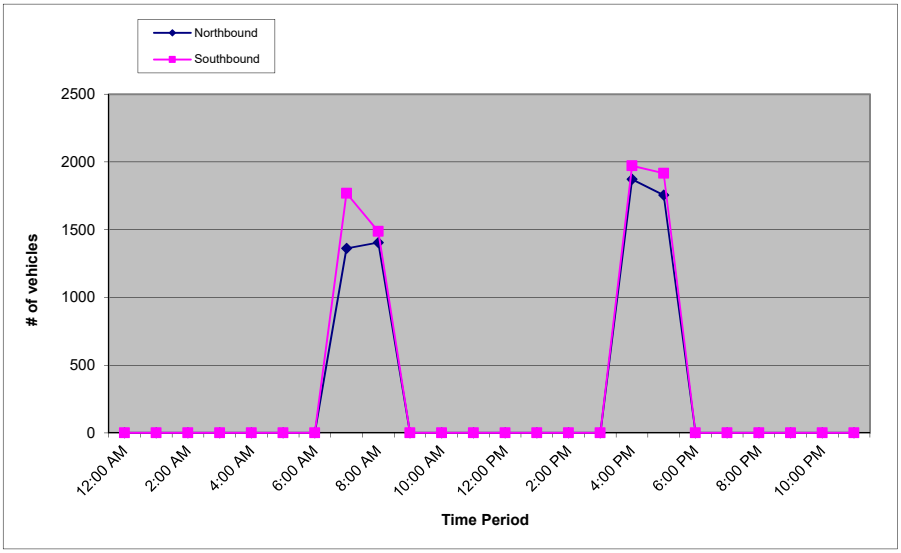
Peak Hour Volume

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

LOCATION 101 Mainline @ Niblick Rd Bridge
LATITUDE 35.6154332
COUNTY San Luis Obispo
LONGITUDE -120.688532
COLLECTION DATE Wednesday, June 6, 2018
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**
1:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
5:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
6:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 AM	237	309	395	421	**1362**	340	472	465	492	**1769**	**3131**
8:00 AM	340	366	358	341	**1405**	401	392	334	360	**1487**	**2892**
9:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
12:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 PM	414	467	497	494	**1872**	442	446	546	538	**1972**	**3844**
5:00 PM	471	482	425	377	**1755**	584	484	406	442	**1916**	**3671**
6:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
8:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
9:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
Total	**47.2%**				**6394**	**52.8%**				**7144**	
	13538										

AM%	**44.5%**	**AM Peak**	**3295**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.90**
PM%	**55.5%**	**PM Peak**	**4096**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.97**



Location: US 101 Mainline at Niblick Rd Bridge
Date: 6/6/2018

	Northbound		Southbound			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	237	19	340	26	**577**	**8%**
7:15 AM	309	18	472	28	**781**	**6%**
7:30 AM	395	26	465	38	**860**	**7%**
7:45 AM	421	29	492	35	**913**	**7%**
8:00 AM	340	21	401	39	**741**	**8%**
8:15 AM	366	34	392	38	**758**	**9%**
8:30 AM	358	40	334	23	**692**	**9%**
8:45 AM	341	28	360	31	**701**	**8%**
Totals:	**2767**	**215**	**3256**	**258**	**6023**	**8%**

Peak Hour Values

7:15 AM - 8:15 AM	1465	94	1830	140	3295	7%

	Northbound		Southbound			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	414	22	442	30	**856**	**6%**
4:15 PM	467	25	446	32	**913**	**6%**
4:30 PM	497	24	546	28	**1043**	**5%**
4:45 PM	494	15	538	21	**1032**	**3%**
5:00 PM	471	19	584	38	**1055**	**5%**
5:15 PM	482	18	484	32	**966**	**5%**
5:30 PM	425	18	406	20	**831**	**5%**
5:45 PM	377	13	442	15	**819**	**3%**
Totals:	**3627**	**154**	**3888**	**216**	**7515**	**5%**

Peak Hour Values

4:30 PM - 5:30 PM	1944	76	2152	119	4096	5%

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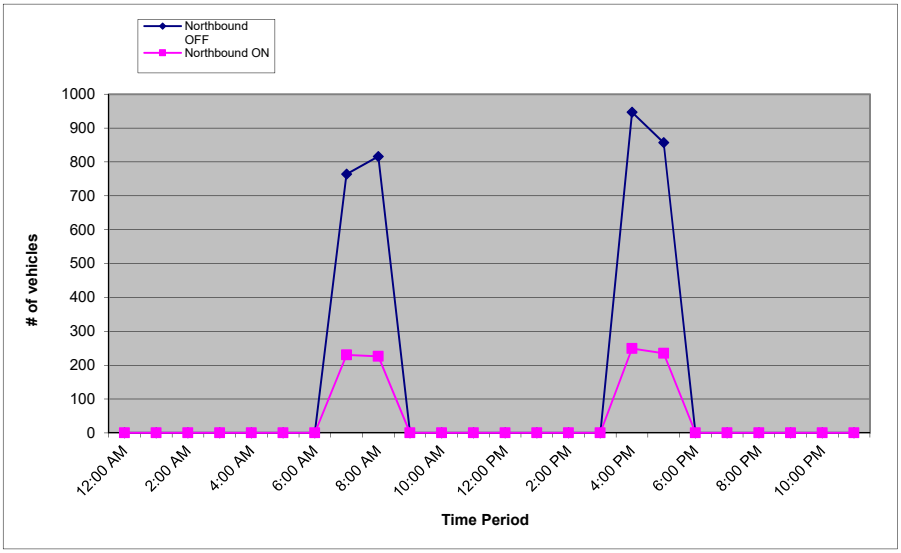
Peak Hour Volume

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

LOCATION 101 NB Ramps @ SR 46 E
LATITUDE 35.6428285
COUNTY San Luis Obispo
LONGITUDE -120.6843692
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear
NUMBER OF LANES 2 OFF / 1 ON

	Northbound OFF					Northbound ON					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
5:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
6:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 AM	135	161	205	263	**764**	44	46	55	85	**230**	**994**
8:00 AM	223	199	179	215	**816**	68	52	60	46	**226**	**1042**
9:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
12:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 PM	235	223	246	243	**947**	65	55	72	57	**249**	**1196**
5:00 PM	224	225	219	189	**857**	59	59	70	47	**235**	**1092**
6:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
8:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
9:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
Total	**78.3%**				**3384**	**21.7%**				**940**	
	4324										

AM% 47.1% **AM Peak** 1150 **7:30 am to 8:30 am** **AM P.H.F.** 0.83
PM% 52.9% **PM Peak** 1196 **4:00 pm to 5:00 pm** **PM P.H.F.** 0.94



Location: 101 NB Ramps @ SR 46 E
Date: 6/6/2018

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	135	7	44	10	**179**	**9%**
7:15 AM	161	5	46	9	**207**	**7%**
7:30 AM	205	4	55	6	**260**	**4%**
7:45 AM	263	19	85	14	**348**	**9%**
8:00 AM	223	11	68	4	**291**	**5%**
8:15 AM	199	9	52	14	**251**	**9%**
8:30 AM	179	17	60	14	**239**	**13%**
8:45 AM	215	13	46	10	**261**	**9%**
Totals:	**1580**	**85**	**456**	**81**	**2036**	**8%**

Peak Hour Values

7:30 AM - 8:30 AM	890	43	260	38	1150	7%

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	235	8	65	10	**300**	**6%**
4:15 PM	223	5	55	5	**278**	**4%**
4:30 PM	246	5	72	8	**318**	**4%**
4:45 PM	243	4	57	5	**300**	**3%**
5:00 PM	224	6	59	8	**283**	**5%**
5:15 PM	225	7	59	10	**284**	**6%**
5:30 PM	219	5	70	11	**289**	**6%**
5:45 PM	189	7	47	8	**236**	**6%**
Totals:	**1804**	**47**	**484**	**65**	**2288**	**5%**

Peak Hour Values

4:00 PM - 5:00 PM	947	22	249	28	1196	4%

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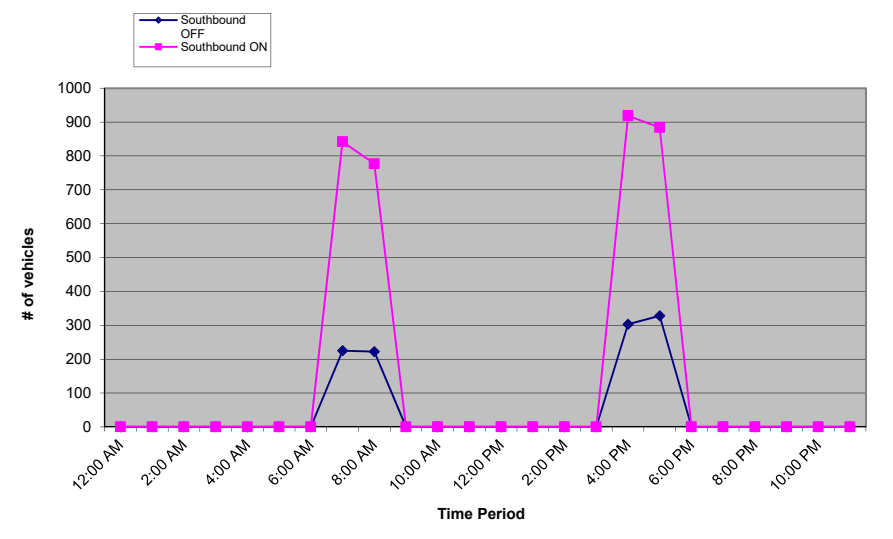
Peak Hour Volume

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

LOCATION US 101 SB Ramps @ SR 46 E
LATITUDE 35.6424274
COUNTY San Luis Obispo
LONGITUDE -120.6856352
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear
NUMBER OF LANES 2 OFF / 2 ON

	Southbound OFF					Southbound ON					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
5:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
6:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 AM	38	64	58	65	**225**	164	224	205	249	**842**	**1067**
8:00 AM	61	53	59	49	**222**	214	213	179	171	**777**	**999**
9:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
12:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 PM	67	70	75	91	**303**	230	198	245	246	**919**	**1222**
5:00 PM	79	82	91	76	**328**	246	255	160	223	**884**	**1212**
6:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
8:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
9:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
Total	**24.0%**				**1078**	**76.0%**				**3422**	
	4500										

AM% **45.9%** **AM Peak 1140** **7:15 am to 8:15 am** **AM P.H.F. 0.91**
PM% **54.1%** **PM Peak 1319** **4:30 pm to 5:30 pm** **PM P.H.F. 0.98**



Location: US 101 SB @ SR 46 E
Date: 6/6/2018

	SB OFF		SB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	38	10	164	16	**202**	**13%**
7:15 AM	64	14	224	9	**288**	**8%**
7:30 AM	58	9	205	13	**263**	**8%**
7:45 AM	65	11	249	13	**314**	**8%**
8:00 AM	61	13	214	24	**275**	**13%**
8:15 AM	53	12	213	20	**266**	**12%**
8:30 AM	59	15	179	10	**238**	**11%**
8:45 AM	49	11	171	24	**220**	**16%**
Totals:	**447**	**95**	**1619**	**129**	**2066**	**11%**

Peak Hour Values

7:15 AM - 8:15 AM	248	47	892	59	1140	9%

	SB OFF		SB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	67	15	230	5	**297**	**7%**
4:15 PM	70	12	198	12	**268**	**9%**
4:30 PM	75	19	245	9	**320**	**9%**
4:45 PM	91	18	246	8	**337**	**8%**
5:00 PM	79	16	246	9	**325**	**8%**
5:15 PM	82	15	255	6	**337**	**6%**
5:30 PM	91	21	160	3	**251**	**10%**
5:45 PM	76	17	223	5	**299**	**7%**
Totals:	**631**	**133**	**1803**	**57**	**2434**	**8%**

Peak Hour Values

4:30 PM - 5:30 PM	327	68	992	32	1319	8%

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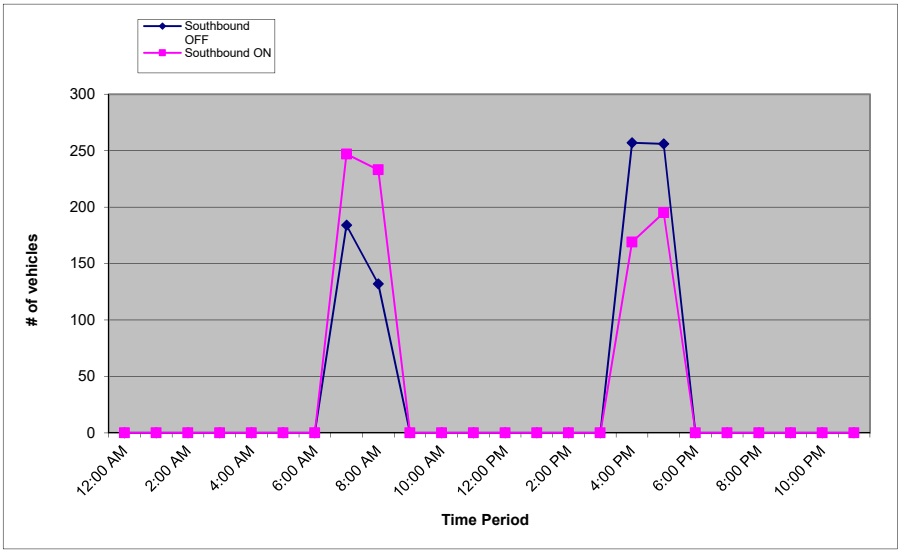
Peak Hour Volume

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

LOCATION US 101 SB Ramps @ Riverside Ave/17th St
LATITUDE 35.6320947
COUNTY San Luis Obispo
LONGITUDE -120.6873304
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear
NUMBER OF LANES 1 OFF / 1 ON

	Southbound OFF					Southbound ON					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
5:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
6:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 AM	18	44	58	64	**184**	38	57	73	79	**247**	**431**
8:00 AM	55	41	26	10	**132**	73	73	43	44	**233**	**365**
9:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
12:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 PM	43	59	60	95	**257**	34	35	54	46	**169**	**426**
5:00 PM	80	68	49	59	**256**	60	45	49	41	**195**	**451**
6:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
8:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
9:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
Total	**49.6%**				**829**	**50.4%**				**844**	
	1673										

AM%	**47.6%**	**AM Peak**	**516**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.90**
PM%	**52.4%**	**PM Peak**	**508**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.90**



Location: US 101 SB Ramps @ Riverside Ave/17th St
Date: 6/6/2018

	SB OFF		SB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	18	0	38	3	**56**	**5%**
7:15 AM	44	0	57	5	**101**	**5%**
7:30 AM	58	0	73	1	**131**	**1%**
7:45 AM	64	0	79	1	**143**	**1%**
8:00 AM	55	0	73	1	**128**	**1%**
8:15 AM	41	0	73	1	**114**	**1%**
8:30 AM	26	0	43	1	**69**	**1%**
8:45 AM	10	1	44	0	**54**	**2%**
Totals:	**316**	**1**	**480**	**13**	**796**	**2%**

Peak Hour Values

7:30 AM - 8:30 AM	218	0	298	4	516	1%

	SB OFF		SB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	43	0	34	0	**77**	**0%**
4:15 PM	59	0	35	0	**94**	**0%**
4:30 PM	60	0	54	1	**114**	**1%**
4:45 PM	95	0	46	0	**141**	**0%**
5:00 PM	80	1	60	0	**140**	**1%**
5:15 PM	68	0	45	0	**113**	**0%**
5:30 PM	49	0	49	0	**98**	**0%**
5:45 PM	59	1	41	0	**100**	**1%**
Totals:	**513**	**2**	**364**	**1**	**877**	**0%**

Peak Hour Values

4:30 PM - 5:30 PM	303	1	205	1	508	0%

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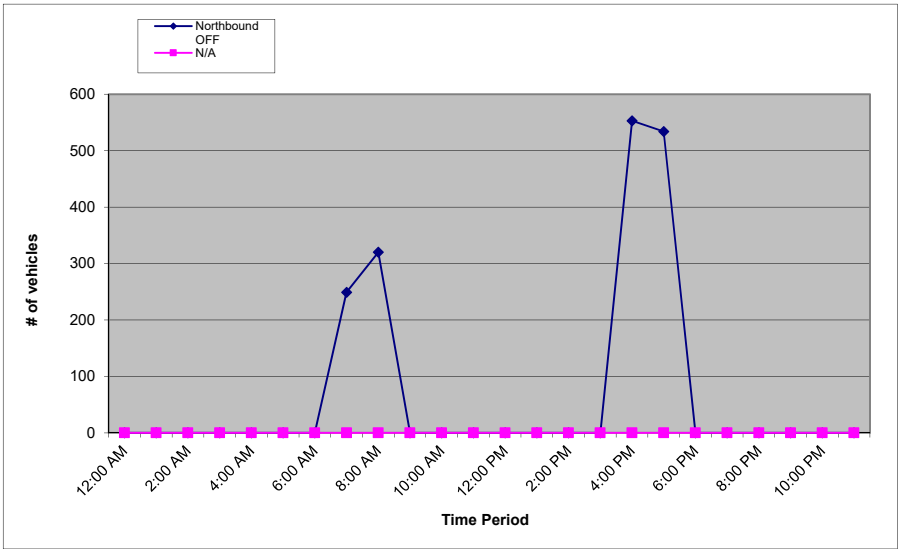
Peak Hour Volume

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

LOCATION US 101 NB Offramp @ Paso Robles St
LATITUDE 35.6210237
COUNTY San Luis Obispo
LONGITUDE -120.6854367
COLLECTION DATE Thursday, June 7, 2018
WEATHER Clear
NUMBER OF LANES 1 OFF

	Northbound OFF					N/A					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
5:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
6:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 AM	44	58	61	86	**249**	-	-	-	-	**0**	**249**
8:00 AM	86	81	70	83	**320**	-	-	-	-	**0**	**320**
9:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 AM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
12:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
1:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
2:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
3:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
4:00 PM	133	147	137	136	**553**	-	-	-	-	**0**	**553**
5:00 PM	141	147	113	133	**534**	-	-	-	-	**0**	**534**
6:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
7:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
8:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
9:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
10:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
11:00 PM	-	-	-	-	**0**	-	-	-	-	**0**	**0**
Total	**100.0%**				**1656**	**0.0%**				**0**	
	1656										

AM%	**34.4%**	**AM Peak**	**323**	**7:45 am to 8:45 am**	**AM P.H.F.**	**0.94**
PM%	**65.6%**	**PM Peak**	**561**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.95**



Location: US 101 NB Offramp @ Paso Robles St
Date: 6/7/2018

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	44	0	-	-	**44**	**0%**
7:15 AM	58	2	-	-	**58**	**3%**
7:30 AM	61	0	-	-	**61**	**0%**
7:45 AM	86	1	-	-	**86**	**1%**
8:00 AM	86	3	-	-	**86**	**3%**
8:15 AM	81	1	-	-	**81**	**1%**
8:30 AM	70	2	-	-	**70**	**3%**
8:45 AM	83	0	-	-	**83**	**0%**
Totals:	**569**	**9**	**-**	**-**	**569**	**2%**

Peak Hour Values

7:45 AM - 8:45 AM	323	7	-	-	323	2%

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	133	0	-	-	**133**	**0%**
4:15 PM	147	2	-	-	**147**	**1%**
4:30 PM	137	0	-	-	**137**	**0%**
4:45 PM	136	0	-	-	**136**	**0%**
5:00 PM	141	0	-	-	**141**	**0%**
5:15 PM	147	0	-	-	**147**	**0%**
5:30 PM	113	0	-	-	**113**	**0%**
5:45 PM	133	0	-	-	**133**	**0%**
Totals:	**1087**	**2**	**-**	**-**	**1087**	**0%**

Peak Hour Values

4:30 PM - 5:30 PM	561	0	-	-	561	0%

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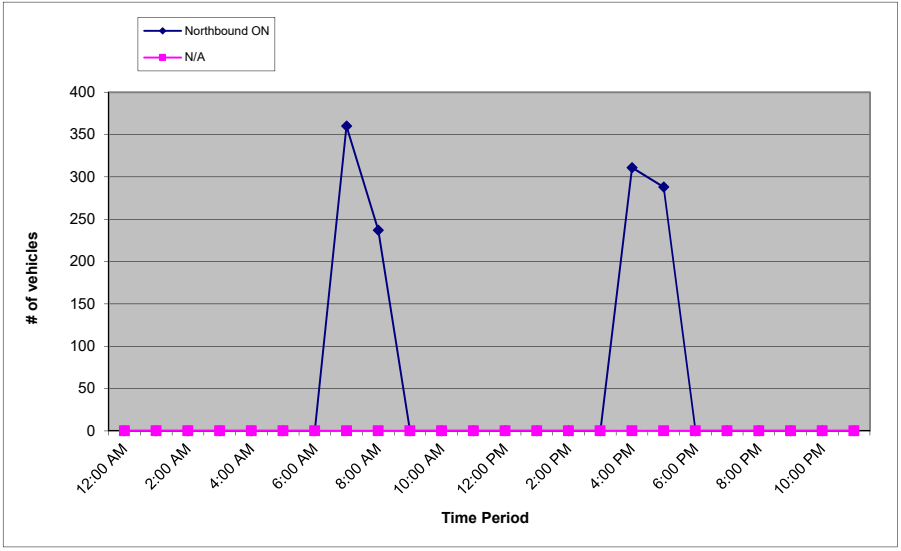
Peak Hour Volume

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

LOCATION US 101 NB Onramp @ Paso Robles St
LATITUDE 35.6298427
COUNTY San Luis Obispo
LONGITUDE -120.6864345
COLLECTION DATE Wednesday, June 6, 2018
WEATHER Clear
NUMBER OF LANES 1 ON

	Northbound ON					N/A					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	-	-	-	-	0	-	-	-	-	0	0
1:00 AM	-	-	-	-	0	-	-	-	-	0	0
2:00 AM	-	-	-	-	0	-	-	-	-	0	0
3:00 AM	-	-	-	-	0	-	-	-	-	0	0
4:00 AM	-	-	-	-	0	-	-	-	-	0	0
5:00 AM	-	-	-	-	0	-	-	-	-	0	0
6:00 AM	-	-	-	-	0	-	-	-	-	0	0
7:00 AM	59	64	102	135	360	-	-	-	-	0	360
8:00 AM	93	43	45	56	237	-	-	-	-	0	237
9:00 AM	-	-	-	-	0	-	-	-	-	0	0
10:00 AM	-	-	-	-	0	-	-	-	-	0	0
11:00 AM	-	-	-	-	0	-	-	-	-	0	0
12:00 PM	-	-	-	-	0	-	-	-	-	0	0
1:00 PM	-	-	-	-	0	-	-	-	-	0	0
2:00 PM	-	-	-	-	0	-	-	-	-	0	0
3:00 PM	-	-	-	-	0	-	-	-	-	0	0
4:00 PM	74	74	85	78	311	-	-	-	-	0	311
5:00 PM	84	79	74	51	288	-	-	-	-	0	288
6:00 PM	-	-	-	-	0	-	-	-	-	0	0
7:00 PM	-	-	-	-	0	-	-	-	-	0	0
8:00 PM	-	-	-	-	0	-	-	-	-	0	0
9:00 PM	-	-	-	-	0	-	-	-	-	0	0
10:00 PM	-	-	-	-	0	-	-	-	-	0	0
11:00 PM	-	-	-	-	0	-	-	-	-	0	0
Total	100.0%				1196	0.0%				0	
	1196										

AM%	49.9%	AM Peak	394	7:15 am to 8:15 am	AM P.H.F.	0.73
PM%	50.1%	PM Peak	326	4:30 pm to 5:30 pm	PM P.H.F.	0.96



Location: US 101 NB Onramp @ Paso Robles St
Date: 6/6/2018

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
7:00 AM	-	-	59	1	**59**	**2%**
7:15 AM	-	-	64	3	**64**	**5%**
7:30 AM	-	-	102	3	**102**	**3%**
7:45 AM	-	-	135	3	**135**	**2%**
8:00 AM	-	-	93	0	**93**	**0%**
8:15 AM	-	-	43	1	**43**	**2%**
8:30 AM	-	-	45	2	**45**	**4%**
8:45 AM	-	-	56	2	**56**	**4%**
Totals:	**-**	**-**	**597**	**15**	**597**	**3%**

Peak Hour Values

7:15 AM - 8:15 AM	-	-	394	9	394	2%

	NB OFF		NB ON			
Interval	**ALL Vehicles**	**Trucks**	**All Vehicles**	**Trucks**	**TOTAL**	**Truck %**
4:00 PM	-	-	74	2	**74**	**3%**
4:15 PM	-	-	74	1	**74**	**1%**
4:30 PM	-	-	85	0	**85**	**0%**
4:45 PM	-	-	78	2	**78**	**3%**
5:00 PM	-	-	84	2	**84**	**2%**
5:15 PM	-	-	79	0	**79**	**0%**
5:30 PM	-	-	74	0	**74**	**0%**
5:45 PM	-	-	51	2	**51**	**4%**
Totals:	**-**	**-**	**599**	**9**	**599**	**2%**

Peak Hour Values

4:30 PM - 5:30 PM	-	-	326	4	326	1%

Segment Counts

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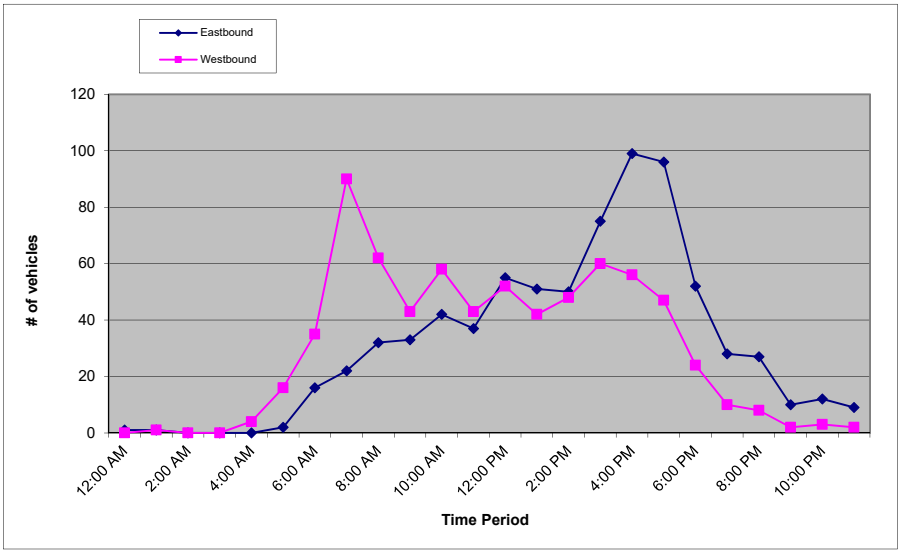
24 Hour Count Report

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

LOCATION Union Rd - Priska Dr to Kit Fox Ln
LATITUDE 35.6383294
COUNTY San Luis Obispo
LONGITUDE -120.6396774
COLLECTION DATE Wednesday, January 23, 2019
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	1	0	**1**	0	0	0	0	**0**	**1**
1:00 AM	1	0	0	0	**1**	1	0	0	0	**1**	**2**
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	2	2	**4**	**4**
5:00 AM	0	0	0	2	**2**	2	3	5	6	**16**	**18**
6:00 AM	0	2	10	4	**16**	5	5	9	16	**35**	**51**
7:00 AM	2	8	6	6	**22**	13	28	31	18	**90**	**112**
8:00 AM	6	8	12	6	**32**	23	16	11	12	**62**	**94**
9:00 AM	8	8	9	8	**33**	13	8	9	13	**43**	**76**
10:00 AM	7	14	12	9	**42**	9	17	16	16	**58**	**100**
11:00 AM	8	10	7	12	**37**	13	15	12	3	**43**	**80**
12:00 PM	13	13	14	15	**55**	10	11	12	19	**52**	**107**
1:00 PM	14	16	11	10	**51**	12	10	10	10	**42**	**93**
2:00 PM	6	16	15	13	**50**	13	15	10	10	**48**	**98**
3:00 PM	17	23	17	18	**75**	9	15	16	20	**60**	**135**
4:00 PM	23	23	21	32	**99**	14	14	9	19	**56**	**155**
5:00 PM	25	26	22	23	**96**	9	12	12	14	**47**	**143**
6:00 PM	13	15	11	13	**52**	3	7	8	6	**24**	**76**
7:00 PM	12	6	6	4	**28**	3	3	4	0	**10**	**38**
8:00 PM	7	14	1	5	**27**	1	1	4	2	**8**	**35**
9:00 PM	3	4	1	2	**10**	0	0	2	0	**2**	**12**
10:00 PM	4	3	3	2	**12**	2	1	0	0	**3**	**15**
11:00 PM	2	3	1	3	**9**	1	1	0	0	**2**	**11**
Total	**51.5%**				**750**	**48.5%**				**706**	
	1456										

AM%	**37.0%**	**AM Peak**	**126**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.85**
PM%	**63.0%**	**PM Peak**	**157**	**4:45 pm to 5:45 pm**	**PM P.H.F.**	**0.77**



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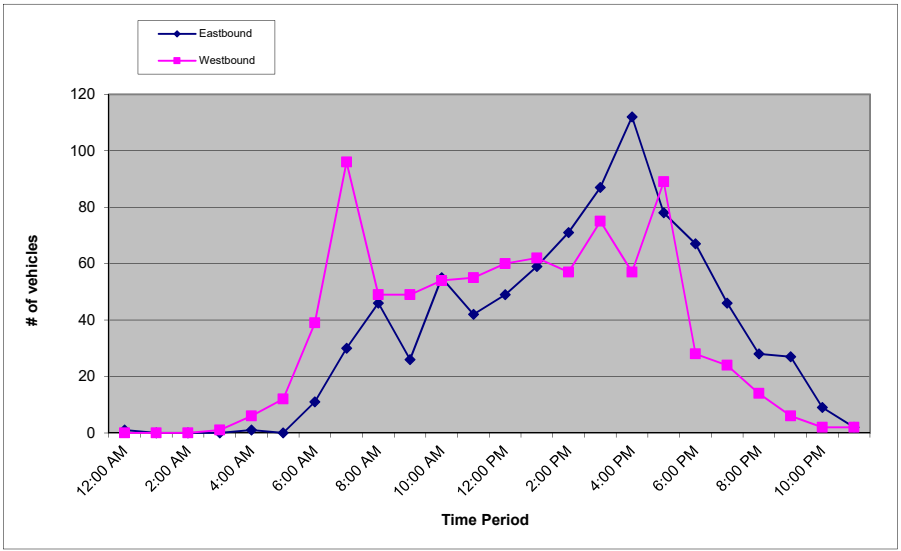
24 Hour Count Report

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

LOCATION Union Rd - Priska Dr to Kit Fox Ln
LATITUDE 35.6383294
COUNTY San Luis Obispo
LONGITUDE -120.6396774
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	1	**1**	0	0	0	0	**0**	**1**
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**	1	0	0	0	**1**	**1**
4:00 AM	0	0	1	0	**1**	0	3	1	2	**6**	**7**
5:00 AM	0	0	0	0	**0**	2	1	1	8	**12**	**12**
6:00 AM	0	3	5	3	**11**	10	4	14	11	**39**	**50**
7:00 AM	9	2	7	12	**30**	21	18	41	16	**96**	**126**
8:00 AM	15	14	9	8	**46**	13	17	8	11	**49**	**95**
9:00 AM	6	8	7	5	**26**	6	14	10	19	**49**	**75**
10:00 AM	11	9	19	16	**55**	10	22	9	13	**54**	**109**
11:00 AM	10	5	16	11	**42**	16	10	14	15	**55**	**97**
12:00 PM	10	13	17	9	**49**	10	18	20	12	**60**	**109**
1:00 PM	18	16	8	17	**59**	14	18	14	16	**62**	**121**
2:00 PM	17	25	19	10	**71**	13	13	12	19	**57**	**128**
3:00 PM	24	16	30	17	**87**	22	17	19	17	**75**	**162**
4:00 PM	32	24	31	25	**112**	12	15	15	15	**57**	**169**
5:00 PM	23	19	18	18	**78**	21	23	23	22	**89**	**167**
6:00 PM	25	12	17	13	**67**	5	9	5	9	**28**	**95**
7:00 PM	15	12	10	9	**46**	6	3	6	9	**24**	**70**
8:00 PM	8	5	9	6	**28**	4	4	6	0	**14**	**42**
9:00 PM	8	10	6	3	**27**	1	1	3	1	**6**	**33**
10:00 PM	2	2	2	3	**9**	0	1	1	0	**2**	**11**
11:00 PM	0	1	1	0	**2**	1	0	0	1	**2**	**4**
Total	**50.3%**				**847**	**49.7%**				**837**	
	1684										

AM%	**34.0%**	**AM Peak**	**135**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.70**
PM%	**66.0%**	**PM Peak**	**172**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.93**



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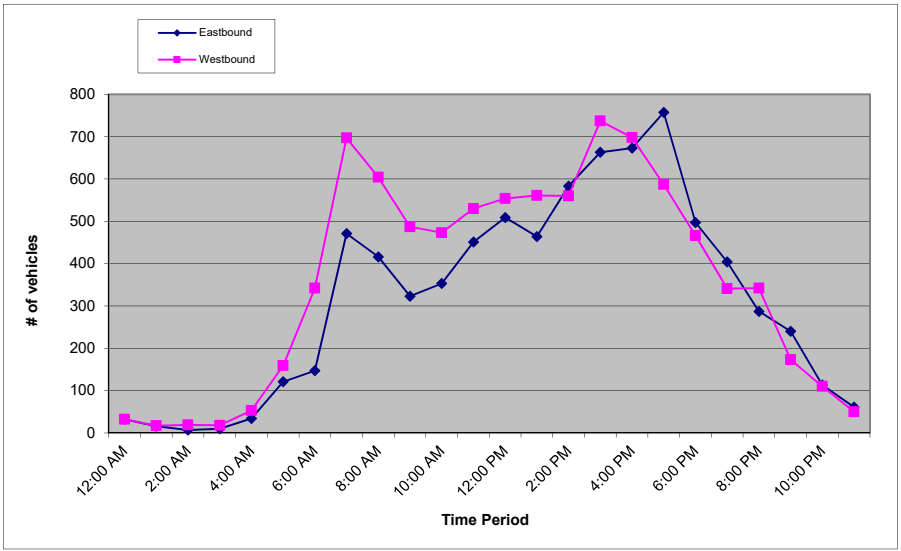
24 Hour Count Report

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

LOCATION Creston Rd e/o Ferro Ln
LATITUDE 35.6289445
COUNTY San Luis Obispo
LONGITUDE -120.6777817
COLLECTION DATE Tuesday, June 5, 2018
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	9	10	5	8	**32**	15	7	3	7	**32**	**64**
1:00 AM	2	6	5	3	**16**	4	5	5	3	**17**	**33**
2:00 AM	1	1	3	2	**7**	4	6	6	3	**19**	**26**
3:00 AM	0	2	4	4	**10**	3	3	2	10	**18**	**28**
4:00 AM	3	7	7	17	**34**	6	10	16	21	**53**	**87**
5:00 AM	17	16	30	58	**121**	23	38	40	58	**159**	**280**
6:00 AM	21	34	36	56	**147**	59	79	91	113	**342**	**489**
7:00 AM	47	91	157	176	**471**	99	132	204	262	**697**	**1168**
8:00 AM	144	102	84	86	**416**	201	147	106	150	**604**	**1020**
9:00 AM	65	88	88	82	**323**	118	116	114	139	**487**	**810**
10:00 AM	84	76	74	119	**353**	127	117	106	123	**473**	**826**
11:00 AM	112	102	111	126	**451**	133	122	143	132	**530**	**981**
12:00 PM	133	139	109	128	**509**	164	139	122	129	**554**	**1063**
1:00 PM	130	105	119	110	**464**	143	127	132	159	**561**	**1025**
2:00 PM	107	131	144	201	**583**	135	132	140	153	**560**	**1143**
3:00 PM	146	190	152	175	**663**	187	210	176	164	**737**	**1400**
4:00 PM	172	152	158	191	**673**	183	183	165	167	**698**	**1371**
5:00 PM	184	213	214	146	**757**	162	153	136	136	**587**	**1344**
6:00 PM	125	131	119	122	**497**	132	117	115	102	**466**	**963**
7:00 PM	129	88	95	92	**404**	89	82	73	97	**341**	**745**
8:00 PM	82	54	74	77	**287**	98	96	82	66	**342**	**629**
9:00 PM	76	50	55	59	**240**	48	51	40	34	**173**	**413**
10:00 PM	40	33	19	21	**113**	33	31	24	22	**110**	**223**
11:00 PM	18	23	9	11	**61**	21	11	10	8	**50**	**111**
Total	**47.0%**				**7632**	**53.0%**				**8610**	
	16242										

AM%	**35.8%**	**AM Peak**	**1393**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.80**
PM%	**64.2%**	**PM Peak**	**1422**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.89**



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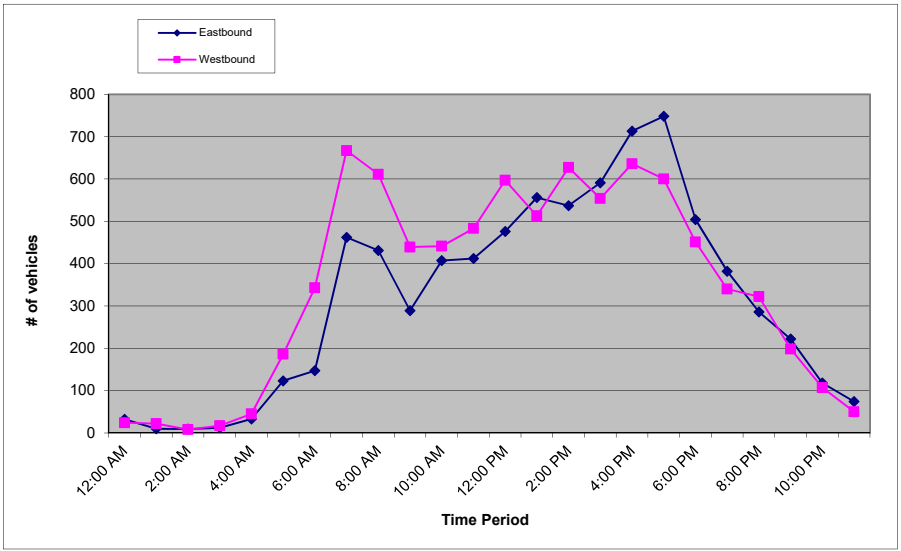
24 Hour Count Report

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

LOCATION	Creston Rd e/o Ferro Ln	**LATITUDE**	35.6289445
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6777817
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	9	15	7	1	**32**	10	7	3	4	**24**	**56**
1:00 AM	6	3	0	1	**10**	5	5	8	4	**22**	**32**
2:00 AM	3	2	3	1	**9**	2	2	1	3	**8**	**17**
3:00 AM	4	1	1	6	**12**	1	5	3	8	**17**	**29**
4:00 AM	2	5	12	14	**33**	5	7	12	21	**45**	**78**
5:00 AM	10	20	31	62	**123**	30	47	44	65	**186**	**309**
6:00 AM	20	35	48	44	**147**	60	63	106	114	**343**	**490**
7:00 AM	52	83	154	173	**462**	99	130	189	249	**667**	**1129**
8:00 AM	145	139	67	80	**431**	194	139	136	142	**611**	**1042**
9:00 AM	70	69	74	76	**289**	127	111	100	101	**439**	**728**
10:00 AM	99	100	100	108	**407**	111	112	102	116	**441**	**848**
11:00 AM	77	102	103	130	**412**	110	103	115	155	**483**	**895**
12:00 PM	156	107	103	110	**476**	161	183	145	108	**597**	**1073**
1:00 PM	109	120	128	199	**556**	118	157	105	133	**513**	**1069**
2:00 PM	147	138	122	130	**537**	174	161	151	141	**627**	**1164**
3:00 PM	143	142	158	148	**591**	151	142	138	123	**554**	**1145**
4:00 PM	153	197	175	188	**713**	118	160	182	176	**636**	**1349**
5:00 PM	193	221	183	151	**748**	161	147	153	139	**600**	**1348**
6:00 PM	140	139	104	121	**504**	137	108	105	101	**451**	**955**
7:00 PM	120	99	90	73	**382**	86	96	79	79	**340**	**722**
8:00 PM	74	76	75	61	**286**	83	72	81	86	**322**	**608**
9:00 PM	67	55	57	43	**222**	71	62	41	24	**198**	**420**
10:00 PM	42	28	29	19	**118**	35	22	23	27	**107**	**225**
11:00 PM	26	9	19	20	**74**	19	13	10	8	**50**	**124**
Total	**47.8%**				**7574**	**52.2%**				**8281**	
	15855										

AM%	**35.7%**	**AM Peak**	**1382**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.82**
PM%	**64.3%**	**PM Peak**	**1443**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.98**



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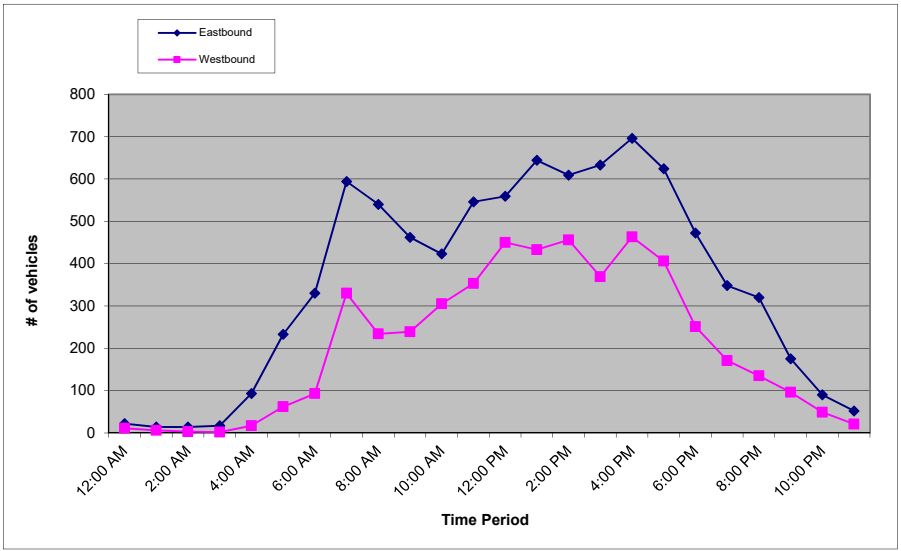
24 Hour Count Report

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

LOCATION	Creston Rd e/o Golden Hill Rd	**LATITUDE**	35.6218359
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6593804
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	9	6	3	4	**22**	1	3	5	2	**11**	**33**
1:00 AM	3	4	4	3	**14**	1	1	2	2	**6**	**20**
2:00 AM	0	3	6	5	**14**	0	1	2	0	**3**	**17**
3:00 AM	1	4	5	7	**17**	0	0	1	1	**2**	**19**
4:00 AM	15	15	26	37	**93**	1	3	6	7	**17**	**110**
5:00 AM	36	58	75	64	**233**	8	7	21	26	**62**	**295**
6:00 AM	60	76	98	96	**330**	15	13	32	33	**93**	**423**
7:00 AM	110	115	166	203	**594**	41	67	105	117	**330**	**924**
8:00 AM	170	135	106	129	**540**	89	68	35	42	**234**	**774**
9:00 AM	120	110	124	108	**462**	55	68	55	61	**239**	**701**
10:00 AM	97	97	111	118	**423**	87	72	83	63	**305**	**728**
11:00 AM	125	120	144	157	**546**	80	87	92	94	**353**	**899**
12:00 PM	133	155	137	134	**559**	112	123	109	106	**450**	**1009**
1:00 PM	144	143	170	187	**644**	103	123	87	120	**433**	**1077**
2:00 PM	177	123	171	138	**609**	118	149	102	87	**456**	**1065**
3:00 PM	171	152	177	133	**633**	75	89	105	100	**369**	**1002**
4:00 PM	162	166	197	171	**696**	98	117	111	137	**463**	**1159**
5:00 PM	168	183	138	135	**624**	125	123	88	70	**406**	**1030**
6:00 PM	141	122	100	109	**472**	84	65	49	53	**251**	**723**
7:00 PM	102	95	65	86	**348**	60	38	38	35	**171**	**519**
8:00 PM	84	81	77	78	**320**	35	16	47	37	**135**	**455**
9:00 PM	64	42	39	30	**175**	30	24	24	18	**96**	**271**
10:00 PM	30	21	27	12	**90**	14	13	14	8	**49**	**139**
11:00 PM	20	15	12	5	**52**	4	6	5	6	**21**	**73**
Total	**63.2%**				**8510**	**36.8%**				**4955**	
	13465										

AM%	**36.7%**	**AM Peak**	**1053**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.82**
PM%	**63.3%**	**PM Peak**	**1215**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.99**



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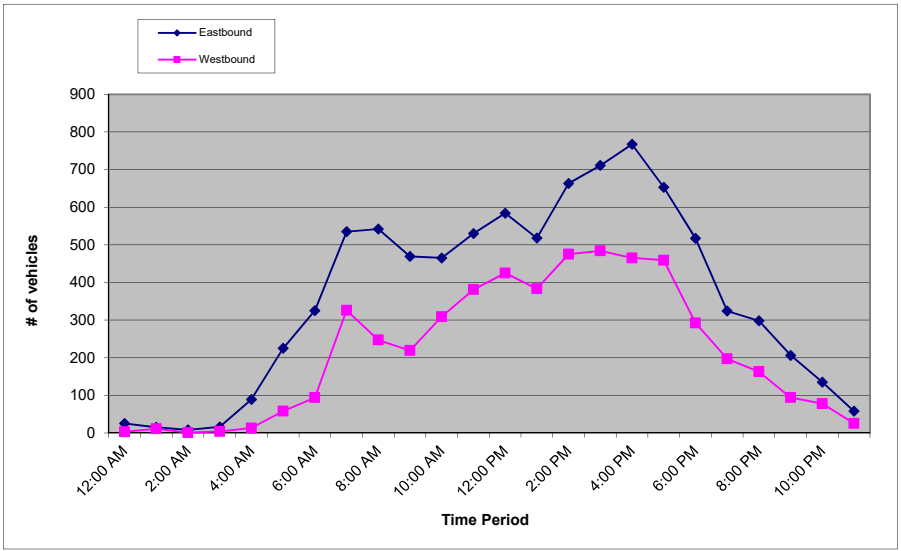
24 Hour Count Report

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

LOCATION	Creston Rd e/o Golden Hill Rd	**LATITUDE**	35.6218359
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6593804
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	7	9	2	7	**25**	0	2	1	0	**3**	**28**
1:00 AM	9	0	0	6	**15**	3	6	0	2	**11**	**26**
2:00 AM	0	3	3	2	**8**	1	0	0	0	**1**	**9**
3:00 AM	2	2	6	6	**16**	1	1	0	2	**4**	**20**
4:00 AM	18	14	25	32	**89**	3	0	3	7	**13**	**102**
5:00 AM	33	55	60	77	**225**	5	9	14	30	**58**	**283**
6:00 AM	60	75	86	104	**325**	16	16	24	38	**94**	**419**
7:00 AM	97	104	143	191	**535**	38	63	103	122	**326**	**861**
8:00 AM	185	125	101	131	**542**	90	57	43	57	**247**	**789**
9:00 AM	133	104	113	119	**469**	57	61	46	55	**219**	**688**
10:00 AM	104	118	108	135	**465**	71	72	80	86	**309**	**774**
11:00 AM	102	134	144	150	**530**	88	97	89	107	**381**	**911**
12:00 PM	126	166	131	161	**584**	124	94	115	92	**425**	**1009**
1:00 PM	128	129	119	142	**518**	89	90	94	110	**383**	**901**
2:00 PM	129	141	195	198	**663**	103	112	123	137	**475**	**1138**
3:00 PM	183	166	187	175	**711**	134	117	113	120	**484**	**1195**
4:00 PM	184	214	207	162	**767**	121	108	110	126	**465**	**1232**
5:00 PM	180	168	153	152	**653**	127	126	105	101	**459**	**1112**
6:00 PM	129	139	132	117	**517**	84	80	70	58	**292**	**809**
7:00 PM	100	78	79	67	**324**	60	41	47	49	**197**	**521**
8:00 PM	75	75	72	76	**298**	45	50	41	27	**163**	**461**
9:00 PM	54	53	45	54	**206**	31	31	16	16	**94**	**300**
10:00 PM	47	33	33	22	**135**	30	16	18	14	**78**	**213**
11:00 PM	23	9	13	13	**58**	10	8	3	4	**25**	**83**
Total	**62.5%**				**8678**	**37.5%**				**5206**	
	13884										

AM%	**35.4%**	**AM Peak**	**911**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.89**
PM%	**64.6%**	**PM Peak**	**1239**	**3:45 pm to 4:45 pm**	**PM P.H.F.**	**0.96**



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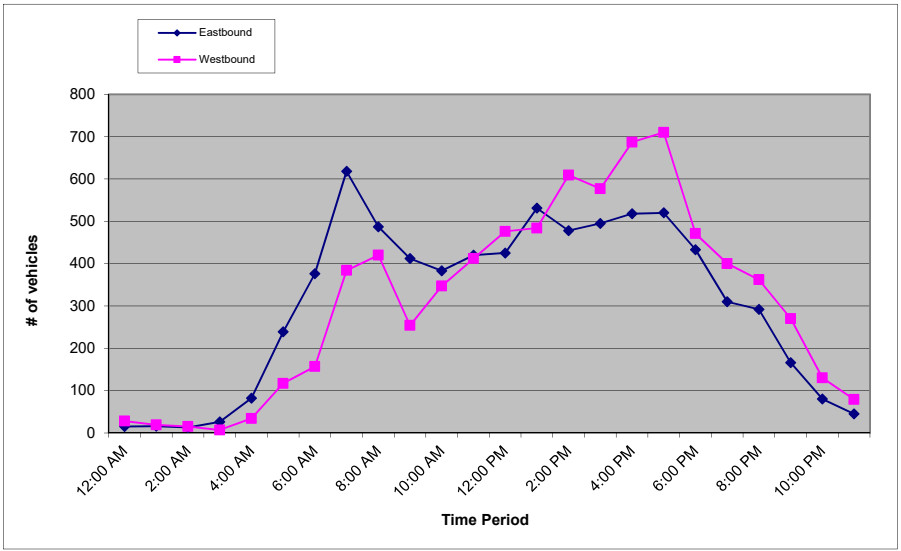
24 Hour Count Report

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

LOCATION	Creston Rd s/o Niblick Rd	**LATITUDE**	35.6146144
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6590371
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	6	5	2	2	**15**	9	6	7	6	**28**	**43**
1:00 AM	4	5	4	3	**16**	3	6	7	3	**19**	**35**
2:00 AM	4	1	4	4	**13**	7	2	4	2	**15**	**28**
3:00 AM	2	8	6	10	**26**	3	2	0	2	**7**	**33**
4:00 AM	10	13	22	37	**82**	3	6	16	9	**34**	**116**
5:00 AM	41	56	71	71	**239**	16	19	47	35	**117**	**356**
6:00 AM	63	87	112	114	**376**	37	27	43	50	**157**	**533**
7:00 AM	111	160	155	192	**618**	53	70	89	172	**384**	**1002**
8:00 AM	168	111	94	114	**487**	161	115	66	78	**420**	**907**
9:00 AM	105	104	104	99	**412**	53	78	52	71	**254**	**666**
10:00 AM	99	83	103	98	**383**	77	91	89	90	**347**	**730**
11:00 AM	98	109	104	109	**420**	97	94	124	97	**412**	**832**
12:00 PM	113	104	100	108	**425**	109	132	110	125	**476**	**901**
1:00 PM	101	107	165	158	**531**	110	123	125	126	**484**	**1015**
2:00 PM	135	95	136	112	**478**	158	191	128	132	**609**	**1087**
3:00 PM	140	123	116	116	**495**	146	116	156	159	**577**	**1072**
4:00 PM	105	121	169	123	**518**	158	155	192	182	**687**	**1205**
5:00 PM	134	145	128	113	**520**	193	177	184	156	**710**	**1230**
6:00 PM	126	102	107	98	**433**	156	103	107	105	**471**	**904**
7:00 PM	86	79	76	69	**310**	103	105	97	95	**400**	**710**
8:00 PM	86	73	67	66	**292**	77	71	115	99	**362**	**654**
9:00 PM	61	47	31	27	**166**	86	63	59	62	**270**	**436**
10:00 PM	29	23	17	11	**80**	43	38	28	21	**130**	**210**
11:00 PM	16	15	6	8	**45**	21	19	25	14	**79**	**124**
Total	**49.8%**				**7380**	**50.2%**				**7449**	
	14829										

AM%	**35.6%**	**AM Peak**	**1167**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.80**
PM%	**64.4%**	**PM Peak**	**1315**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.91**



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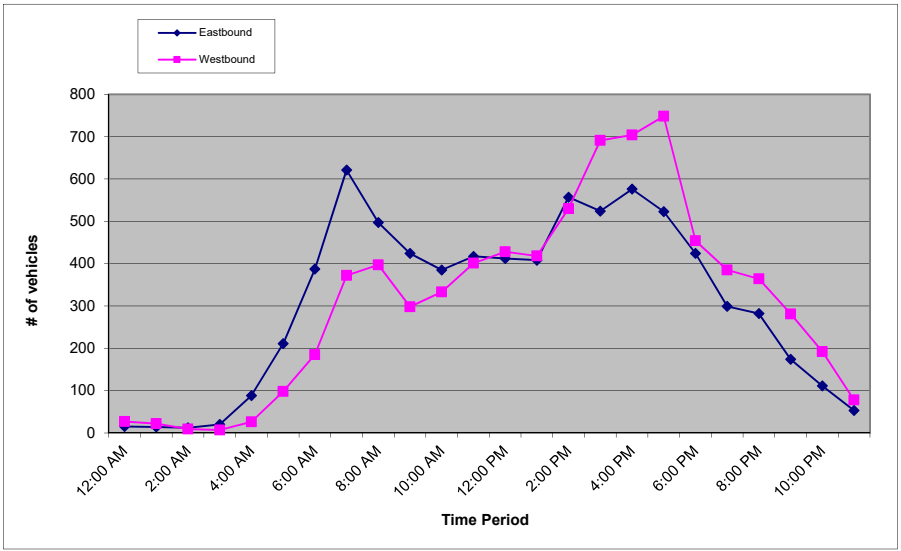
24 Hour Count Report

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

LOCATION	Creston Rd s/o Niblick Rd	**LATITUDE**	35.6146144
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6590371
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	5	3	1	6	**15**	6	7	6	8	**27**	**42**
1:00 AM	6	3	2	3	**14**	3	10	4	5	**22**	**36**
2:00 AM	3	4	2	3	**12**	3	4	0	2	**9**	**21**
3:00 AM	3	5	6	6	**20**	3	1	1	2	**7**	**27**
4:00 AM	12	16	21	39	**88**	3	3	5	15	**26**	**114**
5:00 AM	26	58	64	63	**211**	16	19	32	31	**98**	**309**
6:00 AM	65	98	106	118	**387**	35	37	54	59	**185**	**572**
7:00 AM	112	151	182	176	**621**	48	58	114	152	**372**	**993**
8:00 AM	169	126	93	109	**497**	142	105	71	79	**397**	**894**
9:00 AM	116	92	119	97	**424**	81	64	79	74	**298**	**722**
10:00 AM	92	95	108	90	**385**	68	73	96	96	**333**	**718**
11:00 AM	97	99	99	122	**417**	90	93	92	126	**401**	**818**
12:00 PM	99	99	103	111	**412**	114	102	120	92	**428**	**840**
1:00 PM	101	102	104	101	**408**	110	96	97	115	**418**	**826**
2:00 PM	107	131	151	168	**557**	123	110	152	145	**530**	**1087**
3:00 PM	134	130	130	130	**524**	187	184	163	157	**691**	**1215**
4:00 PM	132	159	164	121	**576**	186	161	171	186	**704**	**1280**
5:00 PM	137	135	122	129	**523**	184	189	198	177	**748**	**1271**
6:00 PM	96	127	118	83	**424**	130	107	106	111	**454**	**878**
7:00 PM	95	64	78	62	**299**	94	86	100	105	**385**	**684**
8:00 PM	75	72	70	65	**282**	89	102	100	73	**364**	**646**
9:00 PM	43	43	44	44	**174**	81	78	67	55	**281**	**455**
10:00 PM	45	28	26	12	**111**	55	45	56	36	**192**	**303**
11:00 PM	17	10	14	12	**53**	33	27	10	8	**78**	**131**
Total	**50.0%**				**7434**	**50.0%**				**7448**	
	14882										

AM%	**35.4%**	**AM Peak**	**1166**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.89**
PM%	**64.6%**	**PM Peak**	**1287**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.96**



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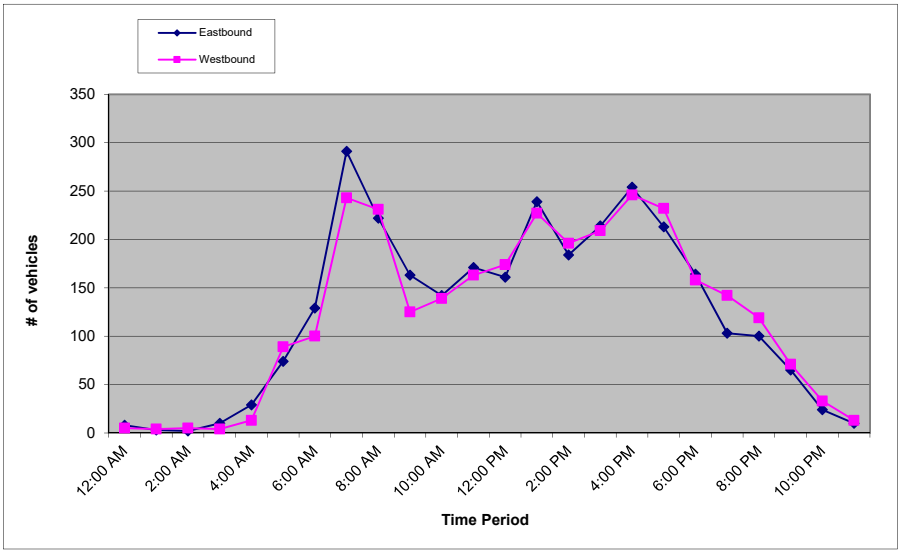
24 Hour Count Report

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

LOCATION	Creston Rd n/o Meadowlark	**LATITUDE**	35.6031866
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6589848
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	4	3	1	0	**8**	2	1	2	0	**5**	**13**
1:00 AM	0	2	1	0	**3**	2	2	0	0	**4**	**7**
2:00 AM	1	0	1	0	**2**	2	0	1	2	**5**	**7**
3:00 AM	0	3	4	3	**10**	1	1	0	2	**4**	**14**
4:00 AM	3	5	8	13	**29**	1	2	6	4	**13**	**42**
5:00 AM	14	18	17	25	**74**	13	13	44	19	**89**	**163**
6:00 AM	22	32	39	36	**129**	26	14	30	30	**100**	**229**
7:00 AM	50	61	92	88	**291**	29	38	74	102	**243**	**534**
8:00 AM	83	49	46	44	**222**	98	59	38	36	**231**	**453**
9:00 AM	52	36	40	35	**163**	30	32	30	33	**125**	**288**
10:00 AM	28	27	48	39	**142**	37	36	31	35	**139**	**281**
11:00 AM	44	41	42	44	**171**	33	38	42	50	**163**	**334**
12:00 PM	50	34	38	39	**161**	39	47	41	47	**174**	**335**
1:00 PM	34	45	94	66	**239**	54	69	59	45	**227**	**466**
2:00 PM	51	32	46	55	**184**	58	57	43	38	**196**	**380**
3:00 PM	57	53	50	54	**214**	43	56	59	51	**209**	**423**
4:00 PM	50	65	83	56	**254**	56	58	63	69	**246**	**500**
5:00 PM	52	63	52	46	**213**	62	50	57	63	**232**	**445**
6:00 PM	51	47	34	32	**164**	54	38	30	36	**158**	**322**
7:00 PM	26	26	23	28	**103**	38	34	31	39	**142**	**245**
8:00 PM	26	24	27	23	**100**	27	17	41	34	**119**	**219**
9:00 PM	23	20	10	12	**65**	24	21	16	10	**71**	**136**
10:00 PM	8	5	9	2	**24**	11	4	10	8	**33**	**57**
11:00 PM	1	5	0	4	**10**	0	3	8	2	**13**	**23**
Total	**50.3%**				**2975**	**49.7%**				**2941**	
	5916										

AM%	**40.0%**	**AM Peak**	**645**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.85**
PM%	**60.0%**	**PM Peak**	**508**	**4:15 pm to 5:15 pm**	**PM P.H.F.**	**0.87**



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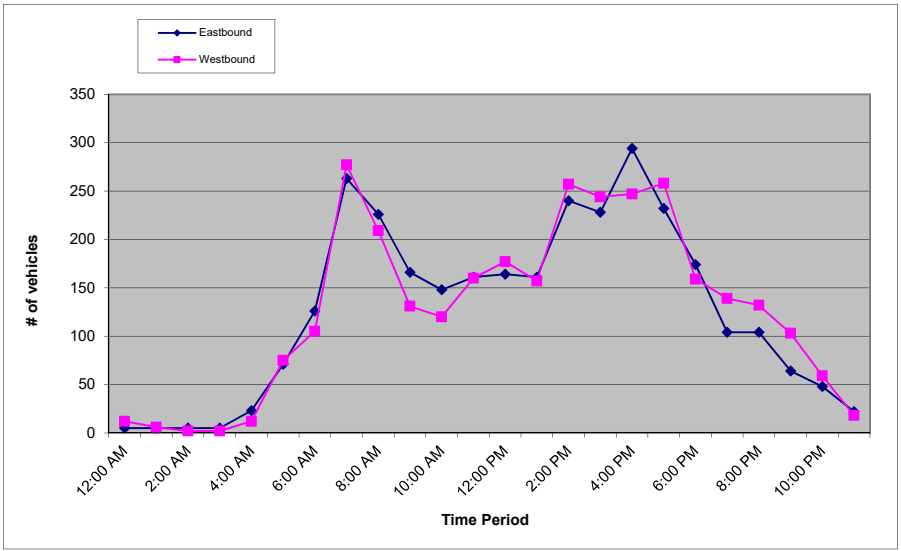
24 Hour Count Report

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

LOCATION	Creston Rd n/o Meadowlark	**LATITUDE**	35.6031866
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6589848
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	1	0	3	1	**5**	5	2	2	3	**12**	**17**
1:00 AM	2	0	2	1	**5**	1	3	2	0	**6**	**11**
2:00 AM	1	1	0	3	**5**	0	0	0	2	**2**	**7**
3:00 AM	0	2	1	2	**5**	1	1	0	0	**2**	**7**
4:00 AM	6	3	5	9	**23**	3	1	1	7	**12**	**35**
5:00 AM	11	22	16	22	**71**	11	11	29	24	**75**	**146**
6:00 AM	19	30	36	41	**126**	21	24	24	36	**105**	**231**
7:00 AM	41	58	87	77	**263**	33	54	79	111	**277**	**540**
8:00 AM	83	64	31	48	**226**	82	54	36	37	**209**	**435**
9:00 AM	44	47	42	33	**166**	36	23	33	39	**131**	**297**
10:00 AM	40	33	46	29	**148**	21	34	41	24	**120**	**268**
11:00 AM	33	38	47	43	**161**	33	39	37	51	**160**	**321**
12:00 PM	50	36	41	37	**164**	45	29	54	49	**177**	**341**
1:00 PM	44	34	39	44	**161**	49	36	28	44	**157**	**318**
2:00 PM	46	37	91	66	**240**	51	59	85	62	**257**	**497**
3:00 PM	67	44	55	62	**228**	62	57	64	61	**244**	**472**
4:00 PM	87	67	83	57	**294**	60	47	61	79	**247**	**541**
5:00 PM	63	61	58	50	**232**	66	77	64	51	**258**	**490**
6:00 PM	39	47	50	38	**174**	44	44	29	42	**159**	**333**
7:00 PM	26	24	33	21	**104**	39	24	42	34	**139**	**243**
8:00 PM	33	19	25	27	**104**	29	39	36	28	**132**	**236**
9:00 PM	17	16	14	17	**64**	27	27	31	18	**103**	**167**
10:00 PM	17	12	12	7	**48**	26	12	11	10	**59**	**107**
11:00 PM	4	5	8	5	**22**	9	6	1	2	**18**	**40**
Total	**49.8%**				**3039**	**50.2%**				**3061**	
	6100										

AM%	**38.0%**	**AM Peak**	**637**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.85**
PM%	**62.0%**	**PM Peak**	**547**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.95**



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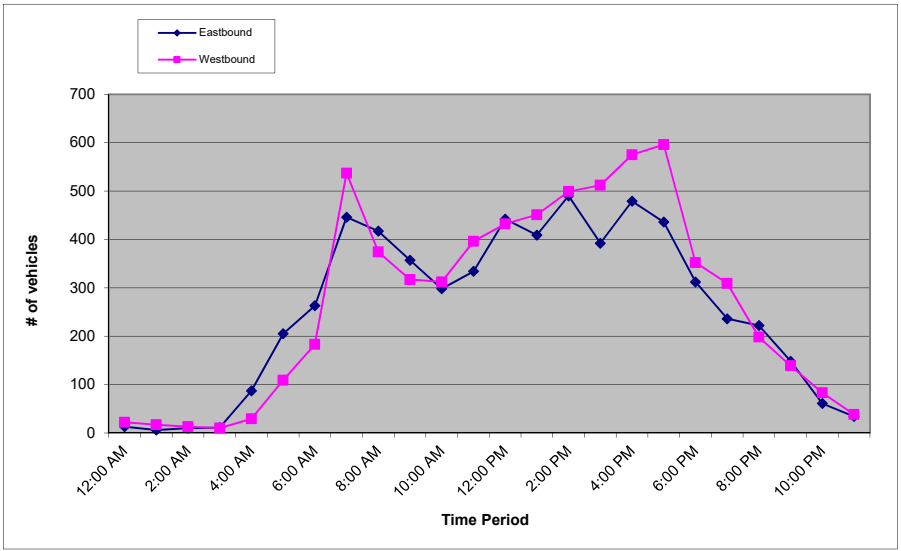
24 Hour Count Report

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

LOCATION	Golden Hill Rd s/o Union Rd	**LATITUDE**	35.6388503
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6581385
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	3		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	6	4	2	1	**13**	5	4	8	5	**22**	**35**
1:00 AM	1	1	3	1	**6**	2	2	9	4	**17**	**23**
2:00 AM	0	2	3	5	**10**	6	4	1	2	**13**	**23**
3:00 AM	2	2	3	4	**11**	3	1	3	3	**10**	**21**
4:00 AM	14	11	27	35	**87**	3	3	16	7	**29**	**116**
5:00 AM	23	58	61	63	**205**	16	20	34	39	**109**	**314**
6:00 AM	52	50	62	99	**263**	35	32	53	63	**183**	**446**
7:00 AM	70	96	113	167	**446**	72	117	164	184	**537**	**983**
8:00 AM	169	111	56	81	**417**	130	117	69	58	**374**	**791**
9:00 AM	91	91	77	98	**357**	64	96	83	74	**317**	**674**
10:00 AM	75	76	72	75	**298**	81	77	72	82	**312**	**610**
11:00 AM	87	79	72	96	**334**	85	97	112	102	**396**	**730**
12:00 PM	105	134	88	115	**442**	114	113	97	108	**432**	**874**
1:00 PM	79	106	106	118	**409**	115	108	96	132	**451**	**860**
2:00 PM	136	147	103	104	**490**	125	141	122	111	**499**	**989**
3:00 PM	101	105	98	88	**392**	96	125	161	130	**512**	**904**
4:00 PM	131	109	117	122	**479**	139	119	159	158	**575**	**1054**
5:00 PM	117	110	95	114	**436**	172	179	133	112	**596**	**1032**
6:00 PM	82	91	72	67	**312**	113	75	85	79	**352**	**664**
7:00 PM	63	61	61	51	**236**	104	85	49	71	**309**	**545**
8:00 PM	48	58	59	57	**222**	51	29	64	54	**198**	**420**
9:00 PM	48	28	48	24	**148**	53	24	42	20	**139**	**287**
10:00 PM	24	17	13	7	**61**	28	24	13	18	**83**	**144**
11:00 PM	8	8	10	8	**34**	8	10	13	7	**38**	**72**
Total	**48.4%**				**6108**	**51.6%**				**6503**	
	12611										

AM%	**37.8%**	**AM Peak**	**1155**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.82**
PM%	**62.2%**	**PM Peak**	**1134**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.98**



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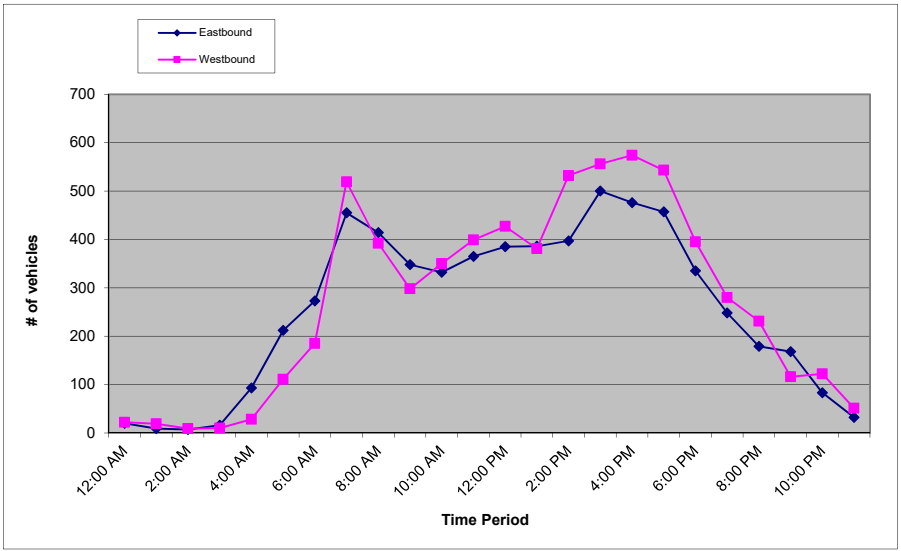
24 Hour Count Report

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

LOCATION	Golden Hill Rd s/o Union Rd	**LATITUDE**	35.6388503
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6581385
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	3		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	4	7	5	4	**20**	8	6	3	5	**22**	**42**
1:00 AM	0	3	2	4	**9**	3	5	6	5	**19**	**28**
2:00 AM	0	1	4	2	**7**	4	2	1	2	**9**	**16**
3:00 AM	1	1	8	6	**16**	5	2	1	2	**10**	**26**
4:00 AM	10	22	20	41	**93**	6	1	11	10	**28**	**121**
5:00 AM	24	56	60	72	**212**	10	15	36	50	**111**	**323**
6:00 AM	57	58	62	96	**273**	25	32	55	73	**185**	**458**
7:00 AM	85	86	112	172	**455**	63	112	172	172	**519**	**974**
8:00 AM	137	122	78	77	**414**	147	99	75	71	**392**	**806**
9:00 AM	83	96	82	87	**348**	93	78	64	63	**298**	**646**
10:00 AM	78	83	79	92	**332**	72	86	107	85	**350**	**682**
11:00 AM	75	80	112	98	**365**	94	104	89	112	**399**	**764**
12:00 PM	77	120	83	105	**385**	129	95	96	107	**427**	**812**
1:00 PM	107	95	83	101	**386**	95	84	88	114	**381**	**767**
2:00 PM	111	82	98	106	**397**	115	114	138	165	**532**	**929**
3:00 PM	132	131	127	110	**500**	147	127	151	131	**556**	**1056**
4:00 PM	127	113	121	115	**476**	131	128	144	171	**574**	**1050**
5:00 PM	112	116	115	114	**457**	159	150	147	87	**543**	**1000**
6:00 PM	84	77	96	78	**335**	101	91	112	91	**395**	**730**
7:00 PM	76	61	54	57	**248**	79	69	57	75	**280**	**528**
8:00 PM	39	48	52	40	**179**	60	57	67	47	**231**	**410**
9:00 PM	48	48	35	37	**168**	37	25	27	27	**116**	**284**
10:00 PM	34	16	18	15	**83**	41	36	28	17	**122**	**205**
11:00 PM	10	12	6	4	**32**	20	15	6	10	**51**	**83**
Total	**48.6%**				**6190**	**51.4%**				**6550**	
	12740										

AM%	**38.4%**	**AM Peak**	**1133**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.82**
PM%	**61.6%**	**PM Peak**	**1086**	**2:45 pm to 3:45 pm**	**PM P.H.F.**	**0.97**



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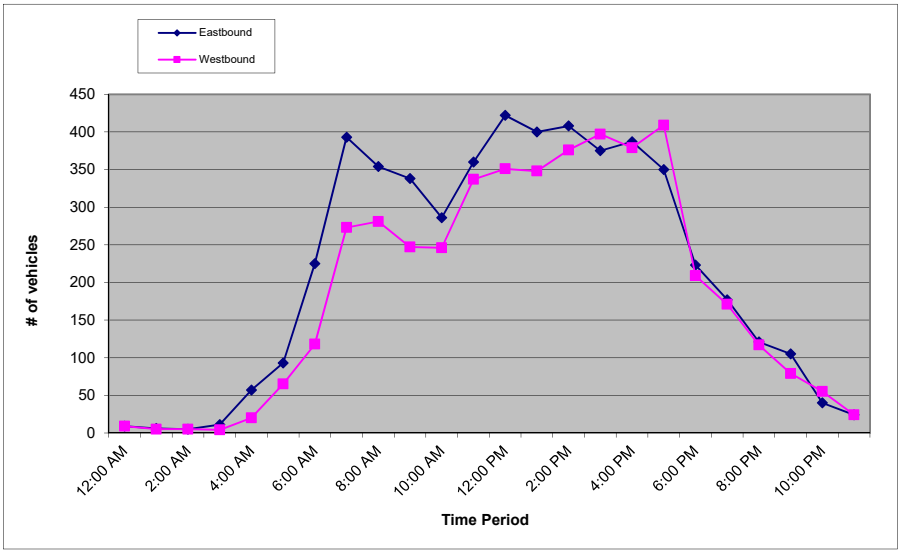
24 Hour Count Report

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

LOCATION	Golden Hill Rd n/o Union Rd	**LATITUDE**	35.6409015
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6581332
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	3		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	2	5	1	1	**9**	2	2	0	5	**9**	**18**
1:00 AM	2	1	2	1	**6**	2	1	2	0	**5**	**11**
2:00 AM	0	1	2	2	**5**	2	1	1	1	**5**	**10**
3:00 AM	1	1	4	5	**11**	1	0	1	2	**4**	**15**
4:00 AM	10	16	15	16	**57**	3	4	8	5	**20**	**77**
5:00 AM	17	21	18	37	**93**	7	15	15	28	**65**	**158**
6:00 AM	38	49	61	77	**225**	21	21	29	47	**118**	**343**
7:00 AM	55	81	99	158	**393**	43	51	70	109	**273**	**666**
8:00 AM	126	90	69	69	**354**	91	87	58	45	**281**	**635**
9:00 AM	61	108	73	96	**338**	58	72	63	54	**247**	**585**
10:00 AM	77	76	64	69	**286**	67	62	57	60	**246**	**532**
11:00 AM	90	93	83	94	**360**	65	82	102	88	**337**	**697**
12:00 PM	82	111	123	106	**422**	92	89	82	88	**351**	**773**
1:00 PM	99	109	94	98	**400**	90	79	66	113	**348**	**748**
2:00 PM	111	98	105	94	**408**	106	97	91	82	**376**	**784**
3:00 PM	94	105	100	76	**375**	85	104	107	101	**397**	**772**
4:00 PM	82	88	107	110	**387**	91	77	119	92	**379**	**766**
5:00 PM	104	104	78	64	**350**	111	117	97	84	**409**	**759**
6:00 PM	71	66	50	36	**223**	68	38	53	50	**209**	**432**
7:00 PM	54	50	32	41	**177**	53	47	24	47	**171**	**348**
8:00 PM	18	36	40	27	**121**	26	18	39	34	**117**	**238**
9:00 PM	35	20	32	18	**105**	24	17	26	12	**79**	**184**
10:00 PM	17	10	6	7	**40**	20	14	9	12	**55**	**95**
11:00 PM	4	7	6	7	**24**	6	6	7	5	**24**	**48**
Total	**53.3%**				**5169**	**46.7%**				**4525**	
	9694										

AM%	**38.7%**	**AM Peak**	**697**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.94**
PM%	**61.3%**	**PM Peak**	**819**	**1:45 pm to 2:45 pm**	**PM P.H.F.**	**0.94**



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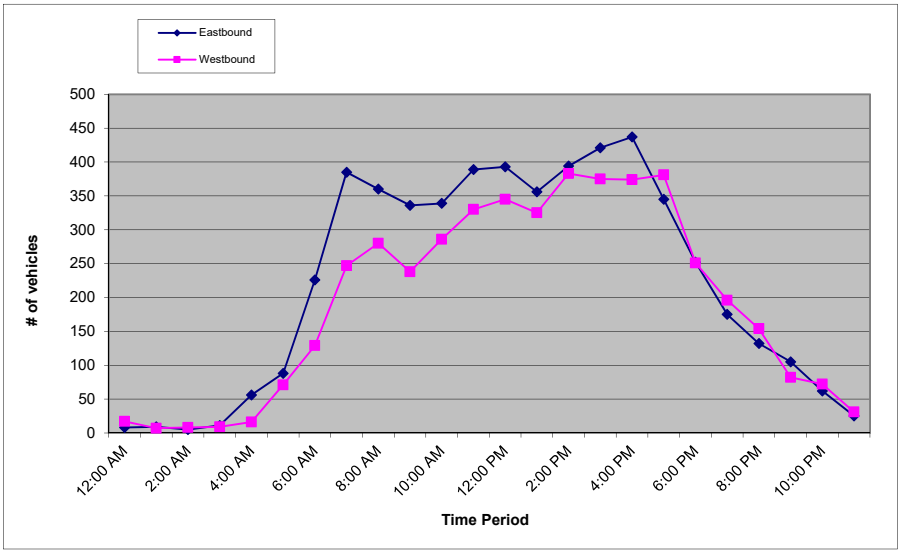
24 Hour Count Report

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

LOCATION	Golden Hill Rd n/o Union Rd	**LATITUDE**	35.6409015
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6581332
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	3		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	3	2	2	1	**8**	7	5	0	5	**17**	**25**
1:00 AM	0	3	1	5	**9**	0	2	2	3	**7**	**16**
2:00 AM	1	1	2	1	**5**	4	2	1	1	**8**	**13**
3:00 AM	2	0	4	5	**11**	4	2	1	2	**9**	**20**
4:00 AM	7	15	12	22	**56**	3	2	5	6	**16**	**72**
5:00 AM	13	17	22	36	**88**	5	18	18	30	**71**	**159**
6:00 AM	41	45	64	76	**226**	26	23	36	44	**129**	**355**
7:00 AM	78	70	95	142	**385**	31	55	69	92	**247**	**632**
8:00 AM	107	101	89	63	**360**	88	68	66	58	**280**	**640**
9:00 AM	70	76	97	93	**336**	68	54	64	52	**238**	**574**
10:00 AM	99	68	79	93	**339**	65	73	79	69	**286**	**625**
11:00 AM	82	85	126	96	**389**	68	84	85	93	**330**	**719**
12:00 PM	102	111	79	101	**393**	103	69	96	77	**345**	**738**
1:00 PM	95	95	83	83	**356**	74	87	84	80	**325**	**681**
2:00 PM	115	106	83	90	**394**	86	83	100	114	**383**	**777**
3:00 PM	109	114	101	97	**421**	118	86	78	93	**375**	**796**
4:00 PM	99	113	124	101	**437**	90	77	99	108	**374**	**811**
5:00 PM	100	92	91	62	**345**	104	99	90	88	**381**	**726**
6:00 PM	64	61	63	64	**252**	68	59	68	56	**251**	**503**
7:00 PM	56	34	46	39	**175**	48	58	36	54	**196**	**371**
8:00 PM	31	32	34	35	**132**	42	41	39	32	**154**	**286**
9:00 PM	26	31	22	26	**105**	21	21	23	17	**82**	**187**
10:00 PM	23	21	7	11	**62**	30	9	17	16	**72**	**134**
11:00 PM	8	10	2	5	**25**	10	11	1	9	**31**	**56**
Total	**53.5%**				**5309**	**46.5%**				**4607**	
	9916										

AM%	**38.8%**	**AM Peak**	**719**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.85**
PM%	**61.2%**	**PM Peak**	**827**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.93**



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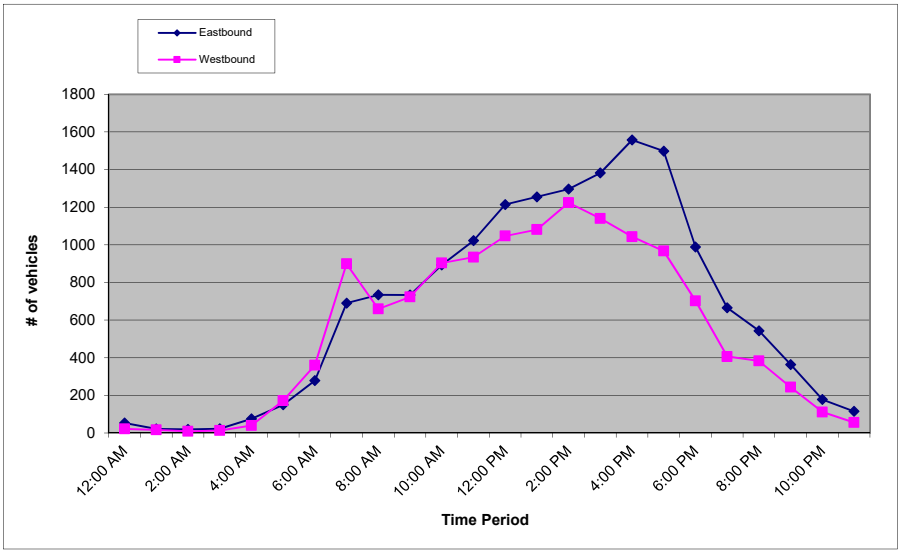
24 Hour Count Report

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

LOCATION	Niblick Rd e/o Spring St	**LATITUDE**	35.6151235
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6849338
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	15	20	10	8	**53**	6	4	6	5	**21**	**74**
1:00 AM	5	11	2	3	**21**	5	4	4	3	**16**	**37**
2:00 AM	4	3	6	6	**19**	2	1	5	1	**9**	**28**
3:00 AM	4	5	7	6	**22**	2	6	1	4	**13**	**35**
4:00 AM	3	17	15	40	**75**	4	9	13	13	**39**	**114**
5:00 AM	25	27	53	45	**150**	34	41	41	56	**172**	**322**
6:00 AM	45	57	75	101	**278**	74	65	117	104	**360**	**638**
7:00 AM	97	145	223	225	**690**	136	166	264	333	**899**	**1589**
8:00 AM	190	187	171	186	**734**	191	177	151	140	**659**	**1393**
9:00 AM	156	191	190	196	**733**	151	153	208	211	**723**	**1456**
10:00 AM	226	206	216	245	**893**	228	204	241	230	**903**	**1796**
11:00 AM	254	257	262	249	**1022**	226	233	235	240	**934**	**1956**
12:00 PM	312	287	278	337	**1214**	283	247	246	271	**1047**	**2261**
1:00 PM	331	290	317	317	**1255**	231	275	283	292	**1081**	**2336**
2:00 PM	310	341	317	328	**1296**	326	354	288	256	**1224**	**2520**
3:00 PM	321	346	358	357	**1382**	297	293	282	268	**1140**	**2522**
4:00 PM	371	381	383	422	**1557**	260	261	293	229	**1043**	**2600**
5:00 PM	444	405	377	272	**1498**	234	260	267	206	**967**	**2465**
6:00 PM	312	256	220	200	**988**	194	193	173	142	**702**	**1690**
7:00 PM	171	170	164	160	**665**	121	105	94	86	**406**	**1071**
8:00 PM	129	149	137	128	**543**	111	92	103	77	**383**	**926**
9:00 PM	139	84	78	62	**363**	82	51	63	47	**243**	**606**
10:00 PM	52	58	35	33	**178**	45	31	20	15	**111**	**289**
11:00 PM	41	30	27	17	**115**	19	20	10	6	**55**	**170**
Total	**54.5%**				**15744**	**45.5%**				**13150**	
	28894										

AM%	**32.7%**	**AM Peak**	**1956**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.98**
PM%	**67.3%**	**PM Peak**	**2670**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.98**



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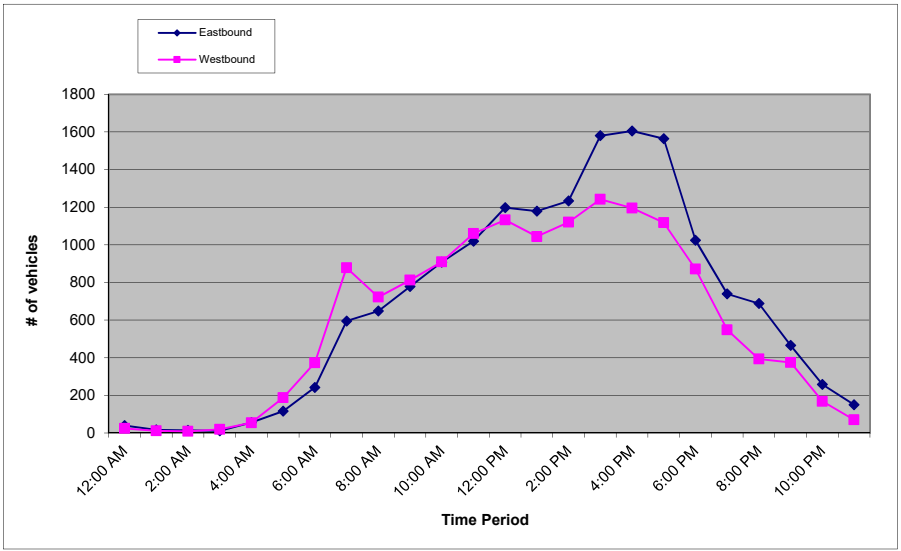
24 Hour Count Report

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

LOCATION	Niblick Rd e/o Spring St	**LATITUDE**	35.6151235
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6849338
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	8	12	7	12	**39**	5	10	3	6	**24**	**63**
1:00 AM	3	3	6	4	**16**	3	3	2	3	**11**	**27**
2:00 AM	3	2	3	6	**14**	4	2	3	0	**9**	**23**
3:00 AM	1	5	0	5	**11**	5	2	5	7	**19**	**30**
4:00 AM	4	13	13	25	**55**	7	7	12	28	**54**	**109**
5:00 AM	12	24	47	33	**116**	28	35	58	66	**187**	**303**
6:00 AM	36	53	60	93	**242**	70	77	119	107	**373**	**615**
7:00 AM	78	135	201	181	**595**	150	178	264	286	**878**	**1473**
8:00 AM	177	180	140	151	**648**	213	182	183	144	**722**	**1370**
9:00 AM	183	201	183	211	**778**	164	186	235	227	**812**	**1590**
10:00 AM	226	240	208	234	**908**	229	230	225	225	**909**	**1817**
11:00 AM	232	245	264	278	**1019**	272	234	268	286	**1060**	**2079**
12:00 PM	317	313	281	287	**1198**	289	267	304	272	**1132**	**2330**
1:00 PM	284	283	299	313	**1179**	244	290	224	286	**1044**	**2223**
2:00 PM	288	307	293	345	**1233**	275	259	293	293	**1120**	**2353**
3:00 PM	362	390	419	409	**1580**	321	345	305	271	**1242**	**2822**
4:00 PM	392	404	415	394	**1605**	294	292	303	306	**1195**	**2800**
5:00 PM	458	427	343	336	**1564**	337	277	250	254	**1118**	**2682**
6:00 PM	280	258	259	227	**1024**	236	244	187	204	**871**	**1895**
7:00 PM	199	191	174	175	**739**	165	135	123	125	**548**	**1287**
8:00 PM	180	198	164	146	**688**	104	108	108	73	**393**	**1081**
9:00 PM	133	123	118	91	**465**	98	93	113	70	**374**	**839**
10:00 PM	79	79	64	36	**258**	57	45	41	25	**168**	**426**
11:00 PM	47	46	41	16	**150**	24	24	12	10	**70**	**220**
Total	**52.9%**				**16124**	**47.1%**				**14333**	
	30457										

AM%	**31.2%**	**AM Peak**	**2079**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.92**
PM%	**68.8%**	**PM Peak**	**2825**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.96**



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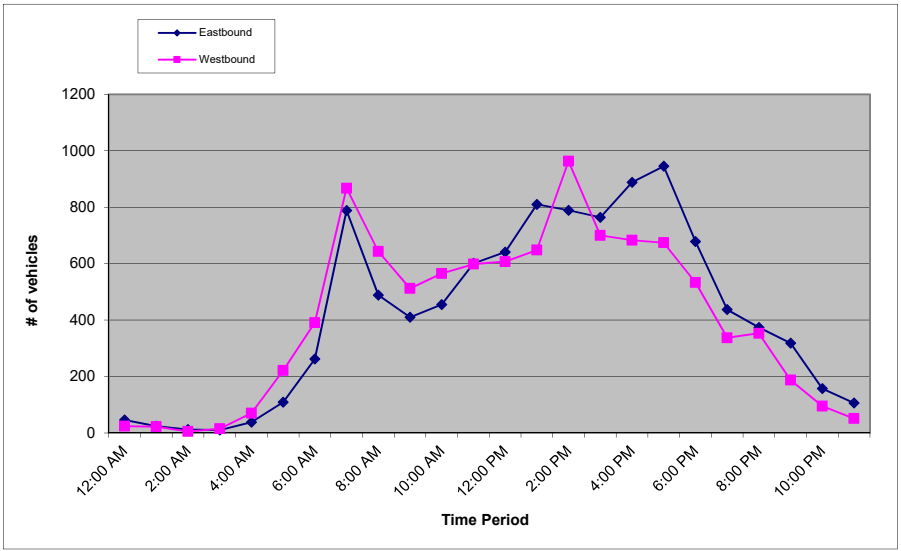
24 Hour Count Report

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

LOCATION	Niblick Rd e/o Quarterhorse	**LATITUDE**	35.6157842
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6766149
COLLECTION DATE	Wednesday, June 6, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	11	13	15	7	**46**	8	6	5	5	**24**	**70**
1:00 AM	5	8	4	7	**24**	10	3	4	5	**22**	**46**
2:00 AM	2	2	4	4	**12**	1	1	2	1	**5**	**17**
3:00 AM	3	1	2	4	**10**	2	7	1	5	**15**	**25**
4:00 AM	4	6	12	16	**38**	9	16	17	28	**70**	**108**
5:00 AM	13	13	38	45	**109**	40	49	55	77	**221**	**330**
6:00 AM	45	43	82	92	**262**	68	81	113	129	**391**	**653**
7:00 AM	73	209	259	247	**788**	134	178	282	273	**867**	**1655**
8:00 AM	149	131	106	102	**488**	210	170	141	122	**643**	**1131**
9:00 AM	92	105	111	102	**410**	133	121	135	123	**512**	**922**
10:00 AM	129	111	101	114	**455**	169	126	148	122	**565**	**1020**
11:00 AM	145	147	168	141	**601**	130	137	168	163	**598**	**1199**
12:00 PM	154	144	168	175	**641**	156	151	146	154	**607**	**1248**
1:00 PM	199	194	185	232	**810**	136	124	189	199	**648**	**1458**
2:00 PM	215	197	186	191	**789**	372	239	192	160	**963**	**1752**
3:00 PM	201	153	195	215	**764**	165	187	185	163	**700**	**1464**
4:00 PM	213	214	224	237	**888**	179	137	221	146	**683**	**1571**
5:00 PM	240	261	232	212	**945**	177	180	170	147	**674**	**1619**
6:00 PM	174	174	164	166	**678**	150	131	139	113	**533**	**1211**
7:00 PM	106	131	102	98	**437**	89	95	64	89	**337**	**774**
8:00 PM	96	84	98	96	**374**	83	87	90	93	**353**	**727**
9:00 PM	99	80	77	62	**318**	58	54	45	30	**187**	**505**
10:00 PM	50	51	26	30	**157**	23	33	21	18	**95**	**252**
11:00 PM	36	27	21	22	**106**	13	18	13	7	**51**	**157**
Total	**51.0%**				**10150**	**49.0%**				**9764**	
	19914										

AM%	**36.0%**	**AM Peak**	**1807**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.84**
PM%	**64.0%**	**PM Peak**	**1832**	**1:45 pm to 2:45 pm**	**PM P.H.F.**	**0.78**



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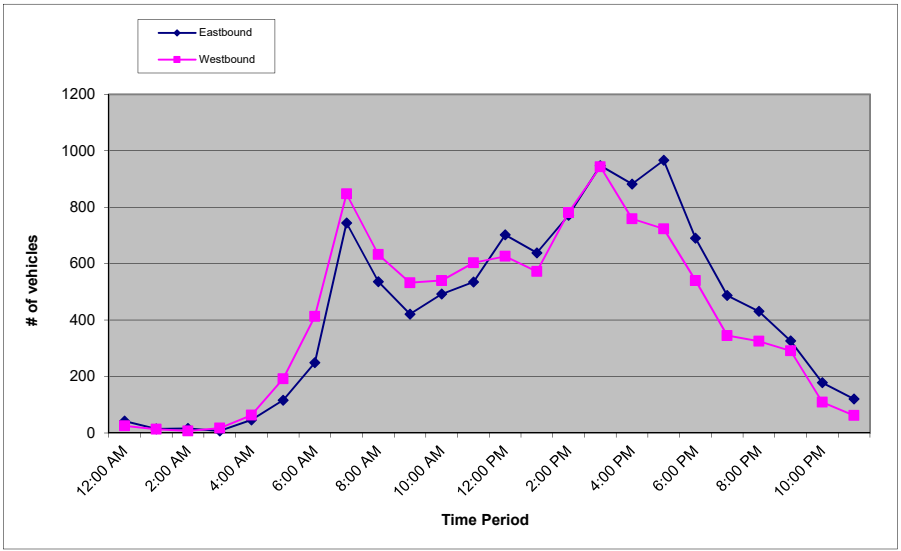
24 Hour Count Report

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

LOCATION	Niblick Rd e/o Quarterhorse	**LATITUDE**	35.6157842
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6766149
COLLECTION DATE	Thursday, June 7, 2018	**WEATHER**	Clear
NUMBER OF LANES	4		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	12	18	8	4	**42**	10	5	4	6	**25**	**67**
1:00 AM	3	4	4	3	**14**	3	4	3	3	**13**	**27**
2:00 AM	3	3	4	6	**16**	3	4	0	0	**7**	**23**
3:00 AM	1	0	2	4	**7**	4	4	4	5	**17**	**24**
4:00 AM	3	5	15	23	**46**	6	11	14	32	**63**	**109**
5:00 AM	15	22	38	41	**116**	32	40	53	67	**192**	**308**
6:00 AM	38	48	68	95	**249**	71	101	120	121	**413**	**662**
7:00 AM	96	200	255	193	**744**	132	188	288	239	**847**	**1591**
8:00 AM	168	150	122	96	**536**	179	163	154	136	**632**	**1168**
9:00 AM	107	96	105	113	**421**	129	121	148	134	**532**	**953**
10:00 AM	124	116	123	129	**492**	138	117	158	127	**540**	**1032**
11:00 AM	127	126	146	136	**535**	147	145	157	154	**603**	**1138**
12:00 PM	186	171	172	173	**702**	153	172	160	141	**626**	**1328**
1:00 PM	157	141	165	175	**638**	143	147	126	156	**572**	**1210**
2:00 PM	175	152	208	236	**771**	184	159	241	197	**781**	**1552**
3:00 PM	242	231	218	256	**947**	324	237	202	180	**943**	**1890**
4:00 PM	211	214	235	222	**882**	180	177	205	197	**759**	**1641**
5:00 PM	244	262	226	234	**966**	196	181	154	192	**723**	**1689**
6:00 PM	157	180	179	174	**690**	147	162	122	109	**540**	**1230**
7:00 PM	135	122	109	121	**487**	104	87	74	80	**345**	**832**
8:00 PM	99	125	108	99	**431**	85	85	89	66	**325**	**756**
9:00 PM	101	87	68	70	**326**	58	80	111	42	**291**	**617**
10:00 PM	60	37	54	27	**178**	42	30	24	13	**109**	**287**
11:00 PM	39	39	30	12	**120**	20	17	11	14	**62**	**182**
Total	**51.0%**				**10356**	**49.0%**				**9960**	
	20316										

AM%	**35.0%**	**AM Peak**	**1710**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.79**
PM%	**65.0%**	**PM Peak**	**1916**	**2:30 pm to 3:30 pm**	**PM P.H.F.**	**0.85**



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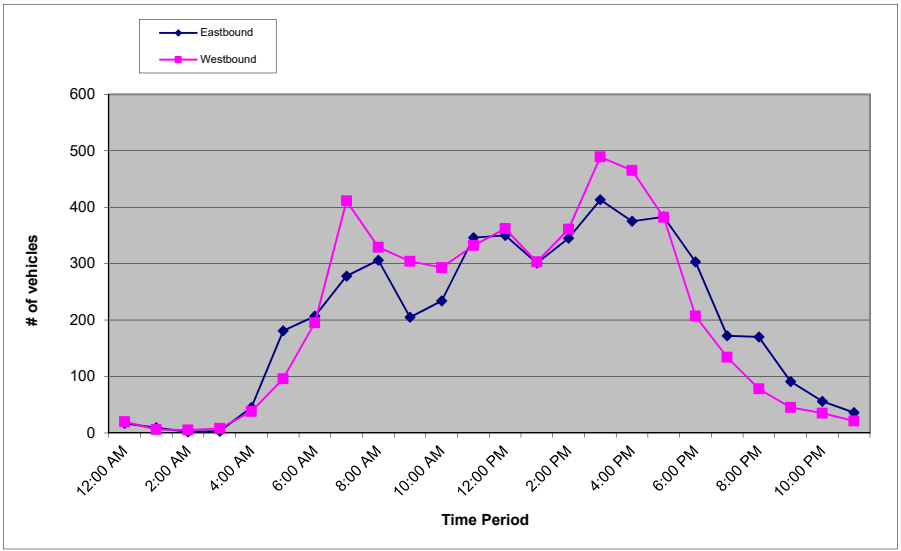
24 Hour Count Report

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

LOCATION	Sherwood Rd - Fontana rd to Creston Rd	**LATITUDE**	35.6157483
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6566803
COLLECTION DATE	Wednesday, January 23, 2019	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	4	5	6	2	**17**	9	2	5	4	**20**	**37**
1:00 AM	4	4	1	0	**9**	5	1	0	0	**6**	**15**
2:00 AM	0	0	2	0	**2**	2	1	1	1	**5**	**7**
3:00 AM	0	0	0	3	**3**	2	1	0	5	**8**	**11**
4:00 AM	1	7	8	29	**45**	4	13	7	14	**38**	**83**
5:00 AM	17	10	34	120	**181**	7	23	27	39	**96**	**277**
6:00 AM	31	39	52	85	**207**	33	36	50	76	**195**	**402**
7:00 AM	67	56	53	102	**278**	60	94	153	104	**411**	**689**
8:00 AM	101	99	54	52	**306**	74	71	99	85	**329**	**635**
9:00 AM	50	53	57	45	**205**	78	67	77	82	**304**	**509**
10:00 AM	49	57	62	66	**234**	63	67	93	70	**293**	**527**
11:00 AM	91	68	88	99	**346**	87	75	89	81	**332**	**678**
12:00 PM	91	82	81	96	**350**	104	87	82	89	**362**	**712**
1:00 PM	89	65	74	73	**301**	84	76	82	61	**303**	**604**
2:00 PM	91	79	76	99	**345**	82	69	118	92	**361**	**706**
3:00 PM	101	109	96	107	**413**	115	92	160	122	**489**	**902**
4:00 PM	88	89	98	100	**375**	111	86	173	95	**465**	**840**
5:00 PM	108	92	107	76	**383**	140	75	93	74	**382**	**765**
6:00 PM	84	92	67	60	**303**	55	72	42	38	**207**	**510**
7:00 PM	48	31	45	48	**172**	28	30	36	40	**134**	**306**
8:00 PM	59	45	38	28	**170**	27	20	13	18	**78**	**248**
9:00 PM	25	24	23	19	**91**	12	18	5	10	**45**	**136**
10:00 PM	22	18	9	7	**56**	15	7	7	6	**35**	**91**
11:00 PM	10	5	7	14	**36**	13	2	1	5	**21**	**57**
Total	**49.5%**				**4828**	**50.5%**				**4919**	
	9747										

AM%	**39.7%**	**AM Peak**	**757**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.92**
PM%	**60.3%**	**PM Peak**	**902**	**3:00 pm to 4:00 pm**	**PM P.H.F.**	**0.88**



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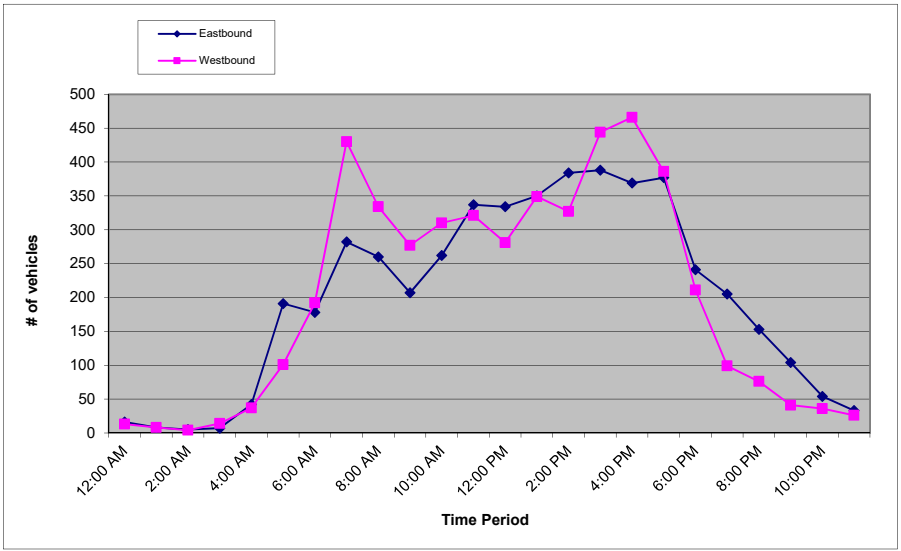
24 Hour Count Report

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

LOCATION Sherwood Rd - Fontana rd to Creston Rd
LATITUDE 35.6157483
COUNTY San Luis Obispo
LONGITUDE -120.6566803
COLLECTION DATE Thursday, January 24, 2019
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	5	7	1	3	**16**	7	2	1	3	**13**	**29**
1:00 AM	3	2	1	2	**8**	4	2	0	2	**8**	**16**
2:00 AM	1	1	2	1	**5**	2	1	1	0	**4**	**9**
3:00 AM	2	1	1	3	**7**	2	6	0	6	**14**	**21**
4:00 AM	0	6	7	29	**42**	13	7	7	10	**37**	**79**
5:00 AM	23	9	30	129	**191**	15	10	31	45	**101**	**292**
6:00 AM	24	37	43	74	**178**	28	37	61	66	**192**	**370**
7:00 AM	67	54	54	107	**282**	73	109	152	96	**430**	**712**
8:00 AM	92	79	50	39	**260**	96	66	96	76	**334**	**594**
9:00 AM	56	43	52	56	**207**	79	73	69	56	**277**	**484**
10:00 AM	54	69	58	81	**262**	80	65	92	73	**310**	**572**
11:00 AM	72	95	86	84	**337**	76	74	89	82	**321**	**658**
12:00 PM	86	81	81	86	**334**	81	64	88	48	**281**	**615**
1:00 PM	85	95	87	83	**350**	79	91	95	84	**349**	**699**
2:00 PM	86	124	83	91	**384**	74	93	90	70	**327**	**711**
3:00 PM	84	101	92	111	**388**	81	92	142	129	**444**	**832**
4:00 PM	90	91	80	108	**369**	105	75	179	107	**466**	**835**
5:00 PM	93	103	96	85	**377**	132	95	95	64	**386**	**763**
6:00 PM	78	73	55	35	**241**	64	62	43	42	**211**	**452**
7:00 PM	54	62	43	46	**205**	27	24	28	20	**99**	**304**
8:00 PM	39	43	39	32	**153**	16	20	21	19	**76**	**229**
9:00 PM	28	26	32	18	**104**	14	14	5	8	**41**	**145**
10:00 PM	20	13	12	9	**54**	15	7	8	6	**36**	**90**
11:00 PM	8	10	7	8	**33**	13	5	2	6	**26**	**59**
Total	**50.0%**				**4787**	**50.0%**				**4783**	
	9570										

AM%	**40.1%**	**AM Peak**	**760**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.92**
PM%	**59.9%**	**PM Peak**	**897**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.87**



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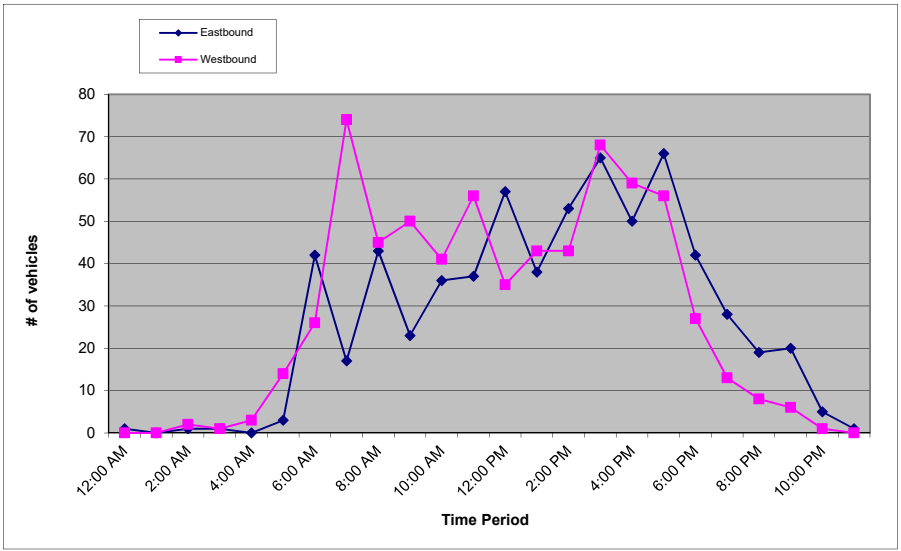
24 Hour Count Report

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

LOCATION Linne Rd - Poppy Ln to Hanson Rd
LATITUDE 35.6119509
COUNTY San Luis Obispo
LONGITUDE -120.6387723
COLLECTION DATE Wednesday, January 23, 2019
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	1	0	**1**	0	0	0	0	**0**	**1**
1:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
2:00 AM	0	0	1	0	**1**	1	1	0	0	**2**	**3**
3:00 AM	0	0	0	1	**1**	0	1	0	0	**1**	**2**
4:00 AM	0	0	0	0	**0**	1	1	0	1	**3**	**3**
5:00 AM	0	1	0	2	**3**	1	5	4	4	**14**	**17**
6:00 AM	2	5	19	16	**42**	4	4	7	11	**26**	**68**
7:00 AM	5	2	0	10	**17**	8	19	29	18	**74**	**91**
8:00 AM	16	12	9	6	**43**	8	11	8	18	**45**	**88**
9:00 AM	3	4	5	11	**23**	13	13	12	12	**50**	**73**
10:00 AM	9	11	5	11	**36**	10	9	14	8	**41**	**77**
11:00 AM	7	5	12	13	**37**	15	24	4	13	**56**	**93**
12:00 PM	11	11	10	25	**57**	12	7	4	12	**35**	**92**
1:00 PM	13	4	11	10	**38**	13	7	11	12	**43**	**81**
2:00 PM	14	12	12	15	**53**	11	13	8	11	**43**	**96**
3:00 PM	14	13	14	24	**65**	22	21	14	11	**68**	**133**
4:00 PM	16	11	15	8	**50**	20	16	13	10	**59**	**109**
5:00 PM	23	16	17	10	**66**	20	13	15	8	**56**	**122**
6:00 PM	9	17	7	9	**42**	8	6	8	5	**27**	**69**
7:00 PM	9	6	2	11	**28**	3	2	5	3	**13**	**41**
8:00 PM	3	12	2	2	**19**	3	1	2	2	**8**	**27**
9:00 PM	5	10	3	2	**20**	2	2	1	1	**6**	**26**
10:00 PM	2	2	1	0	**5**	0	1	0	0	**1**	**6**
11:00 PM	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Total	**49.1%**				**648**	**50.9%**				**671**	
	1319										

AM%	**39.1%**	**AM Peak**	**93**	**11:00 am to 12:00 pm**	**AM P.H.F.**	**0.80**
PM%	**60.9%**	**PM Peak**	**133**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.92**



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310 N. Irwin Street - Suite 20
Hanford, CA 93230

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

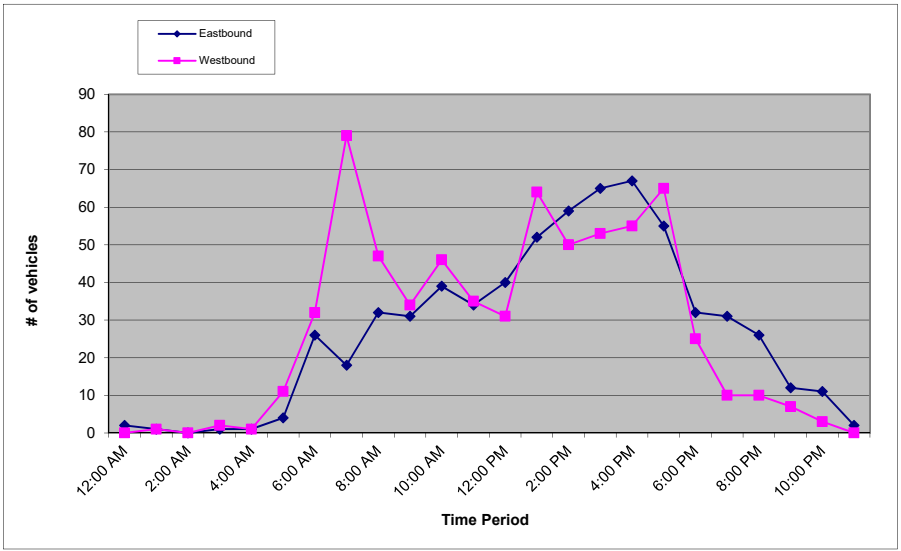
24 Hour Count Report

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

LOCATION	Linne Rd - Poppy Ln to Hanson Rd	**LATITUDE**	35.6119509
COUNTY	San Luis Obispo	**LONGITUDE**	-120.6387723
COLLECTION DATE	Thursday, January 24, 2019	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	1	0	1	0	**2**	0	0	0	0	**0**	**2**
1:00 AM	0	0	0	1	**1**	0	0	0	1	**1**	**2**
2:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
3:00 AM	0	0	1	0	**1**	1	0	1	0	**2**	**3**
4:00 AM	0	0	0	1	**1**	1	0	0	0	**1**	**2**
5:00 AM	1	0	1	2	**4**	3	1	6	1	**11**	**15**
6:00 AM	0	6	8	12	**26**	9	6	8	9	**32**	**58**
7:00 AM	0	3	7	8	**18**	10	26	28	15	**79**	**97**
8:00 AM	10	6	7	9	**32**	10	9	9	19	**47**	**79**
9:00 AM	4	9	11	7	**31**	9	8	8	9	**34**	**65**
10:00 AM	9	8	15	7	**39**	12	7	9	18	**46**	**85**
11:00 AM	10	15	6	3	**34**	10	10	10	5	**35**	**69**
12:00 PM	10	10	10	10	**40**	6	10	6	9	**31**	**71**
1:00 PM	14	13	13	12	**52**	10	28	11	15	**64**	**116**
2:00 PM	11	15	19	14	**59**	11	9	16	14	**50**	**109**
3:00 PM	18	16	16	15	**65**	17	14	12	10	**53**	**118**
4:00 PM	21	19	13	14	**67**	15	10	13	17	**55**	**122**
5:00 PM	14	13	16	12	**55**	16	25	18	6	**65**	**120**
6:00 PM	11	11	5	5	**32**	7	9	7	2	**25**	**57**
7:00 PM	8	6	8	9	**31**	2	3	3	2	**10**	**41**
8:00 PM	10	5	9	2	**26**	1	3	4	2	**10**	**36**
9:00 PM	6	3	2	1	**12**	1	2	1	3	**7**	**19**
10:00 PM	7	1	2	1	**11**	0	1	0	2	**3**	**14**
11:00 PM	1	1	0	0	**2**	0	0	0	0	**0**	**2**
Total	**49.2%**				**641**	**50.8%**				**661**	
	1302										

AM%	**36.6%**	**AM Peak**	**107**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.76**
PM%	**63.4%**	**PM Peak**	**133**	**4:45 pm to 5:45 pm**	**PM P.H.F.**	**0.88**



Appendix B: Intersection LOS & Queue Calculation Sheets

Existing

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	265	1168	1125	101	128	238
v/c Ratio	0.66	0.36	0.80	0.15	0.54	0.35
Control Delay	43.8	0.3	29.0	4.2	50.5	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	0.3	29.0	4.2	50.5	14.9
Queue Length 50th (ft)	145	0	306	0	74	63
Queue Length 95th (ft)	248	0	378	21	137	121
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	520	3223	2885	1301	520	1015
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	0.36	0.39	0.08	0.25	0.23

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	923	889	80	101	188
Future Volume (vph)	209	923	889	80	101	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	265	1168	1125	101	128	238
RTOR Reduction (vph)	0	0	0	56	0	39
Lane Group Flow (vph)	265	1168	1125	45	128	199
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.5	96.4	42.5	42.5	14.4	42.9
Effective Green, g (s)	24.5	96.4	42.5	42.5	14.4	42.9
Actuated g/C Ratio	0.25	1.00	0.44	0.44	0.15	0.45
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	409	3223	1420	635	240	641
v/s Ratio Prot	c0.16	0.36	c0.35		c0.08	0.14
v/s Ratio Perm				0.03		
v/c Ratio	0.65	0.36	0.79	0.07	0.53	0.31
Uniform Delay, d1	32.1	0.0	23.2	15.5	37.9	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.3	3.3	0.1	2.6	0.3
Delay (s)	35.6	0.3	26.5	15.6	40.5	17.5
Level of Service	D	A	C	B	D	B
Approach Delay (s)		6.8	25.6		25.5	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	55.7%	ICU Level of Service	B	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	234	771	300	39	841	180	270	281	98	169	163
v/c Ratio	0.54	0.59	0.39	0.11	0.78	0.30	0.57	0.39	0.34	0.60	0.43
Control Delay	48.2	29.7	5.0	43.1	36.6	5.4	47.4	35.7	51.0	50.8	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	29.7	5.0	43.1	36.6	5.4	47.4	35.7	51.0	50.8	10.5
Queue Length 50th (ft)	72	226	0	11	248	0	82	78	30	100	0
Queue Length 95th (ft)	127	326	43	29	354	37	142	131	63	186	46
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	591	2373	1142	600	2373	1110	658	1376	658	731	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.32	0.26	0.07	0.35	0.16	0.41	0.20	0.15	0.23	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	640	249	32	698	149	224	217	17	81	140	135
Future Volume (vph)	194	640	249	32	698	149	224	217	17	81	140	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3215		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3215		3155	1712	1455
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)	234	771	300	39	841	180	270	261	20	98	169	163
RTOR Reduction (vph)	0	0	182	0	0	117	0	3	0	0	0	136
Lane Group Flow (vph)	234	771	118	39	841	63	270	278	0	98	169	27
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.7	39.8	39.8	9.2	35.3	35.3	14.9	22.3		9.1	16.5	16.5
Effective Green, g (s)	13.7	39.8	39.8	9.2	35.3	35.3	14.9	22.3		9.1	16.5	16.5
Actuated g/C Ratio	0.14	0.39	0.39	0.09	0.35	0.35	0.15	0.22		0.09	0.16	0.16
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	427	1281	573	287	1136	508	465	709		284	279	237
v/s Ratio Prot	0.07	c0.24		0.01	c0.26		c0.09	0.09		0.03	c0.10	
v/s Ratio Perm			0.08			0.04						0.02
v/c Ratio	0.55	0.60	0.21	0.14	0.74	0.12	0.58	0.39		0.35	0.61	0.11
Uniform Delay, d1	40.8	24.3	20.2	42.2	28.8	22.3	40.1	33.6		43.2	39.2	36.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.8	0.2	0.1	2.6	0.1	1.8	0.4		0.7	3.7	0.2
Delay (s)	42.2	25.1	20.4	42.3	31.5	22.4	42.0	33.9		43.9	42.9	36.2
Level of Service	D	C	C	D	C	C	D	C		D	D	D
Approach Delay (s)		27.1			30.3			37.9			40.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	55.8%	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)	194	640	249	32	698	149	224	217	17	81	140	135
Future Volume (veh/h)	194	640	249	32	698	149	224	217	17	81	140	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	234	771	300	39	841	180	270	261	20	98	169	163
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	334	1069	477	252	1133	505	377	678	52	167	266	225
Arrive On Green	0.10	0.32	0.32	0.08	0.34	0.34	0.12	0.22	0.22	0.05	0.15	0.15
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3105	236	3209	1737	1472
Grp Volume(v), veh/h	234	771	300	39	841	180	270	138	143	98	169	163
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1691	1605	1737	1472
Q Serve(g_s), s	5.1	15.1	7.6	0.8	16.4	6.7	5.9	5.2	5.3	2.2	6.7	7.7
Cycle Q Clear(g_c), s	5.1	15.1	7.6	0.8	16.4	6.7	5.9	5.2	5.3	2.2	6.7	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	334	1069	477	252	1133	505	377	360	369	167	266	225
V/C Ratio(X)	0.70	0.72	0.63	0.15	0.74	0.36	0.72	0.38	0.39	0.59	0.64	0.72
Avail Cap(c_a), veh/h	791	3163	1411	791	3163	1411	879	926	949	879	975	826
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	31.6	21.8	7.5	31.4	21.1	17.9	31.0	24.3	24.4	33.9	29.0	29.5
Incr Delay (d2), s/veh	2.7	0.9	1.4	0.1	1.0	0.4	2.5	0.7	0.7	3.3	2.5	4.4
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	1.9	5.0	3.7	0.3	5.4	2.1	2.3	1.9	2.0	0.9	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	22.7	8.9	31.5	22.1	18.4	33.6	25.0	25.0	37.1	31.6	33.9
LnGrp LOS	C	C	A	C	C	B	C	C	C	D	C	C
Approach Vol, veh/h		1305			1060			551			430	
Approach Delay, s/veh		21.6			21.8			29.2			33.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	30.9	12.6	16.5	11.6	32.4	7.8	21.3
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.8	17.1	7.9	9.7	7.1	18.4	4.2	7.3
Green Ext Time (p_c), s	0.0	6.6	0.7	1.5	0.5	6.7	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	705	27	251	891	0	5	0	222	0	0	0
Future Volume (Veh/h)	1	705	27	251	891	0	5	0	222	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	1	860	33	306	1087	0	6	0	271	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1087			893			2034	2578	446	2131	2594	544
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1087			893			2034	2578	446	2131	2594	544
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			56			69	100	49	100	100	100
cM capacity (veh/h)	587			701			20	12	535	8	12	461

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	573	320	306	725	362	277	0
Volume Left	1	0	0	306	0	0	6	0
Volume Right	0	0	33	0	0	0	271	0
cSH	587	1700	1700	701	1700	1700	547	1700
Volume to Capacity	0.00	0.34	0.19	0.44	0.43	0.21	0.51	0.00
Queue Length 95th (ft)	0	0	0	56	0	0	71	0
Control Delay (s)	11.1	0.0	0.0	14.1	0.0	0.0	23.5	0.0
Lane LOS	B			B			C	A
Approach Delay (s)	0.0			3.1			23.5	0.0
Approach LOS							C	A

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

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	1	705	27	251	891	0	5	0	222	0	0	0
Future Vol, veh/h	1	705	27	251	891	0	5	0	222	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	340	-	-	195	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	860	33	306	1087	0	6	0	271	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1087	0	0	893	0	0	2035	2578	447	2131	2594	544
Stage 1	-	-	-	-	-	-	879	879	-	1699	1699	-
Stage 2	-	-	-	-	-	-	1156	1699	-	432	895	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	587	-	-	701	-	-	30	22	535	25	22	461
Stage 1	-	-	-	-	-	-	291	343	-	87	133	-
Stage 2	-	-	-	-	-	-	195	133	-	549	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	701	-	-	20	12	535	8	12	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	20	12	-	8	12	-
Stage 1	-	-	-	-	-	-	290	342	-	87	75	-
Stage 2	-	-	-	-	-	-	110	75	-	271	336	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.1	23.5	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	20	535	587	-	-	701	-	-	-	-
HCM Lane V/C Ratio	0.305	0.506	0.002	-	-	0.437	-	-	-	-
HCM Control Delay (s)	250.3	18.4	11.1	-	-	14.1	-	-	0	0
HCM Lane LOS	F	C	B	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	2.8	0	-	-	2.2	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	329	591	939	17	5	170
Future Volume (Veh/h)	329	591	939	17	5	170
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	392	704	1118	20	6	202
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1138				2254	559
vC1, stage 1 conf vol					1118	
vC2, stage 2 conf vol					1136	
vCu, unblocked vol	1138				2254	559
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	31				92	55
cM capacity (veh/h)	566				72	453

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	392	352	352	559	559	20	208
Volume Left	392	0	0	0	0	0	6
Volume Right	0	0	0	0	0	20	202
cSH	566	1700	1700	1700	1700	1700	466
Volume to Capacity	0.69	0.21	0.21	0.33	0.33	0.01	0.45
Queue Length 95th (ft)	135	0	0	0	0	0	57
Control Delay (s)	24.5	0.0	0.0	0.0	0.0	0.0	20.4
Lane LOS	C						C
Approach Delay (s)	8.8			0.0			20.4
Approach LOS							C

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	329	591	939	17	5	170
Future Vol, veh/h	329	591	939	17	5	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	392	704	1118	20	6	202

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1138	0	-	0	2254	559
Stage 1	-	-	-	-	1118	-
Stage 2	-	-	-	-	1136	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	566	-	-	-	31	453
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	252	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	566	-	-	-	10	453
Mov Cap-2 Maneuver	-	-	-	-	71	-
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	252	-

Approach	EB	WB	SB
HCM Control Delay, s	8.7	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	566	-	-	-	71	453
HCM Lane V/C Ratio	0.692	-	-	-	0.084	0.447
HCM Control Delay (s)	24.4	-	-	-	60.3	19.2
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	5.4	-	-	-	0.3	2.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	545	18	2	1008	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	545	18	2	1008	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	626	21	2	1159	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1159			647			1210	1789	313	1476	1810	580
vC1, stage 1 conf vol							626	626		1163	1163	
vC2, stage 2 conf vol							584	1163		314	647	
vCu, unblocked vol	1159			647			1210	1789	313	1476	1810	580
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	540			864			317	218	651	181	216	431

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	313	313	21	2	773	386	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	864	1700	1700	353	1700
Volume to Capacity	0.00	0.18	0.18	0.01	0.00	0.45	0.23	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	2	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.2	0.0	0.0	16.1	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			16.1	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	37.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	545	18	2	1008	0	8	0	1	0	0	0
Future Vol, veh/h	0	545	18	2	1008	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	626	21	2	1159	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1159	0	0	647	0	0	1210	1789	313	1476	1810	580
Stage 1	-	-	-	-	-	-	626	626	-	1163	1163	-
Stage 2	-	-	-	-	-	-	584	1163	-	313	647	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	540	-	-	864	-	-	126	71	651	79	69	431
Stage 1	-	-	-	-	-	-	413	449	-	190	246	-
Stage 2	-	-	-	-	-	-	438	246	-	643	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	540	-	-	864	-	-	126	71	651	79	69	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	212	-	177	211	-
Stage 1	-	-	-	-	-	-	413	449	-	190	246	-
Stage 2	-	-	-	-	-	-	437	246	-	642	439	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.3	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	308	651	540	-	-	864	-	-	-
HCM Lane V/C Ratio	0.03	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	17	10.5	0	-	-	9.2	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	51.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	113	92	246	96	66	40	288	182	39	260	50
Future Vol, veh/h	87	113	92	246	96	66	40	288	182	39	260	50
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	107	140	114	304	119	81	49	356	225	48	321	62
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	37	55	68.5	33.8
HCM LOS	E	F	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	0%	100%	0%	0%	55%	0%	59%	77%	72%
Vol Right, %	0%	0%	100%	0%	45%	0%	41%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	288	182	87	205	246	162	169	180
LT Vol	40	0	0	87	0	246	0	39	0
Through Vol	0	288	0	0	113	0	96	130	130
RT Vol	0	0	182	0	92	0	66	0	50
Lane Flow Rate	49	356	225	107	253	304	200	209	222
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.155	1.064	0.627	0.35	0.772	0.944	0.582	0.646	0.675
Departure Headway (Hd)	11.297	10.773	10.039	12.15	11.296	11.613	10.792	11.578	11.25
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	319	338	362	298	321	316	336	315	322
Service Time	9.025	8.501	7.767	9.85	8.996	9.313	8.492	9.278	8.95
HCM Lane V/C Ratio	0.154	1.053	0.622	0.359	0.788	0.962	0.595	0.663	0.689
HCM Control Delay	16.1	101.2	28.3	21.3	43.7	73.1	27.5	33.2	34.4
HCM Lane LOS	C	F	D	C	E	F	D	D	D
HCM 95th-tile Q	0.5	12.9	4.1	1.5	6.1	9.4	3.5	4.2	4.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Future Volume (Veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	1	19	7	4	96	0	19	1	3	0	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	96			26			132	128	22	132	132	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96			26			132	128	22	132	132	96
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1461			1550			822	749	1037	821	745	944

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	100	23	3
Volume Left	1	4	19	0
Volume Right	7	0	3	3
cSH	1461	1550	841	944
Volume to Capacity	0.00	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.4	8.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.4	8.8
Approach LOS			A	A

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	18.7%	ICU Level of Service	A	
Analysis Period (min)	15			

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	1	13	5	3	67	0	13	1	2	0	0	2
Future Vol, veh/h	1	13	5	3	67	0	13	1	2	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	19	7	4	96	0	19	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	96	0	0	26	0	0	131	129	23	131	132	96
Stage 1	-	-	-	-	-	-	25	25	-	104	104	-
Stage 2	-	-	-	-	-	-	106	104	-	27	28	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1461	-	-	1550	-	-	828	751	1037	828	748	944
Stage 1	-	-	-	-	-	-	978	863	-	887	798	-
Stage 2	-	-	-	-	-	-	885	798	-	975	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1550	-	-	823	748	1037	822	745	944
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	748	-	822	745	-
Stage 1	-	-	-	-	-	-	977	862	-	886	796	-
Stage 2	-	-	-	-	-	-	880	796	-	970	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.4	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1461	-	-	1550	-	-	944
HCM Lane V/C Ratio	0.027	0.001	-	-	0.003	-	-	0.003
HCM Control Delay (s)	9.4	7.5	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	329	373	393	644	7	22	151	292	297	35
v/c Ratio	0.01	0.57	0.76	0.44	0.59	0.05	0.14	0.56	0.71	0.71	0.07
Control Delay	49.0	38.6	41.8	18.2	4.0	44.2	45.1	16.3	42.1	41.9	0.3
Queue Delay	0.0	0.0	0.2	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	38.6	42.0	18.6	4.3	44.2	45.1	16.3	42.1	41.9	0.3
Queue Length 50th (ft)	1	85	182	127	0	4	11	0	149	152	0
Queue Length 95th (ft)	6	146	332	268	44	18	38	51	286	289	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	106	963	689	1131	1210	382	402	454	574	585	612
Starvation Cap Reductn	0	0	33	329	163	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.34	0.57	0.49	0.62	0.02	0.05	0.33	0.51	0.51	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	252	28	317	334	547	6	19	128	414	87	30
Future Volume (vph)	1	252	28	317	334	547	6	19	128	414	87	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3440		1752	1845	1568	1752	1845	1544	1665	1697	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3440		1752	1845	1568	1752	1845	1544	1665	1697	1521
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1	296	33	373	393	644	7	22	151	487	102	35
RTOR Reduction (vph)	0	7	0	0	0	343	0	0	138	0	0	27
Lane Group Flow (vph)	1	322	0	373	393	301	7	22	13	292	297	8
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	18.6		24.3	42.1	42.1	7.6	7.6	7.6	21.6	21.6	21.6
Effective Green, g (s)	0.8	18.6		24.3	42.1	42.1	7.6	7.6	7.6	21.6	21.6	21.6
Actuated g/C Ratio	0.01	0.21		0.27	0.47	0.47	0.08	0.08	0.08	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	15	710		472	862	732	147	155	130	399	406	364
v/s Ratio Prot	0.00	0.09		c0.21	c0.21		0.00	c0.01		c0.18	0.18	
v/s Ratio Perm						0.19			0.01			0.01
v/c Ratio	0.07	0.45		0.79	0.46	0.41	0.05	0.14	0.10	0.73	0.73	0.02
Uniform Delay, d1	44.3	31.3		30.5	16.2	15.8	37.9	38.2	38.1	31.6	31.6	26.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.5		8.8	0.4	0.4	0.1	0.4	0.3	6.8	6.7	0.0
Delay (s)	46.2	31.8		39.3	16.6	16.2	38.1	38.7	38.4	38.4	38.2	26.2
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		31.8			22.4			38.4			37.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	59.6%	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)	1	252	28	317	334	547	6	19	128	414	87	30
Future Volume (veh/h)	1	252	28	317	334	547	6	19	128	414	87	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	296	33	373	393	644	7	22	151	560	0	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	706	78	423	852	722	212	223	188	712	0	313
Arrive On Green	0.00	0.22	0.22	0.24	0.46	0.46	0.12	0.12	0.12	0.20	0.00	0.20
Sat Flow, veh/h	1767	3194	353	1767	1856	1572	1767	1856	1569	3534	0	1553
Grp Volume(v), veh/h	1	162	167	373	393	644	7	22	151	560	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1784	1767	1856	1572	1767	1856	1569	1767	0	1553
Q Serve(g_s), s	0.0	6.5	6.6	16.8	12.0	31.0	0.3	0.9	7.7	12.4	0.0	1.5
Cycle Q Clear(g_c), s	0.0	6.5	6.6	16.8	12.0	31.0	0.3	0.9	7.7	12.4	0.0	1.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	389	394	423	852	722	212	223	188	712	0	313
V/C Ratio(X)	0.41	0.42	0.42	0.88	0.46	0.89	0.03	0.10	0.80	0.79	0.00	0.11
Avail Cap(c_a), veh/h	107	491	497	695	1134	961	385	404	342	1219	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	27.6	27.7	30.3	15.3	20.5	32.1	32.4	35.4	31.3	0.0	26.9
Incr Delay (d2), s/veh	85.0	0.7	0.7	7.5	0.4	8.5	0.1	0.2	7.7	2.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.8	2.9	7.8	4.8	12.1	0.1	0.4	3.3	5.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	126.2	28.3	28.4	37.8	15.7	28.9	32.2	32.6	43.1	33.3	0.0	27.1
LnGrp LOS	F	C	C	D	B	C	C	C	D	C	A	C
Approach Vol, veh/h		330			1410			180			595	
Approach Delay, s/veh		28.7			27.6			41.4			32.9	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.3	22.8		21.2	4.6	42.4		14.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	18.8	8.6		14.4	2.0	33.0		9.7				
Green Ext Time (p_c), s	1.0	1.7		1.9	0.0	4.9		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			30.0									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	903	56	1216	395	251	14	273	6	9
v/c Ratio	0.40	0.51	0.32	0.70	0.44	0.70	0.03	0.46	0.02	0.02
Control Delay	48.1	16.1	47.4	20.2	6.7	42.7	27.1	7.1	27.0	0.0
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	16.4	47.4	20.2	6.7	42.7	27.1	7.1	27.0	0.0
Queue Length 50th (ft)	43	173	32	274	36	135	6	4	3	0
Queue Length 95th (ft)	85	227	67	342	78	200	19	42	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	250	2243	226	2237	1075	578	769	807	575	772
Starvation Cap Reductn	0	611	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	0.30	0.55	0.25	0.54	0.37	0.43	0.02	0.34	0.01	0.01

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	676	46	45	973	316	201	11	218	5	0	7
Future Volume (vph)	61	676	46	45	973	316	201	11	218	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3464		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3464		1752	3505	1530	1387	1845	1568	1380	1568	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	76	845	58	56	1216	395	251	14	272	6	0	9
RTOR Reduction (vph)	0	4	0	0	0	138	0	0	195	0	7	0
Lane Group Flow (vph)	76	899	0	56	1216	257	251	14	78	6	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.8	42.1		6.1	41.4	41.4	21.4	21.4	21.4	21.4	21.4	
Effective Green, g (s)	6.8	42.1		6.1	41.4	41.4	21.4	21.4	21.4	21.4	21.4	
Actuated g/C Ratio	0.08	0.51		0.07	0.50	0.50	0.26	0.26	0.26	0.26	0.26	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	143	1754		128	1746	762	357	475	403	355	403	
v/s Ratio Prot	c0.04	0.26		0.03	c0.35			0.01			0.00	
v/s Ratio Perm						0.17	c0.18		0.05	0.00		
v/c Ratio	0.53	0.51		0.44	0.70	0.34	0.70	0.03	0.19	0.02	0.01	
Uniform Delay, d1	36.6	13.7		36.9	16.0	12.6	28.0	23.1	24.1	23.0	22.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.3		2.4	1.2	0.3	6.2	0.0	0.2	0.0	0.0	
Delay (s)	40.4	13.9		39.2	17.2	12.8	34.1	23.1	24.3	23.0	22.9	
Level of Service	D	B		D	B	B	C	C	C	C	C	
Approach Delay (s)		16.0			16.9			28.9			23.0	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	60.1%	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)	61	676	46	45	973	316	201	11	218	5	0	7
Future Volume (veh/h)	61	676	46	45	973	316	201	11	218	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	845	58	56	1216	0	251	14	272	6	0	9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	105	1660	114	89	1718		437	433	367	364	0	367
Arrive On Green	0.06	0.50	0.50	0.05	0.49	0.00	0.23	0.23	0.23	0.23	0.00	0.23
Sat Flow, veh/h	1767	3346	230	1767	3526	1572	1395	1856	1572	1085	0	1572
Grp Volume(v), veh/h	76	445	458	56	1216	0	251	14	272	6	0	9
Grp Sat Flow(s),veh/h/ln	1767	1763	1813	1767	1763	1572	1395	1856	1572	1085	0	1572
Q Serve(g_s), s	2.6	10.4	10.4	1.9	16.5	0.0	10.4	0.4	9.8	0.3	0.0	0.3
Cycle Q Clear(g_c), s	2.6	10.4	10.4	1.9	16.5	0.0	10.6	0.4	9.8	0.6	0.0	0.3
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	875	900	89	1718		437	433	367	364	0	367
V/C Ratio(X)	0.73	0.51	0.51	0.63	0.71		0.57	0.03	0.74	0.02	0.00	0.02
Avail Cap(c_a), veh/h	303	1476	1517	274	2894		810	930	788	655	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	10.4	10.4	28.5	12.3	0.0	22.2	18.1	21.8	18.4	0.0	18.1
Incr Delay (d2), s/veh	9.2	0.5	0.4	7.2	0.5	0.0	1.2	0.0	3.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.5	3.6	0.9	5.6	0.0	3.2	0.1	3.6	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	10.9	10.8	35.8	12.8	0.0	23.4	18.2	24.7	18.4	0.0	18.1
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		979			1272	A		537			15	
Approach Delay, s/veh		12.9			13.9			24.0			18.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	34.9		18.8	8.1	34.4		18.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	3.9	12.4		2.6	4.6	18.5		12.6				
Green Ext Time (p_c), s	0.0	7.0		0.0	0.1	11.3		1.7				

Intersection Summary				
HCM 6th Ctrl Delay	15.5			
HCM 6th LOS	B			

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	224	897	70	952	406	211	56	148	637
v/c Ratio	0.59	0.66	0.46	0.80	0.71	0.26	0.13	0.62	0.89dr
Control Delay	53.4	27.2	59.5	36.5	49.8	35.1	2.4	56.7	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	27.2	59.5	36.5	49.8	35.1	2.4	56.7	36.3
Queue Length 50th (ft)	75	245	46	304	136	61	0	97	153
Queue Length 95th (ft)	113	290	89	348	182	93	2	155	198
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	433	1583	187	1534	711	989	510	330	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.57	0.37	0.62	0.57	0.21	0.11	0.45	0.66

Intersection Summary

dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	471	246	56	674	87	325	169	45	118	173	337
Future Volume (vph)	179	471	246	56	674	87	325	169	45	118	173	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3339		1770	3473		3433	3539	1583	1770	3188	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3339		1770	3473		3433	3539	1583	1770	3188	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	224	589	308	70	842	109	406	211	56	148	216	421
RTOR Reduction (vph)	0	55	0	0	8	0	0	0	43	0	159	0
Lane Group Flow (vph)	224	842	0	70	944	0	406	211	13	148	478	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.3	40.3		7.2	36.2		17.1	23.7	23.7	13.8	20.4	
Effective Green, g (s)	11.3	40.3		7.2	36.2		17.1	23.7	23.7	13.8	20.4	
Actuated g/C Ratio	0.11	0.39		0.07	0.35		0.17	0.23	0.23	0.13	0.20	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	376	1306		123	1220		569	814	364	237	631	
v/s Ratio Prot	c0.07	c0.25		0.04	c0.27		c0.12	c0.06		0.08	c0.15	
v/s Ratio Perm									0.01			
v/c Ratio	0.60	0.64		0.57	0.77		0.71	0.26	0.04	0.62	0.89dr	
Uniform Delay, d1	43.7	25.5		46.4	29.7		40.6	32.5	30.8	42.2	39.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	1.1		5.9	3.1		4.2	0.2	0.0	5.1	5.2	
Delay (s)	46.2	26.6		52.3	32.9		44.9	32.6	30.8	47.2	44.2	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		30.5			34.2			39.9			44.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	66.4%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	471	246	56	674	87	325	169	45	118	173	337
Future Volume (veh/h)	179	471	246	56	674	87	325	169	45	118	173	337
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	589	0	70	842	109	406	211	56	148	216	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1444		98	1150	149	550	557	248	191	373	
Arrive On Green	0.10	0.41	0.00	0.05	0.36	0.36	0.16	0.16	0.16	0.11	0.11	0.00
Sat Flow, veh/h	3456	3647	0	1781	3159	409	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	224	589	0	70	474	477	406	211	56	148	216	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1791	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	4.1	7.7	0.0	2.5	15.2	15.2	7.3	3.5	2.0	5.3	3.8	0.0
Cycle Q Clear(g_c), s	4.1	7.7	0.0	2.5	15.2	15.2	7.3	3.5	2.0	5.3	3.8	0.0
Prop In Lane	1.00		0.00	1.00		0.23	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	336	1444		98	647	652	550	557	248	191	373	
V/C Ratio(X)	0.67	0.41		0.72	0.73	0.73	0.74	0.38	0.23	0.77	0.58	
Avail Cap(c_a), veh/h	659	2466		285	1179	1188	1081	1491	665	503	1382	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	13.8	0.0	30.5	18.1	18.1	26.3	24.8	24.2	28.5	28.0	0.0
Incr Delay (d2), s/veh	2.3	0.2	0.0	9.3	1.6	1.6	2.0	0.4	0.5	6.5	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.8	0.0	1.3	5.8	5.8	2.9	1.4	0.7	2.4	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	14.0	0.0	39.8	19.7	19.7	28.2	25.2	24.6	35.0	29.4	0.0
LnGrp LOS	C	B		D	B	B	C	C	C	C	C	
Approach Vol, veh/h		813	A		1021			673			364	A
Approach Delay, s/veh		18.7			21.1			27.0			31.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	31.1	14.9	11.4	10.9	28.4	11.5	14.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.5	9.7	9.3	5.8	6.1	17.2	7.3	5.5
Green Ext Time (p_c), s	0.1	4.5	1.1	1.1	0.4	6.6	0.3	1.3

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

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	75	405	925	480	105
v/c Ratio	0.31	0.22	0.68	0.57	0.22
Control Delay	39.2	10.0	19.1	29.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	10.0	19.1	29.6	8.7
Queue Length 50th (ft)	26	31	114	79	0
Queue Length 95th (ft)	103	126	332	230	43
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	329	2930	2245	1431	720
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	0.23	0.14	0.41	0.34	0.15

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	65	352	447	358	418	91
Future Volume (vph)	65	352	447	358	418	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3250		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3250		3400	1568
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	75	405	514	411	480	105
RTOR Reduction (vph)	0	0	117	0	0	80
Lane Group Flow (vph)	75	405	808	0	480	25
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.9	37.1	25.7		16.7	16.7
Effective Green, g (s)	6.9	37.1	25.7		16.7	16.7
Actuated g/C Ratio	0.10	0.53	0.37		0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	171	1849	1188		807	372
v/s Ratio Prot	c0.04	0.12	c0.25			
v/s Ratio Perm					c0.14	0.02
v/c Ratio	0.44	0.22	0.68		0.59	0.07
Uniform Delay, d1	29.9	8.9	18.8		23.8	20.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8	0.1	1.6		1.2	0.1
Delay (s)	31.7	8.9	20.5		25.0	20.8
Level of Service	C	A	C		C	C
Approach Delay (s)		12.5	20.5		24.2	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	18.0
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 exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	173	121	29	301	228	223	519	172	644
v/c Ratio	0.48	0.31	0.22	0.17	0.46	0.48	0.63	0.60	0.55	0.68
Control Delay	37.5	22.6	5.7	37.9	29.6	8.3	37.9	27.7	37.2	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	22.6	5.7	37.9	29.6	8.3	37.9	27.7	37.2	18.1
Queue Length 50th (ft)	52	49	0	12	63	0	89	104	69	70
Queue Length 95th (ft)	124	131	36	43	115	57	#214	186	156	148
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	378	790	727	193	1120	644	462	1280	434	1313
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	0.34	0.22	0.17	0.15	0.27	0.35	0.48	0.41	0.40	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)	116	156	109	26	271	205	201	438	29	155	273	307
Future Volume (vph)	116	156	109	26	271	205	201	438	29	155	273	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1534	1752	3505	1535	1752	3469		1752	3184	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1534	1752	3505	1535	1752	3469		1752	3184	
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)	129	173	121	29	301	228	223	487	32	172	303	341
RTOR Reduction (vph)	0	0	85	0	0	180	0	5	0	0	235	0
Lane Group Flow (vph)	129	173	36	29	301	48	223	514	0	172	409	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.3	20.8	20.8	2.2	14.7	14.7	13.8	16.9		12.2	15.3	
Effective Green, g (s)	8.3	20.8	20.8	2.2	14.7	14.7	13.8	16.9		12.2	15.3	
Actuated g/C Ratio	0.12	0.30	0.30	0.03	0.21	0.21	0.20	0.24		0.17	0.22	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	207	547	455	54	735	321	344	836		304	694	
v/s Ratio Prot	c0.07	0.09		0.02	c0.09		c0.13	c0.15		0.10	0.13	
v/s Ratio Perm			0.02			0.03						
v/c Ratio	0.62	0.32	0.08	0.54	0.41	0.15	0.65	0.61		0.57	0.59	
Uniform Delay, d1	29.4	19.1	17.8	33.4	23.9	22.6	25.9	23.7		26.5	24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	0.3	0.1	9.9	0.4	0.2	4.2	1.3		2.4	1.3	
Delay (s)	35.1	19.5	17.8	43.3	24.3	22.8	30.1	25.0		28.9	25.9	
Level of Service	D	B	B	D	C	C	C	C		C	C	
Approach Delay (s)		23.8			24.7			26.6			26.5	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	18.0
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)	116	156	109	26	271	205	201	438	29	155	273	307
Future Volume (veh/h)	116	156	109	26	271	205	201	438	29	155	273	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	129	173	121	29	301	228	223	487	32	172	303	341
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	166	506	424	55	739	325	273	1014	66	217	477	420
Arrive On Green	0.09	0.27	0.27	0.03	0.21	0.21	0.15	0.30	0.30	0.12	0.27	0.27
Sat Flow, veh/h	1767	1856	1557	1767	3526	1552	1767	3358	220	1767	1763	1552
Grp Volume(v), veh/h	129	173	121	29	301	228	223	255	264	172	303	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1557	1767	1763	1552	1767	1763	1815	1767	1763	1552
Q Serve(g_s), s	4.7	5.0	4.1	1.1	4.9	9.0	8.1	7.8	7.9	6.3	10.1	13.6
Cycle Q Clear(g_c), s	4.7	5.0	4.1	1.1	4.9	9.0	8.1	7.8	7.9	6.3	10.1	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	166	506	424	55	739	325	273	532	548	217	477	420
V/C Ratio(X)	0.78	0.34	0.29	0.53	0.41	0.70	0.82	0.48	0.48	0.79	0.64	0.81
Avail Cap(c_a), veh/h	359	744	624	184	1062	468	439	611	629	413	584	514
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	29.4	19.4	19.0	31.7	22.7	24.3	27.1	18.9	18.9	28.3	21.3	22.6
Incr Delay (d2), s/veh	7.5	0.4	0.4	7.6	0.4	2.7	6.2	0.7	0.7	6.3	1.6	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.0	1.4	0.5	1.9	3.2	3.7	3.0	3.1	2.9	4.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	19.8	19.4	39.2	23.0	27.0	33.4	19.6	19.6	34.6	22.9	30.7
LnGrp LOS	D	B	B	D	C	C	C	B	B	C	C	C
Approach Vol, veh/h		423			558			742			816	
Approach Delay, s/veh		24.9			25.5			23.7			28.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	24.5	6.6	22.6	14.8	22.4	10.7	18.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	8.3	9.9	3.1	7.0	10.1	15.6	6.7	11.0
Green Ext Time (p_c), s	0.2	2.5	0.0	1.2	0.3	2.1	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	47	481	41	51	391
Future Volume (Veh/h)	35	47	481	41	51	391
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	42	56	573	49	61	465
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1184	598			622	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1184	598			622	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	89			94	
cM capacity (veh/h)	196	503			959	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	98	622	61	465
Volume Left	42	0	61	0
Volume Right	56	49	0	0
cSH	301	1700	959	1700
Volume to Capacity	0.33	0.37	0.06	0.27
Queue Length 95th (ft)	34	0	5	0
Control Delay (s)	22.7	0.0	9.0	0.0
Lane LOS	C		A	
Approach Delay (s)	22.7	0.0	1.0	
Approach LOS	C			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	47	481	41	51	391
Future Vol, veh/h	35	47	481	41	51	391
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	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	56	573	49	61	465

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1185	598	0	0	622	0
Stage 1	598	-	-	-	-	-
Stage 2	587	-	-	-	-	-
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	209	502	-	-	959	-
Stage 1	549	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	196	502	-	-	959	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	301	959	-
HCM Lane V/C Ratio	-	-	0.324	0.063	-
HCM Control Delay (s)	-	-	22.6	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	6	37	7	15	95	27	274	3	33	287	76
Future Volume (Veh/h)	92	6	37	7	15	95	27	274	3	33	287	76
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	110	7	44	8	18	113	32	326	4	39	342	90
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	939	822	348	862	910	331	438			332		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	939	822	348	862	910	331	438			332		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	40	98	94	97	93	84	97			97		
cM capacity (veh/h)	183	288	691	240	256	709	1115			1225		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	161	139	32	330	39	342	90
Volume Left	110	8	32	0	39	0	0
Volume Right	44	113	0	4	0	0	90
cSH	234	528	1115	1700	1225	1700	1700
Volume to Capacity	0.69	0.26	0.03	0.19	0.03	0.20	0.05
Queue Length 95th (ft)	111	26	2	0	2	0	0
Control Delay (s)	48.7	14.2	8.3	0.0	8.0	0.0	0.0
Lane LOS	E	B	A		A		
Approach Delay (s)	48.7	14.2	0.7		0.7		
Approach LOS	E	B					

Intersection Summary					
Average Delay	9.2				
Intersection Capacity Utilization	42.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	6	37	7	15	95	27	274	3	33	287	76
Future Vol, veh/h	92	6	37	7	15	95	27	274	3	33	287	76
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	7	44	8	18	113	32	326	4	39	342	90

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	885	822	348	885	910	331	438	0	0	332	0	0
Stage 1	426	426	-	394	394	-	-	-	-	-	-	-
Stage 2	459	396	-	491	516	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	309	695	266	275	711	1122	-	-	1227	-	-
Stage 1	606	586	-	631	605	-	-	-	-	-	-	-
Stage 2	582	604	-	559	534	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	201	288	691	233	256	709	1116	-	-	1225	-	-
Mov Cap-2 Maneuver	201	288	-	233	256	-	-	-	-	-	-	-
Stage 1	585	564	-	611	586	-	-	-	-	-	-	-
Stage 2	460	585	-	500	514	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.8	14.3	0.7	0.7
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1116	-	-	254	526	1225	-	-
HCM Lane V/C Ratio	0.029	-	-	0.633	0.265	0.032	-	-
HCM Control Delay (s)	8.3	-	-	40.8	14.3	8	-	-
HCM Lane LOS	A	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.9	1.1	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	5	134	5	119	4	165	72	156	161	10
Future Volume (vph)	20	9	5	134	5	119	4	165	72	156	161	10
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	11	6	158	6	140	5	194	85	184	189	12

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	41	304	199	85	279	107
Volume Left (vph)	24	158	5	0	184	0
Volume Right (vph)	6	140	0	85	0	12
Hadj (s)	0.06	-0.14	0.05	-0.67	0.36	-0.04
Departure Headway (s)	6.3	5.5	6.2	5.4	6.3	5.9
Degree Utilization, x	0.07	0.47	0.34	0.13	0.49	0.17
Capacity (veh/h)	490	609	553	618	546	580
Control Delay (s)	9.8	13.3	11.1	8.0	14.0	9.0
Approach Delay (s)	9.8	13.3	10.2		12.6	
Approach LOS	A	B	B		B	

Intersection Summary				
Delay	12.0			
Level of Service	B			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	5	134	5	119	0	4	165	72	156	161
Future Vol, veh/h	20	9	5	134	5	119	0	4	165	72	156	161
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	11	6	158	6	140	0	5	194	85	184	189
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.9	13.5	11.2	13.5
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	0%	59%	52%	66%	0%
Vol Thru, %	98%	0%	26%	2%	34%	89%
Vol Right, %	0%	100%	15%	46%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	72	34	258	237	91
LT Vol	4	0	20	134	156	0
Through Vol	165	0	9	5	81	81
RT Vol	0	72	5	119	0	10
Lane Flow Rate	199	85	40	304	278	106
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.34	0.128	0.071	0.471	0.487	0.174
Departure Headway (Hd)	6.149	5.425	6.376	5.582	6.304	5.891
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	585	659	559	643	570	608
Service Time	3.899	3.174	4.447	3.631	4.051	3.637
HCM Lane V/C Ratio	0.34	0.129	0.072	0.473	0.488	0.174
HCM Control Delay	12.1	9	9.9	13.5	14.9	9.9
HCM Lane LOS	B	A	A	B	B	A
HCM 95th-tile Q	1.5	0.4	0.2	2.5	2.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.85
Heavy Vehicles, %	2
Mvmt Flow	12
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	81	123	129	88	211
Future Volume (Veh/h)	111	81	123	129	88	211
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	129	94	143	150	102	245
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	463	102	347			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	463	102	347			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	90	88			
cM capacity (veh/h)	463	930	1201			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	223	143	75	75	102	245
Volume Left	129	143	0	0	0	0
Volume Right	94	0	0	0	0	245
cSH	800	1201	1700	1700	1700	1700
Volume to Capacity	0.28	0.12	0.04	0.04	0.06	0.14
Queue Length 95th (ft)	29	10	0	0	0	0
Control Delay (s)	13.0	8.4	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	13.0	4.1			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization		26.5%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	111	81	123	129	88	211
Future Vol, veh/h	111	81	123	129	88	211
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	94	143	150	102	245

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	102	347	0	-	0
Stage 1	102	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	540	950	1204	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	476	950	1204	-	-	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	4.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1204	-	476	950	-	-
HCM Lane V/C Ratio	0.119	-	0.271	0.099	-	-
HCM Control Delay (s)	8.4	-	15.4	9.2	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	24	1	83	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	24	1	83	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	30	0	26	1	91	10	0	0	0	0	356	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	414	364	364	390	372	0	372			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	414	364	364	390	372	0	372			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	96	100	84	99	100			100		
cM capacity (veh/h)	475	564	681	547	558	1085	1186			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	56	102	372
Volume Left	30	1	0
Volume Right	26	10	16
cSH	553	619	1700
Volume to Capacity	0.10	0.16	0.22
Queue Length 95th (ft)	8	15	0
Control Delay (s)	12.2	12.3	0.0
Lane LOS	B	B	
Approach Delay (s)	12.2	12.3	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		3.7			
Intersection Capacity Utilization		34.3%	ICU Level of Service	A	
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	24	1	83	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	24	1	83	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	26	1	91	10	0	0	0	0	356	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	415	364	364	377	372	0				-	-	0
Stage 1	364	364	-	0	0	-				-	-	-
Stage 2	51	0	-	377	372	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	548	564	681	580	558	-				0	-	-
Stage 1	655	624	-	-	-	-				0	-	-
Stage 2	-	-	-	644	619	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	564	681	557	558	-				-	-	-
Mov Cap-2 Maneuver	-	564	-	557	558	-				-	-	-
Stage 1	655	624	-	-	-	-				-	-	-
Stage 2	-	-	-	619	619	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	558	-	-	-
HCM Lane V/C Ratio	-	0.165	-	-	-
HCM Control Delay (s)	-	12.7	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	-

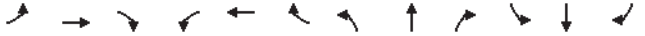
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	337	1045	225	477	77	308	514	319	280
v/c Ratio	0.10	0.69	0.73	0.29	0.44	0.51	0.63	0.31	0.63	0.35
Control Delay	54.6	46.0	34.1	25.9	2.6	71.9	58.1	4.6	56.9	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	46.0	34.1	25.9	2.6	71.9	58.1	4.6	56.9	42.0
Queue Length 50th (ft)	15	98	347	115	5	60	124	30	125	98
Queue Length 95th (ft)	43	157	473	196	34	122	186	48	187	147
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	314	667	1839	997	1161	187	714	1904	725	1065
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	0.07	0.51	0.57	0.23	0.41	0.41	0.43	0.27	0.44	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	168	115	878	189	401	65	259	432	268	197	38
Future Volume (vph)	18	168	115	878	189	401	65	259	432	268	197	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3323		3433	1863	1568	1770	3539	2787	3433	3441	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3323		3433	1863	1568	1770	3539	2787	3433	3441	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	200	137	1045	225	477	77	308	514	319	235	45
RTOR Reduction (vph)	0	83	0	0	0	203	0	0	92	0	11	0
Lane Group Flow (vph)	21	254	0	1045	225	274	77	308	422	319	269	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	14.8	14.8		49.8	49.8	67.5	8.3	18.2	68.0	17.7	27.6	
Effective Green, g (s)	14.8	14.8		49.8	49.8	67.5	8.3	18.2	68.0	17.7	27.6	
Actuated g/C Ratio	0.12	0.12		0.41	0.41	0.56	0.07	0.15	0.56	0.15	0.23	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	406		1412	766	874	121	532	1566	502	784	
v/s Ratio Prot	0.01	c0.08		c0.30	0.12	0.05	0.04	c0.09	0.11	c0.09	0.08	
v/s Ratio Perm						0.13			0.04			
v/c Ratio	0.10	0.62		0.74	0.29	0.31	0.64	0.58	0.27	0.64	0.34	
Uniform Delay, d1	47.2	50.5		30.1	23.8	14.3	54.9	47.8	13.7	48.6	39.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	3.0		2.1	0.2	0.2	10.5	1.5	0.1	2.6	0.3	
Delay (s)	47.4	53.4		32.2	24.0	14.5	65.4	49.4	13.8	51.2	39.4	
Level of Service	D	D		C	C	B	E	D	B	D	D	
Approach Delay (s)		53.1			26.4			30.4			45.7	
Approach LOS		D			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	65.3%	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)	18	168	115	878	189	401	65	259	432	268	197	38
Future Volume (veh/h)	18	168	115	878	189	401	65	259	432	268	197	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	200	137	1045	225	477	77	308	514	319	235	45
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	275	179	1315	711	785	100	555	1497	413	623	117
Arrive On Green	0.13	0.13	0.13	0.38	0.38	0.38	0.06	0.16	0.16	0.12	0.21	0.21
Sat Flow, veh/h	1781	2061	1344	3456	1870	1564	1781	3554	2790	3456	2983	562
Grp Volume(v), veh/h	21	171	166	1045	225	477	77	308	514	319	138	142
Grp Sat Flow(s),veh/h/ln	1781	1777	1628	1728	1870	1564	1781	1777	1395	1728	1777	1768
Q Serve(g_s), s	1.0	9.0	9.6	26.2	8.3	21.4	4.2	7.8	10.2	8.7	6.5	6.7
Cycle Q Clear(g_c), s	1.0	9.0	9.6	26.2	8.3	21.4	4.2	7.8	10.2	8.7	6.5	6.7
Prop In Lane	1.00		0.83	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	237	237	217	1315	711	785	100	555	1497	413	371	369
V/C Ratio(X)	0.09	0.72	0.76	0.79	0.32	0.61	0.77	0.55	0.34	0.77	0.37	0.38
Avail Cap(c_a), veh/h	373	372	341	2186	1183	1179	223	846	1726	862	644	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	40.5	40.7	26.8	21.3	17.5	45.4	38.0	12.8	41.6	33.1	33.1
Incr Delay (d2), s/veh	0.2	4.1	5.5	1.1	0.3	0.8	11.9	0.9	0.1	3.1	0.6	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	0.5	4.2	4.2	10.3	3.5	7.2	2.1	3.3	6.1	3.9	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	44.6	46.3	27.9	21.5	18.3	57.3	38.8	13.0	44.7	33.7	33.8
LnGrp LOS	D	D	D	C	C	B	E	D	B	D	C	C
Approach Vol, veh/h		358			1747			899			599	
Approach Delay, s/veh		45.0			24.5			25.6			39.6	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	21.0		17.6	11.2	26.1		42.4				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	10.7	12.2		11.6	6.2	8.7		28.2				
Green Ext Time (p_c), s	0.9	3.0		1.4	0.1	1.6		8.9				

Intersection Summary												
HCM 6th Ctrl Delay			29.3									
HCM 6th LOS			C									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	595	231	101	1132	571	342	291	426
v/c Ratio	0.52	0.49	0.33	0.55	0.85	0.78	0.59	0.79	0.70
Control Delay	59.3	29.6	5.2	57.9	36.0	48.1	44.1	56.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	29.6	5.2	57.9	36.0	48.1	44.1	56.4	40.0
Queue Length 50th (ft)	40	166	0	67	351	192	114	190	120
Queue Length 95th (ft)	73	242	50	126	475	264	158	#315	170
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	220	1312	732	236	1507	826	898	440	958
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.45	0.32	0.43	0.75	0.69	0.38	0.66	0.44

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)	100	518	201	88	764	221	497	260	37	253	237	134
Future Volume (vph)	100	518	201	88	764	221	497	260	37	253	237	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3402		3433	3464		1770	3347	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3402		3433	3464		1770	3347	
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)	115	595	231	101	878	254	571	299	43	291	272	154
RTOR Reduction (vph)	0	0	151	0	21	0	0	10	0	0	71	0
Lane Group Flow (vph)	115	595	80	101	1111	0	571	332	0	291	355	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.6	35.5	35.5	10.8	39.7		21.9	16.9		21.5	16.5	
Effective Green, g (s)	6.6	35.5	35.5	10.8	39.7		21.9	16.9		21.5	16.5	
Actuated g/C Ratio	0.06	0.35	0.35	0.11	0.39		0.21	0.16		0.21	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	1223	547	186	1315		732	570		370	537	
v/s Ratio Prot	0.03	0.17		c0.06	c0.33		c0.17	0.10		c0.16	0.11	
v/s Ratio Perm			0.05									
v/c Ratio	0.52	0.49	0.15	0.54	0.84		0.78	0.58		0.79	0.66	
Uniform Delay, d1	46.5	26.4	23.2	43.6	28.7		38.1	39.6		38.4	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.3	0.1	3.2	5.2		5.4	1.5		10.5	3.0	
Delay (s)	48.8	26.7	23.3	46.8	33.8		43.5	41.2		49.0	43.5	
Level of Service	D	C	C	D	C		D	D		D	D	
Approach Delay (s)		28.6			34.9			42.6			45.7	
Approach LOS		C			C			D			D	

Intersection Summary					
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	102.7	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	72.6%	ICU Level of Service		C	
Analysis Period (min)	15				
c Critical Lane Group					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	518	201	88	764	221	497	260	37	253	237	134
Future Volume (veh/h)	100	518	201	88	764	221	497	260	37	253	237	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	595	231	101	878	254	571	299	43	291	272	154
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	179	1296	578	129	1046	302	675	564	80	332	380	209
Arrive On Green	0.05	0.36	0.36	0.07	0.39	0.39	0.20	0.18	0.18	0.19	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2715	784	3456	3119	444	1781	2213	1216
Grp Volume(v), veh/h	115	595	231	101	574	558	571	169	173	291	217	209
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1722	1728	1777	1786	1781	1777	1652
Q Serve(g_s), s	3.0	11.8	5.4	5.1	27.0	27.1	14.7	7.9	8.1	14.6	10.6	11.1
Cycle Q Clear(g_c), s	3.0	11.8	5.4	5.1	27.0	27.1	14.7	7.9	8.1	14.6	10.6	11.1
Prop In Lane	1.00		1.00	1.00		0.46	1.00		0.25	1.00		0.74
Lane Grp Cap(c), veh/h	179	1296	578	129	685	664	675	321	323	332	305	284
V/C Ratio(X)	0.64	0.46	0.40	0.78	0.84	0.84	0.85	0.53	0.54	0.88	0.71	0.74
Avail Cap(c_a), veh/h	244	1439	642	261	854	828	904	501	504	487	523	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	22.3	6.3	42.0	25.7	25.7	35.7	34.2	34.2	36.4	36.0	36.2
Incr Delay (d2), s/veh	3.8	0.3	0.4	9.7	6.1	6.4	5.7	1.3	1.4	11.7	3.0	3.7
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	1.3	4.7	3.3	2.5	11.7	11.4	6.4	3.4	3.5	7.2	4.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	22.6	6.8	51.8	31.8	32.1	41.4	35.5	35.6	48.1	39.0	39.9
LnGrp LOS	D	C	A	D	C	C	D	D	D	D	D	D
Approach Vol, veh/h		941			1233			913			717	
Approach Delay, s/veh		21.6			33.6			39.2			43.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	38.1	22.5	20.3	9.3	40.0	21.7	21.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	7.1	13.8	16.7	13.1	5.0	29.1	16.6	10.1
Green Ext Time (p_c), s	0.1	4.7	1.3	2.0	0.0	6.4	0.6	1.6

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	156	146	5	258	203	4
v/c Ratio	0.22	0.22	0.01	0.19	0.39	0.01
Control Delay	9.9	3.3	9.2	9.0	12.4	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	3.3	9.2	9.0	12.4	7.0
Queue Length 50th (ft)	15	0	1	13	20	0
Queue Length 95th (ft)	72	28	7	53	95	5
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1606	1349	1052	3052	1456	1304
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	0.10	0.11	0.00	0.08	0.14	0.00

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	142	133	5	235	185	4
Future Volume (vph)	142	133	5	235	185	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1533	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.66	1.00	0.95	1.00
Satd. Flow (perm)	1845	1533	1211	3505	1752	1568
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	156	146	5	258	203	4
RTOR Reduction (vph)	0	87	0	0	0	3
Lane Group Flow (vph)	156	59	5	258	203	1
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	14.8	14.8	14.8	14.8	11.3	11.3
Effective Green, g (s)	14.8	14.8	14.8	14.8	11.3	11.3
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.31	0.31
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	740	614	485	1405	536	480
v/s Ratio Prot	c0.08			0.07		0.00
v/s Ratio Perm		0.04	0.00		c0.12	
v/c Ratio	0.21	0.10	0.01	0.18	0.38	0.00
Uniform Delay, d1	7.2	6.9	6.6	7.1	10.0	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.0	0.2	0.0
Delay (s)	7.3	6.9	6.6	7.2	10.2	8.9
Level of Service	A	A	A	A	B	A
Approach Delay (s)	7.1			7.2	10.2	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	10.8
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	142	133	5	235	185	4
Future Volume (veh/h)	142	133	5	235	185	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	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	156	146	5	258	203	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	623	525	575	1184	426	379
Arrive On Green	0.34	0.34	0.34	0.34	0.24	0.24
Sat Flow, veh/h	1856	1563	1065	3618	1767	1572
Grp Volume(v), veh/h	156	146	5	258	203	4
Grp Sat Flow(s),veh/h/ln	1856	1563	1065	1763	1767	1572
Q Serve(g_s), s	1.6	1.7	0.1	1.3	2.5	0.0
Cycle Q Clear(g_c), s	1.6	1.7	1.6	1.3	2.5	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	623	525	575	1184	426	379
V/C Ratio(X)	0.25	0.28	0.01	0.22	0.48	0.01
Avail Cap(c_a), veh/h	2515	2119	1661	4779	2049	1823
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	6.1	6.2	6.7	6.1	8.3	7.4
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0	0.2	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.2	6.3	6.7	6.1	8.6	7.4
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	302			263	207	
Approach Delay, s/veh	6.3			6.1	8.6	
Approach LOS	A			A	A	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	14.0				14.0	11.6
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	3.7				3.6	4.5
Green Ext Time (p_c), s	0.7				1.0	0.3

Intersection Summary		
HCM 6th Ctrl Delay		6.8
HCM 6th LOS		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	14	0	9	1	3	4	10	93	0	0	43	16
Future Volume (vph)	14	0	9	1	3	4	10	93	0	0	43	16
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
Hourly flow rate (vph)	17	0	11	1	4	5	12	112	0	0	52	19

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	28	10	124	71
Volume Left (vph)	17	1	12	0
Volume Right (vph)	11	5	0	19
Hadj (s)	0.02	-0.14	0.16	-0.02
Departure Headway (s)	4.4	4.2	4.2	4.1
Degree Utilization, x	0.03	0.01	0.15	0.08
Capacity (veh/h)	786	810	836	865
Control Delay (s)	7.5	7.3	7.9	7.4
Approach Delay (s)	7.5	7.3	7.9	7.4
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.7		
Level of Service			A		
Intersection Capacity Utilization			23.3%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	9	1	3	4	10	93	0	0	43	16
Future Vol, veh/h	14	0	9	1	3	4	10	93	0	0	43	16
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
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	17	0	11	1	4	5	12	112	0	0	52	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.3	7.9	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	61%	12%	0%
Vol Thru, %	90%	0%	38%	73%
Vol Right, %	0%	39%	50%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	23	8	59
LT Vol	10	14	1	0
Through Vol	93	0	3	43
RT Vol	0	9	4	16
Lane Flow Rate	124	28	10	71
Geometry Grp	1	1	1	1
Degree of Util (X)	0.144	0.033	0.011	0.08
Departure Headway (Hd)	4.175	4.266	4.223	4.033
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	858	825	853	883
Service Time	2.21	2.364	2.223	2.082
HCM Lane V/C Ratio	0.145	0.034	0.012	0.08
HCM Control Delay	7.9	7.5	7.3	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	8	0	0	4	2	0	0	0	0	0	79
Future Volume (Veh/h)	24	8	0	0	4	2	0	0	0	0	0	79
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	34	11	0	0	6	3	0	0	0	0	0	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			11			198	88	11	86	86	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			11			198	88	11	86	86	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	100	100	90
cM capacity (veh/h)	1598			1595			667	781	1064	880	783	1069

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	45	9	0	0	111
Volume Left	34	0	0	0	0
Volume Right	0	3	0	0	111
cSH	1598	1595	1700	1700	1069
Volume to Capacity	0.02	0.00	0.00	0.00	0.10
Queue Length 95th (ft)	2	0	0	0	9
Control Delay (s)	5.6	0.0	0.0	0.0	8.8
Lane LOS	A		A	A	A
Approach Delay (s)	5.6	0.0	0.0	8.8	
Approach LOS			A	A	

Intersection Summary					
Average Delay			7.4		
Intersection Capacity Utilization			20.0%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	8	0	0	4	2	0	0	0	0	0	79
Future Vol, veh/h	24	8	0	0	4	2	0	0	0	0	0	79
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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	34	11	0	0	6	3	0	0	0	0	0	111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	11	0	0	142	88	11	87	87	8
Stage 1	-	-	-	-	-	-	79	79	-	8	8	-
Stage 2	-	-	-	-	-	-	63	9	-	79	79	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1598	-	-	1595	-	-	823	798	1064	894	799	1068
Stage 1	-	-	-	-	-	-	925	825	-	1008	885	-
Stage 2	-	-	-	-	-	-	943	884	-	925	825	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1598	-	-	1595	-	-	725	781	1064	880	782	1068
Mov Cap-2 Maneuver	-	-	-	-	-	-	725	781	-	880	782	-
Stage 1	-	-	-	-	-	-	906	808	-	987	885	-
Stage 2	-	-	-	-	-	-	845	884	-	906	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	0	0	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	1598	-	-	1595	-	-	-	1068
HCM Lane V/C Ratio	-	0.021	-	-	-	-	-	-	0.104
HCM Control Delay (s)	0	7.3	0	-	0	-	-	0	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	-	0.3



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	18	60	5	1	6
Future Volume (Veh/h)	3	18	60	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	5	29	95	8	2	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	103				138	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	103				138	99
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1483				850	954

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	34	103	12
Volume Left	5	0	2
Volume Right	0	8	10
cSH	1483	1700	935
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	1.1	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	1.1	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	18	60	5	1	6
Future Vol, veh/h	3	18	60	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	29	95	8	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	103	0	-	0	138	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1483	-	-	-	853	954
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1483	-	-	-	850	954
Mov Cap-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	981	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1483	-	-	-	938
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	213	982	1077	82	75	196
v/c Ratio	0.57	0.30	0.70	0.11	0.31	0.33
Control Delay	35.8	0.2	20.2	4.0	38.7	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	0.2	20.2	4.0	38.7	12.1
Queue Length 50th (ft)	91	0	207	0	33	35
Queue Length 95th (ft)	197	0	362	25	90	97
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	716	3312	3228	1447	716	1246
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	0.30	0.30	0.33	0.06	0.10	0.16

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	972	1066	81	74	194
Future Volume (vph)	211	972	1066	81	74	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	213	982	1077	82	75	196
RTOR Reduction (vph)	0	0	0	44	0	48
Lane Group Flow (vph)	213	982	1077	38	75	148
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	17.1	75.5	35.2	35.2	8.2	29.3
Effective Green, g (s)	17.1	75.5	35.2	35.2	8.2	29.3
Actuated g/C Ratio	0.23	1.00	0.47	0.47	0.11	0.39
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	375	3312	1544	690	179	575
v/s Ratio Prot	c0.13	0.30	c0.33		0.05	0.10
v/s Ratio Perm				0.03		
v/c Ratio	0.57	0.30	0.70	0.06	0.42	0.26
Uniform Delay, d1	25.9	0.0	15.9	11.0	31.4	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.2	1.5	0.0	1.9	0.2
Delay (s)	27.9	0.2	17.4	11.1	33.3	15.9
Level of Service	C	A	B	B	C	B
Approach Delay (s)		5.2	17.0		20.7	
Approach LOS		A	B		C	

Intersection Summary				
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	60.7%	ICU Level of Service	B	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	179	811	220	49	740	115	213	231	179	258	294
v/c Ratio	0.45	0.67	0.33	0.16	0.73	0.22	0.49	0.30	0.45	0.67	0.54
Control Delay	46.3	31.3	5.1	46.5	35.3	6.6	45.6	30.8	46.3	45.5	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	31.3	5.1	46.5	35.3	6.6	45.6	30.8	46.3	45.5	9.6
Queue Length 50th (ft)	51	219	0	13	203	0	60	54	51	140	8
Queue Length 95th (ft)	108	371	54	39	345	42	125	111	108	281	89
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	647	2579	1189	647	2579	1164	718	1478	718	799	831
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.19	0.08	0.29	0.10	0.30	0.16	0.25	0.32	0.35

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	787	213	48	718	112	207	179	45	174	250	285
Future Volume (vph)	174	787	213	48	718	112	207	179	45	174	250	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1489	3273	3374	1489	3273	3264		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1489	3273	3374	1489	3273	3264		3273	1776	1509
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)	179	811	220	49	740	115	213	185	46	179	258	294
RTOR Reduction (vph)	0	0	141	0	0	79	0	13	0	0	0	217
Lane Group Flow (vph)	179	811	79	49	740	36	213	218	0	179	258	77
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	11.6	34.1	34.1	7.4	29.9	29.9	12.7	21.8		11.6	20.7	20.7
Effective Green, g (s)	11.6	34.1	34.1	7.4	29.9	29.9	12.7	21.8		11.6	20.7	20.7
Actuated g/C Ratio	0.12	0.36	0.36	0.08	0.31	0.31	0.13	0.23		0.12	0.22	0.22
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	397	1204	531	253	1056	466	435	745		397	384	327
v/s Ratio Prot	0.05	c0.24		0.01	c0.22		c0.07	0.07		0.05	c0.15	
v/s Ratio Perm			0.05			0.02						0.05
v/c Ratio	0.45	0.67	0.15	0.19	0.70	0.08	0.49	0.29		0.45	0.67	0.24
Uniform Delay, d1	39.0	26.0	20.8	41.3	28.9	23.1	38.4	30.5		39.0	34.3	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	1.5	0.1	0.1	2.1	0.1	0.9	0.2		0.8	4.6	0.4
Delay (s)	39.8	27.5	21.0	41.4	31.0	23.2	39.3	30.7		39.8	38.9	31.2
Level of Service	D	C	C	D	C	C	D	C		D	D	C
Approach Delay (s)		28.1			30.6			34.8			36.0	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	61.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	787	213	48	718	112	207	179	45	174	250	285
Future Volume (veh/h)	174	787	213	48	718	112	207	179	45	174	250	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	179	811	220	49	740	115	213	185	46	179	258	294
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	271	1099	490	112	1082	482	313	685	166	273	431	365
Arrive On Green	0.08	0.32	0.32	0.03	0.32	0.32	0.09	0.25	0.25	0.08	0.24	0.24
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2722	660	3319	1796	1522
Grp Volume(v), veh/h	179	811	220	49	740	115	213	114	117	179	258	294
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1676	1659	1796	1522
Q Serve(g_s), s	4.0	16.3	5.7	1.1	14.6	4.3	4.8	4.1	4.3	4.0	9.8	14.0
Cycle Q Clear(g_c), s	4.0	16.3	5.7	1.1	14.6	4.3	4.8	4.1	4.3	4.0	9.8	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	271	1099	490	112	1082	482	313	429	422	273	431	365
V/C Ratio(X)	0.66	0.74	0.45	0.44	0.68	0.24	0.68	0.27	0.28	0.66	0.60	0.81
Avail Cap(c_a), veh/h	776	3102	1382	776	3102	1382	862	909	892	862	956	810
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	34.3	23.2	8.6	36.5	22.9	19.4	33.8	23.1	23.2	34.3	26.0	27.6
Incr Delay (d2), s/veh	2.7	1.0	0.6	1.0	0.8	0.3	2.6	0.3	0.4	2.7	1.3	4.2
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	1.6	5.7	2.8	0.4	5.1	1.4	1.9	1.6	1.6	1.6	4.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	24.2	9.2	37.5	23.7	19.7	36.4	23.4	23.5	36.9	27.3	31.8
LnGrp LOS	D	C	A	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1210			904			444			731	
Approach Delay, s/veh		23.4			23.9			29.7			31.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	32.1	11.3	23.8	10.3	31.7	10.3	24.7
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.1	18.3	6.8	16.0	6.0	16.6	6.0	6.3
Green Ext Time (p_c), s	0.0	6.5	0.5	2.4	0.4	5.4	0.4	1.3

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	935	62	282	884	0	9	0	294	0	0	0
Future Volume (Veh/h)	0	935	62	282	884	0	9	0	294	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	964	64	291	911	0	9	0	303	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	912			1028			2034	2490	514	1976	2522	456
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912			1028			2034	2490	514	1976	2522	456
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			55			55	100	38	100	100	100
cM capacity (veh/h)	712			642			20	15	493	9	14	537

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	643	385	291	607	304	312	0
Volume Left	0	0	0	291	0	0	9	0
Volume Right	0	0	64	0	0	0	303	0
cSH	1700	1700	1700	642	1700	1700	401	1700
Volume to Capacity	0.00	0.38	0.23	0.45	0.36	0.18	0.78	0.00
Queue Length 95th (ft)	0	0	0	59	0	0	165	0
Control Delay (s)	0.0	0.0	0.0	15.2	0.0	0.0	39.2	0.0
Lane LOS				C			E	A
Approach Delay (s)	0.0			3.7			39.2	0.0
Approach LOS							E	A

Intersection Summary					
Average Delay	6.5				
Intersection Capacity Utilization	56.8%	ICU Level of Service		B	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	935	62	282	884	0	9	0	294	0	0	0
Future Vol, veh/h	0	935	62	282	884	0	9	0	294	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	964	64	291	911	0	9	0	303	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	912	0	0	1028	0	0	2034	2490	514	1976	2522	457
Stage 1	-	-	-	-	-	-	996	996	-	1494	1494	-
Stage 2	-	-	-	-	-	-	1038	1494	-	482	1028	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	712	-	-	642	-	-	31	27	493	35	26	537
Stage 1	-	-	-	-	-	-	253	310	-	123	176	-
Stage 2	-	-	-	-	-	-	238	176	-	521	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	642	-	-	20	15	493	9	14	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	20	15	-	9	14	-
Stage 1	-	-	-	-	-	-	253	310	-	123	96	-
Stage 2	-	-	-	-	-	-	130	96	-	201	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.7	31.3	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	20	493	711	-	-	642	-	-	-	-
HCM Lane V/C Ratio	0.464	0.615	-	-	-	0.453	-	-	-	-
HCM Control Delay (s)	292.7	23.3	0	-	-	15.2	-	-	0	0
HCM Lane LOS	F	C	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	4.1	0	-	-	2.4	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	216	845	829	12	10	326
Future Volume (Veh/h)	216	845	829	12	10	326
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	230	899	882	13	11	347
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	895				1792	441
vC1, stage 1 conf vol					882	
vC2, stage 2 conf vol					910	
vCu, unblocked vol	895				1792	441
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	67				94	36
cM capacity (veh/h)	706				188	543

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	230	450	450	441	441	13	358
Volume Left	230	0	0	0	0	0	11
Volume Right	0	0	0	0	0	13	347
cSH	706	1700	1700	1700	1700	1700	560
Volume to Capacity	0.33	0.26	0.26	0.26	0.26	0.01	0.64
Queue Length 95th (ft)	35	0	0	0	0	0	113
Control Delay (s)	12.5	0.0	0.0	0.0	0.0	0.0	22.7
Lane LOS	B						C
Approach Delay (s)	2.6			0.0			22.7
Approach LOS							C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	216	845	829	12	10	326
Future Vol, veh/h	216	845	829	12	10	326
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	230	899	882	13	11	347

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	895	0	-	0	1792	441
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	910	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	706	-	-	-	66	543
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	334	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	706	-	-	-	44	543
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	334	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	22.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	706	-	-	-	184	543
HCM Lane V/C Ratio	0.325	-	-	-	0.058	0.639
HCM Control Delay (s)	12.5	-	-	-	25.8	22.6
HCM Lane LOS	B	-	-	-	D	C
HCM 95th %tile Q(veh)	1.4	-	-	-	0.2	4.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	890	10	1	835	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	890	10	1	835	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	918	10	1	861	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	861			928			1352	1781	459	1324	1791	430
vC1, stage 1 conf vol							918	918		863	863	
vC2, stage 2 conf vol							434	863		461	928	
vCu, unblocked vol	861			928			1352	1781	459	1324	1791	430
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			93	100	99	100	100	100
cM capacity (veh/h)	716			674			250	243	523	264	240	546

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	459	459	10	1	574	287	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	10	0	0	0	4	1
cSH	1700	1700	1700	1700	674	1700	1700	305	546
Volume to Capacity	0.00	0.27	0.27	0.01	0.00	0.34	0.17	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	0.0	0.0	19.0	11.6
Lane LOS					B			C	B
Approach Delay (s)	0.0				0.0			19.0	11.6
Approach LOS								C	B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		41.3%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	890	10	1	835	0	17	0	4	0	0	1
Future Vol, veh/h	0	890	10	1	835	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	918	10	1	861	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	928	0	0	1351	1781	459	1322	1791	431
Stage 1	-	-	-	-	-	-	918	918	-	863	863	-
Stage 2	-	-	-	-	-	-	433	863	-	459	928	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	716	-	-	674	-	-	100	73	523	105	72	546
Stage 1	-	-	-	-	-	-	273	327	-	296	347	-
Stage 2	-	-	-	-	-	-	545	347	-	526	323	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	716	-	-	674	-	-	100	73	523	104	72	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	236	-	258	234	-
Stage 1	-	-	-	-	-	-	273	327	-	296	347	-
Stage 2	-	-	-	-	-	-	543	347	-	522	323	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	243	523	716	-	-	674	-	-	546
HCM Lane V/C Ratio	0.072	0.008	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	21	11.9	0	-	-	10.3	-	-	11.6
HCM Lane LOS	C	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	0	0	-	-	0	-	-	0

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	50.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	199	61	255	185	97	49	209	243	29	340	90
Future Vol, veh/h	63	199	61	255	185	97	49	209	243	29	340	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	68	214	66	274	199	104	53	225	261	31	366	97
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	55.8	62.5	37	47.5
HCM LOS	F	F	E	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	15%	0%
Vol Thru, %	0%	100%	0%	0%	77%	0%	66%	85%	65%
Vol Right, %	0%	0%	100%	0%	23%	0%	34%	0%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	209	243	63	260	255	282	199	260
LT Vol	49	0	0	63	0	255	0	29	0
Through Vol	0	209	0	0	199	0	185	170	170
RT Vol	0	0	243	0	61	0	97	0	90
Lane Flow Rate	53	225	261	68	280	274	303	214	280
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.173	0.705	0.766	0.232	0.902	0.884	0.912	0.682	0.866
Departure Headway (Hd)	11.815	11.289	10.553	12.316	11.619	11.602	10.827	11.479	11.145
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	303	319	342	291	310	313	334	315	324
Service Time	9.598	9.072	8.336	10.111	9.414	9.39	8.614	9.266	8.933
HCM Lane V/C Ratio	0.175	0.705	0.763	0.234	0.903	0.875	0.907	0.679	0.864
HCM Control Delay	17.1	37.2	40.9	18.8	64.8	61.3	63.6	35.8	56.5
HCM Lane LOS	C	E	E	C	F	F	F	E	F
HCM 95th-tile Q	0.6	5	6.1	0.9	8.5	8.1	9	4.7	7.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	92	12	2	67	0	12	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	67			104			171	171	98	172	177	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			104			171	171	98	172	177	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1522			1475			787	717	953	783	712	991

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	105	69	14	0
Volume Left	1	2	12	0
Volume Right	12	0	1	0
cSH	1522	1475	791	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.1%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	78	10	2	57	0	10	1	1	0	0	0
Future Vol, veh/h	1	78	10	2	57	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	92	12	2	67	0	12	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	104	0	0	171	171	98	172	177	67
Stage 1	-	-	-	-	-	-	100	100	-	71	71	-
Stage 2	-	-	-	-	-	-	71	71	-	101	106	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1522	-	-	1475	-	-	788	718	953	787	713	991
Stage 1	-	-	-	-	-	-	901	808	-	934	832	-
Stage 2	-	-	-	-	-	-	934	832	-	900	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1475	-	-	786	717	953	784	712	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	717	-	784	712	-
Stage 1	-	-	-	-	-	-	900	807	-	933	831	-
Stage 2	-	-	-	-	-	-	933	831	-	897	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1522	-	-	1475	-	-	-
HCM Lane V/C Ratio	0.018	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	431	255	412	537	6	39	281	313	316	91
v/c Ratio	0.14	0.62	0.67	0.51	0.55	0.03	0.21	0.68	0.70	0.69	0.18
Control Delay	50.5	37.2	43.2	23.3	4.5	42.3	43.8	14.7	39.4	39.0	2.4
Queue Delay	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	37.2	43.3	23.7	4.7	42.3	43.8	14.7	39.4	39.0	2.4
Queue Length 50th (ft)	8	106	121	138	0	3	19	0	149	150	0
Queue Length 95th (ft)	36	207	266	342	70	17	60	81	328	329	13
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	118	1089	595	1080	1122	415	437	587	693	704	716
Starvation Cap Reductn	0	0	9	270	132	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.40	0.44	0.51	0.54	0.01	0.09	0.48	0.45	0.45	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	374	31	240	387	505	6	37	264	508	84	86
Future Volume (vph)	15	374	31	240	387	505	6	37	264	508	84	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1787	3526		1787	1881	1558	1787	1881	1599	1698	1725	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1787	3526		1787	1881	1558	1787	1881	1599	1698	1725	1561
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)	16	398	33	255	412	537	6	39	281	540	89	91
RTOR Reduction (vph)	0	5	0	0	0	312	0	0	253	0	0	68
Lane Group Flow (vph)	16	426	0	255	412	225	6	39	28	313	316	23
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	20.2		18.0	36.5	36.5	8.6	8.6	8.6	22.5	22.5	22.5
Effective Green, g (s)	1.7	20.2		18.0	36.5	36.5	8.6	8.6	8.6	22.5	22.5	22.5
Actuated g/C Ratio	0.02	0.23		0.21	0.42	0.42	0.10	0.10	0.10	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	34	815		368	786	651	176	185	157	437	444	402
v/s Ratio Prot	0.01	0.12		c0.14	c0.22		0.00	c0.02		c0.18	0.18	
v/s Ratio Perm						0.14			0.02			0.02
v/c Ratio	0.47	0.52		0.69	0.52	0.34	0.03	0.21	0.18	0.72	0.71	0.06
Uniform Delay, d1	42.4	29.3		32.1	18.9	17.3	35.6	36.2	36.1	29.5	29.5	24.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.9	0.6		5.6	0.6	0.3	0.1	0.6	0.5	5.5	5.3	0.1
Delay (s)	52.3	29.9		37.7	19.6	17.6	35.7	36.8	36.6	35.0	34.8	24.5
Level of Service	D	C		D	B	B	D	D	D	D	C	C
Approach Delay (s)		30.7			22.5			36.6			33.6	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	59.7%	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)	15	374	31	240	387	505	6	37	264	508	84	86
Future Volume (veh/h)	15	374	31	240	387	505	6	37	264	508	84	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	16	398	33	255	412	537	6	39	281	604	0	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	33	804	66	297	731	604	348	366	310	745	0	330
Arrive On Green	0.02	0.24	0.24	0.17	0.39	0.39	0.19	0.19	0.19	0.21	0.00	0.21
Sat Flow, veh/h	1795	3347	276	1795	1885	1559	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	16	212	219	255	412	537	6	39	281	604	0	91
Grp Sat Flow(s),veh/h/ln	1795	1791	1833	1795	1885	1559	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	0.8	9.5	9.6	12.9	16.0	30.0	0.3	1.6	16.1	15.0	0.0	4.5
Cycle Q Clear(g_c), s	0.8	9.5	9.6	12.9	16.0	30.0	0.3	1.6	16.1	15.0	0.0	4.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	430	440	297	731	604	348	366	310	745	0	330
V/C Ratio(X)	0.49	0.49	0.50	0.86	0.56	0.89	0.02	0.11	0.91	0.81	0.00	0.28
Avail Cap(c_a), veh/h	102	470	481	510	923	763	356	374	317	1250	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.4	30.6	30.6	37.9	22.4	26.7	30.4	31.0	36.8	35.2	0.0	31.1
Incr Delay (d2), s/veh	10.9	0.9	0.9	7.2	0.7	10.6	0.0	0.1	27.9	2.2	0.0	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	0.5	4.2	4.3	6.2	7.0	12.4	0.1	0.7	8.5	6.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	31.4	31.5	45.0	23.1	37.3	30.4	31.1	64.6	37.4	0.0	31.5
LnGrp LOS	E	C	C	D	C	D	C	C	E	D	A	C
Approach Vol, veh/h		447			1204			326			695	
Approach Delay, s/veh		32.3			34.1			60.0			36.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	26.9		23.9	6.2	40.7		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	14.9	11.6		17.0	2.8	32.0		18.1				
Green Ext Time (p_c), s	0.6	2.2		2.3	0.0	4.1		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		37.6	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	1129	20	912	242	263	30	438	8	26
v/c Ratio	0.38	0.62	0.13	0.63	0.32	0.62	0.05	0.73	0.02	0.04
Control Delay	41.3	16.4	44.5	21.8	6.5	31.3	21.2	23.6	21.3	0.1
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	16.7	44.5	21.8	6.5	31.3	21.2	23.6	21.3	0.1
Queue Length 50th (ft)	38	150	9	173	13	103	10	112	3	0
Queue Length 95th (ft)	107	381	38	326	72	221	33	268	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	351	2454	154	2213	1042	805	1088	993	803	1017
Starvation Cap Reductn	0	570	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	0.25	0.60	0.13	0.41	0.23	0.33	0.03	0.44	0.01	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1020	30	19	848	225	245	28	407	7	0	24
Future Volume (vph)	83	1020	30	19	848	225	245	28	407	7	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3556		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3556		1787	3574	1564	1393	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	89	1097	32	20	912	242	263	30	438	8	0	26
RTOR Reduction (vph)	0	2	0	0	0	112	0	0	112	0	18	0
Lane Group Flow (vph)	89	1127	0	20	912	130	263	30	326	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.3	37.4		1.7	31.8	31.8	22.4	22.4	22.4	22.4	22.4	
Effective Green, g (s)	7.3	37.4		1.7	31.8	31.8	22.4	22.4	22.4	22.4	22.4	
Actuated g/C Ratio	0.10	0.50		0.02	0.42	0.42	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	173	1773		40	1515	663	416	561	477	414	477	
v/s Ratio Prot	c0.05	c0.32		0.01	0.26			0.02			0.00	
v/s Ratio Perm						0.08	0.19		c0.20	0.01		
v/c Ratio	0.51	0.64		0.50	0.60	0.20	0.63	0.05	0.68	0.02	0.02	
Uniform Delay, d1	32.2	13.8		36.2	16.7	13.6	22.7	18.7	23.2	18.6	18.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.8		9.5	0.7	0.1	3.1	0.0	4.0	0.0	0.0	
Delay (s)	34.7	14.6		45.7	17.4	13.7	25.9	18.8	27.2	18.6	18.5	
Level of Service	C	B		D	B	B	C	B	C	B	B	
Approach Delay (s)		16.0			17.1			26.4			18.6	
Approach LOS		B			B			C			B	

Intersection Summary				
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	69.8%	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)	83	1020	30	19	848	225	245	28	407	7	0	24
Future Volume (veh/h)	83	1020	30	19	848	225	245	28	407	7	0	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	89	1097	32	20	912	0	263	30	438	8	0	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	1536	45	42	1401		556	616	522	410	0	522
Arrive On Green	0.06	0.43	0.43	0.02	0.39	0.00	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1795	3551	104	1795	3582	1598	1396	1885	1598	932	0	1598
Grp Volume(v), veh/h	89	553	576	20	912	0	263	30	438	8	0	26
Grp Sat Flow(s),veh/h/ln	1795	1791	1863	1795	1791	1598	1396	1885	1598	932	0	1598
Q Serve(g_s), s	3.0	15.8	15.8	0.7	12.9	0.0	9.9	0.7	15.8	0.4	0.0	0.7
Cycle Q Clear(g_c), s	3.0	15.8	15.8	0.7	12.9	0.0	10.6	0.7	15.8	1.0	0.0	0.7
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	775	806	42	1401		556	616	522	410	0	522
V/C Ratio(X)	0.77	0.71	0.71	0.47	0.65		0.47	0.05	0.84	0.02	0.00	0.05
Avail Cap(c_a), veh/h	361	1399	1455	159	2394		943	1139	965	669	0	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.6	14.5	14.5	29.9	15.4	0.0	17.9	14.3	19.4	14.7	0.0	14.3
Incr Delay (d2), s/veh	10.0	1.2	1.2	8.0	0.5	0.0	0.6	0.0	3.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.8	6.0	0.4	4.8	0.0	2.9	0.3	5.7	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	15.7	15.7	38.0	16.0	0.0	18.6	14.3	23.1	14.7	0.0	14.4
LnGrp LOS	D	B	B	D	B		B	B	C	B	A	B
Approach Vol, veh/h		1218			932	A		731			34	
Approach Delay, s/veh		17.4			16.4			21.1			14.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	31.4		24.8	8.5	28.8		24.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.7	17.8		3.0	5.0	14.9		17.8				
Green Ext Time (p_c), s	0.0	9.1		0.1	0.1	7.3		2.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	379	1110	63	657	240	214	67	60	517
v/c Ratio	0.63	0.73	0.37	0.57	0.53	0.26	0.14	0.36	0.71
Control Delay	42.2	24.1	51.3	27.4	45.0	33.7	0.6	52.0	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	24.1	51.3	27.4	45.0	33.7	0.6	52.0	24.7
Queue Length 50th (ft)	104	259	34	153	66	55	0	33	71
Queue Length 95th (ft)	191	414	93	262	134	106	0	90	154
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	887	2193	223	1784	598	1204	629	206	1093
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.51	0.28	0.37	0.40	0.18	0.11	0.29	0.47

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	744	311	60	556	68	228	203	64	57	204	287
Future Volume (vph)	360	744	311	60	556	68	228	203	64	57	204	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3403		1787	3510		3467	3574	1599	1787	3236	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3403		1787	3510		3467	3574	1599	1787	3236	
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)	379	783	327	63	585	72	240	214	67	60	215	302
RTOR Reduction (vph)	0	39	0	0	8	0	0	0	52	0	218	0
Lane Group Flow (vph)	379	1071	0	63	649	0	240	214	15	60	299	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	15.7	39.4		6.8	30.5		11.8	20.7	20.7	6.5	15.4	
Effective Green, g (s)	15.7	39.4		6.8	30.5		11.8	20.7	20.7	6.5	15.4	
Actuated g/C Ratio	0.17	0.43		0.07	0.33		0.13	0.23	0.23	0.07	0.17	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	595	1466		132	1171		447	809	362	127	545	
v/s Ratio Prot	c0.11	c0.31		0.04	0.18		c0.07	0.06		0.03	c0.09	
v/s Ratio Perm									0.01			
v/c Ratio	0.64	0.73		0.48	0.55		0.54	0.26	0.04	0.47	0.55	
Uniform Delay, d1	35.2	21.6		40.6	24.9		37.2	29.1	27.6	40.8	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	1.9		2.7	0.6		1.2	0.2	0.0	2.8	1.1	
Delay (s)	37.4	23.5		43.3	25.5		38.5	29.3	27.7	43.6	36.0	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		27.0			27.0			33.3			36.7	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	71.3%	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)	360	744	311	60	556	68	228	203	64	57	204	287
Future Volume (veh/h)	360	744	311	60	556	68	228	203	64	57	204	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	379	783	0	63	585	72	240	214	67	60	215	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	559	1378		102	900	111	381	608	271	99	413	
Arrive On Green	0.16	0.38	0.00	0.06	0.28	0.28	0.11	0.17	0.17	0.05	0.12	0.00
Sat Flow, veh/h	3483	3676	0	1795	3205	394	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	379	783	0	63	326	331	240	214	67	60	215	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1808	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	5.5	9.3	0.0	1.8	8.6	8.7	3.6	2.8	2.0	1.8	3.0	0.0
Cycle Q Clear(g_c), s	5.5	9.3	0.0	1.8	8.6	8.7	3.6	2.8	2.0	1.8	3.0	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	559	1378		102	503	508	381	608	271	99	413	
V/C Ratio(X)	0.68	0.57		0.62	0.65	0.65	0.63	0.35	0.25	0.61	0.52	
Avail Cap(c_a), veh/h	1389	3555		350	1412	1425	937	1880	839	323	1562	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.3	13.1	0.0	24.9	17.0	17.1	23.0	19.8	19.4	24.9	22.4	0.0
Incr Delay (d2), s/veh	1.5	0.4	0.0	6.0	1.4	1.4	1.7	0.3	0.5	5.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.2	0.0	0.9	3.3	3.3	1.4	1.1	0.7	0.8	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	13.4	0.0	30.9	18.5	18.5	24.7	20.1	19.9	30.8	23.5	0.0
LnGrp LOS	C	B		C	B	B	C	C	B	C	C	
Approach Vol, veh/h		1162	A		720			521			275	A
Approach Delay, s/veh		16.5			19.5			22.2			25.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	25.2	10.4	10.7	13.1	19.6	7.5	13.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	3.8	11.3	5.6	5.0	7.5	10.7	3.8	4.8
Green Ext Time (p_c), s	0.1	6.6	0.5	1.1	1.2	4.3	0.0	1.4

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

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	370	785	466	73
v/c Ratio	0.21	0.22	0.59	0.49	0.15
Control Delay	35.3	10.7	15.9	24.8	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	10.7	15.9	24.8	9.0
Queue Length 50th (ft)	16	24	74	63	0
Queue Length 95th (ft)	86	124	274	222	39
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	381	3117	2520	1905	900
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	0.15	0.12	0.31	0.24	0.08

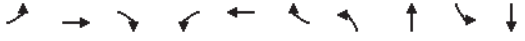
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	359	405	356	452	71
Future Volume (vph)	56	359	405	356	452	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3299		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3299		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	370	418	367	466	73
RTOR Reduction (vph)	0	0	130	0	0	54
Lane Group Flow (vph)	58	370	655	0	466	19
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	4.4	30.5	21.6		16.0	16.0
Effective Green, g (s)	4.4	30.5	21.6		16.0	16.0
Actuated g/C Ratio	0.07	0.49	0.34		0.26	0.26
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	125	1738	1136		884	402
v/s Ratio Prot	c0.03	0.10	c0.20			
v/s Ratio Perm					c0.13	0.01
v/c Ratio	0.46	0.21	0.58		0.53	0.05
Uniform Delay, d1	28.0	9.2	16.8		20.1	17.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.1	0.7		0.6	0.0
Delay (s)	30.7	9.3	17.5		20.7	17.6
Level of Service	C	A	B		C	B
Approach Delay (s)		12.2	17.5		20.3	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support exclusive ped or hold phases.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	267	253	83	290	246	164	428	157	575
v/c Ratio	0.64	0.53	0.42	0.40	0.46	0.51	0.58	0.52	0.55	0.69
Control Delay	41.8	30.1	6.1	39.5	30.5	8.4	40.0	27.4	38.1	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	30.1	6.1	39.5	30.5	8.4	40.0	27.4	38.1	28.7
Queue Length 50th (ft)	83	110	0	36	64	0	70	86	67	114
Queue Length 95th (ft)	#196	207	56	90	111	59	152	155	141	194
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	372	648	707	269	1027	629	372	1071	423	1163
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	0.53	0.41	0.36	0.31	0.28	0.39	0.44	0.40	0.37	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)	184	251	238	78	273	231	154	356	46	148	399	142
Future Volume (vph)	184	251	238	78	273	231	154	356	46	148	399	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1573	1787	3574	1578	1787	3513		1787	3412	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1573	1787	3574	1578	1787	3513		1787	3412	
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)	196	267	253	83	290	246	164	379	49	157	424	151
RTOR Reduction (vph)	0	0	185	0	0	198	0	12	0	0	41	0
Lane Group Flow (vph)	196	267	68	83	290	48	164	416	0	157	534	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.4	19.6	19.6	7.0	14.2	14.2	11.5	16.7		11.7	16.9	
Effective Green, g (s)	12.4	19.6	19.6	7.0	14.2	14.2	11.5	16.7		11.7	16.9	
Actuated g/C Ratio	0.17	0.27	0.27	0.10	0.19	0.19	0.16	0.23		0.16	0.23	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	303	505	422	171	695	306	281	803		286	789	
v/s Ratio Prot	c0.11	c0.14		0.05	0.08		c0.09	0.12		0.09	c0.16	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.65	0.53	0.16	0.49	0.42	0.16	0.58	0.52		0.55	0.68	
Uniform Delay, d1	28.3	22.8	20.4	31.3	25.8	24.4	28.5	24.6		28.2	25.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	1.0	0.2	2.2	0.4	0.2	3.1	0.6		2.2	2.3	
Delay (s)	33.0	23.8	20.6	33.5	26.2	24.7	31.6	25.2		30.4	27.9	
Level of Service	C	C	C	C	C	C	C	C		C	C	
Approach Delay (s)		25.2			26.6			27.0			28.4	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	57.4%	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)	184	251	238	78	273	231	154	356	46	148	399	142
Future Volume (veh/h)	184	251	238	78	273	231	154	356	46	148	399	142
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	196	267	253	83	290	246	164	379	49	157	424	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	247	541	457	112	758	337	211	767	98	204	611	215
Arrive On Green	0.14	0.29	0.29	0.06	0.21	0.21	0.12	0.24	0.24	0.11	0.24	0.24
Sat Flow, veh/h	1795	1885	1591	1795	3582	1595	1795	3192	410	1795	2587	911
Grp Volume(v), veh/h	196	267	253	83	290	246	164	211	217	157	292	283
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1595	1795	1791	1811	1795	1791	1707
Q Serve(g_s), s	6.4	7.1	8.2	2.8	4.2	8.7	5.4	6.2	6.2	5.1	9.0	9.2
Cycle Q Clear(g_c), s	6.4	7.1	8.2	2.8	4.2	8.7	5.4	6.2	6.2	5.1	9.0	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.53
Lane Grp Cap(c), veh/h	247	541	457	112	758	337	211	430	435	204	423	403
V/C Ratio(X)	0.79	0.49	0.55	0.74	0.38	0.73	0.78	0.49	0.50	0.77	0.69	0.70
Avail Cap(c_a), veh/h	430	747	630	311	1183	527	430	621	628	489	680	648
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	25.3	17.9	18.3	27.9	20.5	22.3	26.0	19.8	19.9	26.1	21.1	21.2
Incr Delay (d2), s/veh	5.7	0.7	1.1	9.4	0.3	3.0	6.1	0.9	0.9	6.1	2.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.8	2.7	1.4	1.6	3.2	2.5	2.4	2.5	2.4	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	18.6	19.4	37.3	20.8	25.3	32.0	20.7	20.7	32.1	23.1	23.4
LnGrp LOS	C	B	B	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		716			619			592			732	
Approach Delay, s/veh		22.3			24.8			23.9			25.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	19.0	8.3	21.9	11.6	18.8	12.8	17.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	7.1	8.2	4.8	10.2	7.4	11.2	8.4	10.7
Green Ext Time (p_c), s	0.3	1.9	0.1	2.0	0.2	2.7	0.3	1.8

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	41	56	414	33	85	535
Future Volume (Veh/h)	41	56	414	33	85	535
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	44	60	445	35	91	575
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1222	464			482	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1222	464			482	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	90			92	
cM capacity (veh/h)	182	599			1084	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	104	480	91	575
Volume Left	44	0	91	0
Volume Right	60	35	0	0
cSH	304	1700	1084	1700
Volume to Capacity	0.34	0.28	0.08	0.34
Queue Length 95th (ft)	37	0	7	0
Control Delay (s)	22.8	0.0	8.6	0.0
Lane LOS	C		A	
Approach Delay (s)	22.8	0.0	1.2	
Approach LOS	C			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	56	414	33	85	535
Future Vol, veh/h	41	56	414	33	85	535
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	60	445	35	91	575

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1222	465	0	0	482	0
Stage 1	465	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	199	599	-	-	1086	-
Stage 1	634	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	182	598	-	-	1084	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	426	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	304	1084	-
HCM Lane V/C Ratio	-	-	0.343	0.084	-
HCM Control Delay (s)	-	-	22.9	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	4	7	4	1	38	16	228	10	48	271	126
Future Volume (Veh/h)	100	4	7	4	1	38	16	228	10	48	271	126
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	101	4	7	4	1	38	16	230	10	48	274	127
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	680	647	279	646	769	239	406			240		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680	647	279	646	769	239	406			240		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	99	99	99	100	95	99			96		
cM capacity (veh/h)	331	370	759	364	315	799	1153			1333		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	112	43	16	240	48	274	127
Volume Left	101	4	16	0	48	0	0
Volume Right	7	38	0	10	0	0	127
cSH	345	697	1153	1700	1333	1700	1700
Volume to Capacity	0.33	0.06	0.01	0.14	0.04	0.16	0.07
Queue Length 95th (ft)	34	5	1	0	3	0	0
Control Delay (s)	20.4	10.5	8.2	0.0	7.8	0.0	0.0
Lane LOS	C	B	A		A		
Approach Delay (s)	20.4	10.5	0.5		0.8		
Approach LOS	C	B					

Intersection Summary					
Average Delay	3.8				
Intersection Capacity Utilization	40.4%	ICU Level of Service		A	
Analysis Period (min)	15				

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	100	4	7	4	1	38	16	228	10	48	271	126
Future Vol, veh/h	100	4	7	4	1	38	16	228	10	48	271	126
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	101	4	7	4	1	38	16	230	10	48	274	127

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	666	647	279	706	769	239	406	0	0	240	0	0
Stage 1	375	375	-	267	267	-	-	-	-	-	-	-
Stage 2	291	272	-	439	502	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	374	391	762	352	333	802	1158	-	-	1333	-	-
Stage 1	648	619	-	741	690	-	-	-	-	-	-	-
Stage 2	719	686	-	599	544	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	339	370	758	333	315	799	1152	-	-	1333	-	-
Mov Cap-2 Maneuver	339	370	-	333	315	-	-	-	-	-	-	-
Stage 1	636	594	-	731	680	-	-	-	-	-	-	-
Stage 2	671	676	-	568	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	10.6	0.5	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1152	-	-	352	685	1333	-	-
HCM Lane V/C Ratio	0.014	-	-	0.319	0.063	0.036	-	-
HCM Control Delay (s)	8.2	-	-	19.9	10.6	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.2	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	3	77	3	58	7	190	123	103	165	12
Future Volume (vph)	8	2	3	77	3	58	7	190	123	103	165	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	3	83	3	62	8	204	132	111	177	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	14	148	212	132	200	102
Volume Left (vph)	9	83	8	0	111	0
Volume Right (vph)	3	62	0	132	0	13
Hadj (s)	0.02	-0.12	0.04	-0.68	0.30	-0.07
Departure Headway (s)	5.6	5.2	5.3	4.6	5.6	5.2
Degree Utilization, x	0.02	0.21	0.31	0.17	0.31	0.15
Capacity (veh/h)	565	631	655	752	619	661
Control Delay (s)	8.7	9.6	9.5	7.3	9.9	7.9
Approach Delay (s)	8.7	9.6	8.7		9.2	
Approach LOS	A	A	A		A	

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	3	77	3	58	0	7	190	123	103	165
Future Vol, veh/h	8	2	3	77	3	58	0	7	190	123	103	165
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	3	83	3	62	0	8	204	132	111	177
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.8	9.7	9.6	10.1
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	62%	56%	56%	0%
Vol Thru, %	96%	0%	15%	2%	44%	87%
Vol Right, %	0%	100%	23%	42%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	123	13	138	186	95
LT Vol	7	0	8	77	103	0
Through Vol	190	0	2	3	83	83
RT Vol	0	123	3	58	0	12
Lane Flow Rate	212	132	14	148	199	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.31	0.167	0.022	0.215	0.307	0.146
Departure Headway (Hd)	5.272	4.549	5.593	5.227	5.549	5.18
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	678	783	633	683	644	688
Service Time	3.033	2.309	3.686	3.292	3.313	2.944
HCM Lane V/C Ratio	0.313	0.169	0.022	0.217	0.309	0.148
HCM Control Delay	10.4	8.2	8.8	9.7	10.8	8.8
HCM Lane LOS	B	A	A	A	B	A
HCM 95th-tile Q	1.3	0.6	0.1	0.8	1.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	120	66	144	110	123
Future Volume (Veh/h)	179	120	66	144	110	123
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	185	124	68	148	113	127
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	323	113	240			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	323	113	240			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	87	95			
cM capacity (veh/h)	615	922	1331			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	309	68	74	74	113	127
Volume Left	185	68	0	0	0	0
Volume Right	124	0	0	0	0	127
cSH	1028	1331	1700	1700	1700	1700
Volume to Capacity	0.30	0.05	0.04	0.04	0.07	0.07
Queue Length 95th (ft)	32	4	0	0	0	0
Control Delay (s)	11.8	7.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	11.8	2.5			0.0	
Approach LOS	B					

Intersection Summary				
Average Delay		5.5		
Intersection Capacity Utilization		26.9%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	179	120	66	144	110	123
Future Vol, veh/h	179	120	66	144	110	123
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	185	124	68	148	113	127

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	323	113	240	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	661	942	1332	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	627	942	1332	-	-	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1332	-	627	942	-	-
HCM Lane V/C Ratio	0.051	-	0.294	0.131	-	-
HCM Control Delay (s)	7.8	-	13.1	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	67	0	112	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	67	0	112	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	32	0	80	0	133	17	0	0	0	0	337	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	432	357	357	437	377	0	377			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432	357	357	437	377	0	377			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	88	100	76	98	100			100		
cM capacity (veh/h)	430	571	689	470	556	1088	1187			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	112	150	377
Volume Left	32	0	0
Volume Right	80	17	40
cSH	588	627	1700
Volume to Capacity	0.19	0.24	0.22
Queue Length 95th (ft)	17	23	0
Control Delay (s)	12.6	12.9	0.0
Lane LOS	B	B	
Approach Delay (s)	12.6	12.9	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		5.2			
Intersection Capacity Utilization		35.9%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	67	0	112	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	67	0	112	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	32	0	80	0	133	17	0	0	0	0	337	40

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	432	357	357	397	377	0				-	-	0
Stage 1	357	357	-	0	0	-				-	-	-
Stage 2	75	0	-	397	377	-				-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21				-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-				-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309				-	-	-
Pot Cap-1 Maneuver	536	571	689	565	556	-				0	-	-
Stage 1	663	630	-	-	-	-				0	-	-
Stage 2	-	-	-	631	618	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	571	689	499	556	-				-	-	-
Mov Cap-2 Maneuver	-	571	-	499	556	-				-	-	-
Stage 1	663	630	-	-	-	-				-	-	-
Stage 2	-	-	-	558	618	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	556	-	-	-
HCM Lane V/C Ratio	-	0.24	-	-	-
HCM Control Delay (s)	-	13.5	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-	-



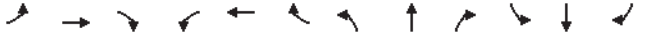
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	362	582	171	396	96	354	929	518	300
v/c Ratio	0.17	0.66	0.57	0.31	0.39	0.52	0.65	0.69	0.70	0.32
Control Delay	49.1	50.4	38.2	35.7	2.6	64.6	54.0	13.7	49.1	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	50.4	38.2	35.7	2.6	64.6	54.0	13.7	49.1	34.2
Queue Length 50th (ft)	31	123	184	96	0	68	131	123	184	87
Queue Length 95th (ft)	78	211	307	195	46	148	219	213	291	150
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	399	787	1321	717	1138	265	923	1585	1121	1515
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	0.12	0.46	0.44	0.24	0.35	0.36	0.38	0.59	0.46	0.20

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	258	93	565	166	384	93	343	901	502	236	55
Future Volume (vph)	46	258	93	565	166	384	93	343	901	502	236	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3419		3467	1881	1585	1787	3574	2814	3467	3472	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3419		3467	1881	1585	1787	3574	2814	3467	3472	
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)	47	266	96	582	171	396	96	354	929	518	243	57
RTOR Reduction (vph)	0	25	0	0	0	194	0	0	85	0	15	0
Lane Group Flow (vph)	47	337	0	582	171	202	96	354	844	518	285	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	17.5	17.5		33.6	33.6	57.8	11.8	17.6	51.2	24.2	30.0	
Effective Green, g (s)	17.5	17.5		33.6	33.6	57.8	11.8	17.6	51.2	24.2	30.0	
Actuated g/C Ratio	0.15	0.15		0.30	0.30	0.51	0.10	0.16	0.45	0.21	0.26	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	527		1027	557	807	185	554	1270	739	918	
v/s Ratio Prot	0.03	c0.10		0.17	0.09	0.05	0.05	0.10	c0.20	c0.15	0.08	
v/s Ratio Perm						0.07			0.10			
v/c Ratio	0.17	0.64		0.57	0.31	0.25	0.52	0.64	0.66	0.70	0.31	
Uniform Delay, d1	41.6	45.0		33.7	30.9	15.6	48.1	44.9	24.4	41.3	33.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	2.7		0.7	0.3	0.2	2.4	2.4	1.3	3.0	0.2	
Delay (s)	41.9	47.7		34.5	31.2	15.8	50.6	47.3	25.7	44.3	33.6	
Level of Service	D	D		C	C	B	D	D	C	D	C	
Approach Delay (s)		47.0			27.5			33.0			40.4	
Approach LOS		D			C			C			D	

Intersection Summary					
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.67				
Actuated Cycle Length (s)	113.4	Sum of lost time (s)		20.5	
Intersection Capacity Utilization	68.2%	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)	46	258	93	565	166	384	93	343	901	502	236	55
Future Volume (veh/h)	46	258	93	565	166	384	93	343	901	502	236	55
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	47	266	96	582	171	396	96	354	929	518	243	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	244	352	124	863	467	679	122	909	1411	619	1022	235
Arrive On Green	0.14	0.14	0.14	0.25	0.25	0.25	0.07	0.25	0.25	0.18	0.35	0.35
Sat Flow, veh/h	1795	2587	909	3483	1885	1594	1795	3582	2812	3483	2891	665
Grp Volume(v), veh/h	47	182	180	582	171	396	96	354	929	518	149	151
Grp Sat Flow(s),veh/h/ln	1795	1791	1705	1742	1885	1594	1795	1791	1406	1742	1791	1765
Q Serve(g_s), s	2.6	10.9	11.3	16.8	8.3	21.1	5.8	9.1	27.3	16.0	6.5	6.7
Cycle Q Clear(g_c), s	2.6	10.9	11.3	16.8	8.3	21.1	5.8	9.1	27.3	16.0	6.5	6.7
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	244	244	232	863	467	679	122	909	1411	619	633	624
V/C Ratio(X)	0.19	0.75	0.78	0.67	0.37	0.58	0.79	0.39	0.66	0.84	0.23	0.24
Avail Cap(c_a), veh/h	394	393	374	1304	706	881	262	909	1411	1107	763	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	46.1	46.4	37.7	34.6	24.4	51.0	34.3	20.6	44.1	25.3	25.4
Incr Delay (d2), s/veh	0.4	4.5	5.5	0.9	0.5	0.8	10.6	0.3	1.1	3.1	0.2	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	1.2	5.2	5.2	7.1	3.8	7.7	2.9	3.9	12.9	7.1	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	50.7	51.9	38.7	35.0	25.2	61.6	34.6	21.7	47.2	25.5	25.6
LnGrp LOS	D	D	D	D	D	C	E	C	C	D	C	C
Approach Vol, veh/h		409			1149			1379			818	
Approach Delay, s/veh		50.3			33.5			27.8			39.3	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.4	34.0		19.7	13.4	45.1		32.9				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	18.0	29.3		13.3	7.8	8.7		23.1				
Green Ext Time (p_c), s	1.8	0.0		1.8	0.1	1.9		4.4				

Intersection Summary												
HCM 6th Ctrl Delay			34.5									
HCM 6th LOS			C									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	252	774	485	101	720	342	294	145	487
v/c Ratio	0.55	0.61	0.55	0.49	0.68	0.62	0.38	0.57	0.68
Control Delay	45.7	29.5	5.2	51.8	31.8	44.2	32.3	49.9	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	29.5	5.2	51.8	31.8	44.2	32.3	49.9	38.4
Queue Length 50th (ft)	72	202	0	56	185	97	72	80	130
Queue Length 95th (ft)	139	332	76	132	304	177	136	172	222
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	608	1639	996	293	1566	765	1096	394	1091
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.47	0.49	0.34	0.46	0.45	0.27	0.37	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	743	466	97	578	113	328	228	54	139	346	122
Future Volume (vph)	242	743	466	97	578	113	328	228	54	139	346	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3478		3467	3472		1787	3421	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3478		3467	3472		1787	3421	
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)	252	774	485	101	602	118	342	238	56	145	360	127
RTOR Reduction (vph)	0	0	314	0	14	0	0	17	0	0	30	0
Lane Group Flow (vph)	252	774	171	101	706	0	342	277	0	145	457	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.3	32.9	32.9	8.8	29.4		14.8	20.1		13.3	18.6	
Effective Green, g (s)	12.3	32.9	32.9	8.8	29.4		14.8	20.1		13.3	18.6	
Actuated g/C Ratio	0.13	0.35	0.35	0.09	0.32		0.16	0.22		0.14	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	458	1262	565	168	1098		551	749		255	683	
v/s Ratio Prot	c0.07	c0.22		0.06	0.20		c0.10	0.08		0.08	c0.13	
v/s Ratio Perm			0.11									
v/c Ratio	0.55	0.61	0.30	0.60	0.64		0.62	0.37		0.57	0.67	
Uniform Delay, d1	37.8	24.8	21.8	40.5	27.3		36.5	31.1		37.2	34.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.9	0.3	5.9	1.3		2.2	0.3		2.9	2.5	
Delay (s)	39.2	25.7	22.1	46.4	28.6		38.7	31.4		40.1	36.9	
Level of Service	D	C	C	D	C		D	C		D	D	
Approach Delay (s)		26.8			30.8			35.3			37.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	65.4%	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)	242	743	466	97	578	113	328	228	54	139	346	122
Future Volume (veh/h)	242	743	466	97	578	113	328	228	54	139	346	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	252	774	485	101	602	118	342	238	56	145	360	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	369	1167	521	132	877	171	474	673	155	188	525	182
Arrive On Green	0.11	0.33	0.33	0.07	0.29	0.29	0.14	0.23	0.23	0.10	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	2986	584	3483	2889	667	1795	2604	905
Grp Volume(v), veh/h	252	774	485	101	361	359	342	146	148	145	246	241
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1779	1742	1791	1765	1795	1791	1718
Q Serve(g_s), s	4.8	12.7	12.1	3.8	12.2	12.3	6.4	4.7	4.8	5.4	8.7	8.9
Cycle Q Clear(g_c), s	4.8	12.7	12.1	3.8	12.2	12.3	6.4	4.7	4.8	5.4	8.7	8.9
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.38	1.00		0.53
Lane Grp Cap(c), veh/h	369	1167	521	132	526	522	474	417	411	188	361	346
V/C Ratio(X)	0.68	0.66	0.93	0.76	0.69	0.69	0.72	0.35	0.36	0.77	0.68	0.70
Avail Cap(c_a), veh/h	788	2118	945	380	1033	1026	992	719	709	511	719	690
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	29.5	19.8	8.1	31.1	21.4	21.4	28.3	21.9	22.0	29.9	25.3	25.4
Incr Delay (d2), s/veh	2.2	0.7	8.7	8.8	1.6	1.6	2.1	0.5	0.5	6.6	2.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.8	4.3	1.9	4.8	4.8	2.6	1.8	1.9	2.5	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	20.5	16.8	39.9	23.0	23.0	30.4	22.4	22.5	36.4	27.6	27.9
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	C	C
Approach Vol, veh/h		1511			821			636			632	
Approach Delay, s/veh		21.2			25.1			26.8			29.7	
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	26.8	13.8	18.3	11.7	24.6	11.7	20.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	5.8	14.7	8.4	10.9	6.8	14.3	7.4	6.8
Green Ext Time (p_c), s	0.1	7.6	0.9	2.5	0.5	4.4	0.3	1.5

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	242	196	18	263	247	11
v/c Ratio	0.36	0.29	0.04	0.21	0.46	0.02
Control Delay	11.3	3.3	9.5	9.3	13.2	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	3.3	9.5	9.3	13.2	6.0
Queue Length 50th (ft)	26	0	2	13	26	0
Queue Length 95th (ft)	107	32	15	53	115	8
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1636	1380	993	3109	1464	1315
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	0.15	0.14	0.02	0.08	0.17	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	215	174	16	234	220	10
Future Volume (vph)	215	174	16	234	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1520	1734	3471	1733	1553
Flt Permitted	1.00	1.00	0.61	1.00	0.95	1.00
Satd. Flow (perm)	1827	1520	1111	3471	1733	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	242	196	18	263	247	11
RTOR Reduction (vph)	0	122	0	0	0	7
Lane Group Flow (vph)	242	74	18	263	247	4
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	13.7	13.7	13.7	13.7	11.7	11.7
Effective Green, g (s)	13.7	13.7	13.7	13.7	11.7	11.7
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.32	0.32
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	691	575	420	1313	560	501
v/s Ratio Prot	c0.13			0.08		0.00
v/s Ratio Perm		0.05	0.02		c0.14	
v/c Ratio	0.35	0.13	0.04	0.20	0.44	0.01
Uniform Delay, d1	8.1	7.4	7.1	7.6	9.7	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.0	0.2	0.0
Delay (s)	8.2	7.4	7.1	7.6	9.9	8.3
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.8			7.6	9.8	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	10.8
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	215	174	16	234	220	10
Future Volume (veh/h)	215	174	16	234	220	10
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	242	196	18	263	247	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	591	499	483	1122	458	407
Arrive On Green	0.32	0.32	0.32	0.32	0.26	0.26
Sat Flow, veh/h	1841	1555	934	3589	1753	1560
Grp Volume(v), veh/h	242	196	18	263	247	11
Grp Sat Flow(s),veh/h/ln	1841	1555	934	1749	1753	1560
Q Serve(g_s), s	2.7	2.5	0.4	1.4	3.1	0.1
Cycle Q Clear(g_c), s	2.7	2.5	3.1	1.4	3.1	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	591	499	483	1122	458	407
V/C Ratio(X)	0.41	0.39	0.04	0.23	0.54	0.03
Avail Cap(c_a), veh/h	2465	2083	1434	4684	2009	1787
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	6.9	6.8	8.1	6.4	8.2	7.1
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.4	0.0	0.2	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	7.0	8.1	6.5	8.6	7.1
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	438			281	258	
Approach Delay, s/veh	7.0			6.6	8.5	
Approach LOS	A			A	A	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	13.7				13.7	12.1
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	4.7				5.1	5.1
Green Ext Time (p_c), s	1.1				1.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	0	17	0	3	8	9	68	2	11	96	8
Future Volume (vph)	15	0	17	0	3	8	9	68	2	11	96	8
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
Hourly flow rate (vph)	18	0	20	0	4	10	11	82	2	13	116	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	38	14	95	139
Volume Left (vph)	18	0	11	13
Volume Right (vph)	20	10	2	10
Hadj (s)	-0.20	-0.41	0.03	-0.01
Departure Headway (s)	4.2	4.0	4.2	4.1
Degree Utilization, x	0.04	0.02	0.11	0.16
Capacity (veh/h)	805	836	837	861
Control Delay (s)	7.4	7.1	7.7	7.9
Approach Delay (s)	7.4	7.1	7.7	7.9
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.7				
Level of Service	A				
Intersection Capacity Utilization	23.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	17	0	3	8	9	68	2	11	96	8
Future Vol, veh/h	15	0	17	0	3	8	9	68	2	11	96	8
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
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	18	0	20	0	4	10	11	82	2	13	116	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.1	7.7	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	47%	0%	10%
Vol Thru, %	86%	0%	27%	83%
Vol Right, %	3%	53%	73%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	32	11	115
LT Vol	9	15	0	11
Through Vol	68	0	3	96
RT Vol	2	17	8	8
Lane Flow Rate	95	39	13	139
Geometry Grp	1	1	1	1
Degree of Util (X)	0.109	0.045	0.015	0.156
Departure Headway (Hd)	4.119	4.212	4.029	4.057
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	863	855	894	878
Service Time	2.176	2.213	2.03	2.105
HCM Lane V/C Ratio	0.11	0.046	0.015	0.158
HCM Control Delay	7.7	7.4	7.1	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	6	0	0	5	2	0	0	0	0	0	31
Future Volume (Veh/h)	67	6	0	0	5	2	0	0	0	0	0	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	92	8	0	0	7	3	0	0	0	0	0	42
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	10			14			248	208	14	200	206	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10			14			248	208	14	200	206	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	100	100	96
cM capacity (veh/h)	1616			1602			643	648	1063	724	649	1076

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	100	10	0	0	42
Volume Left	92	0	0	0	0
Volume Right	0	3	0	0	42
cSH	1616	1602	1700	1700	1076
Volume to Capacity	0.06	0.00	0.00	0.00	0.04
Queue Length 95th (ft)	5	0	0	0	3
Control Delay (s)	6.8	0.0	0.0	0.0	8.5
Lane LOS	A		A	A	A
Approach Delay (s)	6.8	0.0	0.0	8.5	
Approach LOS			A	A	

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	21.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	6	0	0	5	2	0	0	0	0	0	31
Future Vol, veh/h	67	6	0	0	5	2	0	0	0	0	0	31
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	92	8	0	0	7	3	0	0	0	0	0	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	10	0	0	14	0	0	228	208	14	201	207	9
Stage 1	-	-	-	-	-	-	198	198	-	9	9	-
Stage 2	-	-	-	-	-	-	30	10	-	192	198	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1616	-	-	1611	-	-	729	691	1069	760	692	1076
Stage 1	-	-	-	-	-	-	806	739	-	1015	890	-
Stage 2	-	-	-	-	-	-	989	889	-	812	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	1602	-	-	666	647	1063	727	648	1076
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	647	-	727	648	-
Stage 1	-	-	-	-	-	-	756	692	-	957	890	-
Stage 2	-	-	-	-	-	-	950	889	-	766	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.8	0	0	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	1616	-	-	1602	-	-	-	1076
HCM Lane V/C Ratio	-	0.057	-	-	-	-	-	-	0.039
HCM Control Delay (s)	0	7.4	0	-	0	-	-	0	8.5
HCM Lane LOS	A	A	A	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	-	0.1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	50	47	5	3	6
Future Volume (Veh/h)	6	50	47	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	8	67	63	7	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	70				150	66
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	70				150	66
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1518				833	992

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	75	70	12
Volume Left	8	0	4
Volume Right	0	7	8
cSH	1518	1700	933
Volume to Capacity	0.01	0.04	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.8	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	0.8	0.0	8.9
Approach LOS			A

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	17.7%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	50	47	5	3	6
Future Vol, veh/h	6	50	47	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	8	67	63	7	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	150	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1518	-	-	-	837	991
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1518	-	-	-	833	991
Mov Cap-2 Maneuver	-	-	-	-	833	-
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1518	-	-	-	932
HCM Lane V/C Ratio	0.005	-	-	-	0.013
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Existing Plus 1293-Unit Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	265	1177	1151	118	133	238
v/c Ratio	0.67	0.37	0.80	0.17	0.55	0.36
Control Delay	45.6	0.3	29.5	4.0	51.9	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	0.3	29.5	4.0	51.9	16.0
Queue Length 50th (ft)	149	0	324	0	79	67
Queue Length 95th (ft)	258	0	395	22	145	129
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	508	3223	2841	1285	508	991
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	0.52	0.37	0.41	0.09	0.26	0.24

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	930	909	93	105	188
Future Volume (vph)	209	930	909	93	105	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	265	1177	1151	118	133	238
RTOR Reduction (vph)	0	0	0	65	0	36
Lane Group Flow (vph)	265	1177	1151	53	133	202
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.8	98.9	44.2	44.2	14.9	43.7
Effective Green, g (s)	24.8	98.9	44.2	44.2	14.9	43.7
Actuated g/C Ratio	0.25	1.00	0.45	0.45	0.15	0.44
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	404	3223	1440	644	242	637
v/s Ratio Prot	c0.16	0.37	c0.36		c0.08	0.14
v/s Ratio Perm				0.04		
v/c Ratio	0.66	0.37	0.80	0.08	0.55	0.32
Uniform Delay, d1	33.2	0.0	23.5	15.7	38.9	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.3	3.4	0.1	2.8	0.3
Delay (s)	37.0	0.3	26.9	15.8	41.7	18.2
Level of Service	D	A	C	B	D	B
Approach Delay (s)		7.1	25.9		26.6	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	56.3%	ICU Level of Service	B	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	234	771	313	39	841	180	310	313	98	180	163
v/c Ratio	0.56	0.60	0.41	0.11	0.79	0.30	0.61	0.40	0.35	0.62	0.43
Control Delay	50.2	31.1	5.1	44.6	38.3	5.5	48.4	35.6	52.7	52.7	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	31.1	5.1	44.6	38.3	5.5	48.4	35.6	52.7	52.7	10.4
Queue Length 50th (ft)	75	237	0	11	262	0	98	89	31	111	0
Queue Length 95th (ft)	129	330	43	29	359	38	164	145	64	199	46
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	570	2286	1115	579	2286	1076	633	1327	633	705	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.34	0.28	0.07	0.37	0.17	0.49	0.24	0.15	0.26	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	640	260	32	698	149	257	243	17	81	149	135
Future Volume (vph)	194	640	260	32	698	149	257	243	17	81	149	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3218		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3218		3155	1712	1455
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)	234	771	313	39	841	180	310	293	20	98	180	163
RTOR Reduction (vph)	0	0	192	0	0	118	0	3	0	0	0	136
Lane Group Flow (vph)	234	771	121	39	841	62	310	310	0	98	180	27
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.8	40.5	40.5	9.3	36.0	36.0	16.7	25.0		9.2	17.5	17.5
Effective Green, g (s)	13.8	40.5	40.5	9.3	36.0	36.0	16.7	25.0		9.2	17.5	17.5
Actuated g/C Ratio	0.13	0.39	0.39	0.09	0.34	0.34	0.16	0.24		0.09	0.17	0.17
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	416	1259	563	280	1119	500	503	769		277	286	243
v/s Ratio Prot	0.07	c0.24		0.01	c0.26		c0.10	0.10		0.03	c0.11	
v/s Ratio Perm			0.08			0.04						0.02
v/c Ratio	0.56	0.61	0.22	0.14	0.75	0.12	0.62	0.40		0.35	0.63	0.11
Uniform Delay, d1	42.6	25.7	21.4	44.0	30.3	23.5	41.0	33.5		44.9	40.5	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.9	0.2	0.1	2.9	0.1	2.2	0.3		0.8	4.3	0.2
Delay (s)	44.3	26.6	21.6	44.0	33.2	23.6	43.2	33.9		45.7	44.8	37.2
Level of Service	D	C	C	D	C	C	D	C		D	D	D
Approach Delay (s)		28.6			32.0			38.5			42.2	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	104.6	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	57.2%	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)	194	640	260	32	698	149	257	243	17	81	149	135
Future Volume (veh/h)	194	640	260	32	698	149	257	243	17	81	149	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	234	771	313	39	841	180	310	293	20	98	180	163
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	332	1062	474	251	1124	501	417	723	49	166	265	224
Arrive On Green	0.10	0.32	0.32	0.08	0.34	0.34	0.13	0.23	0.23	0.05	0.15	0.15
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3133	213	3209	1737	1472
Grp Volume(v), veh/h	234	771	313	39	841	180	310	154	159	98	180	163
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1695	1605	1737	1472
Q Serve(g_s), s	5.3	15.6	8.1	0.9	17.0	6.9	7.0	5.9	6.0	2.2	7.4	7.9
Cycle Q Clear(g_c), s	5.3	15.6	8.1	0.9	17.0	6.9	7.0	5.9	6.0	2.2	7.4	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	332	1062	474	251	1124	501	417	381	391	166	265	224
V/C Ratio(X)	0.71	0.73	0.66	0.16	0.75	0.36	0.74	0.40	0.41	0.59	0.68	0.73
Avail Cap(c_a), veh/h	767	3069	1369	767	3069	1369	853	899	923	853	946	802
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	32.6	22.6	7.6	32.4	22.0	18.6	31.5	24.6	24.6	34.9	30.2	30.4
Incr Delay (d2), s/veh	2.8	1.0	1.6	0.1	1.0	0.4	2.6	0.7	0.7	3.3	3.1	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.2	4.0	0.3	5.7	2.2	2.7	2.2	2.3	0.9	3.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	23.6	9.2	32.5	23.0	19.1	34.2	25.2	25.3	38.2	33.2	34.9
LnGrp LOS	D	C	A	C	C	B	C	C	C	D	C	C
Approach Vol, veh/h		1318			1060			623			441	
Approach Delay, s/veh		22.2			22.7			29.7			34.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	31.5	13.8	16.8	11.8	32.9	7.9	22.7
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	17.6	9.0	9.9	7.3	19.0	4.2	8.0
Green Ext Time (p_c), s	0.0	6.7	0.8	1.5	0.5	6.7	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	705	27	255	891	0	5	0	235	0	0	0
Future Volume (Veh/h)	1	705	27	255	891	0	5	0	235	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	1	860	33	311	1087	0	6	0	287	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1087			893			2044	2588	446	2141	2604	544
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1087			893			2044	2588	446	2141	2604	544
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			56			69	100	46	100	100	100
cM capacity (veh/h)	587			701			19	12	535	7	12	461

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	573	320	311	725	362	293	0
Volume Left	1	0	0	311	0	0	6	0
Volume Right	0	0	33	0	0	0	287	0
cSH	587	1700	1700	701	1700	1700	547	1700
Volume to Capacity	0.00	0.34	0.19	0.44	0.43	0.21	0.54	0.00
Queue Length 95th (ft)	0	0	0	57	0	0	79	0
Control Delay (s)	11.1	0.0	0.0	14.2	0.0	0.0	24.2	0.0
Lane LOS	B			B			C	A
Approach Delay (s)	0.0			3.2			24.2	0.0
Approach LOS							C	A

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	47.8%	ICU Level of Service	A	
Analysis Period (min)	15			

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	1	705	27	255	891	0	5	0	235	0	0	0
Future Vol, veh/h	1	705	27	255	891	0	5	0	235	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	340	-	-	195	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	860	33	311	1087	0	6	0	287	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1087	0	0	893	0	0	2045	2588	447	2141	2604	544
Stage 1	-	-	-	-	-	-	879	879	-	1709	1709	-
Stage 2	-	-	-	-	-	-	1166	1709	-	432	895	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	587	-	-	701	-	-	29	22	535	25	21	461
Stage 1	-	-	-	-	-	-	291	343	-	86	132	-
Stage 2	-	-	-	-	-	-	192	132	-	549	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	701	-	-	19	12	535	8	12	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	12	-	8	12	-
Stage 1	-	-	-	-	-	-	290	342	-	86	73	-
Stage 2	-	-	-	-	-	-	107	73	-	254	336	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	24.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	19	535	587	-	-	701	-	-	-	-
HCM Lane V/C Ratio	0.321	0.536	0.002	-	-	0.444	-	-	-	-
HCM Control Delay (s)	266.9	19.2	11.1	-	-	14.2	-	-	0	0
HCM Lane LOS	F	C	B	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	3.1	0	-	-	2.3	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	336	598	941	17	5	172
Future Volume (Veh/h)	336	598	941	17	5	172
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	400	712	1120	20	6	205
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1140				2276	560
vC1, stage 1 conf vol					1120	
vC2, stage 2 conf vol					1156	
vCu, unblocked vol	1140				2276	560
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	29				91	55
cM capacity (veh/h)	565				67	452

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	400	356	356	560	560	20	211
Volume Left	400	0	0	0	0	0	6
Volume Right	0	0	0	0	0	20	205
cSH	565	1700	1700	1700	1700	1700	465
Volume to Capacity	0.71	0.21	0.21	0.33	0.33	0.01	0.45
Queue Length 95th (ft)	143	0	0	0	0	0	58
Control Delay (s)	25.4	0.0	0.0	0.0	0.0	0.0	20.7
Lane LOS	D						C
Approach Delay (s)	9.1			0.0			20.7
Approach LOS							C

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

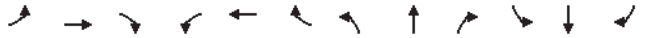
Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	336	598	941	17	5	172
Future Vol, veh/h	336	598	941	17	5	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	400	712	1120	20	6	205

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1140	0	-	0	2276	560
Stage 1	-	-	-	-	1120	-
Stage 2	-	-	-	-	1156	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	565	-	-	-	30	452
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	246	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	565	-	-	-	9	452
Mov Cap-2 Maneuver	-	-	-	-	68	-
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	246	-

Approach	EB	WB	SB
HCM Control Delay, s	9.1	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	565	-	-	-	68	452
HCM Lane V/C Ratio	0.708	-	-	-	0.088	0.453
HCM Control Delay (s)	25.3	-	-	-	63	19.4
HCM Lane LOS	D	-	-	-	F	C
HCM 95th %tile Q(veh)	5.7	-	-	-	0.3	2.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	552	18	2	1010	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	552	18	2	1010	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	634	21	2	1161	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1161			655			1218	1799	317	1482	1820	580
vC1, stage 1 conf vol							634	634		1165	1165	
vC2, stage 2 conf vol							584	1165		318	655	
vCu, unblocked vol	1161			655			1218	1799	317	1482	1820	580
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	539			858			315	217	647	181	215	431

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	317	317	21	2	774	387	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	858	1700	1700	350	1700
Volume to Capacity	0.00	0.19	0.19	0.01	0.00	0.46	0.23	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	2	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.2	0.0	0.0	16.1	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			16.1	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		37.9%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	552	18	2	1010	0	8	0	1	0	0	0
Future Vol, veh/h	0	552	18	2	1010	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	634	21	2	1161	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1161	0	0	655	0	0	1219	1799	317	1482	1820	581
Stage 1	-	-	-	-	-	-	634	634	-	1165	1165	-
Stage 2	-	-	-	-	-	-	585	1165	-	317	655	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	539	-	-	858	-	-	124	70	647	78	68	430
Stage 1	-	-	-	-	-	-	408	445	-	189	245	-
Stage 2	-	-	-	-	-	-	438	245	-	639	435	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	539	-	-	858	-	-	124	70	647	78	68	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	211	-	176	210	-
Stage 1	-	-	-	-	-	-	408	445	-	189	245	-
Stage 2	-	-	-	-	-	-	437	245	-	638	435	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	647	539	-	-	858	-	-	-
HCM Lane V/C Ratio	0.03	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	17.1	10.6	0	-	-	9.2	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	81.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	113	92	253	96	66	40	361	202	39	285	50
Future Vol, veh/h	87	113	92	253	96	66	40	361	202	39	285	50
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	107	140	114	312	119	81	49	446	249	48	352	62
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	40.5	65	138.3	40.3
HCM LOS	E	F	F	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	21%	0%
Vol Thru, %	0%	100%	0%	0%	55%	0%	59%	79%	74%
Vol Right, %	0%	0%	100%	0%	45%	0%	41%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	361	202	87	205	253	162	182	193
LT Vol	40	0	0	87	0	253	0	39	0
Through Vol	0	361	0	0	113	0	96	143	143
RT Vol	0	0	202	0	92	0	66	0	50
Lane Flow Rate	49	446	249	107	253	312	200	224	238
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.158	1.359	0.709	0.359	0.79	0.995	0.594	0.708	0.731
Departure Headway (Hd)	11.5	10.975	10.24	12.854	11.998	12.227	11.403	12.122	11.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	311	330	352	281	304	300	318	300	309
Service Time	9.294	8.769	8.034	10.554	9.698	9.927	9.103	9.822	9.515
HCM Lane V/C Ratio	0.158	1.352	0.707	0.381	0.832	1.04	0.629	0.747	0.77
HCM Control Delay	16.5	209.8	34.6	22.6	48.1	87.8	29.5	39.6	40.9
HCM Lane LOS	C	F	D	C	E	F	D	E	E
HCM 95th-tile Q	0.6	22.1	5.2	1.6	6.3	10.4	3.6	5	5.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Future Volume (Veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	1	19	7	4	96	0	19	1	3	0	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	96			26			132	128	22	132	132	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96			26			132	128	22	132	132	96
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1461			1550			822	749	1037	821	745	944

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	100	23	3
Volume Left	1	4	19	0
Volume Right	7	0	3	3
cSH	1461	1550	841	944
Volume to Capacity	0.00	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.4	8.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.4	8.8
Approach LOS			A	A

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	18.7%	ICU Level of Service	A	
Analysis Period (min)	15			

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	1	13	5	3	67	0	13	1	2	0	0	2
Future Vol, veh/h	1	13	5	3	67	0	13	1	2	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	19	7	4	96	0	19	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	96	0	0	26	0	0	131	129	23	131	132	96
Stage 1	-	-	-	-	-	-	25	25	-	104	104	-
Stage 2	-	-	-	-	-	-	106	104	-	27	28	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1461	-	-	1550	-	-	828	751	1037	828	748	944
Stage 1	-	-	-	-	-	-	978	863	-	887	798	-
Stage 2	-	-	-	-	-	-	885	798	-	975	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1550	-	-	823	748	1037	822	745	944
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	748	-	822	745	-
Stage 1	-	-	-	-	-	-	977	862	-	886	796	-
Stage 2	-	-	-	-	-	-	880	796	-	970	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.4	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1461	-	-	1550	-	-	944
HCM Lane V/C Ratio	0.027	0.001	-	-	0.003	-	-	0.003
HCM Control Delay (s)	9.4	7.5	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	344	373	432	682	7	22	151	300	302	35
v/c Ratio	0.01	0.58	0.77	0.48	0.61	0.05	0.14	0.56	0.72	0.71	0.07
Control Delay	49.0	39.3	42.5	19.1	4.2	44.5	45.4	16.4	42.8	42.1	0.3
Queue Delay	0.0	0.0	0.2	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	39.3	42.7	19.6	4.5	44.5	45.4	16.4	42.8	42.1	0.3
Queue Length 50th (ft)	1	91	186	147	0	4	12	0	156	157	0
Queue Length 95th (ft)	6	153	333	299	44	18	37	51	295	295	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	104	951	680	1118	1219	376	396	450	566	577	605
Starvation Cap Reductn	0	0	35	323	159	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.36	0.58	0.54	0.64	0.02	0.06	0.34	0.53	0.52	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	264	28	317	367	580	6	19	128	425	87	30
Future Volume (vph)	1	264	28	317	367	580	6	19	128	425	87	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3442		1752	1845	1568	1752	1845	1544	1665	1696	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3442		1752	1845	1568	1752	1845	1544	1665	1696	1521
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1	311	33	373	432	682	7	22	151	500	102	35
RTOR Reduction (vph)	0	6	0	0	0	363	0	0	138	0	0	27
Lane Group Flow (vph)	1	338	0	373	432	319	7	22	13	300	302	9
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	18.9		24.4	42.5	42.5	7.6	7.6	7.6	22.1	22.1	22.1
Effective Green, g (s)	0.8	18.9		24.4	42.5	42.5	7.6	7.6	7.6	22.1	22.1	22.1
Actuated g/C Ratio	0.01	0.21		0.27	0.47	0.47	0.08	0.08	0.08	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	15	714		469	861	732	146	154	128	404	411	369
v/s Ratio Prot	0.00	0.10		c0.21	c0.23		0.00	c0.01		c0.18	0.18	
v/s Ratio Perm						0.20			0.01			0.01
v/c Ratio	0.07	0.47		0.80	0.50	0.44	0.05	0.14	0.10	0.74	0.73	0.02
Uniform Delay, d1	44.7	31.7		31.0	16.9	16.2	38.4	38.7	38.5	31.8	31.7	26.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.5		9.0	0.5	0.4	0.1	0.4	0.3	7.2	6.7	0.0
Delay (s)	46.6	32.2		40.0	17.3	16.6	38.5	39.1	38.9	39.0	38.4	26.3
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		32.2			22.7			38.9			38.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	60.2%	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)	1	264	28	317	367	580	6	19	128	425	87	30
Future Volume (veh/h)	1	264	28	317	367	580	6	19	128	425	87	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	311	33	373	432	682	7	22	151	573	0	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	773	81	419	884	749	210	220	186	711	0	313
Arrive On Green	0.00	0.24	0.24	0.24	0.48	0.48	0.12	0.12	0.12	0.20	0.00	0.20
Sat Flow, veh/h	1767	3213	338	1767	1856	1572	1767	1856	1569	3534	0	1553
Grp Volume(v), veh/h	1	169	175	373	432	682	7	22	151	573	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1788	1767	1856	1572	1767	1856	1569	1767	0	1553
Q Serve(g_s), s	0.1	7.2	7.3	18.2	14.1	35.7	0.3	0.9	8.4	13.8	0.0	1.6
Cycle Q Clear(g_c), s	0.1	7.2	7.3	18.2	14.1	35.7	0.3	0.9	8.4	13.8	0.0	1.6
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	424	430	419	884	749	210	220	186	711	0	313
V/C Ratio(X)	0.41	0.40	0.41	0.89	0.49	0.91	0.03	0.10	0.81	0.81	0.00	0.11
Avail Cap(c_a), veh/h	99	456	462	645	1053	892	358	375	317	1132	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.4	28.4	28.4	32.8	15.9	21.5	34.7	35.0	38.2	33.9	0.0	29.0
Incr Delay (d2), s/veh	85.2	0.6	0.6	9.8	0.4	11.9	0.1	0.2	8.2	2.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.1	3.2	8.7	5.8	14.6	0.1	0.4	3.5	5.9	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	129.6	29.0	29.0	42.6	16.3	33.4	34.8	35.2	46.5	36.2	0.0	29.2
LnGrp LOS	F	C	C	D	B	C	C	D	D	D	A	C
Approach Vol, veh/h		345			1487			180			608	
Approach Delay, s/veh		29.3			30.7			44.6			35.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.6	25.9		22.4	4.6	46.9		15.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	20.2	9.3		15.8	2.1	37.7		10.4				
Green Ext Time (p_c), s	1.0	1.7		1.9	0.0	4.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			32.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	932	56	1300	411	251	14	273	6	9
v/c Ratio	0.41	0.52	0.33	0.73	0.45	0.71	0.03	0.46	0.02	0.02
Control Delay	49.2	16.1	48.4	21.0	7.3	44.1	27.4	7.7	27.2	0.0
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	16.4	48.4	21.0	7.3	44.1	27.4	7.7	27.2	0.0
Queue Length 50th (ft)	45	180	33	304	44	143	7	8	3	0
Queue Length 95th (ft)	85	236	67	375	91	200	19	45	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	240	2200	217	2192	1056	556	740	782	553	746
Starvation Cap Reductn	0	656	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	0.32	0.60	0.26	0.59	0.39	0.45	0.02	0.35	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	699	46	45	1040	329	201	11	218	5	0	7
Future Volume (vph)	61	699	46	45	1040	329	201	11	218	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3465		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3465		1752	3505	1530	1387	1845	1568	1380	1568	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	76	874	58	56	1300	411	251	14	272	6	0	9
RTOR Reduction (vph)	0	4	0	0	0	132	0	0	191	0	7	0
Lane Group Flow (vph)	76	928	0	56	1300	279	251	14	82	6	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.8	44.2		6.1	43.5	43.5	21.7	21.7	21.7	21.7	21.7	
Effective Green, g (s)	6.8	44.2		6.1	43.5	43.5	21.7	21.7	21.7	21.7	21.7	
Actuated g/C Ratio	0.08	0.52		0.07	0.51	0.51	0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1791		124	1783	778	352	468	397	350	397	
v/s Ratio Prot	c0.04	0.27		0.03	c0.37			0.01			0.00	
v/s Ratio Perm						0.18	c0.18		0.05	0.00		
v/c Ratio	0.55	0.52		0.45	0.73	0.36	0.71	0.03	0.21	0.02	0.01	
Uniform Delay, d1	37.9	13.6		38.1	16.4	12.6	29.1	24.0	25.1	23.9	23.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.3	0.3		2.6	1.5	0.3	6.7	0.0	0.3	0.0	0.0	
Delay (s)	42.2	13.9		40.7	17.9	12.9	35.8	24.0	25.4	23.9	23.8	
Level of Service	D	B		D	B	B	D	C	C	C	C	
Approach Delay (s)		16.0			17.5			30.2			23.9	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	62.0%	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)	61	699	46	45	1040	329	201	11	218	5	0	7
Future Volume (veh/h)	61	699	46	45	1040	329	201	11	218	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	874	58	56	1300	0	251	14	272	6	0	9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	1722	114	86	1780		426	427	362	354	0	362
Arrive On Green	0.06	0.51	0.51	0.05	0.50	0.00	0.23	0.23	0.23	0.23	0.00	0.23
Sat Flow, veh/h	1767	3354	223	1767	3526	1572	1395	1856	1572	1085	0	1572
Grp Volume(v), veh/h	76	459	473	56	1300	0	251	14	272	6	0	9
Grp Sat Flow(s),veh/h/ln	1767	1763	1814	1767	1763	1572	1395	1856	1572	1085	0	1572
Q Serve(g_s), s	2.8	11.2	11.2	2.0	18.8	0.0	11.1	0.4	10.5	0.3	0.0	0.3
Cycle Q Clear(g_c), s	2.8	11.2	11.2	2.0	18.8	0.0	11.3	0.4	10.5	0.7	0.0	0.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	101	905	931	86	1780		426	427	362	354	0	362
V/C Ratio(X)	0.75	0.51	0.51	0.65	0.73		0.59	0.03	0.75	0.02	0.00	0.02
Avail Cap(c_a), veh/h	285	1389	1430	258	2725		762	875	742	616	0	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	10.4	10.4	30.4	12.6	0.0	23.8	19.4	23.3	19.7	0.0	19.4
Incr Delay (d2), s/veh	10.5	0.4	0.4	7.9	0.6	0.0	1.3	0.0	3.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.8	3.9	1.0	6.4	0.0	3.5	0.2	3.9	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	10.9	10.8	38.3	13.2	0.0	25.1	19.5	26.5	19.7	0.0	19.4
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		1008			1356	A		537			15	
Approach Delay, s/veh		13.1			14.3			25.6			19.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	37.9		19.5	8.2	37.4		19.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	4.0	13.2		2.7	4.8	20.8		13.3				
Green Ext Time (p_c), s	0.0	7.3		0.0	0.1	12.0		1.6				

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

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	224	924	70	1018	448	211	56	150	637
v/c Ratio	0.61	0.66	0.47	0.83	0.76	0.25	0.13	0.64	0.91dr
Control Delay	55.6	27.8	61.7	38.8	53.1	35.8	2.4	58.9	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	27.8	61.7	38.8	53.1	35.8	2.4	58.9	38.6
Queue Length 50th (ft)	82	271	50	352	163	66	0	107	170
Queue Length 95th (ft)	113	300	89	379	201	93	2	156	202
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	415	1524	179	1472	682	953	496	317	930
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.39	0.69	0.66	0.22	0.11	0.47	0.68

Intersection Summary

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	482	257	56	720	94	358	169	45	120	173	337
Future Volume (vph)	179	482	257	56	720	94	358	169	45	120	173	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3337		1770	3473		3433	3539	1583	1770	3188	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3337		1770	3473		3433	3539	1583	1770	3188	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	224	602	321	70	900	118	448	211	56	150	216	421
RTOR Reduction (vph)	0	57	0	0	8	0	0	0	43	0	152	0
Lane Group Flow (vph)	224	867	0	70	1010	0	448	211	13	150	485	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.4	42.5		7.3	38.4		18.2	25.1	25.1	14.1	21.0	
Effective Green, g (s)	11.4	42.5		7.3	38.4		18.2	25.1	25.1	14.1	21.0	
Actuated g/C Ratio	0.11	0.40		0.07	0.36		0.17	0.23	0.23	0.13	0.20	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	365	1325		120	1246		583	830	371	233	625	
v/s Ratio Prot	c0.07	c0.26		0.04	c0.29		c0.13	c0.06		0.08	c0.15	
v/s Ratio Perm									0.01			
v/c Ratio	0.61	0.65		0.58	0.81		0.77	0.25	0.04	0.64	0.91dr	
Uniform Delay, d1	45.7	26.3		48.4	31.0		42.4	33.3	31.6	44.1	40.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	1.2		7.0	4.1		6.0	0.2	0.0	6.0	6.0	
Delay (s)	48.7	27.4		55.4	35.1		48.4	33.5	31.6	50.0	46.8	
Level of Service	D	C		E	D		D	C	C	D	D	
Approach Delay (s)		31.6			36.4			42.7			47.4	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	68.9%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	482	257	56	720	94	358	169	45	120	173	337
Future Volume (veh/h)	179	482	257	56	720	94	358	169	45	120	173	337
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	602	0	70	900	118	448	211	56	150	216	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1492		94	1191	156	583	579	258	192	363	
Arrive On Green	0.10	0.42	0.00	0.05	0.38	0.38	0.17	0.16	0.16	0.11	0.10	0.00
Sat Flow, veh/h	3456	3647	0	1781	3153	413	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	224	602	0	70	507	511	448	211	56	150	216	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1790	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	4.4	8.3	0.0	2.7	17.5	17.5	8.7	3.7	2.2	5.8	4.1	0.0
Cycle Q Clear(g_c), s	4.4	8.3	0.0	2.7	17.5	17.5	8.7	3.7	2.2	5.8	4.1	0.0
Prop In Lane	1.00		0.00	1.00		0.23	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	329	1492		94	671	676	583	579	258	192	363	
V/C Ratio(X)	0.68	0.40		0.74	0.76	0.76	0.77	0.36	0.22	0.78	0.60	
Avail Cap(c_a), veh/h	615	2302		266	1101	1109	1009	1392	621	469	1290	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.7	14.2	0.0	32.8	19.0	19.0	27.9	26.2	25.5	30.5	30.1	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.0	10.8	1.8	1.8	2.2	0.4	0.4	6.7	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.1	0.0	1.4	6.8	6.8	3.5	1.5	0.8	2.6	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	14.4	0.0	43.6	20.8	20.8	30.0	26.5	25.9	37.2	31.7	0.0
LnGrp LOS	C	B		D	C	C	C	C	C	D	C	
Approach Vol, veh/h		826	A		1088			715			366	A
Approach Delay, s/veh		19.5			22.3			28.7			34.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	34.0	16.4	11.7	11.2	31.0	12.1	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.7	10.3	10.7	6.1	6.4	19.5	7.8	5.7
Green Ext Time (p_c), s	0.1	4.6	1.2	1.1	0.4	7.0	0.3	1.3

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	75	431	1131	520	105
v/c Ratio	0.36	0.21	0.74	0.64	0.23
Control Delay	44.6	10.0	20.8	34.6	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	10.0	20.8	34.6	9.0
Queue Length 50th (ft)	33	37	174	113	0
Queue Length 95th (ft)	103	134	#458	251	43
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	273	2619	2022	1187	615
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	0.16	0.56	0.44	0.17

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)	65	375	527	457	452	91
Future Volume (vph)	65	375	527	457	452	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3238		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3238		3400	1568
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	75	431	606	525	520	105
RTOR Reduction (vph)	0	0	115	0	0	81
Lane Group Flow (vph)	75	431	1016	0	520	24
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.9	45.2	33.8		18.3	18.3
Effective Green, g (s)	6.9	45.2	33.8		18.3	18.3
Actuated g/C Ratio	0.09	0.56	0.42		0.23	0.23
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	150	1970	1361		773	356
v/s Ratio Prot	c0.04	0.12	c0.31			
v/s Ratio Perm					c0.15	0.02
v/c Ratio	0.50	0.22	0.75		0.67	0.07
Uniform Delay, d1	35.1	8.8	19.7		28.3	24.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.6	0.1	2.3		2.3	0.1
Delay (s)	37.7	8.8	22.0		30.6	24.4
Level of Service	D	A	C		C	C
Approach Delay (s)		13.1	22.0		29.6	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	266	133	51	552	412	260	556	231	654
v/c Ratio	0.52	0.46	0.23	0.33	0.67	0.61	0.74	0.67	0.71	0.70
Control Delay	42.5	26.4	5.9	44.3	33.3	7.7	47.0	32.3	46.7	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	26.4	5.9	44.3	33.3	7.7	47.0	32.3	46.7	20.4
Queue Length 50th (ft)	64	116	0	26	139	0	131	140	116	92
Queue Length 95th (ft)	124	199	40	65	210	78	#268	200	#238	155
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	325	697	660	166	965	719	398	1101	373	1167
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	0.40	0.38	0.20	0.31	0.57	0.57	0.65	0.50	0.62	0.56

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)	116	239	120	46	497	371	234	464	36	208	282	307
Future Volume (vph)	116	239	120	46	497	371	234	464	36	208	282	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1532	1752	3505	1533	1752	3463		1752	3186	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1532	1752	3505	1533	1752	3463		1752	3186	
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)	129	266	133	51	552	412	260	516	40	231	313	341
RTOR Reduction (vph)	0	0	92	0	0	312	0	6	0	0	227	0
Lane Group Flow (vph)	129	266	41	51	552	100	260	550	0	231	427	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.7	24.1	24.1	3.6	19.0	19.0	15.4	18.3		14.2	17.1	
Effective Green, g (s)	8.7	24.1	24.1	3.6	19.0	19.0	15.4	18.3		14.2	17.1	
Actuated g/C Ratio	0.11	0.31	0.31	0.05	0.24	0.24	0.20	0.23		0.18	0.22	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	194	568	472	80	851	372	345	810		318	696	
v/s Ratio Prot	c0.07	0.14		0.03	c0.16		c0.15	c0.16		0.13	0.13	
v/s Ratio Perm			0.03			0.07						
v/c Ratio	0.66	0.47	0.09	0.64	0.65	0.27	0.75	0.68		0.73	0.61	
Uniform Delay, d1	33.4	21.9	19.2	36.7	26.6	24.0	29.6	27.3		30.2	27.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.3	0.6	0.1	15.5	1.7	0.4	9.0	2.3		8.0	1.6	
Delay (s)	41.7	22.5	19.3	52.1	28.3	24.4	38.6	29.5		38.2	29.2	
Level of Service	D	C	B	D	C	C	D	C		D	C	
Approach Delay (s)		26.4			27.9			32.4			31.5	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	67.2%	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)	116	239	120	46	497	371	234	464	36	208	282	307
Future Volume (veh/h)	116	239	120	46	497	371	234	464	36	208	282	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	129	266	133	51	552	412	260	516	40	231	313	341
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	565	474	75	897	396	302	894	69	273	446	392
Arrive On Green	0.09	0.30	0.30	0.04	0.25	0.25	0.17	0.27	0.27	0.15	0.25	0.25
Sat Flow, veh/h	1767	1856	1559	1767	3526	1556	1767	3315	256	1767	1763	1550
Grp Volume(v), veh/h	129	266	133	51	552	412	260	274	282	231	313	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1559	1767	1763	1556	1767	1763	1808	1767	1763	1550
Q Serve(g_s), s	5.6	9.2	5.1	2.2	10.9	20.0	11.2	10.6	10.6	10.0	12.7	16.6
Cycle Q Clear(g_c), s	5.6	9.2	5.1	2.2	10.9	20.0	11.2	10.6	10.6	10.0	12.7	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	164	565	474	75	897	396	302	475	487	273	446	392
V/C Ratio(X)	0.79	0.47	0.28	0.68	0.62	1.04	0.86	0.58	0.58	0.85	0.70	0.87
Avail Cap(c_a), veh/h	303	628	527	155	897	396	371	516	529	348	493	434
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	34.9	22.2	20.8	37.1	25.9	29.3	31.7	24.8	24.8	32.3	26.7	28.1
Incr Delay (d2), s/veh	8.1	0.6	0.3	10.0	1.3	56.3	15.7	1.4	1.4	14.3	3.9	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.8	1.8	1.1	4.4	13.1	5.9	4.3	4.5	5.2	5.5	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	22.8	21.1	47.1	27.2	85.6	47.3	26.2	26.2	46.6	30.6	44.1
LnGrp LOS	D	C	C	D	C	F	D	C	C	D	C	D
Approach Vol, veh/h		528			1015			816			885	
Approach Delay, s/veh		27.3			51.9			32.9			40.0	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	25.7	7.9	28.4	17.9	24.4	11.8	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	12.0	12.6	4.2	11.2	13.2	18.6	7.6	22.0
Green Ext Time (p_c), s	0.2	2.4	0.0	1.6	0.2	1.3	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	60	533	43	55	426
Future Volume (Veh/h)	42	60	533	43	55	426
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	50	71	635	51	65	507
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1298	660			686	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1298	660			686	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	85			93	
cM capacity (veh/h)	166	463			908	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	121	686	65	507
Volume Left	50	0	65	0
Volume Right	71	51	0	0
cSH	266	1700	908	1700
Volume to Capacity	0.46	0.40	0.07	0.30
Queue Length 95th (ft)	56	0	6	0
Control Delay (s)	29.4	0.0	9.3	0.0
Lane LOS	D		A	
Approach Delay (s)	29.4	0.0	1.1	
Approach LOS	D			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	60	533	43	55	426
Future Vol, veh/h	42	60	533	43	55	426
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	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	71	635	51	65	507

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1298	661	0	0	686	0
Stage 1	661	-	-	-	-	-
Stage 2	637	-	-	-	-	-
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	178	462	-	-	908	-
Stage 1	514	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	165	462	-	-	908	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.6	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	265	908	-
HCM Lane V/C Ratio	-	-	0.458	0.072	-
HCM Control Delay (s)	-	-	29.6	9.3	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	6	37	7	15	95	27	326	3	33	305	83
Future Volume (Veh/h)	94	6	37	7	15	95	27	326	3	33	305	83
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	112	7	44	8	18	113	32	388	4	39	363	99
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1022	905	369	944	1002	393	468			394		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1022	905	369	944	1002	393	468			394		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	29	97	93	96	92	83	97			97		
cM capacity (veh/h)	157	257	673	209	226	654	1087			1162		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	163	139	32	392	39	363	99
Volume Left	112	8	32	0	39	0	0
Volume Right	44	113	0	4	0	0	99
cSH	202	478	1087	1700	1162	1700	1700
Volume to Capacity	0.81	0.29	0.03	0.23	0.03	0.21	0.06
Queue Length 95th (ft)	144	30	2	0	3	0	0
Control Delay (s)	70.8	15.6	8.4	0.0	8.2	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	70.8	15.6	0.6		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	11.7			
Intersection Capacity Utilization	45.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	6	37	7	15	95	27	326	3	33	305	83
Future Vol, veh/h	94	6	37	7	15	95	27	326	3	33	305	83
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	7	44	8	18	113	32	388	4	39	363	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	968	905	369	972	1002	393	468	0	0	394	0	0
Stage 1	447	447	-	456	456	-	-	-	-	-	-	-
Stage 2	521	458	-	516	546	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	233	276	677	232	242	656	1094	-	-	1165	-	-
Stage 1	591	573	-	584	568	-	-	-	-	-	-	-
Stage 2	539	567	-	542	518	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	171	257	673	202	225	654	1088	-	-	1163	-	-
Mov Cap-2 Maneuver	171	257	-	202	225	-	-	-	-	-	-	-
Stage 1	570	550	-	566	550	-	-	-	-	-	-	-
Stage 2	418	549	-	483	497	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	58.5	15.7	0.6	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1088	-	-	218	474	1163	-	-
HCM Lane V/C Ratio	0.03	-	-	0.748	0.294	0.034	-	-
HCM Control Delay (s)	8.4	-	-	58.5	15.7	8.2	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.1	1.2	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	5	200	5	171	4	165	94	174	161	10
Future Volume (vph)	20	9	5	200	5	171	4	165	94	174	161	10
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	11	6	235	6	201	5	194	111	205	189	12

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	41	442	199	111	300	107
Volume Left (vph)	24	235	5	0	205	0
Volume Right (vph)	6	201	0	111	0	12
Hadj (s)	0.06	-0.13	0.05	-0.67	0.38	-0.04
Departure Headway (s)	7.0	5.8	6.9	6.1	7.0	6.6
Degree Utilization, x	0.08	0.71	0.38	0.19	0.58	0.19
Capacity (veh/h)	422	442	488	548	495	523
Control Delay (s)	10.7	22.0	12.8	9.4	18.1	9.9
Approach Delay (s)	10.7	22.0	11.6		15.9	
Approach LOS	B	C	B		C	

Intersection Summary				
Delay	16.9			
Level of Service	C			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	5	200	5	171	0	4	165	94	174	161
Future Vol, veh/h	20	9	5	200	5	171	0	4	165	94	174	161
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	11	6	235	6	201	0	5	194	111	205	189
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.8	22.3	12.4	16.7
HCM LOS	B	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	0%	59%	53%	68%	0%
Vol Thru, %	98%	0%	26%	1%	32%	89%
Vol Right, %	0%	100%	15%	45%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	94	34	376	255	91
LT Vol	4	0	20	200	174	0
Through Vol	165	0	9	5	81	81
RT Vol	0	94	5	171	0	10
Lane Flow Rate	199	111	40	442	299	106
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.374	0.186	0.079	0.715	0.575	0.192
Departure Headway (Hd)	6.78	6.051	7.154	5.815	6.919	6.491
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	527	587	504	619	518	548
Service Time	4.579	3.849	5.154	3.892	4.709	4.28
HCM Lane V/C Ratio	0.378	0.189	0.079	0.714	0.577	0.193
HCM Control Delay	13.6	10.2	10.8	22.3	18.8	10.8
HCM Lane LOS	B	B	B	C	C	B
HCM 95th-tile Q	1.7	0.7	0.3	5.9	3.6	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.85
Heavy Vehicles, %	2
Mvmt Flow	12
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	81	123	129	88	277
Future Volume (Veh/h)	133	81	123	129	88	277
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	155	94	143	150	102	322
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	463	102	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	463	102	424			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	90	87			
cM capacity (veh/h)	458	930	1125			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	249	143	75	75	102	322
Volume Left	155	143	0	0	0	0
Volume Right	94	0	0	0	0	322
cSH	736	1125	1700	1700	1700	1700
Volume to Capacity	0.34	0.13	0.04	0.04	0.06	0.19
Queue Length 95th (ft)	37	11	0	0	0	0
Control Delay (s)	14.0	8.7	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	14.0	4.2			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay		4.9	
Intersection Capacity Utilization		30.6%	ICU Level of Service
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	81	123	129	88	277
Future Vol, veh/h	133	81	123	129	88	277
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	155	94	143	150	102	322

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	102	424	0	-	0
Stage 1	102	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	540	950	1127	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	471	950	1127	-	-	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	4.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1127	-	471	950	-	-
HCM Lane V/C Ratio	0.127	-	0.328	0.099	-	-
HCM Control Delay (s)	8.7	-	16.3	9.2	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	1.4	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	24	1	87	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	24	1	87	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	30	0	26	1	96	10	0	0	0	0	356	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	417	364	364	390	372	0	372			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	417	364	364	390	372	0	372			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	96	100	83	99	100			100		
cM capacity (veh/h)	470	564	681	547	558	1085	1186			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	56	107	372
Volume Left	30	1	0
Volume Right	26	10	16
cSH	549	616	1700
Volume to Capacity	0.10	0.17	0.22
Queue Length 95th (ft)	8	16	0
Control Delay (s)	12.3	12.4	0.0
Lane LOS	B	B	
Approach Delay (s)	12.3	12.4	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay	3.8				
Intersection Capacity Utilization	34.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	24	1	87	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	24	1	87	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	26	1	96	10	0	0	0	0	356	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	417	364	364	377	372	0				-	-	0
Stage 1	364	364	-	0	0	-				-	-	-
Stage 2	53	0	-	377	372	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	546	564	681	580	558	-				0	-	-
Stage 1	655	624	-	-	-	-				0	-	-
Stage 2	-	-	-	644	619	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	564	681	557	558	-				-	-	-
Mov Cap-2 Maneuver	-	564	-	557	558	-				-	-	-
Stage 1	655	624	-	-	-	-				-	-	-
Stage 2	-	-	-	619	619	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	558	-	-	-
HCM Lane V/C Ratio	-	0.173	-	-	-
HCM Control Delay (s)	-	12.8	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	-

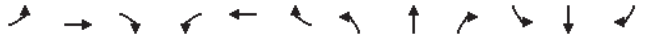
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	348	1194	256	508	77	308	565	335	280
v/c Ratio	0.10	0.72	0.80	0.32	0.46	0.54	0.66	0.34	0.67	0.36
Control Delay	55.8	51.7	37.7	26.7	3.1	76.4	62.1	5.4	60.6	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	51.7	37.7	26.7	3.1	76.4	62.1	5.4	60.6	44.2
Queue Length 50th (ft)	17	120	441	139	15	66	137	40	145	109
Queue Length 95th (ft)	43	171	568	223	47	122	186	59	196	147
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	289	614	1697	921	1163	173	658	1824	669	984
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	0.07	0.57	0.70	0.28	0.44	0.45	0.47	0.31	0.50	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	177	115	1003	215	427	65	259	475	281	197	38
Future Volume (vph)	18	177	115	1003	215	427	65	259	475	281	197	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3330		3433	1863	1568	1770	3539	2787	3433	3441	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3330		3433	1863	1568	1770	3539	2787	3433	3441	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	211	137	1194	256	508	77	308	565	335	235	45
RTOR Reduction (vph)	0	73	0	0	0	195	0	0	80	0	11	0
Lane Group Flow (vph)	21	275	0	1194	256	313	77	308	485	335	269	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	15.8	15.8		55.5	55.5	74.3	8.4	18.5	74.0	18.8	28.9	
Effective Green, g (s)	15.8	15.8		55.5	55.5	74.3	8.4	18.5	74.0	18.8	28.9	
Actuated g/C Ratio	0.12	0.12		0.43	0.43	0.58	0.07	0.14	0.57	0.15	0.22	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	407		1475	800	902	115	507	1597	499	770	
v/s Ratio Prot	0.01	c0.08		c0.35	0.14	0.05	0.04	c0.09	0.13	c0.10	0.08	
v/s Ratio Perm						0.15			0.04			
v/c Ratio	0.10	0.68		0.81	0.32	0.35	0.67	0.61	0.30	0.67	0.35	
Uniform Delay, d1	50.3	54.2		32.2	24.3	14.5	59.0	51.9	14.2	52.2	42.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	4.4		3.4	0.2	0.2	13.8	2.1	0.1	3.5	0.3	
Delay (s)	50.5	58.6		35.6	24.6	14.8	72.8	54.0	14.3	55.8	42.5	
Level of Service	D	E		D	C	B	E	D	B	E	D	
Approach Delay (s)		58.1			28.7			31.9			49.7	
Approach LOS		E			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	129.1	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	69.5%	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)	18	177	115	1003	215	427	65	259	475	281	197	38
Future Volume (veh/h)	18	177	115	1003	215	427	65	259	475	281	197	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	211	137	1194	256	508	77	308	565	335	235	45
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	275	171	1429	774	838	99	544	1581	416	621	117
Arrive On Green	0.13	0.13	0.13	0.41	0.41	0.41	0.06	0.15	0.15	0.12	0.21	0.21
Sat Flow, veh/h	1781	2105	1307	3456	1870	1564	1781	3554	2790	3456	2983	562
Grp Volume(v), veh/h	21	177	171	1194	256	508	77	308	565	335	138	142
Grp Sat Flow(s),veh/h/ln	1781	1777	1635	1728	1870	1564	1781	1777	1395	1728	1777	1768
Q Serve(g_s), s	1.2	10.8	11.4	34.8	10.5	25.2	4.8	9.0	12.4	10.6	7.5	7.8
Cycle Q Clear(g_c), s	1.2	10.8	11.4	34.8	10.5	25.2	4.8	9.0	12.4	10.6	7.5	7.8
Prop In Lane	1.00		0.80	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	233	232	213	1429	774	838	99	544	1581	416	370	368
V/C Ratio(X)	0.09	0.76	0.80	0.84	0.33	0.61	0.78	0.57	0.36	0.81	0.37	0.38
Avail Cap(c_a), veh/h	323	322	297	1893	1025	1048	193	733	1729	747	558	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	47.2	47.5	29.5	22.4	18.1	52.4	44.2	13.2	48.2	38.2	38.3
Incr Delay (d2), s/veh	0.2	6.8	10.4	2.6	0.2	0.7	12.4	0.9	0.1	3.7	0.6	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	0.5	5.2	5.3	14.2	4.5	8.6	2.4	3.9	7.8	4.8	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	54.0	57.9	32.1	22.6	18.8	64.8	45.1	13.4	51.9	38.8	39.0
LnGrp LOS	D	D	E	C	C	B	E	D	B	D	D	D
Approach Vol, veh/h		369			1958			950			615	
Approach Delay, s/veh		55.2			27.4			27.8			46.0	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	23.0		19.3	12.0	29.2		51.9				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	12.6	14.4		13.4	6.8	9.8		36.8				
Green Ext Time (p_c), s	0.9	2.8		1.2	0.1	1.6		9.7				

Intersection Summary			
HCM 6th Ctrl Delay		33.1	
HCM 6th LOS		C	

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	663	244	131	1368	609	367	308	431
v/c Ratio	0.56	0.53	0.34	0.68	0.98	0.84	0.65	0.84	0.73
Control Delay	62.6	31.1	5.0	65.4	51.0	53.1	47.3	62.6	43.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	31.1	5.0	65.4	51.0	53.1	47.3	62.6	43.0
Queue Length 50th (ft)	41	200	0	89	490	211	126	205	126
Queue Length 95th (ft)	73	273	51	#159	#687	285	170	#344	173
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	205	1262	721	219	1403	773	835	409	895
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.53	0.34	0.60	0.98	0.79	0.44	0.75	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)	100	577	212	114	923	267	530	273	46	268	241	134
Future Volume (vph)	100	577	212	114	923	267	530	273	46	268	241	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3401		3433	3453		1770	3350	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3401		3433	3453		1770	3350	
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)	115	663	244	131	1061	307	609	314	53	308	277	154
RTOR Reduction (vph)	0	0	157	0	21	0	0	12	0	0	69	0
Lane Group Flow (vph)	115	663	87	131	1347	0	609	355	0	308	362	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.5	39.0	39.0	12.0	44.5		23.1	17.5		22.7	17.1	
Effective Green, g (s)	6.5	39.0	39.0	12.0	44.5		23.1	17.5		22.7	17.1	
Actuated g/C Ratio	0.06	0.36	0.36	0.11	0.41		0.21	0.16		0.21	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	204	1263	565	194	1385		726	553		367	524	
v/s Ratio Prot	0.03	0.19		c0.07	c0.40		c0.18	0.10		c0.17	0.11	
v/s Ratio Perm			0.06									
v/c Ratio	0.56	0.52	0.15	0.68	0.97		0.84	0.64		0.84	0.69	
Uniform Delay, d1	50.0	27.8	23.9	46.7	31.8		41.3	42.9		41.5	43.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	0.4	0.1	8.9	17.9		8.4	2.6		15.4	3.9	
Delay (s)	53.5	28.2	24.0	55.7	49.7		49.7	45.5		56.9	47.5	
Level of Service	D	C	C	E	D		D	D		E	D	
Approach Delay (s)		30.0			50.2			48.1			51.4	
Approach LOS		C			D			D			D	

Intersection Summary					
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.93				
Actuated Cycle Length (s)	109.2	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	79.5%	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)	100	577	212	114	923	267	530	273	46	268	241	134
Future Volume (veh/h)	100	577	212	114	923	267	530	273	46	268	241	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	663	244	131	1061	307	609	314	53	308	277	154
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	173	1329	593	161	1126	323	688	528	88	342	370	200
Arrive On Green	0.05	0.37	0.37	0.09	0.41	0.41	0.20	0.17	0.17	0.19	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2720	780	3456	3043	508	1781	2228	1203
Grp Volume(v), veh/h	115	663	244	131	690	678	609	182	185	308	219	212
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1723	1728	1777	1774	1781	1777	1654
Q Serve(g_s), s	3.5	15.2	6.6	7.6	39.3	40.2	18.1	10.0	10.2	17.8	12.4	12.9
Cycle Q Clear(g_c), s	3.5	15.2	6.6	7.6	39.3	40.2	18.1	10.0	10.2	17.8	12.4	12.9
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.29	1.00		0.73
Lane Grp Cap(c), veh/h	173	1329	593	161	736	714	688	308	308	342	295	275
V/C Ratio(X)	0.66	0.50	0.41	0.82	0.94	0.95	0.88	0.59	0.60	0.90	0.74	0.77
Avail Cap(c_a), veh/h	213	1329	593	228	745	722	788	437	436	425	456	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	25.4	7.3	47.2	29.7	29.9	41.1	40.2	40.3	41.7	41.9	42.1
Incr Delay (d2), s/veh	5.6	0.3	0.5	14.2	19.3	22.0	10.7	1.8	1.9	19.0	3.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.2	4.0	3.9	19.6	19.9	8.5	4.4	4.5	9.4	5.6	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	25.7	7.7	61.4	49.0	51.9	51.8	42.0	42.2	60.7	45.6	46.7
LnGrp LOS	D	C	A	E	D	D	D	D	D	E	D	D
Approach Vol, veh/h		1022			1499			976			739	
Approach Delay, s/veh		24.7			51.4			48.2			52.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	44.0	25.5	22.1	9.8	48.3	24.8	22.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	9.6	17.2	20.1	14.9	5.5	42.2	19.8	12.2
Green Ext Time (p_c), s	0.1	5.0	0.9	1.9	0.0	1.6	0.4	1.6

Intersection Summary		
HCM 6th Ctrl Delay	44.3	
HCM 6th LOS	D	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	321	146	13	733	203	7
v/c Ratio	0.41	0.20	0.03	0.49	0.41	0.02
Control Delay	11.1	3.1	9.0	10.5	13.8	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	3.1	9.0	10.5	13.8	6.8
Queue Length 50th (ft)	36	0	1	44	26	0
Queue Length 95th (ft)	145	28	12	152	95	7
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1606	1349	906	3052	1378	1236
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	0.20	0.11	0.01	0.24	0.15	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	292	133	12	667	185	6
Future Volume (vph)	292	133	12	667	185	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.57	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	1042	3505	1752	1568
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	321	146	13	733	203	7
RTOR Reduction (vph)	0	82	0	0	0	5
Lane Group Flow (vph)	321	64	13	733	203	2
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	17.5	17.5	17.5	17.5	11.6	11.6
Effective Green, g (s)	17.5	17.5	17.5	17.5	11.6	11.6
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.29	0.29
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	809	671	457	1537	509	455
v/s Ratio Prot	0.17			c0.21		0.00
v/s Ratio Perm		0.04	0.01		c0.12	
v/c Ratio	0.40	0.10	0.03	0.48	0.40	0.00
Uniform Delay, d1	7.6	6.6	6.4	8.0	11.4	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.1	0.2	0.0
Delay (s)	7.7	6.6	6.4	8.0	11.5	10.1
Level of Service	A	A	A	A	B	B
Approach Delay (s)	7.4			8.0	11.5	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	39.9	Sum of lost time (s)	10.8
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Volume (veh/h)	292	133	12	667	185	6	
Future Volume (veh/h)	292	133	12	667	185	6	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		0.99	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	321	146	13	733	203	7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	3	3	3	3	3	3	
Cap, veh/h	675	569	479	1283	416	370	
Arrive On Green	0.36	0.36	0.36	0.36	0.24	0.24	
Sat Flow, veh/h	1856	1564	916	3618	1767	1572	
Grp Volume(v), veh/h	321	146	13	733	203	7	
Grp Sat Flow(s),veh/h/ln	1856	1564	916	1763	1767	1572	
Q Serve(g_s), s	3.6	1.8	0.3	4.5	2.7	0.1	
Cycle Q Clear(g_c), s	3.6	1.8	3.9	4.5	2.7	0.1	
Prop In Lane		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	675	569	479	1283	416	370	
V/C Ratio(X)	0.48	0.26	0.03	0.57	0.49	0.02	
Avail Cap(c_a), veh/h	2383	2008	1322	4528	1942	1728	
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	6.6	6.0	8.1	6.9	8.9	7.9	
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.1	0.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.6	0.2	0.0	0.7	0.6	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	6.8	6.1	8.1	7.0	9.2	7.9	
LnGrp LOS	A	A	A	A	A	A	
Approach Vol, veh/h	467			746	210		
Approach Delay, s/veh	6.6			7.1	9.2		
Approach LOS	A			A	A		

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		15.2				15.2	11.7
Change Period (Y+Rc), s		5.4				5.4	5.4
Max Green Setting (Gmax), s		34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s		5.6				6.5	4.7
Green Ext Time (p_c), s		1.3				3.3	0.3

Intersection Summary			
HCM 6th Ctrl Delay		7.2	
HCM 6th LOS		A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	228	70	5	629	0	49	0	5	0	0	0
Future Volume (Veh/h)	0	228	70	5	629	0	49	0	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	248	76	5	684	0	53	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	684			324			638	980	286	982	1018	342
vC1, stage 1 conf vol							286	286		694	694	
vC2, stage 2 conf vol							352	694		288	324	
vCu, unblocked vol	684			210			555	930	168	932	971	342
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			91	100	99	100	100	100
cM capacity (veh/h)	905			1238			563	407	771	371	401	654

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	324	347	342	58	0
Volume Left	0	5	0	53	0
Volume Right	76	0	0	5	0
cSH	905	1238	1700	617	1700
Volume to Capacity	0.00	0.00	0.20	0.09	0.00
Queue Length 95th (ft)	0	0	0	8	0
Control Delay (s)	0.0	0.2	0.0	11.8	0.0
Lane LOS		A		B	A
Approach Delay (s)	0.0	0.1		11.8	0.0
Approach LOS				B	A

Intersection Summary					
Average Delay		0.7			
Intersection Capacity Utilization		30.9%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	228	70	5	629	0	49	0	5	0	0	0
Future Vol, veh/h	0	228	70	5	629	0	49	0	5	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	248	76	5	684	0	53	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	684	0	0	324	0	0	638	980	286	983	1018	342
Stage 1	-	-	-	-	-	-	286	286	-	694	694	-
Stage 2	-	-	-	-	-	-	352	694	-	289	324	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	907	-	-	1234	-	-	375	249	752	215	237	655
Stage 1	-	-	-	-	-	-	721	674	-	400	443	-
Stage 2	-	-	-	-	-	-	639	443	-	718	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	907	-	-	1234	-	-	373	247	752	212	235	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	395	-	363	390	-
Stage 1	-	-	-	-	-	-	721	674	-	400	440	-
Stage 2	-	-	-	-	-	-	635	440	-	713	649	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	12.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	542	752	907	-	-	1234	-	-	-
HCM Lane V/C Ratio	0.098	0.007	-	-	-	0.004	-	-	-
HCM Control Delay (s)	12.4	9.8	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	24	113	67	13	262	2	198	9	14	7	9	72
Future Volume (veh/h)	24	113	67	13	262	2	198	9	14	7	9	72
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
Hourly flow rate (vph)	26	123	73	14	285	2	215	10	15	8	10	78
Approach Volume (veh/h)		222			301			240			96	
Crossing Volume (veh/h)		32			251			157			514	
High Capacity (veh/h)		1351			1137			1225			923	
High v/c (veh/h)		0.16			0.26			0.20			0.10	
Low Capacity (veh/h)		1130			937			1016			745	
Low v/c (veh/h)		0.20			0.32			0.24			0.13	

Intersection Summary				
Maximum v/c High		0.26		
Maximum v/c Low		0.32		
Intersection Capacity Utilization		45.0%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	5.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	222	301	240	96
Demand Flow Rate, veh/h	226	307	244	98
Vehicles Circulating, veh/h	32	256	160	524
Vehicles Exiting, veh/h	590	148	98	39
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	6.3	5.0	5.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	226	307	244	98
Cap Entry Lane, veh/h	1336	1063	1172	809
Entry HV Adj Factor	0.980	0.981	0.983	0.978
Flow Entry, veh/h	222	301	240	96
Cap Entry, veh/h	1309	1043	1152	790
V/C Ratio	0.169	0.289	0.208	0.121
Control Delay, s/veh	4.2	6.3	5.0	5.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	16	8	9	1	24	13	10	100	1	9	63	23
Future Volume (vph)	16	8	9	1	24	13	10	100	1	9	63	23
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
Hourly flow rate (vph)	19	10	11	1	29	16	12	120	1	11	76	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	46	133	115
Volume Left (vph)	19	1	12	11
Volume Right (vph)	11	16	1	28
Hadj (s)	0.07	-0.07	0.15	0.01
Departure Headway (s)	4.6	4.4	4.4	4.3
Degree Utilization, x	0.05	0.06	0.16	0.14
Capacity (veh/h)	730	754	797	823
Control Delay (s)	7.8	7.7	8.2	7.9
Approach Delay (s)	7.8	7.7	8.2	7.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	8	9	1	24	13	10	100	1	9	63	23
Future Vol, veh/h	16	8	9	1	24	13	10	100	1	9	63	23
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
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	19	10	11	1	29	16	12	120	1	11	76	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.7	8.2	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	48%	3%	9%
Vol Thru, %	90%	24%	63%	66%
Vol Right, %	1%	27%	34%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	33	38	95
LT Vol	10	16	1	9
Through Vol	100	8	24	63
RT Vol	1	9	13	23
Lane Flow Rate	134	40	46	114
Geometry Grp	1	1	1	1
Degree of Util (X)	0.159	0.051	0.056	0.132
Departure Headway (Hd)	4.285	4.579	4.44	4.161
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	825	786	811	847
Service Time	2.373	2.58	2.441	2.258
HCM Lane V/C Ratio	0.162	0.051	0.057	0.135
HCM Control Delay	8.2	7.8	7.7	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0.2	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	49	0	0	123	2	0	4	0	0	13	79
Future Volume (Veh/h)	24	49	0	0	123	2	0	4	0	0	13	79
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	34	69	0	0	173	3	0	6	0	0	18	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	176			69			432	313	69	314	312	174
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	176			69			432	313	69	314	312	174
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	99	100	100	97	87
cM capacity (veh/h)	1388			1519			443	584	988	618	585	864

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	103	176	6	0	129
Volume Left	34	0	0	0	0
Volume Right	0	3	0	0	111
cSH	1388	1519	584	1700	810
Volume to Capacity	0.02	0.00	0.01	0.00	0.16
Queue Length 95th (ft)	2	0	1	0	14
Control Delay (s)	2.7	0.0	11.2	0.0	10.3
Lane LOS	A		B	A	B
Approach Delay (s)	2.7	0.0	11.2	10.3	
Approach LOS			B	B	

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	24	49	0	0	123	2	0	4	0	0	13	79
Future Vol, veh/h	24	49	0	0	123	2	0	4	0	0	13	79
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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	34	69	0	0	173	3	0	6	0	0	18	111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	176	0	0	69	0	0	376	313	69	315	312	175
Stage 1	-	-	-	-	-	-	137	137	-	175	175	-
Stage 2	-	-	-	-	-	-	239	176	-	140	137	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1388	-	-	1519	-	-	578	599	988	634	600	863
Stage 1	-	-	-	-	-	-	861	779	-	822	750	-
Stage 2	-	-	-	-	-	-	760	750	-	858	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1388	-	-	1519	-	-	482	584	988	618	585	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	482	584	-	618	585	-
Stage 1	-	-	-	-	-	-	839	760	-	801	750	-
Stage 2	-	-	-	-	-	-	646	750	-	830	760	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0	11.2	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	584	1388	-	-	1519	-	-	-	809
HCM Lane V/C Ratio	0.01	0.024	-	-	-	-	-	-	0.16
HCM Control Delay (s)	11.2	7.7	0	-	0	-	-	0	10.3
HCM Lane LOS	B	A	A	-	A	-	-	A	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	-	0.6



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	2	129	107	7	84	48
Future Volume (veh/h)	2	129	107	7	84	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	140	116	8	91	52
Approach Volume (veh/h)	142		124			143
Crossing Volume (veh/h)	116		91			2
High Capacity (veh/h)	1265		1290			1382
High v/c (veh/h)	0.11		0.10			0.10
Low Capacity (veh/h)	1052		1075			1159
Low v/c (veh/h)	0.13		0.12			0.12

Intersection Summary				
Maximum v/c High		0.11		
Maximum v/c Low		0.13		
Intersection Capacity Utilization		28.6%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	3.8
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	142	124	143
Demand Flow Rate, veh/h	145	126	146
Vehicles Circulating, veh/h	118	93	2
Vehicles Exiting, veh/h	101	55	261
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.0	3.8	3.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	145	126	146
Cap Entry Lane, veh/h	1223	1255	1377
Entry HV Adj Factor	0.979	0.982	0.979
Flow Entry, veh/h	142	124	143
Cap Entry, veh/h	1198	1232	1348
V/C Ratio	0.119	0.100	0.106
Control Delay, s/veh	4.0	3.8	3.5
LOS	A	A	A
95th %tile Queue, veh	0	0	0



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	45	70	5	1	6
Future Volume (Veh/h)	3	45	70	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	5	71	111	8	2	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119				196	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119				196	115
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1463				788	935

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	119	12
Volume Left	5	0	2
Volume Right	0	8	10
cSH	1463	1700	907
Volume to Capacity	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.5	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	45	70	5	1	6
Future Vol, veh/h	3	45	70	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	71	111	8	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	119	0	-	0	196	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1463	-	-	-	790	935
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	940	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1463	-	-	-	787	935
Mov Cap-2 Maneuver	-	-	-	-	787	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	911
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.5	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	213	1004	1090	91	89	196
v/c Ratio	0.57	0.30	0.70	0.12	0.36	0.32
Control Delay	37.2	0.2	20.9	4.0	40.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	0.2	20.9	4.0	40.0	12.6
Queue Length 50th (ft)	94	0	218	0	40	37
Queue Length 95th (ft)	204	0	382	27	105	101
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	698	3312	3206	1437	698	1219
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	0.31	0.30	0.34	0.06	0.13	0.16

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	994	1079	90	88	194
Future Volume (vph)	211	994	1079	90	88	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	213	1004	1090	91	89	196
RTOR Reduction (vph)	0	0	0	48	0	46
Lane Group Flow (vph)	213	1004	1090	43	89	150
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	17.4	77.7	36.4	36.4	8.9	30.3
Effective Green, g (s)	17.4	77.7	36.4	36.4	8.9	30.3
Actuated g/C Ratio	0.22	1.00	0.47	0.47	0.11	0.39
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	370	3312	1551	694	189	577
v/s Ratio Prot	c0.13	0.30	c0.33		c0.05	0.10
v/s Ratio Perm				0.03		
v/c Ratio	0.58	0.30	0.70	0.06	0.47	0.26
Uniform Delay, d1	26.9	0.0	16.4	11.3	32.2	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	1.6	0.1	2.2	0.2
Delay (s)	29.0	0.2	17.9	11.4	34.4	16.3
Level of Service	C	A	B	B	C	B
Approach Delay (s)		5.3	17.4		22.0	
Approach LOS		A	B		C	

Intersection Summary				
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	61.1%	ICU Level of Service	B	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	179	811	258	49	740	115	237	249	179	289	294
v/c Ratio	0.46	0.68	0.37	0.17	0.73	0.22	0.53	0.30	0.46	0.71	0.53
Control Delay	49.1	33.1	5.2	49.7	37.5	6.8	47.8	31.0	49.1	47.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	33.1	5.2	49.7	37.5	6.8	47.8	31.0	49.1	47.6	9.7
Queue Length 50th (ft)	54	232	0	14	215	0	71	62	54	166	11
Queue Length 95th (ft)	113	390	59	41	366	44	142	121	114	323	94
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	616	2470	1158	616	2470	1120	684	1411	684	761	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.33	0.22	0.08	0.30	0.10	0.35	0.18	0.26	0.38	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	787	250	48	718	112	230	197	45	174	280	285
Future Volume (vph)	174	787	250	48	718	112	230	197	45	174	280	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1489	3273	3374	1489	3273	3272		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1489	3273	3374	1489	3273	3272		3273	1776	1509
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)	179	811	258	49	740	115	237	203	46	179	289	294
RTOR Reduction (vph)	0	0	167	0	0	79	0	11	0	0	0	209
Lane Group Flow (vph)	179	811	91	49	740	36	237	238	0	179	289	85
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	11.8	35.5	35.5	7.4	31.1	31.1	13.7	25.0		11.8	23.1	23.1
Effective Green, g (s)	11.8	35.5	35.5	7.4	31.1	31.1	13.7	25.0		11.8	23.1	23.1
Actuated g/C Ratio	0.12	0.35	0.35	0.07	0.31	0.31	0.14	0.25		0.12	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	385	1194	527	241	1046	461	447	815		385	409	347
v/s Ratio Prot	0.05	c0.24		0.01	c0.22		c0.07	0.07		0.05	c0.16	
v/s Ratio Perm			0.06			0.02						0.06
v/c Ratio	0.46	0.68	0.17	0.20	0.71	0.08	0.53	0.29		0.46	0.71	0.24
Uniform Delay, d1	41.3	27.6	22.3	43.7	30.6	24.5	40.3	30.5		41.3	35.5	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.6	0.2	0.2	2.2	0.1	1.2	0.2		0.9	5.5	0.4
Delay (s)	42.2	29.1	22.5	43.8	32.8	24.5	41.5	30.7		42.2	41.0	31.8
Level of Service	D	C	C	D	C	C	D	C		D	D	C
Approach Delay (s)		29.6			32.3			36.0			37.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	20.6	
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)	174	787	250	48	718	112	230	197	45	174	280	285
Future Volume (veh/h)	174	787	250	48	718	112	230	197	45	174	280	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	179	811	258	49	740	115	237	203	46	179	289	294
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	269	1098	489	111	1078	480	337	723	160	271	432	366
Arrive On Green	0.08	0.32	0.32	0.03	0.32	0.32	0.10	0.26	0.26	0.08	0.24	0.24
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2775	615	3319	1796	1522
Grp Volume(v), veh/h	179	811	258	49	740	115	237	123	126	179	289	294
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1684	1659	1796	1522
Q Serve(g_s), s	4.1	16.7	7.0	1.1	15.0	4.4	5.5	4.5	4.7	4.1	11.5	14.4
Cycle Q Clear(g_c), s	4.1	16.7	7.0	1.1	15.0	4.4	5.5	4.5	4.7	4.1	11.5	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	269	1098	489	111	1078	480	337	444	438	271	432	366
V/C Ratio(X)	0.67	0.74	0.53	0.44	0.69	0.24	0.70	0.28	0.29	0.66	0.67	0.80
Avail Cap(c_a), veh/h	757	3026	1348	757	3026	1348	841	886	874	841	933	791
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	35.2	23.8	8.9	37.4	23.6	20.0	34.3	23.3	23.3	35.2	27.1	28.2
Incr Delay (d2), s/veh	2.8	1.0	0.9	1.0	0.8	0.3	2.7	0.3	0.4	2.7	1.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.9	3.4	0.4	5.3	1.5	2.2	1.7	1.8	1.7	4.8	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	24.8	9.8	38.5	24.4	20.2	37.0	23.6	23.7	37.9	28.9	32.3
LnGrp LOS	D	C	A	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1248			904			486			762	
Approach Delay, s/veh		23.6			24.6			30.2			32.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	32.7	12.0	24.3	10.4	32.2	10.5	25.9
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.1	18.7	7.5	16.4	6.1	17.0	6.1	6.7
Green Ext Time (p_c), s	0.0	6.7	0.6	2.6	0.4	5.4	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	935	62	296	884	0	9	0	303	0	0	0
Future Volume (Veh/h)	0	935	62	296	884	0	9	0	303	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	964	64	305	911	0	9	0	312	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	912			1028			2062	2518	514	2004	2550	456
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912			1028			2062	2518	514	2004	2550	456
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			53			52	100	37	100	100	100
cM capacity (veh/h)	712			642			19	13	493	8	13	537

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	643	385	305	607	304	321	0
Volume Left	0	0	0	305	0	0	9	0
Volume Right	0	0	64	0	0	0	312	0
cSH	1700	1700	1700	642	1700	1700	397	1700
Volume to Capacity	0.00	0.38	0.23	0.47	0.36	0.18	0.81	0.00
Queue Length 95th (ft)	0	0	0	64	0	0	180	0
Control Delay (s)	0.0	0.0	0.0	15.6	0.0	0.0	42.7	0.0
Lane LOS				C			E	A
Approach Delay (s)	0.0			3.9			42.7	0.0
Approach LOS							E	A

Intersection Summary					
Average Delay	7.2				
Intersection Capacity Utilization	57.6%	ICU Level of Service		B	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	935	62	296	884	0	9	0	303	0	0	0
Future Vol, veh/h	0	935	62	296	884	0	9	0	303	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	964	64	305	911	0	9	0	312	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	912	0	0	1028	0	0	2062	2518	514	2004	2550	457
Stage 1	-	-	-	-	-	-	996	996	-	1522	1522	-
Stage 2	-	-	-	-	-	-	1066	1522	-	482	1028	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	712	-	-	642	-	-	30	26	493	33	24	537
Stage 1	-	-	-	-	-	-	253	310	-	118	171	-
Stage 2	-	-	-	-	-	-	229	171	-	521	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	642	-	-	19	14	493	8	13	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	14	-	8	13	-
Stage 1	-	-	-	-	-	-	253	310	-	118	90	-
Stage 2	-	-	-	-	-	-	120	90	-	191	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.9	32.5	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	19	493	711	-	-	642	-	-	-	-
HCM Lane V/C Ratio	0.488	0.634	-	-	-	0.475	-	-	-	-
HCM Control Delay (s)	$ 313.6	24.1	0	-	-	15.6	-	-	0	0
HCM Lane LOS	F	C	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	4.3	0	-	-	2.6	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	849	836	12	10	333
Future Volume (Veh/h)	220	849	836	12	10	333
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	234	903	889	13	11	354
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	902				1808	444
vC1, stage 1 conf vol					889	
vC2, stage 2 conf vol					920	
vCu, unblocked vol	902				1808	444
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	67				94	34
cM capacity (veh/h)	701				184	540

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	234	452	452	444	444	13	365
Volume Left	234	0	0	0	0	0	11
Volume Right	0	0	0	0	0	13	354
cSH	701	1700	1700	1700	1700	1700	556
Volume to Capacity	0.33	0.27	0.27	0.26	0.26	0.01	0.66
Queue Length 95th (ft)	37	0	0	0	0	0	119
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	0.0	23.6
Lane LOS	B						C
Approach Delay (s)	2.6			0.0			23.6
Approach LOS							C

Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization		50.4%	ICU Level of Service A
Analysis Period (min)		15	

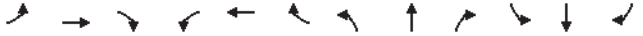
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	220	849	836	12	10	333
Future Vol, veh/h	220	849	836	12	10	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	234	903	889	13	11	354

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	902	0	-	0	1809	445
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	920	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	701	-	-	-	64	539
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	330	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	701	-	-	-	43	539
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	330	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	701	-	-	-	181	539
HCM Lane V/C Ratio	0.334	-	-	-	0.059	0.657
HCM Control Delay (s)	12.7	-	-	-	26.1	23.6
HCM Lane LOS	B	-	-	-	D	C
HCM 95th %tile Q(veh)	1.5	-	-	-	0.2	4.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	894	10	1	842	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	894	10	1	842	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	922	10	1	868	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	868			932			1359	1792	461	1333	1802	434
vC1, stage 1 conf vol							922	922		870	870	
vC2, stage 2 conf vol							437	870		463	932	
vCu, unblocked vol	868			932			1359	1792	461	1333	1802	434
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			93	100	99	100	100	100
cM capacity (veh/h)	712			671			248	241	521	262	239	543

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	461	461	10	1	579	289	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	10	0	0	0	4	1
cSH	1700	1700	1700	1700	671	1700	1700	303	543
Volume to Capacity	0.00	0.27	0.27	0.01	0.00	0.34	0.17	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	0.0	0.0	19.1	11.6
Lane LOS					B			C	B
Approach Delay (s)	0.0				0.0			19.1	11.6
Approach LOS								C	B

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		41.4%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	894	10	1	842	0	17	0	4	0	0	1
Future Vol, veh/h	0	894	10	1	842	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	922	10	1	868	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	868	0	0	932	0	0	1358	1792	461	1331	1802	434
Stage 1	-	-	-	-	-	-	922	922	-	870	870	-
Stage 2	-	-	-	-	-	-	436	870	-	461	932	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	712	-	-	671	-	-	98	72	521	103	71	543
Stage 1	-	-	-	-	-	-	272	325	-	293	345	-
Stage 2	-	-	-	-	-	-	543	345	-	524	322	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	712	-	-	671	-	-	98	72	521	102	71	543
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	234	-	255	233	-
Stage 1	-	-	-	-	-	-	272	325	-	293	345	-
Stage 2	-	-	-	-	-	-	541	345	-	520	322	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	521	712	-	-	671	-	-	543
HCM Lane V/C Ratio	0.072	0.008	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	21	12	0	-	-	10.4	-	-	11.6
HCM Lane LOS	C	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	0	0	-	-	0	-	-	0

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	72.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	199	61	278	185	97	49	258	257	29	421	90
Future Vol, veh/h	63	199	61	278	185	97	49	258	257	29	421	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	68	214	66	299	199	104	53	277	276	31	453	97
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	68.2	82.8	54.6	83
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	12%	0%
Vol Thru, %	0%	100%	0%	0%	77%	0%	66%	88%	70%
Vol Right, %	0%	0%	100%	0%	23%	0%	34%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	258	257	63	260	278	282	240	301
LT Vol	49	0	0	63	0	278	0	29	0
Through Vol	0	258	0	0	199	0	185	211	211
RT Vol	0	0	257	0	61	0	97	0	90
Lane Flow Rate	53	277	276	68	280	299	303	258	323
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.178	0.894	0.837	0.244	0.954	1.004	0.95	0.86	1.054
Departure Headway (Hd)	12.49	11.962	11.224	13.436	12.737	12.46	11.682	12.025	11.738
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	289	305	326	269	288	293	312	301	310
Service Time	10.19	9.662	8.924	11.136	10.437	10.16	9.382	9.796	9.509
HCM Lane V/C Ratio	0.183	0.908	0.847	0.253	0.972	1.02	0.971	0.857	1.042
HCM Control Delay	17.9	64.2	51.9	20.4	79.8	91.1	74.7	58.6	102.5
HCM Lane LOS	C	F	F	C	F	F	F	F	F
HCM 95th-tile Q	0.6	8.2	7.3	0.9	9.3	10.5	9.6	7.5	12.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	92	12	2	67	0	12	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	67			104			171	171	98	172	177	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			104			171	171	98	172	177	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1522			1475			787	717	953	783	712	991

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	105	69	14	0
Volume Left	1	2	12	0
Volume Right	12	0	1	0
cSH	1522	1475	791	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.1%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	78	10	2	57	0	10	1	1	0	0	0
Future Vol, veh/h	1	78	10	2	57	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	92	12	2	67	0	12	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	104	0	0	171	171	98	172	177	67
Stage 1	-	-	-	-	-	-	100	100	-	71	71	-
Stage 2	-	-	-	-	-	-	71	71	-	101	106	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1522	-	-	1475	-	-	788	718	953	787	713	991
Stage 1	-	-	-	-	-	-	901	808	-	934	832	-
Stage 2	-	-	-	-	-	-	934	832	-	900	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1475	-	-	786	717	953	784	712	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	717	-	784	712	-
Stage 1	-	-	-	-	-	-	900	807	-	933	831	-
Stage 2	-	-	-	-	-	-	933	831	-	897	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1522	-	-	1475	-	-	-
HCM Lane V/C Ratio	0.018	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	470	255	436	561	6	39	281	330	338	91
v/c Ratio	0.14	0.65	0.68	0.54	0.57	0.03	0.21	0.69	0.72	0.73	0.17
Control Delay	51.8	38.4	44.9	24.2	4.5	43.3	45.0	15.0	40.9	41.0	2.4
Queue Delay	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	38.4	44.9	24.8	4.8	43.3	45.0	15.0	40.9	41.0	2.4
Queue Length 50th (ft)	9	122	129	156	0	3	20	0	169	173	0
Queue Length 95th (ft)	36	227	266	366	72	17	60	81	348	355	13
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	114	1052	574	1042	1112	401	421	576	669	679	696
Starvation Cap Reductn	0	0	9	288	146	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.45	0.58	0.58	0.01	0.09	0.49	0.49	0.50	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	411	31	240	410	527	6	37	264	544	84	86
Future Volume (vph)	15	411	31	240	410	527	6	37	264	544	84	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3530		1787	1881	1558	1787	1881	1599	1698	1724	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3530		1787	1881	1558	1787	1881	1599	1698	1724	1561
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)	16	437	33	255	436	561	6	39	281	579	89	91
RTOR Reduction (vph)	0	5	0	0	0	324	0	0	254	0	0	67
Lane Group Flow (vph)	16	465	0	255	436	237	6	39	27	330	338	24
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	21.3		18.3	37.9	37.9	8.6	8.6	8.6	23.7	23.7	23.7
Effective Green, g (s)	1.7	21.3		18.3	37.9	37.9	8.6	8.6	8.6	23.7	23.7	23.7
Actuated g/C Ratio	0.02	0.24		0.20	0.42	0.42	0.10	0.10	0.10	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	836		363	792	656	170	179	152	447	454	411
v/s Ratio Prot	0.01	0.13		c0.14	c0.23		0.00	c0.02		0.19	c0.20	
v/s Ratio Perm						0.15			0.02			0.02
v/c Ratio	0.48	0.56		0.70	0.55	0.36	0.04	0.22	0.18	0.74	0.74	0.06
Uniform Delay, d1	43.7	30.2		33.3	19.6	17.7	36.9	37.5	37.4	30.3	30.3	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.8	0.8		6.0	0.8	0.3	0.1	0.6	0.6	6.3	6.5	0.1
Delay (s)	54.5	31.0		39.3	20.4	18.1	37.0	38.2	38.0	36.5	36.8	24.8
Level of Service	D	C		D	C	B	D	D	D	D	D	C
Approach Delay (s)		31.7			23.2			38.0			35.3	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.6%	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)	15	411	31	240	410	527	6	37	264	544	84	86
Future Volume (veh/h)	15	411	31	240	410	527	6	37	264	544	84	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	16	437	33	255	436	561	6	39	281	643	0	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	32	847	64	294	749	619	336	353	299	774	0	343
Arrive On Green	0.02	0.25	0.25	0.16	0.40	0.40	0.19	0.19	0.19	0.22	0.00	0.22
Sat Flow, veh/h	1795	3374	254	1795	1885	1559	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	16	231	239	255	436	561	6	39	281	643	0	91
Grp Sat Flow(s),veh/h/ln	1795	1791	1837	1795	1885	1559	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	0.9	11.0	11.1	13.7	17.9	33.5	0.3	1.7	17.1	16.9	0.0	4.7
Cycle Q Clear(g_c), s	0.9	11.0	11.1	13.7	17.9	33.5	0.3	1.7	17.1	16.9	0.0	4.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	450	461	294	749	619	336	353	299	774	0	343
V/C Ratio(X)	0.50	0.51	0.52	0.87	0.58	0.91	0.02	0.11	0.94	0.83	0.00	0.27
Avail Cap(c_a), veh/h	96	450	461	481	872	721	336	353	299	1181	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.1	31.8	31.9	40.3	23.4	28.1	32.8	33.3	39.6	37.0	0.0	32.3
Incr Delay (d2), s/veh	11.3	1.0	1.0	9.0	0.7	13.8	0.0	0.1	36.3	3.1	0.0	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	0.5	4.9	5.0	6.7	7.9	14.3	0.1	0.8	9.6	7.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	32.8	32.9	49.3	24.1	41.9	32.8	33.5	75.9	40.2	0.0	32.7
LnGrp LOS	E	C	C	D	C	D	C	C	E	D	A	C
Approach Vol, veh/h		486			1252			326			734	
Approach Delay, s/veh		33.7			37.2			70.0			39.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.7	29.3		25.8	6.3	43.8		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	15.7	13.1		18.9	2.9	35.5		19.1				
Green Ext Time (p_c), s	0.5	2.2		2.4	0.0	3.8		0.0				

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

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	1208	20	959	252	263	30	438	8	26
v/c Ratio	0.38	0.65	0.14	0.64	0.33	0.62	0.05	0.74	0.02	0.04
Control Delay	42.6	17.2	45.6	22.2	6.9	32.2	21.7	25.2	21.7	0.1
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	17.6	45.6	22.2	6.9	32.2	21.7	25.2	21.7	0.1
Queue Length 50th (ft)	40	173	9	191	17	109	10	124	3	0
Queue Length 95th (ft)	107	420	38	347	80	221	33	274	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	337	2402	148	2168	1024	789	1066	971	786	997
Starvation Cap Reductn	0	584	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	0.26	0.66	0.14	0.44	0.25	0.33	0.03	0.45	0.01	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1094	30	19	892	234	245	28	407	7	0	24
Future Volume (vph)	83	1094	30	19	892	234	245	28	407	7	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3557		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3557		1787	3574	1564	1393	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	89	1176	32	20	959	252	263	30	438	8	0	26
RTOR Reduction (vph)	0	1	0	0	0	109	0	0	106	0	18	0
Lane Group Flow (vph)	89	1207	0	20	959	143	263	30	332	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.4	39.3		1.7	33.6	33.6	22.9	22.9	22.9	22.9	22.9	
Effective Green, g (s)	7.4	39.3		1.7	33.6	33.6	22.9	22.9	22.9	22.9	22.9	
Actuated g/C Ratio	0.10	0.51		0.02	0.43	0.43	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	170	1806		39	1551	678	412	556	473	410	473	
v/s Ratio Prot	c0.05	c0.34		0.01	0.27			0.02			0.00	
v/s Ratio Perm						0.09	0.19		c0.21	0.01		
v/c Ratio	0.52	0.67		0.51	0.62	0.21	0.64	0.05	0.70	0.02	0.02	
Uniform Delay, d1	33.3	14.2		37.4	16.9	13.6	23.7	19.5	24.2	19.3	19.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	0.9		10.9	0.7	0.2	3.2	0.0	4.7	0.0	0.0	
Delay (s)	36.2	15.1		48.4	17.7	13.8	26.9	19.5	28.9	19.3	19.3	
Level of Service	D	B		D	B	B	C	B	C	B	B	
Approach Delay (s)		16.6			17.4			27.8			19.3	
Approach LOS		B			B			C			B	

Intersection Summary				
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	71.8%	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)	83	1094	30	19	892	234	245	28	407	7	0	24
Future Volume (veh/h)	83	1094	30	19	892	234	245	28	407	7	0	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	89	1176	32	20	959	0	263	30	438	8	0	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	1601	44	42	1462		544	609	516	400	0	516
Arrive On Green	0.06	0.45	0.45	0.02	0.41	0.00	0.32	0.32	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1795	3559	97	1795	3582	1598	1396	1885	1598	932	0	1598
Grp Volume(v), veh/h	89	592	616	20	959	0	263	30	438	8	0	26
Grp Sat Flow(s),veh/h/ln	1795	1791	1865	1795	1791	1598	1396	1885	1598	932	0	1598
Q Serve(g_s), s	3.2	18.0	18.0	0.7	14.3	0.0	10.6	0.7	16.9	0.4	0.0	0.7
Cycle Q Clear(g_c), s	3.2	18.0	18.0	0.7	14.3	0.0	11.3	0.7	16.9	1.1	0.0	0.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	806	839	42	1462		544	609	516	400	0	516
V/C Ratio(X)	0.77	0.73	0.73	0.48	0.66		0.48	0.05	0.85	0.02	0.00	0.05
Avail Cap(c_a), veh/h	339	1312	1366	149	2246		884	1068	905	627	0	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	15.0	15.0	31.9	15.8	0.0	19.3	15.4	20.9	15.8	0.0	15.4
Incr Delay (d2), s/veh	10.0	1.3	1.3	8.3	0.5	0.0	0.7	0.0	4.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.7	7.0	0.4	5.3	0.0	3.2	0.3	6.2	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	16.3	16.2	40.2	16.3	0.0	20.0	15.4	24.9	15.8	0.0	15.5
LnGrp LOS	D	B	B	D	B		B	B	C	B	A	B
Approach Vol, veh/h		1297			979	A		731			34	
Approach Delay, s/veh		17.9			16.8			22.7			15.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	34.3		25.9	8.8	31.5		25.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.7	20.0		3.1	5.2	16.3		18.9				
Green Ext Time (p_c), s	0.0	9.8		0.1	0.1	7.6		2.5				

Intersection Summary			
HCM 6th Ctrl Delay	18.7		
HCM 6th LOS	B		

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	379	1188	63	694	264	214	67	67	517
v/c Ratio	0.64	0.75	0.38	0.58	0.58	0.26	0.14	0.41	0.72
Control Delay	44.1	24.9	53.5	27.6	47.4	35.0	0.6	55.1	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	24.9	53.5	27.6	47.4	35.0	0.6	55.1	25.9
Queue Length 50th (ft)	112	297	37	171	78	60	0	39	77
Queue Length 95th (ft)	191	456	93	279	145	106	0	98	154
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	848	2098	213	1706	572	1151	607	197	1057
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.57	0.30	0.41	0.46	0.19	0.11	0.34	0.49

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	781	348	60	587	72	251	203	64	64	204	287
Future Volume (vph)	360	781	348	60	587	72	251	203	64	64	204	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3395		1787	3510		3467	3574	1599	1787	3236	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3395		1787	3510		3467	3574	1599	1787	3236	
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)	379	822	366	63	618	76	264	214	67	67	215	302
RTOR Reduction (vph)	0	43	0	0	8	0	0	0	52	0	219	0
Lane Group Flow (vph)	379	1145	0	63	686	0	264	214	15	67	298	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	16.1	42.4		6.8	33.1		12.4	21.4	21.4	6.7	15.7	
Effective Green, g (s)	16.1	42.4		6.8	33.1		12.4	21.4	21.4	6.7	15.7	
Actuated g/C Ratio	0.17	0.44		0.07	0.35		0.13	0.22	0.22	0.07	0.16	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	585	1510		127	1219		451	802	359	125	533	
v/s Ratio Prot	c0.11	c0.34		0.04	0.20		c0.08	0.06		0.04	c0.09	
v/s Ratio Perm									0.01			
v/c Ratio	0.65	0.76		0.50	0.56		0.59	0.27	0.04	0.54	0.56	
Uniform Delay, d1	37.0	22.2		42.6	25.2		39.0	30.5	28.9	42.8	36.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	2.2		3.0	0.6		1.9	0.2	0.0	4.4	1.3	
Delay (s)	39.4	24.4		45.6	25.8		41.0	30.7	29.0	47.2	37.9	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		28.0			27.5			35.4			39.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	74.1%	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)	360	781	348	60	587	72	251	203	64	64	204	287
Future Volume (veh/h)	360	781	348	60	587	72	251	203	64	64	204	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	379	822	0	63	618	76	264	214	67	67	215	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	552	1408		100	930	114	405	615	274	104	406	
Arrive On Green	0.16	0.39	0.00	0.06	0.29	0.29	0.12	0.17	0.17	0.06	0.11	0.00
Sat Flow, veh/h	3483	3676	0	1795	3205	393	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	379	822	0	63	345	349	264	214	67	67	215	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1808	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	5.7	10.1	0.0	1.9	9.5	9.5	4.1	2.9	2.0	2.0	3.2	0.0
Cycle Q Clear(g_c), s	5.7	10.1	0.0	1.9	9.5	9.5	4.1	2.9	2.0	2.0	3.2	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	552	1408		100	520	525	405	615	274	104	406	
V/C Ratio(X)	0.69	0.58		0.63	0.66	0.67	0.65	0.35	0.24	0.65	0.53	
Avail Cap(c_a), veh/h	1338	3425		337	1360	1373	903	1812	808	311	1504	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.2	13.4	0.0	25.8	17.5	17.5	23.6	20.4	20.0	25.8	23.4	0.0
Incr Delay (d2), s/veh	1.5	0.4	0.0	6.3	1.5	1.5	1.8	0.3	0.5	6.6	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.6	0.0	0.9	3.6	3.6	1.6	1.1	0.7	1.0	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	13.8	0.0	32.2	18.9	18.9	25.4	20.8	20.5	32.3	24.5	0.0
LnGrp LOS	C	B		C	B	B	C	C	C	C	C	
Approach Vol, veh/h		1201	A		757			545			282	A
Approach Delay, s/veh		16.9			20.0			23.0			26.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	26.5	11.0	10.8	13.4	20.7	7.7	14.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	3.9	12.1	6.1	5.2	7.7	11.5	4.0	4.9
Green Ext Time (p_c), s	0.1	7.0	0.6	1.1	1.1	4.6	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	447	911	580	73
v/c Ratio	0.24	0.25	0.65	0.58	0.14
Control Delay	38.9	11.4	17.7	27.5	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	11.4	17.7	27.5	9.1
Queue Length 50th (ft)	20	37	110	96	0
Queue Length 95th (ft)	88	150	337	286	40
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	329	2923	2340	1645	786
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	0.15	0.39	0.35	0.09

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	434	460	424	563	71
Future Volume (vph)	56	434	460	424	563	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3292		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3292		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	447	474	437	580	73
RTOR Reduction (vph)	0	0	132	0	0	53
Lane Group Flow (vph)	58	447	779	0	580	20
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	4.5	34.5	25.5		18.8	18.8
Effective Green, g (s)	4.5	34.5	25.5		18.8	18.8
Actuated g/C Ratio	0.06	0.49	0.37		0.27	0.27
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	115	1769	1204		935	425
v/s Ratio Prot	c0.03	0.13	c0.24			
v/s Ratio Perm					c0.17	0.01
v/c Ratio	0.50	0.25	0.65		0.62	0.05
Uniform Delay, d1	31.5	10.2	18.4		22.3	18.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.1	1.2		1.3	0.0
Delay (s)	35.0	10.2	19.6		23.6	18.9
Level of Service	C	B	B		C	B
Approach Delay (s)		13.1	19.6		23.1	
Approach LOS		B	B		C	

Intersection Summary				
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	552	291	97	455	367	187	469	340	606
v/c Ratio	0.71	0.99	0.43	0.50	0.59	0.58	0.69	0.65	0.94	0.67
Control Delay	49.7	69.6	5.7	46.1	33.0	7.6	48.4	33.8	70.4	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	69.6	5.7	46.1	33.0	7.6	48.4	33.8	70.4	30.7
Queue Length 50th (ft)	101	~334	0	50	116	0	96	117	187	148
Queue Length 95th (ft)	#196	#556	59	101	171	71	#182	168	#377	208
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	319	557	670	231	882	666	319	920	363	1005
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	0.61	0.99	0.43	0.42	0.52	0.55	0.59	0.51	0.94	0.60

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)	184	519	274	91	428	345	176	373	68	320	428	142
Future Volume (vph)	184	519	274	91	428	345	176	373	68	320	428	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1572	1787	3574	1578	1787	3492		1787	3419	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1572	1787	3574	1578	1787	3492		1787	3419	
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)	196	552	291	97	455	367	187	397	72	340	455	151
RTOR Reduction (vph)	0	0	206	0	0	283	0	17	0	0	36	0
Lane Group Flow (vph)	196	552	85	97	455	84	187	452	0	340	570	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.8	24.4	24.4	7.4	19.0	19.0	12.6	16.6		16.8	20.8	
Effective Green, g (s)	12.8	24.4	24.4	7.4	19.0	19.0	12.6	16.6		16.8	20.8	
Actuated g/C Ratio	0.15	0.29	0.29	0.09	0.23	0.23	0.15	0.20		0.20	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	274	551	461	158	816	360	270	696		360	854	
v/s Ratio Prot	c0.11	c0.29		0.05	0.13		0.10	0.13		c0.19	c0.17	
v/s Ratio Perm			0.05			0.05						
v/c Ratio	0.72	1.00	0.19	0.61	0.56	0.23	0.69	0.65		0.94	0.67	
Uniform Delay, d1	33.5	29.4	22.0	36.5	28.4	26.2	33.5	30.6		32.7	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.6	38.8	0.2	6.9	0.8	0.3	7.5	2.1		33.1	2.0	
Delay (s)	42.0	68.2	22.2	43.4	29.2	26.5	40.9	32.7		65.8	30.1	
Level of Service	D	E	C	D	C	C	D	C		E	C	
Approach Delay (s)		50.4			29.6			35.1			42.9	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	77.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	519	274	91	428	345	176	373	68	320	428	142
Future Volume (veh/h)	184	519	274	91	428	345	176	373	68	320	428	142
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	196	552	291	97	455	367	187	397	72	340	455	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	237	591	499	125	899	401	228	546	98	375	691	227
Arrive On Green	0.13	0.31	0.31	0.07	0.25	0.25	0.13	0.18	0.18	0.21	0.26	0.26
Sat Flow, veh/h	1795	1885	1591	1795	3582	1596	1795	3032	545	1795	2639	868
Grp Volume(v), veh/h	196	552	291	97	455	367	187	233	236	340	307	299
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1596	1795	1791	1787	1795	1791	1717
Q Serve(g_s), s	8.4	22.5	12.1	4.2	8.6	17.7	8.0	9.7	9.9	14.6	12.1	12.3
Cycle Q Clear(g_c), s	8.4	22.5	12.1	4.2	8.6	17.7	8.0	9.7	9.9	14.6	12.1	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.51
Lane Grp Cap(c), veh/h	237	591	499	125	899	401	228	323	322	375	469	450
V/C Ratio(X)	0.83	0.93	0.58	0.77	0.51	0.92	0.82	0.72	0.73	0.91	0.66	0.66
Avail Cap(c_a), veh/h	329	591	499	239	907	404	329	476	475	375	521	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	26.3	22.8	36.1	25.4	28.8	33.6	30.5	30.6	30.5	26.0	26.1
Incr Delay (d2), s/veh	11.4	22.2	1.7	9.7	0.4	25.2	10.2	3.1	3.2	25.0	2.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	12.8	4.4	2.1	3.5	9.0	4.0	4.3	4.3	8.6	5.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	48.5	24.5	45.8	25.8	54.0	43.8	33.6	33.8	55.5	28.6	28.9
LnGrp LOS	D	D	C	D	C	D	D	C	C	E	C	C
Approach Vol, veh/h		1039			919			656			946	
Approach Delay, s/veh		41.1			39.2			36.6			38.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	18.7	10.0	29.3	14.5	25.2	14.9	24.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	16.6	11.9	6.2	24.5	10.0	14.3	10.4	19.7
Green Ext Time (p_c), s	0.0	1.8	0.1	0.0	0.2	2.4	0.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	65	466	41	99	598
Future Volume (Veh/h)	46	65	466	41	99	598
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	49	70	501	44	106	643
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1380	525			547	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1380	525			547	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	66	87			90	
cM capacity (veh/h)	143	553			1025	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	119	545	106	643
Volume Left	49	0	106	0
Volume Right	70	44	0	0
cSH	254	1700	1025	1700
Volume to Capacity	0.47	0.32	0.10	0.38
Queue Length 95th (ft)	58	0	9	0
Control Delay (s)	31.1	0.0	8.9	0.0
Lane LOS	D		A	
Approach Delay (s)	31.1	0.0	1.3	
Approach LOS	D			

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	65	466	41	99	598
Future Vol, veh/h	46	65	466	41	99	598
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	49	70	501	44	106	643

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1380	525	0	0	547	0
Stage 1	525	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	160	554	-	-	1027	-
Stage 1	595	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	143	553	-	-	1025	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	375	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	253	1025	-
HCM Lane V/C Ratio	-	-	0.472	0.104	-
HCM Control Delay (s)	-	-	31.3	8.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	4	8	4	1	38	17	262	10	48	328	131
Future Volume (Veh/h)	108	4	8	4	1	38	17	262	10	48	328	131
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	109	4	8	4	1	38	17	265	10	48	331	132
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	741	336	741	868	274	468			275		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	741	336	741	868	274	468			275		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	99	99	99	100	95	98			96		
cM capacity (veh/h)	285	326	705	312	275	764	1094			1294		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	121	43	17	275	48	331	132
Volume Left	109	4	17	0	48	0	0
Volume Right	8	38	0	10	0	0	132
cSH	298	650	1094	1700	1294	1700	1700
Volume to Capacity	0.41	0.07	0.02	0.16	0.04	0.19	0.08
Queue Length 95th (ft)	47	5	1	0	3	0	0
Control Delay (s)	25.1	10.9	8.3	0.0	7.9	0.0	0.0
Lane LOS	D	B	A		A		
Approach Delay (s)	25.1	10.9	0.5		0.7		
Approach LOS	D	B					

Intersection Summary					
Average Delay	4.2				
Intersection Capacity Utilization	43.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	108	4	8	4	1	38	17	262	10	48	328	131
Future Vol, veh/h	108	4	8	4	1	38	17	262	10	48	328	131
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	109	4	8	4	1	38	17	265	10	48	331	132

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	760	741	336	803	868	274	468	0	0	275	0	0
Stage 1	432	432	-	304	304	-	-	-	-	-	-	-
Stage 2	328	309	-	499	564	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	324	345	708	303	292	767	1099	-	-	1294	-	-
Stage 1	604	584	-	708	665	-	-	-	-	-	-	-
Stage 2	687	661	-	555	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	292	325	705	285	275	764	1094	-	-	1294	-	-
Mov Cap-2 Maneuver	292	325	-	285	275	-	-	-	-	-	-	-
Stage 1	592	559	-	697	654	-	-	-	-	-	-	-
Stage 2	639	650	-	524	489	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.4	11.1	0.5	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1094	-	-	305	638	1294	-	-
HCM Lane V/C Ratio	0.016	-	-	0.397	0.068	0.037	-	-
HCM Control Delay (s)	8.3	-	-	24.4	11.1	7.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.2	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	3	121	3	93	7	190	196	161	165	12
Future Volume (vph)	8	2	3	121	3	93	7	190	196	161	165	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	3	130	3	100	8	204	211	173	177	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	14	233	212	211	262	102
Volume Left (vph)	9	130	8	0	173	0
Volume Right (vph)	3	100	0	211	0	13
Hadj (s)	0.02	-0.13	0.04	-0.68	0.35	-0.07
Departure Headway (s)	6.3	5.6	5.8	5.0	6.1	5.7
Degree Utilization, x	0.02	0.36	0.34	0.30	0.44	0.16
Capacity (veh/h)	495	598	602	685	569	606
Control Delay (s)	9.4	11.7	10.5	8.9	12.7	8.6
Approach Delay (s)	9.4	11.7	9.7		11.5	
Approach LOS	A	B	A		B	

Intersection Summary				
Delay	10.8			
Level of Service	B			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	3	121	3	93	0	7	190	196	161	165
Future Vol, veh/h	8	2	3	121	3	93	0	7	190	196	161	165
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	3	130	3	100	0	8	204	211	173	177
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.5	11.9	10.7	12.5
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	62%	56%	66%	0%
Vol Thru, %	96%	0%	15%	1%	34%	87%
Vol Right, %	0%	100%	23%	43%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	196	13	217	244	95
LT Vol	7	0	8	121	161	0
Through Vol	190	0	2	3	83	83
RT Vol	0	196	3	93	0	12
Lane Flow Rate	212	211	14	233	262	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.34	0.295	0.024	0.366	0.444	0.16
Departure Headway (Hd)	5.77	5.043	6.302	5.643	6.11	5.685
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	625	712	567	637	589	631
Service Time	3.499	2.771	4.352	3.674	3.841	3.416
HCM Lane V/C Ratio	0.339	0.296	0.025	0.366	0.445	0.162
HCM Control Delay	11.5	9.9	9.5	11.9	13.7	9.5
HCM Lane LOS	B	A	A	B	B	A
HCM 95th-tile Q	1.5	1.2	0.1	1.7	2.3	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	252	120	66	144	110	167
Future Volume (Veh/h)	252	120	66	144	110	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	260	124	68	148	113	172
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	323	113	285			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	323	113	285			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	87	95			
cM capacity (veh/h)	614	922	1281			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	384	68	74	74	113	172
Volume Left	260	68	0	0	0	0
Volume Right	124	0	0	0	0	172
cSH	907	1281	1700	1700	1700	1700
Volume to Capacity	0.42	0.05	0.04	0.04	0.07	0.10
Queue Length 95th (ft)	53	4	0	0	0	0
Control Delay (s)	13.3	8.0	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	13.3	2.5			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay		6.4	
Intersection Capacity Utilization		31.0%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	252	120	66	144	110	167
Future Vol, veh/h	252	120	66	144	110	167
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	260	124	68	148	113	172

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	323	113	285	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	661	942	1282	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	626	942	1282	-	-	-
Mov Cap-2 Maneuver	626	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1282	-	626	942	-	-
HCM Lane V/C Ratio	0.053	-	0.415	0.131	-	-
HCM Control Delay (s)	8	-	14.8	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	2	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	67	0	126	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	67	0	126	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	32	0	80	0	150	17	0	0	0	0	337	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	440	357	357	437	377	0	377			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	440	357	357	437	377	0	377			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	88	100	73	98	100			100		
cM capacity (veh/h)	412	571	689	470	556	1088	1187			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	112	167	377
Volume Left	32	0	0
Volume Right	80	17	40
cSH	578	602	1700
Volume to Capacity	0.19	0.28	0.22
Queue Length 95th (ft)	18	28	0
Control Delay (s)	12.7	13.3	0.0
Lane LOS	B	B	
Approach Delay (s)	12.7	13.3	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		5.5			
Intersection Capacity Utilization	39.2%	ICU Level of Service		A	
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	67	0	126	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	67	0	126	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	32	0	80	0	150	17	0	0	0	0	337	40

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	441	357	357	397	377	0				-	-	0
Stage 1	357	357	-	0	0	-				-	-	-
Stage 2	84	0	-	397	377	-				-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21				-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-				-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309				-	-	-
Pot Cap-1 Maneuver	528	571	689	565	556	-				0	-	-
Stage 1	663	630	-	-	-	-				0	-	-
Stage 2	-	-	-	631	618	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	571	689	499	556	-				-	-	-
Mov Cap-2 Maneuver	-	571	-	499	556	-				-	-	-
Stage 1	663	630	-	-	-	-				-	-	-
Stage 2	-	-	-	558	618	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

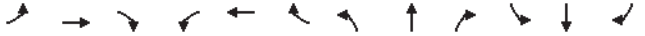
Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	556	-	-	-
HCM Lane V/C Ratio	-	0.27	-	-	-
HCM Control Delay (s)	-	13.9	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	392	670	189	414	96	354	1072	563	300
v/c Ratio	0.17	0.71	0.63	0.33	0.40	0.55	0.67	0.79	0.75	0.32
Control Delay	50.8	55.1	41.2	37.2	2.9	69.0	58.2	20.0	53.0	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	55.1	41.2	37.2	2.9	69.0	58.2	20.0	53.0	35.6
Queue Length 50th (ft)	34	152	237	116	6	77	147	184	226	98
Queue Length 95th (ft)	79	234	362	217	55	149	221	290	318	150
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	368	726	1217	660	1122	244	850	1472	1033	1398
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	0.54	0.55	0.29	0.37	0.39	0.42	0.73	0.55	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	287	93	650	183	402	93	343	1040	546	236	55
Future Volume (vph)	46	287	93	650	183	402	93	343	1040	546	236	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3430		3467	1881	1585	1787	3574	2814	3467	3472	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3430		3467	1881	1585	1787	3574	2814	3467	3472	
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)	47	296	96	670	189	414	96	354	1072	563	243	57
RTOR Reduction (vph)	0	21	0	0	0	188	0	0	65	0	15	0
Lane Group Flow (vph)	47	371	0	670	189	226	96	354	1007	563	285	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	19.1	19.1		37.5	37.5	64.0	12.0	18.1	55.6	26.5	32.6	
Effective Green, g (s)	19.1	19.1		37.5	37.5	64.0	12.0	18.1	55.6	26.5	32.6	
Actuated g/C Ratio	0.16	0.16		0.31	0.31	0.53	0.10	0.15	0.46	0.22	0.27	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	538		1068	579	833	176	531	1285	754	930	
v/s Ratio Prot	0.03	c0.11		0.19	0.10	0.06	0.05	0.10	c0.24	c0.16	0.08	
v/s Ratio Perm						0.08			0.12			
v/c Ratio	0.17	0.69		0.63	0.33	0.27	0.55	0.67	0.78	0.75	0.31	
Uniform Delay, d1	44.4	48.5		36.1	32.4	16.0	52.3	48.9	28.0	44.5	35.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	3.7		1.2	0.3	0.2	3.4	3.2	3.2	4.1	0.2	
Delay (s)	44.7	52.2		37.3	32.7	16.1	55.7	52.1	31.2	48.5	35.7	
Level of Service	D	D		D	C	B	E	D	C	D	D	
Approach Delay (s)		51.4			29.7			37.6			44.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	121.7	Sum of lost time (s)	20.5
Intersection Capacity Utilization	75.1%	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)	46	287	93	650	183	402	93	343	1040	546	236	55
Future Volume (veh/h)	46	287	93	650	183	402	93	343	1040	546	236	55
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	47	296	96	670	189	414	96	354	1072	563	243	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	255	378	120	884	478	707	121	860	1389	659	1019	235
Arrive On Green	0.14	0.14	0.14	0.25	0.25	0.25	0.07	0.24	0.24	0.19	0.35	0.35
Sat Flow, veh/h	1795	2663	845	3483	1885	1594	1795	3582	2812	3483	2891	665
Grp Volume(v), veh/h	47	197	195	670	189	414	96	354	1072	563	149	151
Grp Sat Flow(s),veh/h/ln	1795	1791	1718	1742	1885	1594	1795	1791	1406	1742	1791	1765
Q Serve(g_s), s	2.7	12.4	12.9	20.9	9.8	22.9	6.2	9.8	28.2	18.3	6.9	7.1
Cycle Q Clear(g_c), s	2.7	12.4	12.9	20.9	9.8	22.9	6.2	9.8	28.2	18.3	6.9	7.1
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	255	255	244	884	478	707	121	860	1389	659	632	623
V/C Ratio(X)	0.18	0.77	0.80	0.76	0.40	0.59	0.79	0.41	0.77	0.85	0.24	0.24
Avail Cap(c_a), veh/h	373	372	357	1234	668	867	248	860	1389	1047	722	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	48.5	48.7	40.5	36.3	24.6	53.9	37.6	22.2	46.0	26.8	26.9
Incr Delay (d2), s/veh	0.3	6.0	7.8	1.8	0.5	0.8	10.9	0.3	2.7	4.1	0.2	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	1.2	6.0	6.1	8.9	4.5	8.4	3.1	4.2	16.1	8.3	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	54.5	56.5	42.3	36.9	25.4	64.8	37.9	24.9	50.1	27.0	27.1
LnGrp LOS	D	D	E	D	D	C	E	D	C	D	C	C
Approach Vol, veh/h		439			1273			1522			863	
Approach Delay, s/veh		54.4			36.0			30.5			42.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.9	34.0		21.3	13.7	47.2		35.2				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	20.3	30.2		14.9	8.2	9.1		24.9				
Green Ext Time (p_c), s	1.9	0.0		1.8	0.1	1.9		4.8				

Intersection Summary												
HCM 6th Ctrl Delay			37.2									
HCM 6th LOS			D									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	252	973	523	119	864	365	333	198	502
v/c Ratio	0.58	0.77	0.59	0.58	0.72	0.67	0.47	0.71	0.72
Control Delay	50.7	35.7	6.3	58.6	33.6	49.4	35.8	58.4	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	35.7	6.3	58.6	33.6	49.4	35.8	58.4	43.1
Queue Length 50th (ft)	86	299	10	79	253	124	97	131	162
Queue Length 95th (ft)	139	443	101	151	382	189	147	#233	231
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	543	1463	949	261	1402	683	982	352	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.67	0.55	0.46	0.62	0.53	0.34	0.56	0.51

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)	242	934	502	114	685	144	350	237	83	190	360	122
Future Volume (vph)	242	934	502	114	685	144	350	237	83	190	360	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3472		3467	3436		1787	3425	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3472		3467	3436		1787	3425	
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)	252	973	523	119	714	150	365	247	86	198	375	127
RTOR Reduction (vph)	0	0	323	0	14	0	0	30	0	0	29	0
Lane Group Flow (vph)	252	973	200	119	850	0	365	303	0	198	473	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.7	35.9	35.9	11.7	34.9		16.0	20.1		15.9	20.0	
Effective Green, g (s)	12.7	35.9	35.9	11.7	34.9		16.0	20.1		15.9	20.0	
Actuated g/C Ratio	0.12	0.35	0.35	0.12	0.34		0.16	0.20		0.16	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	433	1262	565	205	1192		545	679		279	674	
v/s Ratio Prot	c0.07	c0.27		0.07	0.24		c0.11	c0.09		0.11	c0.14	
v/s Ratio Perm			0.13									
v/c Ratio	0.58	0.77	0.35	0.58	0.71		0.67	0.45		0.71	0.70	
Uniform Delay, d1	41.9	29.2	24.3	42.6	29.0		40.3	35.8		40.7	38.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	3.0	0.4	4.1	2.0		3.1	0.5		8.0	3.3	
Delay (s)	43.9	32.2	24.7	46.8	31.0		43.4	36.3		48.7	41.3	
Level of Service	D	C	C	D	C		D	D		D	D	
Approach Delay (s)		31.6			32.9			40.0			43.4	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	71.9%	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)	242	934	502	114	685	144	350	237	83	190	360	122
Future Volume (veh/h)	242	934	502	114	685	144	350	237	83	190	360	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	252	973	523	119	714	150	365	247	86	198	375	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	349	1307	583	153	1030	216	474	516	175	241	512	171
Arrive On Green	0.10	0.37	0.37	0.08	0.35	0.35	0.14	0.20	0.20	0.13	0.19	0.19
Sat Flow, veh/h	3483	3582	1598	1795	2945	618	3483	2625	891	1795	2633	880
Grp Volume(v), veh/h	252	973	523	119	434	430	365	167	166	198	253	249
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1773	1742	1791	1725	1795	1791	1722
Q Serve(g_s), s	5.8	19.4	15.5	5.3	17.1	17.1	8.3	6.8	7.0	8.8	10.9	11.2
Cycle Q Clear(g_c), s	5.8	19.4	15.5	5.3	17.1	17.1	8.3	6.8	7.0	8.8	10.9	11.2
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.52	1.00		0.51
Lane Grp Cap(c), veh/h	349	1307	583	153	626	620	474	352	339	241	348	335
V/C Ratio(X)	0.72	0.74	0.90	0.78	0.69	0.69	0.77	0.47	0.49	0.82	0.73	0.74
Avail Cap(c_a), veh/h	658	1767	788	317	862	853	827	600	578	427	600	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	22.7	9.2	36.8	22.9	22.9	34.2	29.2	29.3	34.6	31.0	31.1
Incr Delay (d2), s/veh	2.8	1.2	10.4	8.3	1.4	1.4	2.7	1.0	1.1	6.8	2.9	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.7	6.0	2.6	6.8	6.8	3.5	2.8	2.9	4.1	4.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	23.9	19.6	45.1	24.3	24.4	36.9	30.2	30.4	41.4	33.9	34.4
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1748			983			698			700	
Approach Delay, s/veh		24.7			26.9			33.8			36.2	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	34.5	15.7	20.5	12.7	33.2	15.5	20.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	7.3	21.4	10.3	13.2	7.8	19.1	10.8	9.0
Green Ext Time (p_c), s	0.1	8.5	0.9	2.4	0.5	5.2	0.3	1.7

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	787	196	22	593	247	19
v/c Ratio	0.78	0.21	0.11	0.31	0.58	0.05
Control Delay	18.8	2.3	9.8	8.2	24.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	2.3	9.8	8.2	24.3	8.4
Queue Length 50th (ft)	165	0	3	45	73	0
Queue Length 95th (ft)	#526	30	18	116	134	12
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1152	1030	237	2189	934	846
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	0.68	0.19	0.09	0.27	0.26	0.02

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)	700	174	20	528	220	17
Future Volume (vph)	700	174	20	528	220	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1519	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.21	1.00	0.95	1.00
Satd. Flow (perm)	1827	1519	376	3471	1732	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	787	196	22	593	247	19
RTOR Reduction (vph)	0	86	0	0	0	14
Lane Group Flow (vph)	787	110	22	593	247	5
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	31.3	31.3	31.3	31.3	13.9	13.9
Effective Green, g (s)	31.3	31.3	31.3	31.3	13.9	13.9
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.25	0.25
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1021	849	210	1940	429	385
v/s Ratio Prot	c0.43			0.17		0.00
v/s Ratio Perm		0.07	0.06		c0.14	
v/c Ratio	0.77	0.13	0.10	0.31	0.58	0.01
Uniform Delay, d1	9.6	5.9	5.8	6.6	18.5	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.1	0.0	1.2	0.0
Delay (s)	12.9	5.9	5.9	6.6	19.6	15.9
Level of Service	B	A	A	A	B	B
Approach Delay (s)	11.5			6.6	19.4	
Approach LOS	B			A	B	

Intersection Summary				
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	10.8	
Intersection Capacity Utilization	58.0%	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)	700	174	20	528	220	17		
Future Volume (veh/h)	700	174	20	528	220	17		
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	1841	1841	1841	1841	1841	1841		
Adj Flow Rate, veh/h	787	196	22	593	247	19		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89		
Percent Heavy Veh, %	4	4	4	4	4	4		
Cap, veh/h	949	802	277	1802	348	310		
Arrive On Green	0.52	0.52	0.52	0.52	0.20	0.20		
Sat Flow, veh/h	1841	1557	563	3589	1753	1560		
Grp Volume(v), veh/h	787	196	22	593	247	19		
Grp Sat Flow(s),veh/h/ln	1841	1557	563	1749	1753	1560		
Q Serve(g_s), s	13.7	2.6	1.3	3.7	5.0	0.4		
Cycle Q Clear(g_c), s	13.7	2.6	15.0	3.7	5.0	0.4		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	949	802	277	1802	348	310		
V/C Ratio(X)	0.83	0.24	0.08	0.33	0.71	0.06		
Avail Cap(c_a), veh/h	1686	1426	503	3203	1374	1222		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	7.8	5.1	14.1	5.3	14.1	12.3		
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.0	1.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.6	0.4	0.1	0.6	1.6	0.1		
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh	8.5	5.1	14.1	5.4	15.1	12.3		
LnGrp LOS	A	A	B	A	B	B		
Approach Vol, veh/h	983			615	266			
Approach Delay, s/veh	7.8			5.7	14.9			
Approach LOS	A			A	B			
Timer - Assigned Phs		2				6	8	
Phs Duration (G+Y+Rc), s		24.9				24.9	12.9	
Change Period (Y+Rc), s		5.4				5.4	5.4	
Max Green Setting (Gmax), s		34.6				34.6	29.6	
Max Q Clear Time (g_c+I1), s		15.7				17.0	7.0	
Green Ext Time (p_c), s		3.6				2.5	0.3	
Intersection Summary								
HCM 6th Ctrl Delay			8.1					
HCM 6th LOS			A					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	657	60	11	444	0	105	0	11	0	0	0
Future Volume (Veh/h)	0	657	60	11	444	0	105	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	714	65	12	483	0	114	0	12	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.63			0.63	0.63	0.63	0.63	0.63	
vC, conflicting volume	483			779			1012	1254	746	1260	1286	242
vC1, stage 1 conf vol							746	746		507	507	
vC2, stage 2 conf vol							266	507		752	779	
vCu, unblocked vol	483			357			726	1109	305	1119	1161	242
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			71	100	97	100	100	100
cM capacity (veh/h)	1076			756			390	342	436	320	323	759

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	779	254	242	126	0
Volume Left	0	12	0	114	0
Volume Right	65	0	0	12	0
cSH	1076	756	1700	431	1700
Volume to Capacity	0.00	0.02	0.14	0.29	0.00
Queue Length 95th (ft)	0	1	0	30	0
Control Delay (s)	0.0	0.6	0.0	17.6	0.0
Lane LOS		A		C	A
Approach Delay (s)	0.0	0.3		17.6	0.0
Approach LOS				C	A

Intersection Summary					
Average Delay	1.7				
Intersection Capacity Utilization	50.7%	ICU Level of Service		A	
Analysis Period (min)	15				

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	0	657	60	11	444	0	105	0	11	0	0	0
Future Vol, veh/h	0	657	60	11	444	0	105	0	11	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	714	65	12	483	0	114	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	483	0	0	779	0	0	1013	1254	747	1260	1286	242
Stage 1	-	-	-	-	-	-	747	747	-	507	507	-
Stage 2	-	-	-	-	-	-	266	507	-	753	779	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1078	-	-	836	-	-	205	171	412	137	164	759
Stage 1	-	-	-	-	-	-	404	419	-	517	538	-
Stage 2	-	-	-	-	-	-	717	538	-	401	405	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1078	-	-	836	-	-	202	168	412	131	161	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	344	-	311	330	-
Stage 1	-	-	-	-	-	-	404	419	-	517	527	-
Stage 2	-	-	-	-	-	-	703	527	-	389	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	18.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	364	412	1078	-	-	836	-	-	-
HCM Lane V/C Ratio	0.314	0.029	-	-	-	0.014	-	-	-
HCM Control Delay (s)	19.3	14	0	-	-	9.4	0.1	-	0
HCM Lane LOS	C	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.3	0.1	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	79	292	188	20	175	8	121	11	18	5	11	47
Future Volume (veh/h)	79	292	188	20	175	8	121	11	18	5	11	47
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
Hourly flow rate (vph)	86	317	204	22	190	9	132	12	20	5	12	51
Approach Volume (veh/h)		607			221			164			68	
Crossing Volume (veh/h)		39			230			408			344	
High Capacity (veh/h)		1343			1156			1004			1057	
High v/c (veh/h)		0.45			0.19			0.16			0.06	
Low Capacity (veh/h)		1123			954			818			865	
Low v/c (veh/h)		0.54			0.23			0.20			0.08	

Intersection Summary				
Maximum v/c High	0.45			
Maximum v/c Low	0.54			
Intersection Capacity Utilization	67.0%	ICU Level of Service	C	

Intersection	
Intersection Delay, s/veh	6.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	607	221	164	68
Demand Flow Rate, veh/h	619	225	167	69
Vehicles Circulating, veh/h	39	235	416	351
Vehicles Exiting, veh/h	381	348	242	109
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.5	5.3	5.9	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	619	225	167	69
Cap Entry Lane, veh/h	1326	1086	903	965
Entry HV Adj Factor	0.980	0.983	0.981	0.982
Flow Entry, veh/h	607	221	164	68
Cap Entry, veh/h	1300	1067	885	947
V/C Ratio	0.467	0.207	0.185	0.072
Control Delay, s/veh	7.5	5.3	5.9	4.5
LOS	A	A	A	A
95th %tile Queue, veh	3	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	22	25	17	1	18	19	9	90	3	22	109	12
Future Volume (vph)	22	25	17	1	18	19	9	90	3	22	109	12
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
Hourly flow rate (vph)	27	30	20	1	22	23	11	108	4	27	131	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	77	46	123	172
Volume Left (vph)	27	1	11	27
Volume Right (vph)	20	23	4	14
Hadj (s)	-0.07	-0.28	0.02	0.00
Departure Headway (s)	4.6	4.4	4.4	4.3
Degree Utilization, x	0.10	0.06	0.15	0.21
Capacity (veh/h)	731	754	785	796
Control Delay (s)	8.0	7.6	8.2	8.4
Approach Delay (s)	8.0	7.6	8.2	8.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	25	17	1	18	19	9	90	3	22	109	12
Future Vol, veh/h	22	25	17	1	18	19	9	90	3	22	109	12
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
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	27	30	20	1	22	23	11	108	4	27	131	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.7	8.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	34%	3%	15%
Vol Thru, %	88%	39%	47%	76%
Vol Right, %	3%	27%	50%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	64	38	143
LT Vol	9	22	1	22
Through Vol	90	25	18	109
RT Vol	3	17	19	12
Lane Flow Rate	123	77	46	172
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.097	0.056	0.206
Departure Headway (Hd)	4.383	4.539	4.375	4.314
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	820	791	820	834
Service Time	2.4	2.559	2.395	2.329
HCM Lane V/C Ratio	0.15	0.097	0.056	0.206
HCM Control Delay	8.2	8	7.7	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.2	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	138	0	1	85	2	0	14	1	0	9	31
Future Volume (Veh/h)	67	138	0	1	85	2	0	14	1	0	9	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	92	189	0	1	116	3	0	19	1	0	12	42
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	119			195			546	500	195	503	498	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	119			195			546	500	195	503	498	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	96	100	100	97	96
cM capacity (veh/h)	1475			1376			396	442	844	440	443	937

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	281	120	20	0	54
Volume Left	92	1	0	0	0
Volume Right	0	3	1	0	42
cSH	1475	1376	452	1700	751
Volume to Capacity	0.06	0.00	0.04	0.00	0.07
Queue Length 95th (ft)	5	0	3	0	6
Control Delay (s)	2.8	0.1	13.3	0.0	10.2
Lane LOS	A	A	B	A	B
Approach Delay (s)	2.8	0.1	13.3	10.2	
Approach LOS			B	B	

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	27.6%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	67	138	0	1	85	2	0	14	1	0	9	31
Future Vol, veh/h	67	138	0	1	85	2	0	14	1	0	9	31
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	92	189	0	1	116	3	0	19	1	0	12	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	119	0	0	195	0	0	526	500	195	503	499	118
Stage 1	-	-	-	-	-	-	379	379	-	120	120	-
Stage 2	-	-	-	-	-	-	147	121	-	383	379	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1475	-	-	1384	-	-	464	474	849	481	475	937
Stage 1	-	-	-	-	-	-	645	616	-	887	798	-
Stage 2	-	-	-	-	-	-	858	798	-	642	616	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1475	-	-	1376	-	-	408	438	844	439	438	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	438	-	439	438	-
Stage 1	-	-	-	-	-	-	597	569	-	825	797	-
Stage 2	-	-	-	-	-	-	806	797	-	576	569	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.1	13.3	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	453	1475	-	-	1376	-	-	-	746
HCM Lane V/C Ratio	0.045	0.062	-	-	0.001	-	-	-	0.073
HCM Control Delay (s)	13.3	7.6	0	-	7.6	0	-	0	10.2
HCM Lane LOS	B	A	A	-	A	A	-	A	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	-	0.2



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	8	98	89	5	140	134
Future Volume (veh/h)	8	98	89	5	140	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	107	97	5	152	146
Approach Volume (veh/h)	116		102			298
Crossing Volume (veh/h)	97		152			9
High Capacity (veh/h)	1284		1230			1375
High v/c (veh/h)	0.09		0.08			0.22
Low Capacity (veh/h)	1069		1020			1152
Low v/c (veh/h)	0.11		0.10			0.26

Intersection Summary			
Maximum v/c High	0.22		
Maximum v/c Low	0.26		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	116	102	298
Demand Flow Rate, veh/h	118	104	304
Vehicles Circulating, veh/h	99	155	9
Vehicles Exiting, veh/h	160	158	208
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.9	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	118	104	304
Cap Entry Lane, veh/h	1247	1178	1367
Entry HV Adj Factor	0.983	0.981	0.981
Flow Entry, veh/h	116	102	298
Cap Entry, veh/h	1226	1156	1341
V/C Ratio	0.095	0.088	0.222
Control Delay, s/veh	3.7	3.9	4.6
LOS	A	A	A
95th %tile Queue, veh	0	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	69	78	5	3	6
Future Volume (Veh/h)	6	69	78	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	8	92	104	7	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	111				216	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	111				216	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1466				764	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	100	111	12
Volume Left	8	0	4
Volume Right	0	7	8
cSH	1466	1700	874
Volume to Capacity	0.01	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	69	78	5	3	6
Future Vol, veh/h	6	69	78	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	8	92	104	7	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	216	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1466	-	-	-	768	940
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1466	-	-	-	763	940
Mov Cap-2 Maneuver	-	-	-	-	763	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1466	-	-	-	873
HCM Lane V/C Ratio	0.005	-	-	-	0.014
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Existing Plus 1293-Unit Project (Phase 1)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	468	280	93	409	333	180	456	286	597
v/c Ratio	0.70	0.83	0.42	0.47	0.53	0.55	0.66	0.64	0.82	0.69
Control Delay	48.3	43.9	5.7	44.9	31.6	7.5	46.8	33.3	54.2	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	43.9	5.7	44.9	31.6	7.5	46.8	33.3	54.2	30.9
Queue Length 50th (ft)	99	240	0	47	101	0	91	114	149	143
Queue Length 95th (ft)	#196	#446	59	98	154	68	#166	164	#301	204
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	329	574	674	238	910	649	329	949	375	1035
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	0.60	0.82	0.42	0.39	0.45	0.51	0.55	0.48	0.76	0.58

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)	184	440	263	87	384	313	169	368	61	269	419	142
Future Volume (vph)	184	440	263	87	384	313	169	368	61	269	419	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1572	1787	3574	1578	1787	3498		1787	3417	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1572	1787	3574	1578	1787	3498		1787	3417	
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)	196	468	280	93	409	333	180	391	65	286	446	151
RTOR Reduction (vph)	0	0	197	0	0	257	0	15	0	0	38	0
Lane Group Flow (vph)	196	468	83	93	409	77	180	441	0	286	559	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.8	24.2	24.2	7.3	18.7	18.7	12.3	16.2		15.7	19.6	
Effective Green, g (s)	12.8	24.2	24.2	7.3	18.7	18.7	12.3	16.2		15.7	19.6	
Actuated g/C Ratio	0.16	0.30	0.30	0.09	0.23	0.23	0.15	0.20		0.19	0.24	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	559	467	160	821	362	270	696		344	822	
v/s Ratio Prot	c0.11	c0.25		0.05	0.11		0.10	0.13		c0.16	c0.16	
v/s Ratio Perm			0.05			0.05						
v/c Ratio	0.70	0.84	0.18	0.58	0.50	0.21	0.67	0.63		0.83	0.68	
Uniform Delay, d1	32.5	26.8	21.2	35.6	27.3	25.4	32.6	29.9		31.6	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.3	10.5	0.2	5.3	0.5	0.3	6.1	1.9		15.6	2.3	
Delay (s)	39.8	37.3	21.4	40.9	27.7	25.7	38.7	31.8		47.2	30.4	
Level of Service	D	D	C	D	C	C	D	C		D	C	
Approach Delay (s)		33.1			28.4			33.7			35.8	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	70.0%	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)	184	440	263	87	384	313	169	368	61	269	419	142
Future Volume (veh/h)	184	440	263	87	384	313	169	368	61	269	419	142
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	196	468	280	93	409	333	180	391	65	286	446	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	241	592	500	121	885	394	224	563	93	333	639	214
Arrive On Green	0.13	0.31	0.31	0.07	0.25	0.25	0.12	0.18	0.18	0.19	0.24	0.24
Sat Flow, veh/h	1795	1885	1592	1795	3582	1596	1795	3077	507	1795	2624	880
Grp Volume(v), veh/h	196	468	280	93	409	333	180	226	230	286	303	294
Grp Sat Flow(s),veh/h/ln	1795	1885	1592	1795	1791	1596	1795	1791	1794	1795	1791	1714
Q Serve(g_s), s	7.6	16.3	10.5	3.7	7.0	14.3	7.0	8.5	8.6	11.1	11.1	11.3
Cycle Q Clear(g_c), s	7.6	16.3	10.5	3.7	7.0	14.3	7.0	8.5	8.6	11.1	11.1	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.51
Lane Grp Cap(c), veh/h	241	592	500	121	885	394	224	328	328	333	436	417
V/C Ratio(X)	0.81	0.79	0.56	0.77	0.46	0.85	0.80	0.69	0.70	0.86	0.69	0.70
Avail Cap(c_a), veh/h	362	630	531	262	997	444	362	523	524	412	573	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	22.5	20.5	33.0	23.0	25.8	30.6	27.5	27.5	28.4	24.7	24.8
Incr Delay (d2), s/veh	8.3	6.4	1.2	9.8	0.4	12.8	6.6	2.6	2.7	14.0	2.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	7.5	3.7	1.8	2.7	6.3	3.3	3.7	3.7	5.8	4.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	28.9	21.7	42.8	23.4	38.5	37.2	30.1	30.2	42.4	27.2	27.6
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		944			835			636			883	
Approach Delay, s/veh		28.8			31.6			32.1			32.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	17.6	9.3	27.1	13.5	22.0	14.1	22.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	13.1	10.6	5.7	18.3	9.0	13.3	9.6	16.3
Green Ext Time (p_c), s	0.3	1.9	0.1	1.9	0.2	2.5	0.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Existing Plus 1293-Unit and School Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	265	1184	1156	122	138	238
v/c Ratio	0.67	0.37	0.81	0.17	0.56	0.36
Control Delay	46.3	0.3	29.8	3.9	52.5	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	0.3	29.8	3.9	52.5	16.2
Queue Length 50th (ft)	151	0	330	0	83	68
Queue Length 95th (ft)	261	0	400	22	152	132
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	503	3223	2824	1278	503	981
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	0.53	0.37	0.41	0.10	0.27	0.24

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	935	913	96	109	188
Future Volume (vph)	209	935	913	96	109	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	265	1184	1156	122	138	238
RTOR Reduction (vph)	0	0	0	67	0	36
Lane Group Flow (vph)	265	1184	1156	55	138	202
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.9	99.9	44.7	44.7	15.3	44.2
Effective Green, g (s)	24.9	99.9	44.7	44.7	15.3	44.2
Actuated g/C Ratio	0.25	1.00	0.45	0.45	0.15	0.44
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	401	3223	1442	645	246	638
v/s Ratio Prot	c0.16	0.37	c0.36		c0.09	0.14
v/s Ratio Perm				0.04		
v/c Ratio	0.66	0.37	0.80	0.08	0.56	0.32
Uniform Delay, d1	33.7	0.0	23.8	15.9	39.2	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.3	3.5	0.1	3.2	0.3
Delay (s)	37.8	0.3	27.3	15.9	42.4	18.4
Level of Service	D	A	C	B	D	B
Approach Delay (s)		7.2	26.2		27.2	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	234	771	324	39	841	180	318	320	98	188	163
v/c Ratio	0.56	0.61	0.42	0.11	0.79	0.30	0.62	0.40	0.35	0.64	0.42
Control Delay	51.0	31.6	5.1	45.2	38.9	5.6	49.1	35.5	53.4	53.3	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	31.6	5.1	45.2	38.9	5.6	49.1	35.5	53.4	53.3	10.2
Queue Length 50th (ft)	76	242	0	11	266	0	102	92	32	118	0
Queue Length 95th (ft)	130	333	43	29	362	38	170	149	65	207	46
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	562	2256	1108	571	2256	1064	625	1310	625	695	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.34	0.29	0.07	0.37	0.17	0.51	0.24	0.16	0.27	0.24

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	640	269	32	698	149	264	249	17	81	156	135
Future Volume (vph)	194	640	269	32	698	149	264	249	17	81	156	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3219		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3219		3155	1712	1455
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)	234	771	324	39	841	180	318	300	20	98	188	163
RTOR Reduction (vph)	0	0	199	0	0	118	0	3	0	0	0	135
Lane Group Flow (vph)	234	771	125	39	841	62	318	317	0	98	188	28
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.8	40.8	40.8	9.3	36.3	36.3	17.1	25.9		9.2	18.0	18.0
Effective Green, g (s)	13.8	40.8	40.8	9.3	36.3	36.3	17.1	25.9		9.2	18.0	18.0
Actuated g/C Ratio	0.13	0.39	0.39	0.09	0.34	0.34	0.16	0.24		0.09	0.17	0.17
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	411	1254	561	277	1115	499	509	788		274	291	247
v/s Ratio Prot	0.07	c0.24		0.01	c0.26		c0.10	0.10		0.03	c0.11	
v/s Ratio Perm			0.09			0.04						0.02
v/c Ratio	0.57	0.61	0.22	0.14	0.75	0.12	0.62	0.40		0.36	0.65	0.11
Uniform Delay, d1	43.2	26.2	21.8	44.6	30.8	23.8	41.4	33.5		45.5	40.9	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	0.9	0.2	0.1	2.9	0.1	2.4	0.3		0.8	4.9	0.2
Delay (s)	45.0	27.1	22.0	44.6	33.7	24.0	43.7	33.8		46.3	45.8	37.3
Level of Service	D	C	C	D	C	C	D	C		D	D	D
Approach Delay (s)		29.0			32.5			38.8			42.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	105.8	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	57.7%	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)	194	640	269	32	698	149	264	249	17	81	156	135
Future Volume (veh/h)	194	640	269	32	698	149	264	249	17	81	156	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	234	771	324	39	841	180	318	300	20	98	188	163
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	331	1062	474	250	1122	500	425	733	49	166	265	225
Arrive On Green	0.10	0.32	0.32	0.08	0.34	0.34	0.13	0.23	0.23	0.05	0.15	0.15
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3138	208	3209	1737	1472
Grp Volume(v), veh/h	234	771	324	39	841	180	318	157	163	98	188	163
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1696	1605	1737	1472
Q Serve(g_s), s	5.3	15.7	8.5	0.9	17.1	7.0	7.2	6.1	6.2	2.3	7.8	8.0
Cycle Q Clear(g_c), s	5.3	15.7	8.5	0.9	17.1	7.0	7.2	6.1	6.2	2.3	7.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	331	1062	474	250	1122	500	425	385	396	166	265	225
V/C Ratio(X)	0.71	0.73	0.68	0.16	0.75	0.36	0.75	0.41	0.41	0.59	0.71	0.73
Avail Cap(c_a), veh/h	762	3048	1360	762	3048	1360	847	893	918	847	940	796
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	32.9	22.7	7.6	32.6	22.2	18.8	31.7	24.6	24.6	35.2	30.5	30.6
Incr Delay (d2), s/veh	2.8	1.0	1.8	0.1	1.0	0.4	2.7	0.7	0.7	3.3	3.5	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.3	4.2	0.3	5.8	2.2	2.8	2.3	2.4	0.9	3.3	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	23.7	9.4	32.7	23.2	19.2	34.3	25.3	25.3	38.5	34.0	35.0
LnGrp LOS	D	C	A	C	C	B	C	C	C	D	C	D
Approach Vol, veh/h		1329			1060			638			449	
Approach Delay, s/veh		22.3			22.9			29.8			35.3	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	31.7	14.0	16.9	11.8	33.1	7.9	23.0
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	17.7	9.2	10.0	7.3	19.1	4.3	8.2
Green Ext Time (p_c), s	0.0	6.7	0.8	1.6	0.5	6.7	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	705	27	259	891	0	5	0	238	0	0	0
Future Volume (Veh/h)	1	705	27	259	891	0	5	0	238	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	1	860	33	316	1087	0	6	0	290	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1087			893			2054	2598	446	2151	2614	544
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1087			893			2054	2598	446	2151	2614	544
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			55			68	100	46	100	100	100
cM capacity (veh/h)	587			701			19	12	535	7	11	461

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	573	320	316	725	362	296	0
Volume Left	1	0	0	316	0	0	6	0
Volume Right	0	0	33	0	0	0	290	0
cSH	587	1700	1700	701	1700	1700	546	1700
Volume to Capacity	0.00	0.34	0.19	0.45	0.43	0.21	0.54	0.00
Queue Length 95th (ft)	0	0	0	59	0	0	80	0
Control Delay (s)	11.1	0.0	0.0	14.3	0.0	0.0	24.5	0.0
Lane LOS	B			B			C	A
Approach Delay (s)	0.0			3.2			24.5	0.0
Approach LOS							C	A

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A	
Analysis Period (min)	15			

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	1	705	27	259	891	0	5	0	238	0	0	0
Future Vol, veh/h	1	705	27	259	891	0	5	0	238	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	340	-	-	195	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	860	33	316	1087	0	6	0	290	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1087	0	0	893	0	0	2055	2598	447	2151	2614	544
Stage 1	-	-	-	-	-	-	879	879	-	1719	1719	-
Stage 2	-	-	-	-	-	-	1176	1719	-	432	895	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	587	-	-	701	-	-	29	21	535	24	21	461
Stage 1	-	-	-	-	-	-	291	343	-	85	130	-
Stage 2	-	-	-	-	-	-	189	130	-	549	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	701	-	-	19	12	535	7	12	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	12	-	7	12	-
Stage 1	-	-	-	-	-	-	290	342	-	85	71	-
Stage 2	-	-	-	-	-	-	104	71	-	251	336	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	24.5	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	19	535	587	-	-	701	-	-	-	-
HCM Lane V/C Ratio	0.321	0.543	0.002	-	-	0.451	-	-	-	-
HCM Control Delay (s)	266.9	19.4	11.1	-	-	14.3	-	-	0	0
HCM Lane LOS	F	C	B	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	3.2	0	-	-	2.3	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	337	599	943	17	5	174
Future Volume (Veh/h)	337	599	943	17	5	174
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	401	713	1123	20	6	207
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1143				2282	562
vC1, stage 1 conf vol					1123	
vC2, stage 2 conf vol					1158	
vCu, unblocked vol	1143				2282	562
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	29				91	54
cM capacity (veh/h)	563				66	451

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	401	356	356	562	562	20	213
Volume Left	401	0	0	0	0	0	6
Volume Right	0	0	0	0	0	20	207
cSH	563	1700	1700	1700	1700	1700	464
Volume to Capacity	0.71	0.21	0.21	0.33	0.33	0.01	0.46
Queue Length 95th (ft)	144	0	0	0	0	0	59
Control Delay (s)	25.6	0.0	0.0	0.0	0.0	0.0	20.9
Lane LOS	D						C
Approach Delay (s)	9.2			0.0			20.9
Approach LOS							C

Intersection Summary			
Average Delay		6.0	
Intersection Capacity Utilization		58.1%	ICU Level of Service B
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	337	599	943	17	5	174
Future Vol, veh/h	337	599	943	17	5	174
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	401	713	1123	20	6	207

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1143	0	-	0	2282	562
Stage 1	-	-	-	-	1123	-
Stage 2	-	-	-	-	1159	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	563	-	-	-	30	450
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	245	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	563	-	-	-	9	450
Mov Cap-2 Maneuver	-	-	-	-	67	-
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	245	-

Approach	EB	WB	SB
HCM Control Delay, s	9.2	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	563	-	-	-	67	450
HCM Lane V/C Ratio	0.713	-	-	-	0.089	0.46
HCM Control Delay (s)	25.7	-	-	-	63.9	19.6
HCM Lane LOS	D	-	-	-	F	C
HCM 95th %tile Q(veh)	5.8	-	-	-	0.3	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	553	18	2	1012	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	553	18	2	1012	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	636	21	2	1163	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1163			657			1222	1803	318	1486	1824	582
vC1, stage 1 conf vol							636	636		1167	1167	
vC2, stage 2 conf vol							586	1167		318	657	
vCu, unblocked vol	1163			657			1222	1803	318	1486	1824	582
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	538			856			314	216	646	180	215	430

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	318	318	21	2	775	388	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	856	1700	1700	349	1700
Volume to Capacity	0.00	0.19	0.19	0.01	0.00	0.46	0.23	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	2	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.2	0.0	0.0	16.2	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			16.2	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	38.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	553	18	2	1012	0	8	0	1	0	0	0
Future Vol, veh/h	0	553	18	2	1012	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	636	21	2	1163	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1163	0	0	657	0	0	1222	1803	318	1485	1824	582
Stage 1	-	-	-	-	-	-	636	636	-	1167	1167	-
Stage 2	-	-	-	-	-	-	586	1167	-	318	657	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	538	-	-	856	-	-	124	70	646	78	68	430
Stage 1	-	-	-	-	-	-	407	444	-	189	244	-
Stage 2	-	-	-	-	-	-	437	244	-	638	434	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	538	-	-	856	-	-	124	70	646	78	68	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	305	210	-	176	209	-
Stage 1	-	-	-	-	-	-	407	444	-	189	244	-
Stage 2	-	-	-	-	-	-	436	244	-	637	434	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	646	538	-	-	856	-	-	-
HCM Lane V/C Ratio	0.03	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	17.2	10.6	0	-	-	9.2	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	90.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	113	92	258	96	66	40	378	206	39	305	50
Future Vol, veh/h	87	113	92	258	96	66	40	378	206	39	305	50
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	107	140	114	319	119	81	49	467	254	48	377	62
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	42.3	71.8	155.1	44.8
HCM LOS	E	F	F	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	20%	0%
Vol Thru, %	0%	100%	0%	0%	55%	0%	59%	80%	75%
Vol Right, %	0%	0%	100%	0%	45%	0%	41%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	378	206	87	205	258	162	192	203
LT Vol	40	0	0	87	0	258	0	39	0
Through Vol	0	378	0	0	113	0	96	153	153
RT Vol	0	0	206	0	92	0	66	0	50
Lane Flow Rate	49	467	254	107	253	319	200	236	250
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.157	1.418	0.721	0.364	0.802	1.029	0.603	0.747	0.771
Departure Headway (Hd)	11.769	11.243	10.507	13.112	12.254	12.429	11.605	12.279	11.987
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	307	327	346	276	299	293	314	298	305
Service Time	9.469	8.943	8.207	10.812	9.954	10.129	9.305	9.979	9.687
HCM Lane V/C Ratio	0.16	1.428	0.734	0.388	0.846	1.089	0.637	0.792	0.82
HCM Control Delay	16.6	234.6	36.2	23.1	50.4	97.8	30.5	43.9	45.7
HCM Lane LOS	C	F	E	C	F	F	D	E	E
HCM 95th-tile Q	0.5	23.9	5.4	1.6	6.4	11.1	3.7	5.5	6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Future Volume (Veh/h)	1	13	5	3	67	0	13	1	2	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	1	19	7	4	96	0	19	1	3	0	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	96			26			132	128	22	132	132	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96			26			132	128	22	132	132	96
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1461			1550			822	749	1037	821	745	944

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	100	23	3
Volume Left	1	4	19	0
Volume Right	7	0	3	3
cSH	1461	1550	841	944
Volume to Capacity	0.00	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.4	8.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.4	8.8
Approach LOS			A	A

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	18.7%	ICU Level of Service		A	
Analysis Period (min)	15				

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	1	13	5	3	67	0	13	1	2	0	0	2
Future Vol, veh/h	1	13	5	3	67	0	13	1	2	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	19	7	4	96	0	19	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	96	0	0	26	0	0	131	129	23	131	132	96
Stage 1	-	-	-	-	-	-	25	25	-	104	104	-
Stage 2	-	-	-	-	-	-	106	104	-	27	28	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1461	-	-	1550	-	-	828	751	1037	828	748	944
Stage 1	-	-	-	-	-	-	978	863	-	887	798	-
Stage 2	-	-	-	-	-	-	885	798	-	975	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1550	-	-	823	748	1037	822	745	944
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	748	-	822	745	-
Stage 1	-	-	-	-	-	-	977	862	-	886	796	-
Stage 2	-	-	-	-	-	-	880	796	-	970	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.4	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1461	-	-	1550	-	-	944
HCM Lane V/C Ratio	0.027	0.001	-	-	0.003	-	-	0.003
HCM Control Delay (s)	9.4	7.5	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	354	373	440	691	7	22	151	307	306	35
v/c Ratio	0.01	0.60	0.77	0.49	0.62	0.05	0.14	0.56	0.73	0.71	0.07
Control Delay	50.0	39.8	42.8	19.3	4.2	44.7	45.7	16.5	43.5	42.4	0.3
Queue Delay	0.0	0.0	0.2	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	39.8	43.0	19.9	4.6	44.7	45.7	16.5	43.5	42.4	0.3
Queue Length 50th (ft)	1	96	190	153	0	4	12	0	164	162	0
Queue Length 95th (ft)	6	157	333	307	45	18	37	51	302	300	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	103	940	672	1107	1217	372	392	447	560	570	600
Starvation Cap Reductn	0	0	39	326	161	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.38	0.59	0.56	0.65	0.02	0.06	0.34	0.55	0.54	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	273	28	317	374	587	6	19	128	434	87	30
Future Volume (vph)	1	273	28	317	374	587	6	19	128	434	87	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3444		1752	1845	1568	1752	1845	1544	1665	1696	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3444		1752	1845	1568	1752	1845	1544	1665	1696	1521
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1	321	33	373	440	691	7	22	151	511	102	35
RTOR Reduction (vph)	0	6	0	0	0	368	0	0	139	0	0	26
Lane Group Flow (vph)	1	348	0	373	440	323	7	22	12	307	306	9
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	19.2		24.6	43.0	43.0	7.6	7.6	7.6	22.5	22.5	22.5
Effective Green, g (s)	0.8	19.2		24.6	43.0	43.0	7.6	7.6	7.6	22.5	22.5	22.5
Actuated g/C Ratio	0.01	0.21		0.27	0.47	0.47	0.08	0.08	0.08	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	15	719		468	863	733	144	152	127	407	415	372
v/s Ratio Prot	0.00	0.10		c0.21	c0.24		0.00	c0.01		c0.18	0.18	
v/s Ratio Perm						0.21			0.01			0.01
v/c Ratio	0.07	0.48		0.80	0.51	0.44	0.05	0.14	0.10	0.75	0.74	0.02
Uniform Delay, d1	45.2	32.0		31.3	17.1	16.4	38.8	39.1	39.0	32.1	32.0	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
Incremental Delay, d2	1.9	0.5		9.1	0.5	0.4	0.1	0.4	0.3	7.7	6.7	0.0
Delay (s)	47.1	32.5		40.5	17.6	16.8	39.0	39.6	39.3	39.9	38.7	26.4
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		32.5			22.9			39.3			38.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	60.6%	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)	1	273	28	317	374	587	6	19	128	434	87	30
Future Volume (veh/h)	1	273	28	317	374	587	6	19	128	434	87	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	321	33	373	440	691	7	22	151	584	0	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	788	80	418	890	754	209	219	185	718	0	315
Arrive On Green	0.00	0.24	0.24	0.24	0.48	0.48	0.12	0.12	0.12	0.20	0.00	0.20
Sat Flow, veh/h	1767	3224	329	1767	1856	1572	1767	1856	1568	3534	0	1553
Grp Volume(v), veh/h	1	174	180	373	440	691	7	22	151	584	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1790	1767	1856	1572	1767	1856	1568	1767	0	1553
Q Serve(g_s), s	0.1	7.5	7.7	18.6	14.7	37.1	0.3	1.0	8.5	14.4	0.0	1.7
Cycle Q Clear(g_c), s	0.1	7.5	7.7	18.6	14.7	37.1	0.3	1.0	8.5	14.4	0.0	1.7
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	431	437	418	890	754	209	219	185	718	0	315
V/C Ratio(X)	0.41	0.40	0.41	0.89	0.49	0.92	0.03	0.10	0.81	0.81	0.00	0.11
Avail Cap(c_a), veh/h	97	446	453	631	1030	873	350	367	310	1107	0	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.4	28.8	28.9	33.6	16.2	22.0	35.5	35.8	39.1	34.6	0.0	29.6
Incr Delay (d2), s/veh	85.2	0.6	0.6	10.5	0.4	13.1	0.1	0.2	8.4	2.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.3	3.4	9.0	6.0	15.4	0.1	0.4	3.6	6.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.6	29.4	29.5	44.1	16.6	35.1	35.6	36.0	47.5	37.3	0.0	29.7
LnGrp LOS	F	C	C	D	B	D	D	D	D	D	A	C
Approach Vol, veh/h		355			1504			180			619	
Approach Delay, s/veh		29.8			31.9			45.6			36.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	26.7		23.0	4.6	48.1		15.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	20.6	9.7		16.4	2.1	39.1		10.5				
Green Ext Time (p_c), s	0.9	1.8		1.9	0.0	4.5		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			33.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	954	56	1319	415	251	14	273	6	9
v/c Ratio	0.41	0.53	0.33	0.74	0.46	0.71	0.03	0.47	0.02	0.02
Control Delay	49.3	16.3	48.5	21.3	7.4	44.3	27.4	8.1	27.2	0.0
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	16.7	48.5	21.3	7.4	44.3	27.4	8.1	27.2	0.0
Queue Length 50th (ft)	45	186	33	311	46	143	7	10	3	0
Queue Length 95th (ft)	85	243	67	384	94	200	19	48	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	239	2196	216	2188	1054	554	737	777	551	743
Starvation Cap Reductn	0	650	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	0.32	0.62	0.26	0.60	0.39	0.45	0.02	0.35	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	717	46	45	1055	332	201	11	218	5	0	7
Future Volume (vph)	61	717	46	45	1055	332	201	11	218	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3466		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3466		1752	3505	1530	1387	1845	1568	1380	1568	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	76	896	58	56	1319	415	251	14	272	6	0	9
RTOR Reduction (vph)	0	4	0	0	0	131	0	0	187	0	7	0
Lane Group Flow (vph)	76	950	0	56	1319	284	251	14	86	6	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.8	44.4		6.1	43.7	43.7	21.7	21.7	21.7	21.7	21.7	
Effective Green, g (s)	6.8	44.4		6.1	43.7	43.7	21.7	21.7	21.7	21.7	21.7	
Actuated g/C Ratio	0.08	0.52		0.07	0.51	0.51	0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1795		124	1787	780	351	467	397	349	397	
v/s Ratio Prot	c0.04	0.27		0.03	c0.38			0.01			0.00	
v/s Ratio Perm						0.19	c0.18		0.05	0.00		
v/c Ratio	0.55	0.53		0.45	0.74	0.36	0.72	0.03	0.22	0.02	0.01	
Uniform Delay, d1	38.0	13.7		38.2	16.5	12.6	29.2	24.1	25.3	24.0	23.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.3	0.3		2.6	1.6	0.3	6.8	0.0	0.3	0.0	0.0	
Delay (s)	42.3	14.0		40.8	18.1	12.9	36.0	24.1	25.6	24.0	23.9	
Level of Service	D	B		D	B	B	D	C	C	C	C	
Approach Delay (s)		16.1			17.6			30.4			24.0	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	62.4%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	717	46	45	1055	332	201	11	218	5	0	7
Future Volume (veh/h)	61	717	46	45	1055	332	201	11	218	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	896	58	56	1319	0	251	14	272	6	0	9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	1738	112	86	1794		423	426	361	352	0	361
Arrive On Green	0.06	0.52	0.52	0.05	0.51	0.00	0.23	0.23	0.23	0.23	0.00	0.23
Sat Flow, veh/h	1767	3360	218	1767	3526	1572	1395	1856	1572	1085	0	1572
Grp Volume(v), veh/h	76	470	484	56	1319	0	251	14	272	6	0	9
Grp Sat Flow(s),veh/h/ln	1767	1763	1815	1767	1763	1572	1395	1856	1572	1085	0	1572
Q Serve(g_s), s	2.8	11.6	11.6	2.1	19.4	0.0	11.2	0.4	10.6	0.3	0.0	0.3
Cycle Q Clear(g_c), s	2.8	11.6	11.6	2.1	19.4	0.0	11.5	0.4	10.6	0.7	0.0	0.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	101	912	939	86	1794		423	426	361	352	0	361
V/C Ratio(X)	0.75	0.52	0.52	0.65	0.74		0.59	0.03	0.75	0.02	0.00	0.02
Avail Cap(c_a), veh/h	281	1371	1412	255	2689		752	864	732	608	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	10.5	10.5	30.8	12.7	0.0	24.1	19.7	23.7	20.0	0.0	19.7
Incr Delay (d2), s/veh	10.8	0.5	0.4	8.0	0.6	0.0	1.3	0.0	3.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.9	4.1	1.0	6.6	0.0	3.6	0.2	3.9	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	10.9	10.9	38.9	13.3	0.0	25.5	19.8	26.9	20.0	0.0	19.7
LnGrp LOS	D	B	B	D	B		C	B	C	C	A	B
Approach Vol, veh/h		1030			1375	A		537			15	
Approach Delay, s/veh		13.2			14.4			26.0			19.8	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	38.6		19.6	8.3	38.1		19.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	4.1	13.6		2.7	4.8	21.4		13.5				
Green Ext Time (p_c), s	0.0	7.5		0.0	0.1	12.2		1.6				

Intersection Summary				
HCM 6th Ctrl Delay	16.1			
HCM 6th LOS	B			

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	224	947	70	1033	456	211	56	153	637
v/c Ratio	0.61	0.68	0.47	0.84	0.77	0.25	0.13	0.65	0.91dr
Control Delay	56.0	28.2	62.0	39.4	53.8	36.0	2.4	59.6	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	28.2	62.0	39.4	53.8	36.0	2.4	59.6	39.1
Queue Length 50th (ft)	83	282	51	362	168	66	0	110	173
Queue Length 95th (ft)	113	308	89	386	204	93	2	159	203
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	412	1513	178	1461	677	945	492	314	923
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.63	0.39	0.71	0.67	0.22	0.11	0.49	0.69

Intersection Summary

dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	491	266	56	731	95	365	169	45	122	173	337
Future Volume (vph)	179	491	266	56	731	95	365	169	45	122	173	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3334		1770	3473		3433	3539	1583	1770	3188	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3334		1770	3473		3433	3539	1583	1770	3188	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	224	614	332	70	914	119	456	211	56	152	216	421
RTOR Reduction (vph)	0	59	0	0	8	0	0	0	43	0	150	0
Lane Group Flow (vph)	224	888	0	70	1025	0	456	211	13	153	487	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.4	42.8		7.3	38.7		18.4	25.2	25.2	14.3	21.1	
Effective Green, g (s)	11.4	42.8		7.3	38.7		18.4	25.2	25.2	14.3	21.1	
Actuated g/C Ratio	0.11	0.40		0.07	0.36		0.17	0.23	0.23	0.13	0.20	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	363	1326		120	1249		587	828	370	235	625	
v/s Ratio Prot	c0.07	c0.27		0.04	c0.30		c0.13	c0.06		0.09	c0.15	
v/s Ratio Perm									0.01			
v/c Ratio	0.62	0.67		0.58	0.82		0.78	0.25	0.04	0.65	0.91dr	
Uniform Delay, d1	46.0	26.6		48.7	31.3		42.6	33.6	31.8	44.3	41.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	1.3		7.0	4.4		6.4	0.2	0.0	6.3	6.1	
Delay (s)	49.1	27.9		55.7	35.7		49.0	33.7	31.9	50.6	47.1	
Level of Service	D	C		E	D		D	C	C	D	D	
Approach Delay (s)		32.0			37.0			43.2			47.8	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	107.6	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	69.4%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	491	266	56	731	95	365	169	45	122	173	337
Future Volume (veh/h)	179	491	266	56	731	95	365	169	45	122	173	337
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	614	0	70	914	119	456	211	56	152	216	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1503		94	1201	156	589	579	258	194	360	
Arrive On Green	0.09	0.42	0.00	0.05	0.38	0.38	0.17	0.16	0.16	0.11	0.10	0.00
Sat Flow, veh/h	3456	3647	0	1781	3156	411	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	224	614	0	70	515	518	456	211	56	152	216	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1790	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	4.5	8.6	0.0	2.8	18.0	18.0	9.0	3.8	2.2	5.9	4.1	0.0
Cycle Q Clear(g_c), s	4.5	8.6	0.0	2.8	18.0	18.0	9.0	3.8	2.2	5.9	4.1	0.0
Prop In Lane	1.00		0.00	1.00		0.23	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	328	1503		94	676	681	589	579	258	194	360	
V/C Ratio(X)	0.68	0.41		0.75	0.76	0.76	0.77	0.36	0.22	0.78	0.60	
Avail Cap(c_a), veh/h	606	2269		262	1085	1093	994	1371	612	462	1272	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.2	14.3	0.0	33.3	19.2	19.2	28.2	26.5	25.9	30.9	30.6	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.0	11.2	1.8	1.8	2.2	0.4	0.4	6.7	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.2	0.0	1.4	7.0	7.0	3.6	1.5	0.8	2.7	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	14.5	0.0	44.4	21.0	21.0	30.4	26.9	26.3	37.6	32.2	0.0
LnGrp LOS	C	B		D	C	C	C	C	C	D	C	
Approach Vol, veh/h		838	A		1103			723			368	A
Approach Delay, s/veh		19.7			22.5			29.1			34.5	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	34.6	16.7	11.7	11.3	31.6	12.3	16.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.8	10.6	11.0	6.1	6.5	20.0	7.9	5.8
Green Ext Time (p_c), s	0.1	4.7	1.2	1.1	0.4	7.1	0.3	1.3

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	75	452	1178	551	105
v/c Ratio	0.38	0.22	0.74	0.68	0.23
Control Delay	46.6	10.1	21.3	36.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	10.1	21.3	36.3	9.0
Queue Length 50th (ft)	35	41	193	129	0
Queue Length 95th (ft)	103	141	#515	267	43
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	255	2525	1924	1107	581
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	0.18	0.61	0.50	0.18

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)	65	393	545	480	479	91
Future Volume (vph)	65	393	545	480	479	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3235		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3235		3400	1568
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	75	452	626	552	551	105
RTOR Reduction (vph)	0	0	114	0	0	81
Lane Group Flow (vph)	75	452	1064	0	551	24
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.9	47.9	36.5		19.2	19.2
Effective Green, g (s)	6.9	47.9	36.5		19.2	19.2
Actuated g/C Ratio	0.08	0.57	0.43		0.23	0.23
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	143	1993	1402		775	357
v/s Ratio Prot	c0.04	0.13	c0.33			
v/s Ratio Perm					c0.16	0.02
v/c Ratio	0.52	0.23	0.76		0.71	0.07
Uniform Delay, d1	37.1	9.0	20.1		29.9	25.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.1	2.4		3.1	0.1
Delay (s)	40.5	9.0	22.5		33.0	25.6
Level of Service	D	A	C		C	C
Approach Delay (s)		13.5	22.5		31.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	338	143	56	610	454	268	568	277	662
v/c Ratio	0.54	0.58	0.25	0.38	0.73	0.64	0.77	0.70	0.81	0.69
Control Delay	43.5	29.3	5.7	46.3	35.5	7.8	49.6	33.4	53.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	29.3	5.7	46.3	35.5	7.8	49.6	33.4	53.9	20.9
Queue Length 50th (ft)	65	155	0	29	157	0	136	143	144	97
Queue Length 95th (ft)	124	256	41	70	#235	82	#279	204	#304	162
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	309	674	649	158	916	735	378	1046	354	1117
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	0.42	0.50	0.22	0.35	0.67	0.62	0.71	0.54	0.78	0.59

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)	116	304	129	50	549	409	241	470	41	249	289	307
Future Volume (vph)	116	304	129	50	549	409	241	470	41	249	289	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1531	1752	3505	1532	1752	3458		1752	3189	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1531	1752	3505	1532	1752	3458		1752	3189	
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)	129	338	143	56	610	454	268	522	46	277	321	341
RTOR Reduction (vph)	0	0	99	0	0	342	0	8	0	0	218	0
Lane Group Flow (vph)	129	338	44	56	610	112	268	560	0	277	444	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.8	25.0	25.0	3.7	19.9	19.9	15.7	18.6		15.6	18.5	
Effective Green, g (s)	8.8	25.0	25.0	3.7	19.9	19.9	15.7	18.6		15.6	18.5	
Actuated g/C Ratio	0.11	0.31	0.31	0.05	0.25	0.25	0.19	0.23		0.19	0.23	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	570	473	80	862	376	340	795		337	729	
v/s Ratio Prot	c0.07	0.18		0.03	c0.17		0.15	c0.16		c0.16	0.14	
v/s Ratio Perm			0.03			0.07						
v/c Ratio	0.68	0.59	0.09	0.70	0.71	0.30	0.79	0.70		0.82	0.61	
Uniform Delay, d1	34.7	23.6	19.9	38.1	27.8	24.8	31.0	28.6		31.3	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	1.7	0.1	23.4	2.7	0.4	11.5	2.9		14.8	1.5	
Delay (s)	44.0	25.3	20.0	61.5	30.5	25.3	42.5	31.5		46.1	29.4	
Level of Service	D	C	B	E	C	C	D	C		D	C	
Approach Delay (s)		28.0			29.9			35.0			34.3	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	68.8%	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)	116	304	129	50	549	409	241	470	41	249	289	307
Future Volume (veh/h)	116	304	129	50	549	409	241	470	41	249	289	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	129	338	143	56	610	454	268	522	46	277	321	341
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	558	468	79	890	393	309	814	72	316	445	391
Arrive On Green	0.09	0.30	0.30	0.04	0.25	0.25	0.18	0.25	0.25	0.18	0.25	0.25
Sat Flow, veh/h	1767	1856	1558	1767	3526	1556	1767	3277	288	1767	1763	1550
Grp Volume(v), veh/h	129	338	143	56	610	454	268	280	288	277	321	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1558	1767	1763	1556	1767	1763	1802	1767	1763	1550
Q Serve(g_s), s	5.7	12.3	5.6	2.5	12.4	20.0	11.7	11.2	11.3	12.1	13.2	16.7
Cycle Q Clear(g_c), s	5.7	12.3	5.6	2.5	12.4	20.0	11.7	11.2	11.3	12.1	13.2	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	164	558	468	79	890	393	309	438	448	316	445	391
V/C Ratio(X)	0.79	0.61	0.31	0.71	0.69	1.16	0.87	0.64	0.64	0.88	0.72	0.87
Avail Cap(c_a), veh/h	301	623	523	154	890	393	368	512	523	346	490	431
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	35.2	23.7	21.3	37.3	26.8	29.6	31.8	26.6	26.6	31.7	27.1	28.4
Incr Delay (d2), s/veh	8.1	1.4	0.4	11.0	2.2	95.1	16.9	2.1	2.1	20.2	4.6	16.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	5.2	1.9	1.3	5.1	17.3	6.2	4.7	4.9	6.7	5.8	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	25.1	21.7	48.4	28.9	124.7	48.7	28.7	28.7	51.9	31.7	44.7
LnGrp LOS	D	C	C	D	C	F	D	C	C	D	C	D
Approach Vol, veh/h		610			1120			836			939	
Approach Delay, s/veh		28.1			68.7			35.1			42.4	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	24.2	8.0	28.3	18.4	24.5	11.8	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	14.1	13.3	4.5	14.3	13.7	18.7	7.7	22.0
Green Ext Time (p_c), s	0.1	2.3	0.0	1.9	0.2	1.3	0.1	0.0

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	63	550	45	59	443
Future Volume (Veh/h)	43	63	550	45	59	443
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	51	75	655	54	70	527
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1349	682			709	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1349	682			709	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	83			92	
cM capacity (veh/h)	153	450			890	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	126	709	70	527
Volume Left	51	0	70	0
Volume Right	75	54	0	0
cSH	252	1700	890	1700
Volume to Capacity	0.50	0.42	0.08	0.31
Queue Length 95th (ft)	64	0	6	0
Control Delay (s)	32.8	0.0	9.4	0.0
Lane LOS	D		A	
Approach Delay (s)	32.8	0.0	1.1	
Approach LOS	D			

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	63	550	45	59	443
Future Vol, veh/h	43	63	550	45	59	443
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	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	75	655	54	70	527

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1349	682	0	0	709	0
Stage 1	682	-	-	-	-	-
Stage 2	667	-	-	-	-	-
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	166	450	-	-	890	-
Stage 1	502	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	450	-	-	890	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.8	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	252	890	-
HCM Lane V/C Ratio	-	-	0.501	0.079	-
HCM Control Delay (s)	-	-	32.8	9.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.6	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	6	37	7	15	95	27	339	3	33	319	84
Future Volume (Veh/h)	96	6	37	7	15	95	27	339	3	33	319	84
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	114	7	44	8	18	113	32	404	4	39	380	100
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1055	938	386	978	1036	409	486			410		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1055	938	386	978	1036	409	486			410		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	23	97	93	96	92	82	97			97		
cM capacity (veh/h)	148	246	658	198	215	641	1071			1147		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	165	139	32	408	39	380	100
Volume Left	114	8	32	0	39	0	0
Volume Right	44	113	0	4	0	0	100
cSH	190	463	1071	1700	1147	1700	1700
Volume to Capacity	0.87	0.30	0.03	0.24	0.03	0.22	0.06
Queue Length 95th (ft)	161	31	2	0	3	0	0
Control Delay (s)	85.1	16.1	8.5	0.0	8.3	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	85.1	16.1	0.6		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	13.4			
Intersection Capacity Utilization	45.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	6	37	7	15	95	27	339	3	33	319	84
Future Vol, veh/h	96	6	37	7	15	95	27	339	3	33	319	84
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	7	44	8	18	113	32	404	4	39	380	100

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1001	938	386	1006	1036	409	486	0	0	410	0	0
Stage 1	464	464	-	472	472	-	-	-	-	-	-	-
Stage 2	537	474	-	534	564	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	222	264	662	220	232	642	1077	-	-	1149	-	-
Stage 1	578	564	-	573	559	-	-	-	-	-	-	-
Stage 2	528	558	-	530	508	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	162	246	658	191	216	640	1071	-	-	1147	-	-
Mov Cap-2 Maneuver	162	246	-	191	216	-	-	-	-	-	-	-
Stage 1	558	541	-	555	541	-	-	-	-	-	-	-
Stage 2	407	540	-	471	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	69.2	16.2	0.6	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1071	-	-	206	460	1147	-	-
HCM Lane V/C Ratio	0.03	-	-	0.803	0.303	0.034	-	-
HCM Control Delay (s)	8.5	-	-	69.2	16.2	8.2	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.7	1.3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	5	215	5	184	4	165	112	188	161	10
Future Volume (vph)	20	9	5	215	5	184	4	165	112	188	161	10
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	11	6	253	6	216	5	194	132	221	189	12

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	41	475	199	132	316	107
Volume Left (vph)	24	253	5	0	221	0
Volume Right (vph)	6	216	0	132	0	12
Hadj (s)	0.06	-0.13	0.05	-0.67	0.38	-0.04
Departure Headway (s)	7.3	5.9	7.1	6.4	7.2	6.8
Degree Utilization, x	0.08	0.78	0.39	0.23	0.63	0.20
Capacity (veh/h)	430	589	472	529	482	508
Control Delay (s)	11.0	27.1	13.4	10.1	20.6	10.3
Approach Delay (s)	11.0	27.1	12.1		18.0	
Approach LOS	B	D	B		C	

Intersection Summary				
Delay	19.6			
Level of Service	C			
Intersection Capacity Utilization	58.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	5	215	5	184	0	4	165	112	188	161
Future Vol, veh/h	20	9	5	215	5	184	0	4	165	112	188	161
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	11	6	253	6	216	0	5	194	132	221	189
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.2	28.8	13.1	19.1
HCM LOS	B	D	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	0%	59%	53%	70%	0%
Vol Thru, %	98%	0%	26%	1%	30%	89%
Vol Right, %	0%	100%	15%	46%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	112	34	404	269	91
LT Vol	4	0	20	215	188	0
Through Vol	165	0	9	5	81	81
RT Vol	0	112	5	184	0	10
Lane Flow Rate	199	132	40	475	316	106
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.392	0.233	0.083	0.799	0.634	0.201
Departure Headway (Hd)	7.097	6.366	7.452	6.053	7.225	6.787
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	563	480	604	499	528
Service Time	4.85	4.119	5.516	4.053	4.975	4.536
HCM Lane V/C Ratio	0.393	0.234	0.083	0.786	0.633	0.201
HCM Control Delay	14.4	11.1	11.2	28.8	21.7	11.2
HCM Lane LOS	B	B	B	D	C	B
HCM 95th-tile Q	1.8	0.9	0.3	7.8	4.4	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.85
Heavy Vehicles, %	2
Mvmt Flow	12
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	151	81	123	129	88	292
Future Volume (Veh/h)	151	81	123	129	88	292
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	176	94	143	150	102	340
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	463	102	442			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	463	102	442			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	90	87			
cM capacity (veh/h)	457	930	1107			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	270	143	75	75	102	340
Volume Left	176	143	0	0	0	0
Volume Right	94	0	0	0	0	340
cSH	701	1107	1700	1700	1700	1700
Volume to Capacity	0.38	0.13	0.04	0.04	0.06	0.20
Queue Length 95th (ft)	45	11	0	0	0	0
Control Delay (s)	14.8	8.7	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	14.8	4.3			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay		5.2	
Intersection Capacity Utilization		31.6%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	151	81	123	129	88	292
Future Vol, veh/h	151	81	123	129	88	292
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	176	94	143	150	102	340

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	102	442	0	-	0
Stage 1	102	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	540	950	1110	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	470	950	1110	-	-	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	4.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1110	-	470	950	-	-
HCM Lane V/C Ratio	0.129	-	0.374	0.099	-	-
HCM Control Delay (s)	8.7	-	17.2	9.2	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	1.7	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	24	1	91	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	24	1	91	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	30	0	26	1	100	10	0	0	0	0	356	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	419	364	364	390	372	0	372			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	419	364	364	390	372	0	372			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	96	100	82	99	100			100		
cM capacity (veh/h)	465	564	681	547	558	1085	1186			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	56	111	372
Volume Left	30	1	0
Volume Right	26	10	16
cSH	545	613	1700
Volume to Capacity	0.10	0.18	0.22
Queue Length 95th (ft)	9	16	0
Control Delay (s)	12.4	12.5	0.0
Lane LOS	B	B	
Approach Delay (s)	12.4	12.5	0.0
Approach LOS	B	B	

Intersection Summary				
Average Delay		3.9		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	24	1	91	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	24	1	91	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	26	1	100	10	0	0	0	0	356	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	419	364	364	377	372	0				-	-	0
Stage 1	364	364	-	0	0	-				-	-	-
Stage 2	55	0	-	377	372	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	544	564	681	580	558	-				0	-	-
Stage 1	655	624	-	-	-	-				0	-	-
Stage 2	-	-	-	644	619	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	564	681	557	558	-				-	-	-
Mov Cap-2 Maneuver	-	564	-	557	558	-				-	-	-
Stage 1	655	624	-	-	-	-				-	-	-
Stage 2	-	-	-	619	619	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	558	-	-	-
HCM Lane V/C Ratio	-	0.181	-	-	-
HCM Control Delay (s)	-	12.9	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-	-

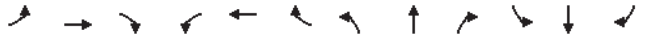
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	356	1230	263	515	77	308	606	348	280
v/c Ratio	0.09	0.73	0.82	0.32	0.46	0.56	0.67	0.36	0.69	0.36
Control Delay	55.9	54.4	39.0	27.1	3.2	78.3	63.7	6.1	62.4	44.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	54.4	39.0	27.1	3.2	78.3	63.7	6.1	62.4	44.9
Queue Length 50th (ft)	17	127	471	146	17	66	139	48	153	110
Queue Length 95th (ft)	43	179	592	229	50	122	186	69	204	147
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	280	593	1645	893	1161	168	639	1774	649	955
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	0.07	0.60	0.75	0.29	0.44	0.46	0.48	0.34	0.54	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	184	115	1033	221	433	65	259	509	292	197	38
Future Volume (vph)	18	184	115	1033	221	433	65	259	509	292	197	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3335		3433	1863	1568	1770	3539	2787	3433	3441	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3335		3433	1863	1568	1770	3539	2787	3433	3441	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	21	219	137	1230	263	515	77	308	606	348	235	45
RTOR Reduction (vph)	0	67	0	0	0	193	0	0	73	0	11	0
Lane Group Flow (vph)	21	289	0	1230	263	322	77	308	533	348	269	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	16.5	16.5		57.5	57.5	76.8	8.5	18.6	76.1	19.3	29.4	
Effective Green, g (s)	16.5	16.5		57.5	57.5	76.8	8.5	18.6	76.1	19.3	29.4	
Actuated g/C Ratio	0.12	0.12		0.43	0.43	0.58	0.06	0.14	0.57	0.15	0.22	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	220	415		1490	809	909	113	497	1601	500	764	
v/s Ratio Prot	0.01	c0.09		c0.36	0.14	0.05	0.04	c0.09	0.14	c0.10	0.08	
v/s Ratio Perm						0.15			0.05			
v/c Ratio	0.10	0.70		0.83	0.33	0.35	0.68	0.62	0.33	0.70	0.35	
Uniform Delay, d1	51.3	55.6		33.0	24.7	14.7	60.6	53.6	14.8	53.8	43.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	5.1		3.9	0.2	0.2	15.6	2.3	0.1	4.2	0.3	
Delay (s)	51.5	60.6		36.9	24.9	14.9	76.2	55.9	14.9	58.0	43.7	
Level of Service	D	E		D	C	B	E	E	B	E	D	
Approach Delay (s)		60.1			29.7			32.4			51.6	
Approach LOS		E			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	132.4	Sum of lost time (s)	20.5	
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)	18	184	115	1033	221	433	65	259	509	292	197	38
Future Volume (veh/h)	18	184	115	1033	221	433	65	259	509	292	197	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	219	137	1230	263	515	77	308	606	348	235	45
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	279	167	1444	781	848	98	557	1603	424	641	121
Arrive On Green	0.13	0.13	0.13	0.42	0.42	0.42	0.06	0.16	0.16	0.12	0.22	0.22
Sat Flow, veh/h	1781	2136	1281	3456	1870	1564	1781	3554	2790	3456	2983	562
Grp Volume(v), veh/h	21	181	175	1230	263	515	77	308	606	348	138	142
Grp Sat Flow(s),veh/h/ln	1781	1777	1640	1728	1870	1564	1781	1777	1395	1728	1777	1768
Q Serve(g_s), s	1.2	11.7	12.4	38.3	11.3	26.8	5.1	9.5	14.1	11.7	7.9	8.1
Cycle Q Clear(g_c), s	1.2	11.7	12.4	38.3	11.3	26.8	5.1	9.5	14.1	11.7	7.9	8.1
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	232	232	214	1444	781	848	98	557	1603	424	382	380
V/C Ratio(X)	0.09	0.78	0.82	0.85	0.34	0.61	0.78	0.55	0.38	0.82	0.36	0.37
Avail Cap(c_a), veh/h	305	305	281	1788	968	1004	183	693	1709	705	527	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	50.1	50.4	31.3	23.5	18.7	55.5	46.3	13.8	50.9	39.8	39.9
Incr Delay (d2), s/veh	0.2	9.1	13.5	3.5	0.3	0.8	12.6	0.9	0.1	4.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.8	5.9	15.9	4.9	9.3	2.6	4.2	9.0	5.3	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	59.2	63.8	34.8	23.7	19.5	68.1	47.2	13.9	54.9	40.3	40.5
LnGrp LOS	D	E	E	C	C	B	E	D	B	D	D	D
Approach Vol, veh/h		377			2008			991			628	
Approach Delay, s/veh		60.6			29.4			28.5			48.4	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3	24.5		20.1	12.4	31.4		55.1				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	13.7	16.1		14.4	7.1	10.1		40.3				
Green Ext Time (p_c), s	0.9	2.6		1.1	0.1	1.6		9.4				

Intersection Summary			
HCM 6th Ctrl Delay		35.1	
HCM 6th LOS		D	

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	717	254	138	1423	617	378	323	436
v/c Ratio	0.56	0.57	0.35	0.70	1.02	0.85	0.68	0.86	0.73
Control Delay	63.0	32.3	5.0	67.3	61.4	53.7	48.2	64.4	43.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	32.3	5.0	67.3	61.4	53.7	48.2	64.4	43.5
Queue Length 50th (ft)	41	221	0	95	~564	215	130	219	128
Queue Length 95th (ft)	73	298	51	#177	#733	289	173	#371	176
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	204	1250	723	218	1398	770	831	408	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.57	0.35	0.63	1.02	0.80	0.45	0.79	0.49

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	624	221	120	960	278	537	276	53	281	245	134
Future Volume (vph)	100	624	221	120	960	278	537	276	53	281	245	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3401		3433	3443		1770	3352	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3401		3433	3443		1770	3352	
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)	115	717	254	138	1103	320	617	317	61	323	282	154
RTOR Reduction (vph)	0	0	164	0	21	0	0	14	0	0	67	0
Lane Group Flow (vph)	115	717	90	138	1402	0	617	364	0	323	369	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.5	38.7	38.7	12.2	44.4		23.3	17.3		23.3	17.3	
Effective Green, g (s)	6.5	38.7	38.7	12.2	44.4		23.3	17.3		23.3	17.3	
Actuated g/C Ratio	0.06	0.35	0.35	0.11	0.41		0.21	0.16		0.21	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	1250	559	197	1379		730	543		376	529	
v/s Ratio Prot	0.03	0.20		c0.08	c0.41		c0.18	0.11		c0.18	0.11	
v/s Ratio Perm			0.06									
v/c Ratio	0.57	0.57	0.16	0.70	1.02		0.85	0.67		0.86	0.70	
Uniform Delay, d1	50.1	28.7	24.3	46.9	32.5		41.4	43.4		41.5	43.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	0.6	0.1	10.7	28.5		8.9	3.1		17.4	4.0	
Delay (s)	53.7	29.3	24.4	57.6	61.1		50.3	46.5		58.9	47.6	
Level of Service	D	C	C	E	E		D	D		E	D	
Approach Delay (s)		30.8			60.8			48.8			52.4	
Approach LOS		C			E			D			D	

Intersection Summary					
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.96				
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	81.4%	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)	100	624	221	120	960	278	537	276	53	281	245	134
Future Volume (veh/h)	100	624	221	120	960	278	537	276	53	281	245	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	717	254	138	1103	320	617	317	61	323	282	154
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	173	1315	587	168	1126	323	693	499	95	356	374	199
Arrive On Green	0.05	0.37	0.37	0.09	0.41	0.41	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2720	780	3456	2974	565	1781	2242	1191
Grp Volume(v), veh/h	115	717	254	138	716	707	617	188	190	323	222	214
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1723	1728	1777	1763	1781	1777	1656
Q Serve(g_s), s	3.5	17.0	7.0	8.1	42.3	43.6	18.6	10.5	10.8	19.0	12.7	13.2
Cycle Q Clear(g_c), s	3.5	17.0	7.0	8.1	42.3	43.6	18.6	10.5	10.8	19.0	12.7	13.2
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.32	1.00		0.72
Lane Grp Cap(c), veh/h	173	1315	587	168	736	714	693	298	296	356	297	277
V/C Ratio(X)	0.67	0.55	0.43	0.82	0.97	0.99	0.89	0.63	0.64	0.91	0.75	0.77
Avail Cap(c_a), veh/h	210	1315	587	225	736	714	779	432	428	420	450	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	26.6	7.6	47.6	30.7	31.1	41.6	41.4	41.5	41.8	42.4	42.6
Incr Delay (d2), s/veh	5.8	0.5	0.5	16.4	26.6	31.1	11.5	2.2	2.3	21.2	3.8	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	7.0	4.3	4.3	22.3	23.0	8.8	4.7	4.7	10.2	5.7	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	27.1	8.1	64.0	57.4	62.2	53.1	43.6	43.8	63.0	46.2	47.6
LnGrp LOS	E	C	A	E	E	E	D	D	D	E	D	D
Approach Vol, veh/h		1086			1561			995			759	
Approach Delay, s/veh		25.7			60.1			49.5			53.7	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	44.1	26.0	22.4	9.8	48.8	25.9	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	10.1	19.0	20.6	15.2	5.5	45.6	21.0	12.8
Green Ext Time (p_c), s	0.1	5.3	0.9	1.9	0.0	0.0	0.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	448	146	14	842	203	9
v/c Ratio	0.54	0.19	0.04	0.54	0.42	0.02
Control Delay	12.7	3.0	9.1	10.9	14.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	3.0	9.1	10.9	14.6	6.9
Queue Length 50th (ft)	56	0	1	54	28	0
Queue Length 95th (ft)	214	28	13	180	95	8
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1573	1324	702	2988	1311	1176
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.11	0.02	0.28	0.15	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	408	133	13	766	185	8
Future Volume (vph)	408	133	13	766	185	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1750	3505	1752	1568
Flt Permitted	1.00	1.00	0.45	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	825	3505	1752	1568
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	448	146	14	842	203	9
RTOR Reduction (vph)	0	80	0	0	0	6
Lane Group Flow (vph)	448	66	14	842	203	3
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	18.9	18.9	18.9	18.9	11.8	11.8
Effective Green, g (s)	18.9	18.9	18.9	18.9	11.8	11.8
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.28	0.28
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	840	697	375	1596	498	445
v/s Ratio Prot	c0.24			0.24		0.00
v/s Ratio Perm		0.04	0.02		c0.12	
v/c Ratio	0.53	0.10	0.04	0.53	0.41	0.01
Uniform Delay, d1	8.1	6.4	6.3	8.1	12.0	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.0	0.1	0.2	0.0
Delay (s)	8.5	6.5	6.3	8.2	12.2	10.6
Level of Service	A	A	A	A	B	B
Approach Delay (s)	8.0			8.2	12.2	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	10.8
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	408	133	13	766	185	8
Future Volume (veh/h)	408	133	13	766	185	8
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	448	146	14	842	203	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	752	634	423	1429	397	354
Arrive On Green	0.41	0.41	0.41	0.41	0.22	0.22
Sat Flow, veh/h	1856	1565	815	3618	1767	1572
Grp Volume(v), veh/h	448	146	14	842	203	9
Grp Sat Flow(s),veh/h/ln	1856	1565	815	1763	1767	1572
Q Serve(g_s), s	5.5	1.8	0.4	5.4	2.9	0.1
Cycle Q Clear(g_c), s	5.5	1.8	5.9	5.4	2.9	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	752	634	423	1429	397	354
V/C Ratio(X)	0.60	0.23	0.03	0.59	0.51	0.03
Avail Cap(c_a), veh/h	2199	1854	1058	4178	1791	1594
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	6.8	5.7	9.1	6.8	9.9	8.8
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.0	0.8	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	5.8	9.1	6.9	10.3	8.8
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	594			856	212	
Approach Delay, s/veh	6.8			7.0	10.2	
Approach LOS	A			A	B	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	17.2				17.2	12.0
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	7.5				7.9	4.9
Green Ext Time (p_c), s	1.9				3.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	333	83	5	720	0	60	0	5	0	0	0
Future Volume (Veh/h)	0	333	83	5	720	0	60	0	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	362	90	5	783	0	65	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	783			452			808	1200	407	1202	1245	392
vC1, stage 1 conf vol							407	407		793	793	
vC2, stage 2 conf vol							402	793		410	452	
vCu, unblocked vol	783			236			666	1138	182	1141	1193	392
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			87	100	99	100	100	100
cM capacity (veh/h)	831			1101			499	354	688	315	347	607

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	452	396	392	70	0
Volume Left	0	5	0	65	0
Volume Right	90	0	0	5	0
cSH	831	1101	1700	537	1700
Volume to Capacity	0.00	0.00	0.23	0.13	0.00
Queue Length 95th (ft)	0	0	0	11	0
Control Delay (s)	0.0	0.2	0.0	13.1	0.0
Lane LOS		A		B	A
Approach Delay (s)	0.0	0.1		13.1	0.0
Approach LOS				B	A

Intersection Summary					
Average Delay	0.7				
Intersection Capacity Utilization	33.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	0	333	83	5	720	0	60	0	5	0	0	0
Future Vol, veh/h	0	333	83	5	720	0	60	0	5	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	362	90	5	783	0	65	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	783	0	0	452	0	0	809	1200	407	1203	1245	392
Stage 1	-	-	-	-	-	-	407	407	-	793	793	-
Stage 2	-	-	-	-	-	-	402	793	-	410	452	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	833	-	-	1107	-	-	285	184	643	150	173	608
Stage 1	-	-	-	-	-	-	620	596	-	349	399	-
Stage 2	-	-	-	-	-	-	597	399	-	618	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	833	-	-	1107	-	-	283	183	643	148	172	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	472	346	-	309	339	-
Stage 1	-	-	-	-	-	-	620	596	-	349	396	-
Stage 2	-	-	-	-	-	-	592	396	-	613	570	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.6	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	472	643	833	-	-	1107	-	-	-
HCM Lane V/C Ratio	0.138	0.008	-	-	-	0.005	-	-	-
HCM Control Delay (s)	13.8	10.6	0	-	-	8.3	0	-	0
HCM Lane LOS	B	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	44	163	76	15	305	4	206	12	15	8	12	89
Future Volume (veh/h)	44	163	76	15	305	4	206	12	15	8	12	89
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
Hourly flow rate (vph)	48	177	83	16	332	4	224	13	16	9	13	97
Approach Volume (veh/h)		308			352			253			119	
Crossing Volume (veh/h)		38			285			234			572	
High Capacity (veh/h)		1344			1107			1153			881	
High v/c (veh/h)		0.23			0.32			0.22			0.14	
Low Capacity (veh/h)		1124			910			951			708	
Low v/c (veh/h)		0.27			0.39			0.27			0.17	

Intersection Summary					
Maximum v/c High		0.32			
Maximum v/c Low		0.39			
Intersection Capacity Utilization		57.2%	ICU Level of Service		B

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	308	352	253	119
Demand Flow Rate, veh/h	315	359	257	121
Vehicles Circulating, veh/h	38	290	239	583
Vehicles Exiting, veh/h	666	206	114	66
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	7.2	5.6	6.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	315	359	257	121
Cap Entry Lane, veh/h	1327	1027	1081	761
Entry HV Adj Factor	0.979	0.981	0.983	0.981
Flow Entry, veh/h	308	352	253	119
Cap Entry, veh/h	1300	1008	1063	747
V/C Ratio	0.237	0.350	0.238	0.159
Control Delay, s/veh	4.8	7.2	5.6	6.5
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	18	13	9	1	28	16	10	105	1	12	67	24
Future Volume (vph)	18	13	9	1	28	16	10	105	1	12	67	24
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
Hourly flow rate (vph)	22	16	11	1	34	19	12	127	1	14	81	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	49	54	140	124
Volume Left (vph)	22	1	12	14
Volume Right (vph)	11	19	1	29
Hadj (s)	0.09	-0.07	0.15	0.02
Departure Headway (s)	4.7	4.5	4.4	4.3
Degree Utilization, x	0.06	0.07	0.17	0.15
Capacity (veh/h)	717	743	785	797
Control Delay (s)	8.0	7.8	8.4	8.1
Approach Delay (s)	8.0	7.8	8.4	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.1			
Level of Service	A			
Intersection Capacity Utilization	23.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	13	9	1	28	16	10	105	1	12	67	24
Future Vol, veh/h	18	13	9	1	28	16	10	105	1	12	67	24
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
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	22	16	11	1	34	19	12	127	1	14	81	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.8	8.4	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	45%	2%	12%
Vol Thru, %	91%	32%	62%	65%
Vol Right, %	1%	23%	36%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	40	45	103
LT Vol	10	18	1	12
Through Vol	105	13	28	67
RT Vol	1	9	16	24
Lane Flow Rate	140	48	54	124
Geometry Grp	1	1	1	1
Degree of Util (X)	0.172	0.062	0.068	0.149
Departure Headway (Hd)	4.434	4.653	4.483	4.312
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	813	772	801	834
Service Time	2.434	2.671	2.5	2.325
HCM Lane V/C Ratio	0.172	0.062	0.067	0.149
HCM Control Delay	8.4	8	7.8	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0.2	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	81	0	0	150	2	0	8	0	0	16	79
Future Volume (Veh/h)	24	81	0	0	150	2	0	8	0	0	16	79
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	34	114	0	0	211	3	0	11	0	0	23	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	214			114			517	396	114	400	394	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214			114			517	396	114	400	394	212
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	98	100	100	96	87
cM capacity (veh/h)	1344			1463			382	524	933	537	525	823

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	148	214	11	0	134
Volume Left	34	0	0	0	0
Volume Right	0	3	0	0	111
cSH	1344	1463	524	1700	750
Volume to Capacity	0.03	0.00	0.02	0.00	0.18
Queue Length 95th (ft)	2	0	2	0	16
Control Delay (s)	1.9	0.0	12.0	0.0	10.8
Lane LOS	A		B	A	B
Approach Delay (s)	1.9	0.0	12.0	10.8	
Approach LOS			B	B	

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	29.3%	ICU Level of Service		A
Analysis Period (min)	15			

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	24	81	0	0	150	2	0	8	0	0	16	79
Future Vol, veh/h	24	81	0	0	150	2	0	8	0	0	16	79
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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	34	114	0	0	211	3	0	11	0	0	23	111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	114	0	0	462	396	114	401	395	213
Stage 1	-	-	-	-	-	-	182	182	-	213	213	-
Stage 2	-	-	-	-	-	-	280	214	-	188	182	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1344	-	-	1463	-	-	507	538	933	556	539	822
Stage 1	-	-	-	-	-	-	815	745	-	785	722	-
Stage 2	-	-	-	-	-	-	722	722	-	809	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1344	-	-	1463	-	-	415	523	933	535	524	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	415	523	-	535	524	-
Stage 1	-	-	-	-	-	-	793	725	-	764	722	-
Stage 2	-	-	-	-	-	-	605	722	-	775	725	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	12	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	523	1344	-	-	1463	-	-	-	750
HCM Lane V/C Ratio	0.022	0.025	-	-	-	-	-	-	0.178
HCM Control Delay (s)	12	7.7	0	-	0	-	-	0	10.8
HCM Lane LOS	B	A	A	-	A	-	-	A	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	-	0.6



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	4	143	132	8	99	76
Future Volume (veh/h)	4	143	132	8	99	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	155	143	9	108	83
Approach Volume (veh/h)	159		152			191
Crossing Volume (veh/h)	143		108			4
High Capacity (veh/h)	1238		1273			1380
High v/c (veh/h)	0.13		0.12			0.14
Low Capacity (veh/h)	1028		1059			1157
Low v/c (veh/h)	0.15		0.14			0.17

Intersection Summary			
Maximum v/c High	0.14		
Maximum v/c Low	0.17		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	159	152	191
Demand Flow Rate, veh/h	162	155	195
Vehicles Circulating, veh/h	146	110	4
Vehicles Exiting, veh/h	119	89	304
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	4.0	3.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	162	155	195
Cap Entry Lane, veh/h	1189	1233	1374
Entry HV Adj Factor	0.981	0.982	0.981
Flow Entry, veh/h	159	152	191
Cap Entry, veh/h	1167	1211	1348
V/C Ratio	0.136	0.126	0.142
Control Delay, s/veh	4.3	4.0	3.8
LOS	A	A	A
95th %tile Queue, veh	0	0	0



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	51	77	5	1	6
Future Volume (Veh/h)	3	51	77	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	5	81	122	8	2	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	130				217	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				217	126
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1449				766	922

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	86	130	12
Volume Left	5	0	2
Volume Right	0	8	10
cSH	1449	1700	892
Volume to Capacity	0.00	0.08	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.5	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	51	77	5	1	6
Future Vol, veh/h	3	51	77	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	81	122	8	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	130	0	-	0	217	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1449	-	-	-	769	922
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1449	-	-	-	766	922
Mov Cap-2 Maneuver	-	-	-	-	766	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	930	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1449	-	-	-	896
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	213	1005	1091	92	90	196
v/c Ratio	0.57	0.30	0.70	0.12	0.36	0.32
Control Delay	37.3	0.2	20.9	3.9	40.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	0.2	20.9	3.9	40.1	12.6
Queue Length 50th (ft)	94	0	218	0	41	37
Queue Length 95th (ft)	204	0	384	27	106	101
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	697	3312	3202	1436	697	1217
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	0.31	0.30	0.34	0.06	0.13	0.16

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	995	1080	91	89	194
Future Volume (vph)	211	995	1080	91	89	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	213	1005	1091	92	90	196
RTOR Reduction (vph)	0	0	0	49	0	46
Lane Group Flow (vph)	213	1005	1091	43	90	150
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	17.4	77.8	36.5	36.5	8.9	30.3
Effective Green, g (s)	17.4	77.8	36.5	36.5	8.9	30.3
Actuated g/C Ratio	0.22	1.00	0.47	0.47	0.11	0.39
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	370	3312	1553	695	189	577
v/s Ratio Prot	c0.13	0.30	c0.33		c0.05	0.10
v/s Ratio Perm				0.03		
v/c Ratio	0.58	0.30	0.70	0.06	0.48	0.26
Uniform Delay, d1	26.9	0.0	16.4	11.3	32.3	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	1.6	0.1	2.2	0.2
Delay (s)	29.1	0.2	17.9	11.3	34.5	16.4
Level of Service	C	A	B	B	C	B
Approach Delay (s)		5.3	17.4		22.1	
Approach LOS		A	B		C	

Intersection Summary				
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	179	811	260	49	740	115	239	251	179	290	294
v/c Ratio	0.46	0.68	0.37	0.17	0.73	0.22	0.53	0.30	0.46	0.71	0.53
Control Delay	49.2	33.2	5.2	49.8	37.6	6.8	48.0	30.9	49.3	47.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	33.2	5.2	49.8	37.6	6.8	48.0	30.9	49.3	47.7	9.7
Queue Length 50th (ft)	54	234	0	14	216	0	72	62	54	167	11
Queue Length 95th (ft)	114	391	59	41	366	44	143	121	114	325	93
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	614	2465	1157	614	2465	1118	683	1409	683	760	801
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.33	0.22	0.08	0.30	0.10	0.35	0.18	0.26	0.38	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	787	252	48	718	112	232	199	45	174	281	285
Future Volume (vph)	174	787	252	48	718	112	232	199	45	174	281	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1489	3273	3374	1489	3273	3273		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1489	3273	3374	1489	3273	3273		3273	1776	1509
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)	179	811	260	49	740	115	239	205	46	179	290	294
RTOR Reduction (vph)	0	0	168	0	0	79	0	11	0	0	0	209
Lane Group Flow (vph)	179	811	92	49	740	36	239	240	0	179	290	85
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	11.8	35.5	35.5	7.4	31.1	31.1	13.8	25.2		11.8	23.2	23.2
Effective Green, g (s)	11.8	35.5	35.5	7.4	31.1	31.1	13.8	25.2		11.8	23.2	23.2
Actuated g/C Ratio	0.12	0.35	0.35	0.07	0.31	0.31	0.14	0.25		0.12	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	384	1191	525	240	1044	460	449	820		384	409	348
v/s Ratio Prot	0.05	c0.24		0.01	c0.22		c0.07	0.07		0.05	c0.16	
v/s Ratio Perm			0.06			0.02						0.06
v/c Ratio	0.47	0.68	0.17	0.20	0.71	0.08	0.53	0.29		0.47	0.71	0.24
Uniform Delay, d1	41.4	27.7	22.4	43.8	30.7	24.5	40.3	30.4		41.4	35.5	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.6	0.2	0.2	2.2	0.1	1.2	0.2		0.9	5.6	0.4
Delay (s)	42.3	29.3	22.6	43.9	32.9	24.6	41.6	30.6		42.3	41.1	31.9
Level of Service	D	C	C	D	C	C	D	C		D	D	C
Approach Delay (s)		29.8			32.5			36.0			37.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	63.7%	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)	174	787	252	48	718	112	232	199	45	174	281	285
Future Volume (veh/h)	174	787	252	48	718	112	232	199	45	174	281	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	179	811	260	49	740	115	239	205	46	179	290	294
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	269	1098	489	111	1078	480	339	726	159	271	432	366
Arrive On Green	0.08	0.32	0.32	0.03	0.32	0.32	0.10	0.26	0.26	0.08	0.24	0.24
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2780	611	3319	1796	1522
Grp Volume(v), veh/h	179	811	260	49	740	115	239	124	127	179	290	294
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1685	1659	1796	1522
Q Serve(g_s), s	4.1	16.7	7.1	1.1	15.0	4.4	5.5	4.6	4.8	4.1	11.6	14.4
Cycle Q Clear(g_c), s	4.1	16.7	7.1	1.1	15.0	4.4	5.5	4.6	4.8	4.1	11.6	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	269	1098	489	111	1078	480	339	445	440	271	432	366
V/C Ratio(X)	0.67	0.74	0.53	0.44	0.69	0.24	0.70	0.28	0.29	0.66	0.67	0.80
Avail Cap(c_a), veh/h	755	3021	1346	755	3021	1346	839	885	873	839	931	789
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	35.3	23.9	9.0	37.5	23.6	20.0	34.3	23.3	23.4	35.2	27.2	28.3
Incr Delay (d2), s/veh	2.8	1.0	0.9	1.0	0.8	0.3	2.7	0.3	0.4	2.7	1.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.9	3.5	0.4	5.3	1.5	2.2	1.8	1.8	1.7	4.8	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	24.9	9.8	38.5	24.4	20.3	37.0	23.6	23.7	38.0	29.0	32.4
LnGrp LOS	D	C	A	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1250			904			490			763	
Approach Delay, s/veh		23.6			24.7			30.2			32.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	32.7	12.1	24.3	10.4	32.3	10.5	25.9
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.1	18.7	7.5	16.4	6.1	17.0	6.1	6.8
Green Ext Time (p_c), s	0.0	6.7	0.6	2.6	0.4	5.4	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	935	62	297	884	0	9	0	304	0	0	0
Future Volume (Veh/h)	0	935	62	297	884	0	9	0	304	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	964	64	306	911	0	9	0	313	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	912			1028			2064	2520	514	2006	2552	456
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912			1028			2064	2520	514	2006	2552	456
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			52			52	100	36	100	100	100
cM capacity (veh/h)	712			642			19	13	493	7	13	537

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	643	385	306	607	304	322	0
Volume Left	0	0	0	306	0	0	9	0
Volume Right	0	0	64	0	0	0	313	0
cSH	1700	1700	1700	642	1700	1700	397	1700
Volume to Capacity	0.00	0.38	0.23	0.48	0.36	0.18	0.81	0.00
Queue Length 95th (ft)	0	0	0	64	0	0	181	0
Control Delay (s)	0.0	0.0	0.0	15.6	0.0	0.0	43.1	0.0
Lane LOS				C			E	A
Approach Delay (s)	0.0			3.9			43.1	0.0
Approach LOS							E	A

Intersection Summary				
Average Delay		7.3		
Intersection Capacity Utilization		57.6%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	935	62	297	884	0	9	0	304	0	0	0
Future Vol, veh/h	0	935	62	297	884	0	9	0	304	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	964	64	306	911	0	9	0	313	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	912	0	0	1028	0	0	2064	2520	514	2006	2552	457
Stage 1	-	-	-	-	-	-	996	996	-	1524	1524	-
Stage 2	-	-	-	-	-	-	1068	1524	-	482	1028	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	712	-	-	642	-	-	30	26	493	33	24	537
Stage 1	-	-	-	-	-	-	253	310	-	118	170	-
Stage 2	-	-	-	-	-	-	228	170	-	521	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	642	-	-	19	14	493	8	13	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	14	-	8	13	-
Stage 1	-	-	-	-	-	-	253	310	-	118	89	-
Stage 2	-	-	-	-	-	-	119	89	-	190	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.9	32.5	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	19	493	711	-	-	642	-	-	-	-
HCM Lane V/C Ratio	0.488	0.636	-	-	-	0.477	-	-	-	-
HCM Control Delay (s)	$ 313.6	24.2	0	-	-	15.6	-	-	0	0
HCM Lane LOS	F	C	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	4.4	0	-	-	2.6	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	221	850	837	12	10	334
Future Volume (Veh/h)	221	850	837	12	10	334
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	235	904	890	13	11	355
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	903				1812	445
vC1, stage 1 conf vol					890	
vC2, stage 2 conf vol					922	
vCu, unblocked vol	903				1812	445
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	66				94	34
cM capacity (veh/h)	701				183	539

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	235	452	452	445	445	13	366
Volume Left	235	0	0	0	0	0	11
Volume Right	0	0	0	0	0	13	355
cSH	701	1700	1700	1700	1700	1700	556
Volume to Capacity	0.34	0.27	0.27	0.26	0.26	0.01	0.66
Queue Length 95th (ft)	37	0	0	0	0	0	120
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	0.0	23.7
Lane LOS	B						C
Approach Delay (s)	2.6			0.0			23.7
Approach LOS							C

Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization		50.5%	ICU Level of Service A
Analysis Period (min)		15	

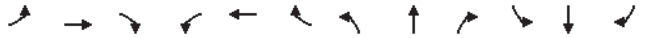
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	221	850	837	12	10	334
Future Vol, veh/h	221	850	837	12	10	334
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	235	904	890	13	11	355

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	903	0	-	0	1812	445
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	922	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	701	-	-	-	64	539
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	329	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	701	-	-	-	43	539
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	329	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	23.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	701	-	-	-	181	539
HCM Lane V/C Ratio	0.335	-	-	-	0.059	0.659
HCM Control Delay (s)	12.7	-	-	-	26.1	23.7
HCM Lane LOS	B	-	-	-	D	C
HCM 95th %tile Q(veh)	1.5	-	-	-	0.2	4.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	895	10	1	843	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	895	10	1	843	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	923	10	1	869	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	869			933			1360	1794	462	1334	1804	434
vC1, stage 1 conf vol							923	923		871	871	
vC2, stage 2 conf vol							438	871		464	933	
vCu, unblocked vol	869			933			1360	1794	462	1334	1804	434
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			93	100	99	100	100	100
cM capacity (veh/h)	711			670			248	241	521	262	239	543

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	462	462	10	1	579	290	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	10	0	0	0	4	1
cSH	1700	1700	1700	1700	670	1700	1700	303	543
Volume to Capacity	0.00	0.27	0.27	0.01	0.00	0.34	0.17	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	0.0	0.0	19.1	11.6
Lane LOS					B			C	B
Approach Delay (s)	0.0				0.0			19.1	11.6
Approach LOS								C	B

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	41.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	895	10	1	843	0	17	0	4	0	0	1
Future Vol, veh/h	0	895	10	1	843	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	923	10	1	869	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	869	0	0	933	0	0	1360	1794	462	1333	1804	435
Stage 1	-	-	-	-	-	-	923	923	-	871	871	-
Stage 2	-	-	-	-	-	-	437	871	-	462	933	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	711	-	-	670	-	-	98	72	520	103	71	542
Stage 1	-	-	-	-	-	-	271	325	-	292	344	-
Stage 2	-	-	-	-	-	-	542	344	-	524	321	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	670	-	-	98	72	520	102	71	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	234	-	255	232	-
Stage 1	-	-	-	-	-	-	271	325	-	292	344	-
Stage 2	-	-	-	-	-	-	540	344	-	520	321	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.4	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	520	711	-	-	670	-	-	542
HCM Lane V/C Ratio	0.073	0.008	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	21.1	12	0	-	-	10.4	-	-	11.7
HCM Lane LOS	C	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	0	0	-	-	0	-	-	0

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	72.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	199	61	279	185	97	49	263	258	29	425	90
Future Vol, veh/h	63	199	61	279	185	97	49	263	258	29	425	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	68	214	66	300	199	104	53	283	277	31	457	97
Number of Lanes	1	1	0	1	1	0	1	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	69.5	83.9	56.6	79.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	12%	0%
Vol Thru, %	0%	100%	0%	0%	77%	0%	66%	88%	70%
Vol Right, %	0%	0%	100%	0%	23%	0%	34%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	263	258	63	260	279	282	242	303
LT Vol	49	0	0	63	0	279	0	29	0
Through Vol	0	263	0	0	199	0	185	213	213
RT Vol	0	0	258	0	61	0	97	0	90
Lane Flow Rate	53	283	277	68	280	300	303	260	325
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.176	0.914	0.84	0.245	0.961	1.008	0.954	0.842	1.038
Departure Headway (Hd)	12.485	11.957	11.219	13.434	12.735	12.465	11.686	12.137	11.852
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	289	305	325	269	288	294	312	301	309
Service Time	10.185	9.657	8.919	11.134	10.435	10.165	9.386	9.837	9.552
HCM Lane V/C Ratio	0.183	0.928	0.852	0.253	0.972	1.02	0.971	0.864	1.052
HCM Control Delay	17.8	68.1	52.3	20.4	81.4	92.2	75.6	55.9	98
HCM Lane LOS	C	F	F	C	F	F	F	F	F
HCM 95th-tile Q	0.6	8.7	7.3	0.9	9.4	10.6	9.6	7.2	11.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	78	10	2	57	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	92	12	2	67	0	12	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	67			104			171	171	98	172	177	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			104			171	171	98	172	177	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1522			1475			787	717	953	783	712	991

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	105	69	14	0
Volume Left	1	2	12	0
Volume Right	12	0	1	0
cSH	1522	1475	791	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.1%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	78	10	2	57	0	10	1	1	0	0	0
Future Vol, veh/h	1	78	10	2	57	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	92	12	2	67	0	12	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	104	0	0	171	171	98	172	177	67
Stage 1	-	-	-	-	-	-	100	100	-	71	71	-
Stage 2	-	-	-	-	-	-	71	71	-	101	106	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1522	-	-	1475	-	-	788	718	953	787	713	991
Stage 1	-	-	-	-	-	-	901	808	-	934	832	-
Stage 2	-	-	-	-	-	-	934	832	-	900	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1475	-	-	786	717	953	784	712	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	717	-	784	712	-
Stage 1	-	-	-	-	-	-	900	807	-	933	831	-
Stage 2	-	-	-	-	-	-	933	831	-	897	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1522	-	-	1475	-	-	-
HCM Lane V/C Ratio	0.018	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	472	255	438	563	6	39	281	331	339	91
v/c Ratio	0.14	0.65	0.68	0.54	0.57	0.03	0.21	0.69	0.72	0.73	0.17
Control Delay	51.9	38.5	45.0	24.3	4.6	43.3	45.1	15.0	40.9	41.1	2.4
Queue Delay	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	38.5	45.0	25.0	4.8	43.3	45.1	15.0	40.9	41.1	2.4
Queue Length 50th (ft)	9	123	130	158	0	3	20	0	169	174	0
Queue Length 95th (ft)	36	228	266	369	72	17	60	81	349	356	13
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	114	1051	573	1040	1112	400	421	576	668	677	695
Starvation Cap Reductn	0	0	9	288	146	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.45	0.58	0.58	0.01	0.09	0.49	0.50	0.50	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	413	31	240	412	529	6	37	264	546	84	86
Future Volume (vph)	15	413	31	240	412	529	6	37	264	546	84	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3530		1787	1881	1558	1787	1881	1599	1698	1724	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3530		1787	1881	1558	1787	1881	1599	1698	1724	1561
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)	16	439	33	255	438	563	6	39	281	581	89	91
RTOR Reduction (vph)	0	5	0	0	0	326	0	0	254	0	0	67
Lane Group Flow (vph)	16	467	0	255	438	237	6	39	27	331	339	24
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	21.3		18.3	37.9	37.9	8.6	8.6	8.6	23.8	23.8	23.8
Effective Green, g (s)	1.7	21.3		18.3	37.9	37.9	8.6	8.6	8.6	23.8	23.8	23.8
Actuated g/C Ratio	0.02	0.24		0.20	0.42	0.42	0.10	0.10	0.10	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	835		363	792	656	170	179	152	449	455	412
v/s Ratio Prot	0.01	0.13		c0.14	c0.23		0.00	c0.02		0.19	c0.20	
v/s Ratio Perm						0.15			0.02			0.02
v/c Ratio	0.48	0.56		0.70	0.55	0.36	0.04	0.22	0.18	0.74	0.75	0.06
Uniform Delay, d1	43.7	30.2		33.3	19.7	17.8	36.9	37.6	37.4	30.2	30.3	24.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.8	0.8		6.0	0.8	0.3	0.1	0.6	0.6	6.2	6.5	0.1
Delay (s)	54.5	31.0		39.4	20.5	18.1	37.0	38.2	38.0	36.5	36.8	24.8
Level of Service	D	C		D	C	B	D	D	D	D	D	C
Approach Delay (s)		31.8			23.3			38.0			35.2	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	61.7%	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)	15	413	31	240	412	529	6	37	264	546	84	86
Future Volume (veh/h)	15	413	31	240	412	529	6	37	264	546	84	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	16	439	33	255	438	563	6	39	281	645	0	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	32	851	64	294	750	620	335	352	298	775	0	343
Arrive On Green	0.02	0.25	0.25	0.16	0.40	0.40	0.19	0.19	0.19	0.22	0.00	0.22
Sat Flow, veh/h	1795	3375	253	1795	1885	1559	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	16	232	240	255	438	563	6	39	281	645	0	91
Grp Sat Flow(s),veh/h/ln	1795	1791	1837	1795	1885	1559	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	0.9	11.0	11.1	13.7	18.1	33.7	0.3	1.7	17.2	17.0	0.0	4.7
Cycle Q Clear(g_c), s	0.9	11.0	11.1	13.7	18.1	33.7	0.3	1.7	17.2	17.0	0.0	4.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	451	463	294	750	620	335	352	298	775	0	343
V/C Ratio(X)	0.50	0.51	0.52	0.87	0.58	0.91	0.02	0.11	0.94	0.83	0.00	0.27
Avail Cap(c_a), veh/h	96	451	463	480	869	718	335	352	298	1177	0	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.2	31.9	31.9	40.4	23.4	28.1	32.9	33.5	39.8	37.2	0.0	32.3
Incr Delay (d2), s/veh	11.3	1.0	1.0	9.1	0.7	14.1	0.0	0.1	37.1	3.2	0.0	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	0.5	4.9	5.1	6.7	8.0	14.5	0.1	0.8	9.6	7.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	32.9	32.9	49.5	24.2	42.2	32.9	33.6	76.9	40.4	0.0	32.7
LnGrp LOS	E	C	C	D	C	D	C	C	E	D	A	C
Approach Vol, veh/h		488			1256			326			736	
Approach Delay, s/veh		33.8			37.4			70.9			39.4	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.8	29.5		25.9	6.3	44.0		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	15.7	13.1		19.0	2.9	35.7		19.2				
Green Ext Time (p_c), s	0.5	2.2		2.4	0.0	3.7		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			41.2									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	1213	20	965	253	263	30	438	8	26
v/c Ratio	0.39	0.65	0.14	0.64	0.33	0.62	0.05	0.74	0.02	0.04
Control Delay	42.7	17.2	45.7	22.3	7.0	32.2	21.8	25.2	21.7	0.1
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	17.6	45.7	22.3	7.0	32.2	21.8	25.2	21.7	0.1
Queue Length 50th (ft)	40	175	9	193	18	109	10	124	3	0
Queue Length 95th (ft)	107	421	38	351	80	221	33	274	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	336	2399	148	2165	1023	787	1064	970	785	995
Starvation Cap Reductn	0	585	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	0.26	0.67	0.14	0.45	0.25	0.33	0.03	0.45	0.01	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1098	30	19	897	235	245	28	407	7	0	24
Future Volume (vph)	83	1098	30	19	897	235	245	28	407	7	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3557		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3557		1787	3574	1564	1393	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	89	1181	32	20	965	253	263	30	438	8	0	26
RTOR Reduction (vph)	0	1	0	0	0	109	0	0	106	0	18	0
Lane Group Flow (vph)	89	1212	0	20	965	144	263	30	332	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.4	39.4		1.7	33.7	33.7	22.9	22.9	22.9	22.9	22.9	
Effective Green, g (s)	7.4	39.4		1.7	33.7	33.7	22.9	22.9	22.9	22.9	22.9	
Actuated g/C Ratio	0.10	0.51		0.02	0.43	0.43	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	170	1808		39	1554	680	411	555	472	410	472	
v/s Ratio Prot	c0.05	c0.34		0.01	0.27			0.02			0.00	
v/s Ratio Perm						0.09	0.19		c0.21	0.01		
v/c Ratio	0.52	0.67		0.51	0.62	0.21	0.64	0.05	0.70	0.02	0.02	
Uniform Delay, d1	33.4	14.2		37.5	17.0	13.6	23.7	19.5	24.3	19.3	19.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	1.0		10.9	0.8	0.2	3.3	0.0	4.7	0.0	0.0	
Delay (s)	36.3	15.2		48.4	17.7	13.8	27.0	19.6	29.0	19.4	19.3	
Level of Service	D	B		D	B	B	C	B	C	B	B	
Approach Delay (s)		16.6			17.4			27.9			19.3	
Approach LOS		B			B			C			B	

Intersection Summary				
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	71.9%	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)	83	1098	30	19	897	235	245	28	407	7	0	24
Future Volume (veh/h)	83	1098	30	19	897	235	245	28	407	7	0	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	89	1181	32	20	965	0	263	30	438	8	0	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	1605	43	42	1466		543	609	516	399	0	516
Arrive On Green	0.06	0.45	0.45	0.02	0.41	0.00	0.32	0.32	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1795	3559	96	1795	3582	1598	1396	1885	1598	932	0	1598
Grp Volume(v), veh/h	89	594	619	20	965	0	263	30	438	8	0	26
Grp Sat Flow(s),veh/h/ln	1795	1791	1865	1795	1791	1598	1396	1885	1598	932	0	1598
Q Serve(g_s), s	3.2	18.1	18.1	0.7	14.5	0.0	10.6	0.7	17.0	0.4	0.0	0.7
Cycle Q Clear(g_c), s	3.2	18.1	18.1	0.7	14.5	0.0	11.4	0.7	17.0	1.1	0.0	0.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	807	841	42	1466		543	609	516	399	0	516
V/C Ratio(X)	0.77	0.74	0.74	0.48	0.66		0.48	0.05	0.85	0.02	0.00	0.05
Avail Cap(c_a), veh/h	338	1307	1361	149	2237		880	1064	901	624	0	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	15.0	15.0	32.1	15.9	0.0	19.4	15.5	21.0	15.9	0.0	15.5
Incr Delay (d2), s/veh	10.0	1.3	1.3	8.3	0.5	0.0	0.7	0.0	4.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.7	7.0	0.4	5.4	0.0	3.2	0.3	6.2	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	16.3	16.3	40.4	16.4	0.0	20.1	15.5	25.0	15.9	0.0	15.5
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		1302			985	A		731			34	
Approach Delay, s/veh		18.0			16.9			22.8			15.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	34.5		26.0	8.8	31.7		26.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.7	20.1		3.1	5.2	16.5		19.0				
Green Ext Time (p_c), s	0.0	9.8		0.1	0.1	7.7		2.5				

Intersection Summary			
HCM 6th Ctrl Delay	18.7		
HCM 6th LOS	B		

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	379	1192	63	698	266	214	67	68	517
v/c Ratio	0.64	0.75	0.38	0.58	0.58	0.26	0.14	0.42	0.72
Control Delay	44.2	25.0	53.7	27.7	47.6	35.1	0.6	55.3	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	25.0	53.7	27.7	47.6	35.1	0.6	55.3	25.9
Queue Length 50th (ft)	113	300	37	173	79	60	0	40	77
Queue Length 95th (ft)	191	459	93	281	147	106	0	100	154
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	846	2092	213	1699	571	1148	605	196	1055
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.57	0.30	0.41	0.47	0.19	0.11	0.35	0.49

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	783	350	60	590	73	253	203	64	65	204	287
Future Volume (vph)	360	783	350	60	590	73	253	203	64	65	204	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3395		1787	3510		3467	3574	1599	1787	3236	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3395		1787	3510		3467	3574	1599	1787	3236	
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)	379	824	368	63	621	77	266	214	67	68	215	302
RTOR Reduction (vph)	0	43	0	0	8	0	0	0	52	0	219	0
Lane Group Flow (vph)	379	1149	0	63	690	0	266	214	15	68	298	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	16.0	42.5		6.8	33.3		12.4	21.5	21.5	6.7	15.8	
Effective Green, g (s)	16.0	42.5		6.8	33.3		12.4	21.5	21.5	6.7	15.8	
Actuated g/C Ratio	0.17	0.45		0.07	0.35		0.13	0.23	0.23	0.07	0.17	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	580	1510		127	1223		450	804	359	125	535	
v/s Ratio Prot	c0.11	c0.34		0.04	0.20		c0.08	0.06		0.04	c0.09	
v/s Ratio Perm									0.01			
v/c Ratio	0.65	0.76		0.50	0.56		0.59	0.27	0.04	0.54	0.56	
Uniform Delay, d1	37.2	22.2		42.7	25.2		39.2	30.5	28.9	42.9	36.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	2.3		3.0	0.6		2.1	0.2	0.0	4.8	1.3	
Delay (s)	39.8	24.6		45.7	25.8		41.2	30.7	29.0	47.7	37.9	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		28.2			27.5			35.6			39.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	74.3%	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)	360	783	350	60	590	73	253	203	64	65	204	287
Future Volume (veh/h)	360	783	350	60	590	73	253	203	64	65	204	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	379	824	0	63	621	77	266	214	67	68	215	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	552	1411		100	933	115	406	615	274	105	405	
Arrive On Green	0.16	0.39	0.00	0.06	0.29	0.29	0.12	0.17	0.17	0.06	0.11	0.00
Sat Flow, veh/h	3483	3676	0	1795	3202	396	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	379	824	0	63	347	351	266	214	67	68	215	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1807	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	5.8	10.2	0.0	1.9	9.6	9.6	4.1	3.0	2.0	2.1	3.2	0.0
Cycle Q Clear(g_c), s	5.8	10.2	0.0	1.9	9.6	9.6	4.1	3.0	2.0	2.1	3.2	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	552	1411		100	522	527	406	615	274	105	405	
V/C Ratio(X)	0.69	0.58		0.63	0.66	0.67	0.65	0.35	0.24	0.65	0.53	
Avail Cap(c_a), veh/h	1333	3412		336	1355	1368	899	1805	805	310	1499	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.3	13.4	0.0	26.0	17.5	17.5	23.7	20.5	20.1	25.9	23.5	0.0
Incr Delay (d2), s/veh	1.5	0.4	0.0	6.4	1.5	1.5	1.8	0.3	0.5	6.7	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.6	0.0	0.9	3.6	3.7	1.6	1.1	0.7	1.0	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	13.8	0.0	32.3	19.0	19.0	25.5	20.8	20.6	32.5	24.6	0.0
LnGrp LOS	C	B		C	B	B	C	C	C	C	C	
Approach Vol, veh/h		1203	A		761			547			283	A
Approach Delay, s/veh		17.0			20.1			23.1			26.5	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	26.6	11.1	10.9	13.4	20.9	7.8	14.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	3.9	12.2	6.1	5.2	7.8	11.6	4.1	5.0
Green Ext Time (p_c), s	0.1	7.0	0.6	1.1	1.1	4.6	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	452	922	587	73
v/c Ratio	0.24	0.26	0.66	0.58	0.14
Control Delay	39.4	11.6	18.1	27.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	11.6	18.1	27.5	9.0
Queue Length 50th (ft)	20	38	113	99	0
Queue Length 95th (ft)	88	152	343	290	40
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	325	2902	2320	1625	778
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	0.40	0.36	0.09

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	438	465	430	569	71
Future Volume (vph)	56	438	465	430	569	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3291		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3291		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	452	479	443	587	73
RTOR Reduction (vph)	0	0	133	0	0	53
Lane Group Flow (vph)	58	452	789	0	587	20
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	4.5	34.7	25.7		19.3	19.3
Effective Green, g (s)	4.5	34.7	25.7		19.3	19.3
Actuated g/C Ratio	0.06	0.49	0.36		0.27	0.27
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	114	1759	1199		949	431
v/s Ratio Prot	c0.03	0.13	c0.24			
v/s Ratio Perm					c0.17	0.01
v/c Ratio	0.51	0.26	0.66		0.62	0.05
Uniform Delay, d1	31.9	10.4	18.7		22.4	18.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.1	1.3		1.2	0.0
Delay (s)	35.5	10.5	20.0		23.6	18.9
Level of Service	D	B	C		C	B
Approach Delay (s)		13.3	20.0		23.1	
Approach LOS		B	C		C	

Intersection Summary				
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	58.5%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	568	294	98	471	379	189	472	350	607
v/c Ratio	0.71	1.02	0.44	0.50	0.61	0.59	0.69	0.65	0.96	0.68
Control Delay	49.6	76.9	5.7	46.2	33.5	7.7	48.7	33.8	76.3	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	76.9	5.7	46.2	33.5	7.7	48.7	33.8	76.3	30.8
Queue Length 50th (ft)	101	~354	0	51	121	0	97	118	~207	149
Queue Length 95th (ft)	#196	#578	60	103	177	73	#185	169	#391	208
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	319	556	671	231	881	674	319	920	363	1004
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	0.61	1.02	0.44	0.42	0.53	0.56	0.59	0.51	0.96	0.60

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)	184	534	276	92	443	356	178	375	69	329	429	142
Future Volume (vph)	184	534	276	92	443	356	178	375	69	329	429	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1572	1787	3574	1578	1787	3491		1787	3420	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1572	1787	3574	1578	1787	3491		1787	3420	
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)	196	568	294	98	471	379	189	399	73	350	456	151
RTOR Reduction (vph)	0	0	208	0	0	292	0	18	0	0	36	0
Lane Group Flow (vph)	196	568	86	98	471	87	189	454	0	350	571	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.8	24.4	24.4	7.5	19.1	19.1	12.6	16.7		16.8	20.9	
Effective Green, g (s)	12.8	24.4	24.4	7.5	19.1	19.1	12.6	16.7		16.8	20.9	
Actuated g/C Ratio	0.15	0.29	0.29	0.09	0.23	0.23	0.15	0.20		0.20	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	274	550	459	160	818	361	269	699		359	857	
v/s Ratio Prot	c0.11	c0.30		0.05	0.13		0.11	0.13		c0.20	c0.17	
v/s Ratio Perm			0.05			0.06						
v/c Ratio	0.72	1.03	0.19	0.61	0.58	0.24	0.70	0.65		0.97	0.67	
Uniform Delay, d1	33.6	29.5	22.1	36.6	28.6	26.2	33.6	30.7		33.1	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.6	47.1	0.2	6.8	1.0	0.3	8.1	2.2		40.5	2.0	
Delay (s)	42.1	76.6	22.3	43.3	29.5	26.6	41.7	32.8		73.6	30.1	
Level of Service	D	E	C	D	C	C	D	C		E	C	
Approach Delay (s)		55.1			29.8			35.4			46.0	
Approach LOS		E			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	79.0%	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)	184	534	276	92	443	356	178	375	69	329	429	142
Future Volume (veh/h)	184	534	276	92	443	356	178	375	69	329	429	142
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	196	568	294	98	471	379	189	399	73	350	456	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	237	592	499	127	903	402	230	547	99	374	688	226
Arrive On Green	0.13	0.31	0.31	0.07	0.25	0.25	0.13	0.18	0.18	0.21	0.26	0.26
Sat Flow, veh/h	1795	1885	1592	1795	3582	1596	1795	3028	549	1795	2641	867
Grp Volume(v), veh/h	196	568	294	98	471	379	189	235	237	350	308	299
Grp Sat Flow(s),veh/h/ln	1795	1885	1592	1795	1791	1596	1795	1791	1786	1795	1791	1717
Q Serve(g_s), s	8.4	23.5	12.3	4.3	9.0	18.5	8.1	9.8	10.0	15.2	12.2	12.4
Cycle Q Clear(g_c), s	8.4	23.5	12.3	4.3	9.0	18.5	8.1	9.8	10.0	15.2	12.2	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.50
Lane Grp Cap(c), veh/h	237	592	499	127	903	402	230	324	323	374	467	447
V/C Ratio(X)	0.83	0.96	0.59	0.77	0.52	0.94	0.82	0.73	0.74	0.94	0.66	0.67
Avail Cap(c_a), veh/h	328	592	499	238	903	402	328	474	473	374	519	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	26.7	22.9	36.2	25.5	29.1	33.7	30.6	30.7	30.9	26.2	26.3
Incr Delay (d2), s/veh	11.6	27.3	1.8	9.6	0.5	30.4	10.6	3.1	3.3	30.9	2.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	14.1	4.5	2.1	3.6	9.9	4.1	4.3	4.4	9.4	5.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	54.0	24.7	45.8	26.1	59.5	44.3	33.7	34.0	61.8	28.8	29.2
LnGrp LOS	D	D	C	D	C	E	D	C	C	E	C	C
Approach Vol, veh/h		1058			948			661			957	
Approach Delay, s/veh		44.2			41.5			36.9			41.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	18.8	10.1	29.4	14.7	25.2	15.0	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	17.2	12.0	6.3	25.5	10.1	14.4	10.4	20.5
Green Ext Time (p_c), s	0.0	1.8	0.1	0.0	0.2	2.4	0.2	0.0

Intersection Summary			
HCM 6th Ctrl Delay			41.3
HCM 6th LOS			D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	47	66	470	42	100	602
Future Volume (Veh/h)	47	66	470	42	100	602
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	51	71	505	45	108	647
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1392	530			552	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1392	530			552	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	87			89	
cM capacity (veh/h)	140	550			1021	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	122	550	108	647
Volume Left	51	0	108	0
Volume Right	71	45	0	0
cSH	248	1700	1021	1700
Volume to Capacity	0.49	0.32	0.11	0.38
Queue Length 95th (ft)	63	0	9	0
Control Delay (s)	32.9	0.0	8.9	0.0
Lane LOS	D		A	
Approach Delay (s)	32.9	0.0	1.3	
Approach LOS	D			

Intersection Summary				
Average Delay		3.5		
Intersection Capacity Utilization		49.5%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	66	470	42	100	602
Future Vol, veh/h	47	66	470	42	100	602
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	51	71	505	45	108	647

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1393	530	0	0	552	0
Stage 1	530	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	157	551	-	-	1023	-
Stage 1	592	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	550	-	-	1021	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	371	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.7	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	248	1021	-
HCM Lane V/C Ratio	-	-	0.49	0.105	-
HCM Control Delay (s)	-	-	32.7	8.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.5	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	4	8	4	1	38	17	266	10	48	332	132
Future Volume (Veh/h)	109	4	8	4	1	38	17	266	10	48	332	132
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	110	4	8	4	1	38	17	269	10	48	335	133
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	782	749	340	749	877	278	473			279		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	782	749	340	749	877	278	473			279		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	99	99	99	100	95	98			96		
cM capacity (veh/h)	281	322	701	309	272	760	1089			1289		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	122	43	17	279	48	335	133
Volume Left	110	4	17	0	48	0	0
Volume Right	8	38	0	10	0	0	133
cSH	294	645	1089	1700	1289	1700	1700
Volume to Capacity	0.41	0.07	0.02	0.16	0.04	0.20	0.08
Queue Length 95th (ft)	49	5	1	0	3	0	0
Control Delay (s)	25.6	11.0	8.4	0.0	7.9	0.0	0.0
Lane LOS	D	B	A		A		
Approach Delay (s)	25.6	11.0	0.5		0.7		
Approach LOS	D	B					

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	44.2%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	4	8	4	1	38	17	266	10	48	332	132
Future Vol, veh/h	109	4	8	4	1	38	17	266	10	48	332	132
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	110	4	8	4	1	38	17	269	10	48	335	133

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	768	749	340	812	877	278	473	0	0	279	0	0
Stage 1	436	436	-	308	308	-	-	-	-	-	-	-
Stage 2	332	313	-	504	569	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	320	342	705	299	288	763	1094	-	-	1289	-	-
Stage 1	601	582	-	704	662	-	-	-	-	-	-	-
Stage 2	684	659	-	552	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	288	323	702	281	272	760	1089	-	-	1289	-	-
Mov Cap-2 Maneuver	288	323	-	281	272	-	-	-	-	-	-	-
Stage 1	589	558	-	693	651	-	-	-	-	-	-	-
Stage 2	636	648	-	522	486	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.9	11.1	0.5	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1089	-	-	301	633	1289	-	-
HCM Lane V/C Ratio	0.016	-	-	0.406	0.069	0.038	-	-
HCM Control Delay (s)	8.4	-	-	24.9	11.1	7.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.2	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	3	126	3	97	7	190	200	165	165	12
Future Volume (vph)	8	2	3	126	3	97	7	190	200	165	165	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	3	135	3	104	8	204	215	177	177	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	14	242	212	215	266	102
Volume Left (vph)	9	135	8	0	177	0
Volume Right (vph)	3	104	0	215	0	13
Hadj (s)	0.02	-0.13	0.04	-0.68	0.35	-0.07
Departure Headway (s)	6.3	5.6	5.8	5.1	6.2	5.7
Degree Utilization, x	0.02	0.38	0.34	0.30	0.45	0.16
Capacity (veh/h)	490	596	597	679	563	601
Control Delay (s)	9.5	12.0	10.6	9.1	13.0	8.6
Approach Delay (s)	9.5	12.0	9.8		11.8	
Approach LOS	A	B	A		B	

Intersection Summary				
Delay	11.0			
Level of Service	B			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	3	126	3	97	0	7	190	200	165	165
Future Vol, veh/h	8	2	3	126	3	97	0	7	190	200	165	165
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	3	135	3	104	0	8	204	215	177	177
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.6	12.2	10.8	12.8
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	62%	56%	67%	0%
Vol Thru, %	96%	0%	15%	1%	33%	87%
Vol Right, %	0%	100%	23%	43%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	200	13	226	248	95
LT Vol	7	0	8	126	165	0
Through Vol	190	0	2	3	83	83
RT Vol	0	200	3	97	0	12
Lane Flow Rate	212	215	14	243	266	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.342	0.304	0.025	0.383	0.455	0.162
Departure Headway (Hd)	5.816	5.089	6.358	5.668	6.158	5.73
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	705	562	634	585	626
Service Time	3.551	2.823	4.414	3.704	3.894	3.466
HCM Lane V/C Ratio	0.342	0.305	0.025	0.383	0.455	0.163
HCM Control Delay	11.6	10	9.6	12.2	14	9.6
HCM Lane LOS	B	A	A	B	B	A
HCM 95th-tile Q	1.5	1.3	0.1	1.8	2.4	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	256	120	66	144	110	172
Future Volume (Veh/h)	256	120	66	144	110	172
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	264	124	68	148	113	177
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	323	113	290			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	323	113	290			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	87	95			
cM capacity (veh/h)	614	922	1276			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	388	68	74	74	113	177
Volume Left	264	68	0	0	0	0
Volume Right	124	0	0	0	0	177
cSH	902	1276	1700	1700	1700	1700
Volume to Capacity	0.43	0.05	0.04	0.04	0.07	0.10
Queue Length 95th (ft)	55	4	0	0	0	0
Control Delay (s)	13.4	8.0	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	13.4	2.5			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay		6.4	
Intersection Capacity Utilization		31.2%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	256	120	66	144	110	172
Future Vol, veh/h	256	120	66	144	110	172
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	264	124	68	148	113	177

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	323	113	290	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	661	942	1277	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	626	942	1277	-	-	-
Mov Cap-2 Maneuver	626	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1277	-	626	942	-	-
HCM Lane V/C Ratio	0.053	-	0.422	0.131	-	-
HCM Control Delay (s)	8	-	14.9	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	2.1	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	67	0	127	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	67	0	127	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	32	0	80	0	151	17	0	0	0	0	337	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	441	357	357	437	377	0	377			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	441	357	357	437	377	0	377			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	88	100	73	98	100			100		
cM capacity (veh/h)	411	571	689	470	556	1088	1187			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	112	168	377
Volume Left	32	0	0
Volume Right	80	17	40
cSH	578	602	1700
Volume to Capacity	0.19	0.28	0.22
Queue Length 95th (ft)	18	28	0
Control Delay (s)	12.7	13.3	0.0
Lane LOS	B	B	
Approach Delay (s)	12.7	13.3	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		5.6			
Intersection Capacity Utilization	39.3%	ICU Level of Service		A	
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	67	0	127	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	67	0	127	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	32	0	80	0	151	17	0	0	0	0	337	40

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	441	357	357	397	377	0				-	-	0
Stage 1	357	357	-	0	0	-				-	-	-
Stage 2	84	0	-	397	377	-				-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21				-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-				-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309				-	-	-
Pot Cap-1 Maneuver	528	571	689	565	556	-				0	-	-
Stage 1	663	630	-	-	-	-				0	-	-
Stage 2	-	-	-	631	618	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	571	689	499	556	-				-	-	-
Mov Cap-2 Maneuver	-	571	-	499	556	-				-	-	-
Stage 1	663	630	-	-	-	-				-	-	-
Stage 2	-	-	-	558	618	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	556	-	-	-
HCM Lane V/C Ratio	-	0.272	-	-	-
HCM Control Delay (s)	-	13.9	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	393	678	191	416	96	354	1080	565	300
v/c Ratio	0.17	0.71	0.63	0.33	0.41	0.55	0.67	0.80	0.75	0.32
Control Delay	50.8	55.3	41.4	37.2	3.0	69.4	58.5	20.4	53.2	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	55.3	41.4	37.2	3.0	69.4	58.5	20.4	53.2	35.7
Queue Length 50th (ft)	34	153	240	118	6	77	148	187	227	98
Queue Length 95th (ft)	79	234	368	220	56	149	221	294	319	150
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	366	722	1209	656	1122	242	845	1464	1026	1389
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	0.54	0.56	0.29	0.37	0.40	0.42	0.74	0.55	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	288	93	658	185	404	93	343	1048	548	236	55
Future Volume (vph)	46	288	93	658	185	404	93	343	1048	548	236	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3431		3467	1881	1585	1787	3574	2814	3467	3472	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3431		3467	1881	1585	1787	3574	2814	3467	3472	
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)	47	297	96	678	191	416	96	354	1080	565	243	57
RTOR Reduction (vph)	0	21	0	0	0	187	0	0	64	0	15	0
Lane Group Flow (vph)	47	372	0	678	191	229	96	354	1016	565	285	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	19.1	19.1		37.9	37.9	64.5	12.0	18.1	56.0	26.6	32.7	
Effective Green, g (s)	19.1	19.1		37.9	37.9	64.5	12.0	18.1	56.0	26.6	32.7	
Actuated g/C Ratio	0.16	0.16		0.31	0.31	0.53	0.10	0.15	0.46	0.22	0.27	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	279	536		1075	583	836	175	529	1289	754	929	
v/s Ratio Prot	0.03	c0.11		0.20	0.10	0.06	0.05	0.10	c0.24	c0.16	0.08	
v/s Ratio Perm						0.08			0.12			
v/c Ratio	0.17	0.69		0.63	0.33	0.27	0.55	0.67	0.79	0.75	0.31	
Uniform Delay, d1	44.7	48.8		36.1	32.4	15.9	52.5	49.2	28.1	44.7	35.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	3.9		1.2	0.3	0.2	3.5	3.2	3.3	4.1	0.2	
Delay (s)	45.0	52.7		37.4	32.7	16.1	56.0	52.4	31.3	48.8	35.9	
Level of Service	D	D		D	C	B	E	D	C	D	D	
Approach Delay (s)		51.8			29.8			37.8			44.3	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	122.2	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	75.5%	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)	46	288	93	658	185	404	93	343	1048	548	236	55
Future Volume (veh/h)	46	288	93	658	185	404	93	343	1048	548	236	55
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	47	297	96	678	191	416	96	354	1080	565	243	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	255	379	120	887	480	709	121	857	1389	661	1018	234
Arrive On Green	0.14	0.14	0.14	0.25	0.25	0.25	0.07	0.24	0.24	0.19	0.35	0.35
Sat Flow, veh/h	1795	2666	843	3483	1885	1594	1795	3582	2812	3483	2891	665
Grp Volume(v), veh/h	47	197	196	678	191	416	96	354	1080	565	149	151
Grp Sat Flow(s),veh/h/ln	1795	1791	1718	1742	1885	1594	1795	1791	1406	1742	1791	1765
Q Serve(g_s), s	2.7	12.5	13.0	21.2	9.9	23.1	6.2	9.8	28.2	18.5	6.9	7.1
Cycle Q Clear(g_c), s	2.7	12.5	13.0	21.2	9.9	23.1	6.2	9.8	28.2	18.5	6.9	7.1
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	255	255	244	887	480	709	121	857	1389	661	631	622
V/C Ratio(X)	0.18	0.78	0.80	0.76	0.40	0.59	0.79	0.41	0.78	0.85	0.24	0.24
Avail Cap(c_a), veh/h	372	371	356	1230	666	866	247	857	1389	1044	719	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	48.7	48.9	40.6	36.4	24.6	54.1	37.8	22.2	46.2	27.0	27.0
Incr Delay (d2), s/veh	0.3	6.1	8.0	1.9	0.5	0.8	10.9	0.3	2.9	4.2	0.2	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	1.3	6.1	6.1	9.1	4.5	8.5	3.1	4.2	16.3	8.4	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	54.8	56.9	42.6	37.0	25.4	65.0	38.1	25.1	50.4	27.1	27.2
LnGrp LOS	D	D	E	D	D	C	E	D	C	D	C	C
Approach Vol, veh/h		440			1285			1530			865	
Approach Delay, s/veh		54.7			36.2			30.6			42.3	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.1	34.0		21.4	13.8	47.3		35.4				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	20.5	30.2		15.0	8.2	9.1		25.1				
Green Ext Time (p_c), s	1.9	0.0		1.8	0.1	1.9		4.9				

Intersection Summary			
HCM 6th Ctrl Delay		37.4	
HCM 6th LOS		D	

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	252	984	525	121	878	367	336	201	503
v/c Ratio	0.59	0.78	0.59	0.59	0.73	0.68	0.48	0.72	0.72
Control Delay	50.8	36.1	6.5	58.9	34.0	49.6	36.1	58.8	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	36.1	6.5	58.9	34.0	49.6	36.1	58.8	43.3
Queue Length 50th (ft)	86	305	12	81	258	125	98	133	163
Queue Length 95th (ft)	139	450	105	154	390	191	149	#243	231
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	540	1456	946	260	1398	680	977	350	973
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.68	0.55	0.47	0.63	0.54	0.34	0.57	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)	242	945	504	116	696	147	352	238	84	193	361	122
Future Volume (vph)	242	945	504	116	696	147	352	238	84	193	361	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3472		3467	3434		1787	3426	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3472		3467	3434		1787	3426	
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)	252	984	525	121	725	153	367	248	88	201	376	127
RTOR Reduction (vph)	0	0	321	0	14	0	0	31	0	0	29	0
Lane Group Flow (vph)	252	984	204	121	864	0	367	305	0	201	474	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.7	36.1	36.1	11.8	35.2		16.0	20.0		16.1	20.1	
Effective Green, g (s)	12.7	36.1	36.1	11.8	35.2		16.0	20.0		16.1	20.1	
Actuated g/C Ratio	0.12	0.35	0.35	0.12	0.35		0.16	0.20		0.16	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	431	1264	565	206	1198		543	673		282	675	
v/s Ratio Prot	c0.07	c0.28		0.07	0.25		c0.11	c0.09		0.11	c0.14	
v/s Ratio Perm			0.13									
v/c Ratio	0.58	0.78	0.36	0.59	0.72		0.68	0.45		0.71	0.70	
Uniform Delay, d1	42.2	29.4	24.4	42.8	29.1		40.6	36.2		40.8	38.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	3.1	0.4	4.2	2.2		3.3	0.5		8.2	3.3	
Delay (s)	44.2	32.5	24.8	47.0	31.3		43.9	36.7		49.0	41.5	
Level of Service	D	C	C	D	C		D	D		D	D	
Approach Delay (s)		31.9			33.2			40.4			43.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	72.4%	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)	242	945	504	116	696	147	352	238	84	193	361	122
Future Volume (veh/h)	242	945	504	116	696	147	352	238	84	193	361	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	252	984	525	121	725	153	367	248	88	201	376	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	348	1313	586	155	1038	219	475	509	176	244	512	170
Arrive On Green	0.10	0.37	0.37	0.09	0.35	0.35	0.14	0.19	0.19	0.14	0.19	0.19
Sat Flow, veh/h	3483	3582	1598	1795	2942	621	3483	2611	903	1795	2635	878
Grp Volume(v), veh/h	252	984	525	121	441	437	367	168	168	201	254	249
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1772	1742	1791	1723	1795	1791	1722
Q Serve(g_s), s	5.8	19.9	15.8	5.5	17.6	17.6	8.4	6.9	7.2	9.0	11.0	11.3
Cycle Q Clear(g_c), s	5.8	19.9	15.8	5.5	17.6	17.6	8.4	6.9	7.2	9.0	11.0	11.3
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.52	1.00		0.51
Lane Grp Cap(c), veh/h	348	1313	586	155	632	625	475	349	336	244	348	334
V/C Ratio(X)	0.72	0.75	0.90	0.78	0.70	0.70	0.77	0.48	0.50	0.82	0.73	0.74
Avail Cap(c_a), veh/h	650	1747	779	314	852	843	818	593	571	422	593	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	23.0	9.3	37.2	23.1	23.1	34.6	29.7	29.8	34.9	31.4	31.5
Incr Delay (d2), s/veh	2.9	1.3	10.6	8.3	1.6	1.6	2.7	1.0	1.2	6.9	3.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.9	6.1	2.7	7.1	7.0	3.6	2.9	2.9	4.2	4.8	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	24.2	20.0	45.5	24.7	24.7	37.3	30.7	31.0	41.8	34.4	34.8
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1761			999			703			704	
Approach Delay, s/veh		25.1			27.2			34.2			36.7	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	34.9	15.8	20.6	12.8	33.8	15.8	20.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	7.5	21.9	10.4	13.3	7.8	19.6	11.0	9.2
Green Ext Time (p_c), s	0.1	8.5	0.9	2.4	0.5	5.3	0.3	1.7

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	816	196	24	626	247	20
v/c Ratio	0.78	0.21	0.12	0.31	0.60	0.05
Control Delay	18.9	2.3	10.0	8.1	25.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	2.3	10.0	8.1	25.8	8.3
Queue Length 50th (ft)	177	0	3	48	79	0
Queue Length 95th (ft)	#556	30	20	123	134	13
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1097	990	215	2085	889	807
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	0.74	0.20	0.11	0.30	0.28	0.02

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)	726	174	21	557	220	18
Future Volume (vph)	726	174	21	557	220	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1519	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.20	1.00	0.95	1.00
Satd. Flow (perm)	1827	1519	359	3471	1732	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	816	196	24	626	247	20
RTOR Reduction (vph)	0	83	0	0	0	14
Lane Group Flow (vph)	816	113	24	626	247	6
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	33.6	33.6	33.6	33.6	14.0	14.0
Effective Green, g (s)	33.6	33.6	33.6	33.6	14.0	14.0
Actuated g/C Ratio	0.58	0.58	0.58	0.58	0.24	0.24
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1051	873	206	1997	415	372
v/s Ratio Prot	c0.45			0.18		0.00
v/s Ratio Perm		0.07	0.07		c0.14	
v/c Ratio	0.78	0.13	0.12	0.31	0.60	0.01
Uniform Delay, d1	9.5	5.7	5.6	6.4	19.7	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.1	0.0	1.5	0.0
Delay (s)	12.9	5.7	5.7	6.5	21.2	16.9
Level of Service	B	A	A	A	C	B
Approach Delay (s)	11.5			6.4	20.9	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	10.8
Intersection Capacity Utilization	59.4%	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)	726	174	21	557	220	18
Future Volume (veh/h)	726	174	21	557	220	18
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	816	196	24	626	247	20
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	976	826	270	1855	339	302
Arrive On Green	0.53	0.53	0.53	0.53	0.19	0.19
Sat Flow, veh/h	1841	1557	548	3589	1753	1560
Grp Volume(v), veh/h	816	196	24	626	247	20
Grp Sat Flow(s),veh/h/ln	1841	1557	548	1749	1753	1560
Q Serve(g_s), s	14.6	2.6	1.5	4.0	5.2	0.4
Cycle Q Clear(g_c), s	14.6	2.6	16.1	4.0	5.2	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	976	826	270	1855	339	302
V/C Ratio(X)	0.84	0.24	0.09	0.34	0.73	0.07
Avail Cap(c_a), veh/h	1629	1378	464	3095	1327	1181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	4.9	14.5	5.2	14.8	12.9
Incr Delay (d2), s/veh	0.8	0.1	0.1	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.4	0.1	0.7	1.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.5	5.0	14.6	5.3	15.9	12.9
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	1012			650	267	
Approach Delay, s/veh	7.8			5.6	15.7	
Approach LOS	A			A	B	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	26.1				26.1	13.0
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	16.6				18.1	7.2
Green Ext Time (p_c), s	3.7				2.6	0.3

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	681	63	11	470	0	108	0	11	0	0	0
Future Volume (Veh/h)	0	681	63	11	470	0	108	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	740	68	12	511	0	117	0	12	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.62			0.62	0.62	0.62	0.62	0.62	
vC, conflicting volume	511			808			1054	1309	774	1315	1343	256
vC1, stage 1 conf vol							774	774		535	535	
vC2, stage 2 conf vol							280	535		780	808	
vCu, unblocked vol	511			379			777	1191	324	1200	1246	256
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			68	100	97	100	100	100
cM capacity (veh/h)	1050			726			371	326	415	302	307	744

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	808	268	256	129	0
Volume Left	0	12	0	117	0
Volume Right	68	0	0	12	0
cSH	1050	726	1700	409	1700
Volume to Capacity	0.00	0.02	0.15	0.32	0.00
Queue Length 95th (ft)	0	1	0	33	0
Control Delay (s)	0.0	0.6	0.0	18.6	0.0
Lane LOS		A		C	A
Approach Delay (s)	0.0	0.3		18.6	0.0
Approach LOS				C	A

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	52.3%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	681	63	11	470	0	108	0	11	0	0	0
Future Vol, veh/h	0	681	63	11	470	0	108	0	11	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	740	68	12	511	0	117	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	808	0	0	1054	1309	774	1315	1343	256
Stage 1	-	-	-	-	-	-	774	774	-	535	535	-
Stage 2	-	-	-	-	-	-	280	535	-	780	808	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1052	-	-	815	-	-	192	159	398	125	151	744
Stage 1	-	-	-	-	-	-	390	407	-	498	523	-
Stage 2	-	-	-	-	-	-	704	523	-	387	393	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1052	-	-	815	-	-	189	156	398	119	148	744
Mov Cap-2 Maneuver	-	-	-	-	-	-	350	333	-	298	317	-
Stage 1	-	-	-	-	-	-	390	407	-	498	512	-
Stage 2	-	-	-	-	-	-	689	512	-	375	393	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	19.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	398	1052	-	-	815	-	-	-
HCM Lane V/C Ratio	0.335	0.03	-	-	-	0.015	-	-	-
HCM Control Delay (s)	20.4	14.3	0	-	-	9.5	0.1	-	0
HCM Lane LOS	C	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.4	0.1	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	83	303	190	21	187	9	124	12	19	6	12	52
Future Volume (veh/h)	83	303	190	21	187	9	124	12	19	6	12	52
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
Hourly flow rate (vph)	90	329	207	23	203	10	135	13	21	7	13	57
Approach Volume (veh/h)		626			236			169			77	
Crossing Volume (veh/h)		43			238			426			361	
High Capacity (veh/h)		1339			1149			990			1043	
High v/c (veh/h)		0.47			0.21			0.17			0.07	
Low Capacity (veh/h)		1120			948			805			852	
Low v/c (veh/h)		0.56			0.25			0.21			0.09	

Intersection Summary					
Maximum v/c High		0.47			
Maximum v/c Low		0.56			
Intersection Capacity Utilization		69.0%	ICU Level of Service		C

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	626	236	169	77
Demand Flow Rate, veh/h	639	240	172	78
Vehicles Circulating, veh/h	43	243	435	368
Vehicles Exiting, veh/h	403	364	247	115
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	5.5	6.1	4.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	639	240	172	78
Cap Entry Lane, veh/h	1321	1077	885	948
Entry HV Adj Factor	0.980	0.983	0.981	0.984
Flow Entry, veh/h	626	236	169	77
Cap Entry, veh/h	1295	1059	869	933
V/C Ratio	0.484	0.223	0.194	0.082
Control Delay, s/veh	7.8	5.5	6.1	4.6
LOS	A	A	A	A
95th %tile Queue, veh	3	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	26	17	1	19	20	9	91	3	23	110	13
Future Volume (vph)	23	26	17	1	19	20	9	91	3	23	110	13
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
Hourly flow rate (vph)	28	31	20	1	23	24	11	110	4	28	133	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	79	48	125	177
Volume Left (vph)	28	1	11	28
Volume Right (vph)	20	24	4	16
Hadj (s)	-0.06	-0.28	0.02	-0.01
Departure Headway (s)	4.6	4.4	4.4	4.3
Degree Utilization, x	0.10	0.06	0.15	0.21
Capacity (veh/h)	726	749	781	794
Control Delay (s)	8.1	7.7	8.2	8.5
Approach Delay (s)	8.1	7.7	8.2	8.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.2		
Level of Service	A		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	26	17	1	19	20	9	91	3	23	110	13
Future Vol, veh/h	23	26	17	1	19	20	9	91	3	23	110	13
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
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	28	31	20	1	23	24	11	110	4	28	133	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.7	8.2	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	35%	3%	16%
Vol Thru, %	88%	39%	47%	75%
Vol Right, %	3%	26%	50%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	66	40	146
LT Vol	9	23	1	23
Through Vol	91	26	19	110
RT Vol	3	17	20	13
Lane Flow Rate	124	80	48	176
Geometry Grp	1	1	1	1
Degree of Util (X)	0.152	0.101	0.059	0.211
Departure Headway (Hd)	4.4	4.56	4.39	4.324
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	817	787	817	832
Service Time	2.418	2.581	2.412	2.343
HCM Lane V/C Ratio	0.152	0.102	0.059	0.212
HCM Control Delay	8.2	8.1	7.7	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.2	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	145	0	1	93	2	0	15	1	0	10	31
Future Volume (Veh/h)	67	145	0	1	93	2	0	15	1	0	10	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	92	199	0	1	127	3	0	21	1	0	14	42
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	130			205			568	521	205	525	520	128
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	130			205			568	521	205	525	520	128
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	95	100	100	97	95
cM capacity (veh/h)	1462			1365			381	430	833	423	430	924

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	291	131	22	0	56
Volume Left	92	1	0	0	0
Volume Right	0	3	1	0	42
cSH	1462	1365	439	1700	718
Volume to Capacity	0.06	0.00	0.05	0.00	0.08
Queue Length 95th (ft)	5	0	4	0	6
Control Delay (s)	2.8	0.1	13.6	0.0	10.4
Lane LOS	A	A	B	A	B
Approach Delay (s)	2.8	0.1	13.6	10.4	
Approach LOS			B	B	

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	28.0%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	67	145	0	1	93	2	0	15	1	0	10	31
Future Vol, veh/h	67	145	0	1	93	2	0	15	1	0	10	31
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	92	199	0	1	127	3	0	21	1	0	14	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	130	0	0	205	0	0	548	521	205	525	520	129
Stage 1	-	-	-	-	-	-	389	389	-	131	131	-
Stage 2	-	-	-	-	-	-	159	132	-	394	389	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1462	-	-	1372	-	-	449	461	838	465	462	924
Stage 1	-	-	-	-	-	-	637	610	-	875	790	-
Stage 2	-	-	-	-	-	-	846	789	-	633	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1462	-	-	1364	-	-	393	426	833	423	426	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	393	426	-	423	426	-
Stage 1	-	-	-	-	-	-	589	563	-	813	789	-
Stage 2	-	-	-	-	-	-	792	788	-	566	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.1	13.6	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	439	1462	-	-	1364	-	-	-	719
HCM Lane V/C Ratio	0.05	0.063	-	-	0.001	-	-	-	0.078
HCM Control Delay (s)	13.6	7.6	0	-	7.6	0	-	0	10.4
HCM Lane LOS	B	A	A	-	A	A	-	A	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	-	0.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	9	102	96	6	144	140
Future Volume (veh/h)	9	102	96	6	144	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	111	104	7	157	152
Approach Volume (veh/h)	121		111			309
Crossing Volume (veh/h)	104		157			10
High Capacity (veh/h)	1277		1225			1374
High v/c (veh/h)	0.09		0.09			0.22
Low Capacity (veh/h)	1063		1016			1151
Low v/c (veh/h)	0.11		0.11			0.27

Intersection Summary				
Maximum v/c High	0.22			
Maximum v/c Low	0.27			
Intersection Capacity Utilization	35.5%	ICU Level of Service		A

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	121	111	309
Demand Flow Rate, veh/h	123	113	315
Vehicles Circulating, veh/h	106	160	10
Vehicles Exiting, veh/h	167	165	219
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.9	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	123	113	315
Cap Entry Lane, veh/h	1238	1172	1366
Entry HV Adj Factor	0.984	0.982	0.981
Flow Entry, veh/h	121	111	309
Cap Entry, veh/h	1218	1151	1340
V/C Ratio	0.099	0.096	0.231
Control Delay, s/veh	3.8	3.9	4.6
LOS	A	A	A
95th %tile Queue, veh	0	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	71	79	5	3	6
Future Volume (Veh/h)	6	71	79	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	8	95	105	7	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				220	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				220	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1465				760	940

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	103	112	12
Volume Left	8	0	4
Volume Right	0	7	8
cSH	1465	1700	871
Volume to Capacity	0.01	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		18.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	71	79	5	3	6
Future Vol, veh/h	6	71	79	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	8	95	105	7	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	112	0	-	0	220	109
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1465	-	-	-	764	939
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1465	-	-	-	759	939
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1465	-	-	-	870
HCM Lane V/C Ratio	0.005	-	-	-	0.014
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Existing Plus 1293-Unit and School Project (Mitigated)

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	705	27	259	891	0	5	0	238	0	0	0
Future Vol, veh/h	1	705	27	259	891	0	5	0	238	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	340	-	-	195	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	860	33	316	1087	0	6	0	290	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1087	0	0	893	0	0	2055	-	447	2151	2614	544
Stage 1	-	-	-	-	-	-	879	-	-	1719	1719	-
Stage 2	-	-	-	-	-	-	1176	-	-	432	895	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	-	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	-	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	-	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	-	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	587	-	-	701	-	-	29	0	535	24	21	461
Stage 1	-	-	-	-	-	-	291	0	-	85	130	-
Stage 2	-	-	-	-	-	-	189	0	-	549	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	701	-	-	19	-	535	7	12	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	-	-	7	12	-
Stage 1	-	-	-	-	-	-	290	-	-	85	71	-
Stage 2	-	-	-	-	-	-	104	-	-	251	336	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	19.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	535	587	-	-	701	-	-	-	-
HCM Lane V/C Ratio	0.543	0.002	-	-	0.451	-	-	-	-
HCM Control Delay (s)	19.4	11.1	-	-	14.3	-	-	0	0
HCM Lane LOS	C	B	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	3.2	0	-	-	2.3	-	-	-	-

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	361	519	770	487
Demand Flow Rate, veh/h	371	535	793	501
Vehicles Circulating, veh/h	766	641	303	502
Vehicles Exiting, veh/h	237	455	834	674
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	16.8	22.4	19.4	14.1
Approach LOS	C	C	C	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	371	535	793	501
Cap Entry Lane, veh/h	632	718	1013	827
Entry HV Adj Factor	0.973	0.971	0.971	0.971
Flow Entry, veh/h	361	519	770	487
Cap Entry, veh/h	614	697	983	803
V/C Ratio	0.587	0.745	0.783	0.606
Control Delay, s/veh	16.8	22.4	19.4	14.1
LOS	C	C	C	B
95th %tile Queue, veh	4	7	8	4

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	354	373	440	691	7	22	151	307	306	35
v/c Ratio	0.01	0.36	0.86	0.43	0.47	0.07	0.20	0.29	0.71	0.70	0.07
Control Delay	41.0	29.6	54.1	23.6	1.1	42.7	45.8	7.4	41.0	40.0	0.2
Queue Delay	0.0	0.0	0.2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	29.6	54.4	24.3	1.2	42.7	45.8	7.4	41.0	40.0	0.2
Queue Length 50th (ft)	1	100	236	232	0	4	12	11	160	157	0
Queue Length 95th (ft)	5	122	#323	263	0	17	35	44	#262	253	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	100	1086	468	1028	1467	105	111	559	450	459	541
Starvation Cap Reductn	0	0	4	295	165	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.33	0.80	0.60	0.53	0.07	0.20	0.27	0.68	0.67	0.06

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 (veh/h)	1	273	28	317	374	587	6	19	128	434	87	30
Future Volume (veh/h)	1	273	28	317	374	587	6	19	128	434	87	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	321	33	373	440	691	7	22	151	584	0	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	1047	107	404	1024	1177	96	101	444	696	0	306
Arrive On Green	0.00	0.32	0.32	0.38	0.92	0.92	0.05	0.05	0.05	0.20	0.00	0.20
Sat Flow, veh/h	1767	3225	329	1767	1856	1572	1767	1856	1564	3534	0	1553
Grp Volume(v), veh/h	1	174	180	373	440	691	7	22	151	584	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1791	1767	1856	1572	1767	1856	1564	1767	0	1553
Q Serve(g_s), s	0.1	6.8	6.9	18.5	2.8	6.7	0.3	1.0	5.0	14.6	0.0	1.7
Cycle Q Clear(g_c), s	0.1	6.8	6.9	18.5	2.8	6.7	0.3	1.0	5.0	14.6	0.0	1.7
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	572	582	404	1024	1177	96	101	444	696	0	306
V/C Ratio(X)	0.41	0.30	0.31	0.92	0.43	0.59	0.07	0.22	0.34	0.84	0.00	0.11
Avail Cap(c_a), veh/h	96	572	582	471	1024	1177	96	101	444	849	0	373
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	0.66	0.66	0.66	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.9	23.3	23.3	27.7	1.7	0.7	41.3	41.6	26.2	35.6	0.0	30.4
Incr Delay (d2), s/veh	85.3	1.4	1.4	16.3	0.2	0.5	0.3	1.1	0.5	6.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.0	3.1	8.1	0.7	1.3	0.2	0.5	2.6	6.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	131.2	24.6	24.7	44.0	1.9	1.2	41.6	42.7	26.6	41.9	0.0	30.5
LnGrp LOS	F	C	C	D	A	A	D	D	C	D	A	C
Approach Vol, veh/h		355			1504			180			619	
Approach Delay, s/veh		25.0			12.0			29.2			41.3	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.5	34.4		22.6	4.6	55.3		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	24.5	22.4		22.1	5.0	41.9		5.0				
Max Q Clear Time (g_c+I1), s	20.5	8.9		16.6	2.1	8.7		7.0				
Green Ext Time (p_c), s	0.5	1.8		1.2	0.0	6.6		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	954	56	1319	415	251	14	273	6	9
v/c Ratio	0.50	0.51	0.25	0.67	0.42	0.80	0.03	0.50	0.02	0.02
Control Delay	57.5	21.0	37.4	18.1	5.0	52.6	25.6	8.7	25.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0
Total Delay	57.5	21.1	37.4	18.1	5.0	54.8	25.6	8.7	25.4	0.0
Queue Length 50th (ft)	47	208	26	304	29	135	6	12	3	0
Queue Length 95th (ft)	m77	222	58	326	59	186	18	50	11	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	164	2069	237	1973	998	369	491	598	367	573
Starvation Cap Reductn	0	112	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	42	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.49	0.24	0.67	0.42	0.77	0.03	0.46	0.02	0.02

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)	61	717	46	45	1055	332	201	11	218	5	0	7
Future Volume (veh/h)	61	717	46	45	1055	332	201	11	218	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	896	58	56	1319	0	251	14	272	6	0	9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	1047	68	584	2070		367	392	332	301	0	332
Arrive On Green	0.11	0.62	0.62	0.33	0.59	0.00	0.21	0.21	0.21	0.21	0.00	0.21
Sat Flow, veh/h	1767	3359	217	1767	3526	1572	1395	1856	1572	1085	0	1572
Grp Volume(v), veh/h	76	470	484	56	1319	0	251	14	272	6	0	9
Grp Sat Flow(s),veh/h/ln	1767	1763	1814	1767	1763	1572	1395	1856	1572	1085	0	1572
Q Serve(g_s), s	3.9	19.8	19.8	2.0	22.7	0.0	16.0	0.6	15.2	0.4	0.0	0.4
Cycle Q Clear(g_c), s	3.9	19.8	19.8	2.0	22.7	0.0	16.4	0.6	15.2	1.0	0.0	0.4
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	549	565	584	2070		367	392	332	301	0	332
V/C Ratio(X)	0.78	0.86	0.86	0.10	0.64		0.68	0.04	0.82	0.02	0.00	0.03
Avail Cap(c_a), veh/h	163	897	923	584	2070		443	494	419	361	0	419
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.4	15.7	15.7	21.3	12.5	0.0	35.3	28.8	34.6	29.2	0.0	28.8
Incr Delay (d2), s/veh	11.4	14.0	13.6	0.1	1.5	0.0	3.3	0.0	9.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.6	6.7	0.8	8.5	0.0	5.6	0.2	6.5	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	29.6	29.3	21.4	14.0	0.0	38.6	28.9	44.4	29.2	0.0	28.8
LnGrp LOS	D	C	C	C	B		D	C	D	C	A	C
Approach Vol, veh/h		1030			1375	A		537			15	
Approach Delay, s/veh		31.1			14.3			41.3			29.0	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	33.2		23.9	9.5	58.5		23.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.2	46.8		24.5	8.5	45.5		24.5				
Max Q Clear Time (g_c+I1), s	4.0	21.8		3.0	5.9	24.7		18.4				
Green Ext Time (p_c), s	0.0	6.8		0.0	0.0	10.3		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	338	143	56	610	454	268	568	277	321	341
v/c Ratio	0.68	0.51	0.22	0.37	0.64	0.63	0.78	0.67	0.58	0.49	0.75
Control Delay	56.8	25.9	5.3	44.8	28.9	8.2	49.4	31.4	38.6	31.9	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	25.9	5.3	44.8	28.9	8.2	49.4	31.4	38.6	31.9	24.1
Queue Length 50th (ft)	63	144	0	27	138	14	125	133	67	76	60
Queue Length 95th (ft)	#166	248	40	69	208	96	#279	201	117	122	164
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150			170		140	230		245		25
Base Capacity (vph)	195	702	670	165	1241	813	379	1091	562	919	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.48	0.21	0.34	0.49	0.56	0.71	0.52	0.49	0.35	0.62

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 (veh/h)	116	304	129	50	549	409	241	470	41	249	289	307
Future Volume (veh/h)	116	304	129	50	549	409	241	470	41	249	289	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	129	338	143	56	610	454	268	522	46	277	321	341
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	160	658	553	75	1080	478	304	963	85	360	800	351
Arrive On Green	0.09	0.35	0.35	0.04	0.31	0.31	0.17	0.29	0.29	0.10	0.23	0.23
Sat Flow, veh/h	1767	1856	1561	1767	3526	1559	1767	3277	288	3428	3526	1548
Grp Volume(v), veh/h	129	338	143	56	610	454	268	280	288	277	321	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1561	1767	1763	1559	1767	1763	1802	1714	1763	1548
Q Serve(g_s), s	6.3	12.7	5.7	2.8	12.8	25.1	13.0	11.8	11.8	6.9	6.8	19.2
Cycle Q Clear(g_c), s	6.3	12.7	5.7	2.8	12.8	25.1	13.0	11.8	11.8	6.9	6.8	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	160	658	553	75	1080	478	304	518	530	360	800	351
V/C Ratio(X)	0.81	0.51	0.26	0.75	0.56	0.95	0.88	0.54	0.54	0.77	0.40	0.97
Avail Cap(c_a), veh/h	170	658	553	144	1080	478	331	518	530	490	800	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	22.4	20.2	41.7	25.6	29.9	35.6	26.1	26.1	38.4	29.0	33.8
Incr Delay (d2), s/veh	23.1	0.7	0.2	13.8	0.7	29.0	22.0	1.1	1.1	5.1	0.3	40.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.3	2.0	1.4	5.1	12.6	7.3	4.9	5.0	3.1	2.8	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	23.1	20.5	55.5	26.3	58.9	57.6	27.3	27.3	43.5	29.3	73.9
LnGrp LOS	E	C	C	E	C	E	E	C	C	D	C	E
Approach Vol, veh/h		610			1120			836			939	
Approach Delay, s/veh		30.8			41.0			37.0			49.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	30.4	8.2	35.7	19.6	24.5	12.5	31.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.3	25.9	3.7	31.2	15.1	20.0	8.0	27.0
Max Q Clear Time (g_c+I1), s	8.9	13.8	4.8	14.7	15.0	21.2	8.3	27.1
Green Ext Time (p_c), s	0.3	2.4	0.0	2.0	0.1	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	717	254	138	1103	320	617	378	323	436
v/c Ratio	0.57	0.70	0.26	0.99	1.01	0.48	0.72	0.58	0.78	0.67
Control Delay	53.8	33.6	1.7	116.4	62.1	8.1	34.7	33.9	45.5	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	33.6	1.7	116.4	62.1	8.1	34.7	33.9	45.5	31.6
Queue Length 50th (ft)	30	176	2	74	~308	14	154	92	159	88
Queue Length 95th (ft)	#76	#304	22	#222	#575	84	221	140	279	148
Internal Link Dist (ft)		1510			1609			962		896
Turn Bay Length (ft)	140			80			150		110	
Base Capacity (vph)	203	1020	1070	140	1091	672	1135	1117	566	1139
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	0.57	0.70	0.24	0.99	1.01	0.48	0.54	0.34	0.57	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	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	624	221	120	960	278	537	276	53	281	245	134
Future Volume (veh/h)	100	624	221	120	960	278	537	276	53	281	245	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	717	254	138	1103	320	617	317	61	323	282	154
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	197	1051	813	148	1142	505	751	566	107	372	407	216
Arrive On Green	0.06	0.30	0.30	0.08	0.32	0.32	0.22	0.19	0.19	0.21	0.18	0.18
Sat Flow, veh/h	3456	3554	1585	1781	3554	1570	3456	2975	565	1781	2242	1191
Grp Volume(v), veh/h	115	717	254	138	1103	320	617	188	190	323	222	214
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1570	1728	1777	1763	1781	1777	1656
Q Serve(g_s), s	2.6	14.4	2.1	6.2	24.7	14.0	13.8	7.7	7.9	14.2	9.4	9.8
Cycle Q Clear(g_c), s	2.6	14.4	2.1	6.2	24.7	14.0	13.8	7.7	7.9	14.2	9.4	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.72
Lane Grp Cap(c), veh/h	197	1051	813	148	1142	505	751	338	335	372	323	301
V/C Ratio(X)	0.58	0.68	0.31	0.94	0.97	0.63	0.82	0.56	0.57	0.87	0.69	0.71
Avail Cap(c_a), veh/h	214	1068	820	148	1142	505	1154	593	589	595	593	553
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	37.2	25.1	3.6	36.9	27.0	23.4	30.2	29.7	29.7	30.9	30.9	31.1
Incr Delay (d2), s/veh	3.4	1.8	0.2	54.9	18.9	2.6	2.9	1.4	1.5	8.0	2.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.9	0.6	4.8	12.5	5.1	5.7	3.3	3.3	6.5	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	26.9	3.9	91.8	45.9	26.0	33.1	31.1	31.3	38.9	33.5	34.2
LnGrp LOS	D	C	A	F	D	C	C	C	C	D	C	C
Approach Vol, veh/h		1086			1561			995			759	
Approach Delay, s/veh		23.0			45.9			32.3			36.0	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	28.4	22.1	19.2	9.1	30.5	21.4	19.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.7	24.3	27.0	27.0	5.0	26.0	27.0	27.0
Max Q Clear Time (g_c+I1), s	8.2	16.4	15.8	11.8	4.6	26.7	16.2	9.9
Green Ext Time (p_c), s	0.0	3.4	1.8	2.1	0.0	0.0	0.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

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	935	62	297	884	0	9	0	304	0	0	0
Future Vol, veh/h	0	935	62	297	884	0	9	0	304	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	-	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	964	64	306	911	0	9	0	313	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	912	0	0	1028	0	0	2064	-	514	2006	2552	457
Stage 1	-	-	-	-	-	-	996	-	-	1524	1524	-
Stage 2	-	-	-	-	-	-	1068	-	-	482	1028	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	-	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	-	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	-	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	-	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	712	-	-	642	-	-	30	0	493	33	24	537
Stage 1	-	-	-	-	-	-	253	0	-	118	170	-
Stage 2	-	-	-	-	-	-	228	0	-	521	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	642	-	-	19	-	493	8	13	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	-	-	8	13	-
Stage 1	-	-	-	-	-	-	253	-	-	118	89	-
Stage 2	-	-	-	-	-	-	119	-	-	190	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.9	24.2	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	493	711	-	-	642	-	-	-	-
HCM Lane V/C Ratio	0.636	-	-	-	0.477	-	-	-	-
HCM Control Delay (s)	24.2	0	-	-	15.6	-	-	0	0
HCM Lane LOS	C	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	4.4	0	-	-	2.6	-	-	-	-

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	348	603	613	585
Demand Flow Rate, veh/h	352	609	620	591
Vehicles Circulating, veh/h	796	409	316	558
Vehicles Exiting, veh/h	353	527	832	460
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	16.5	15.1	12.5	21.4
Approach LOS	C	C	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	352	609	620	591
Cap Entry Lane, veh/h	613	909	1000	781
Entry HV Adj Factor	0.988	0.990	0.989	0.991
Flow Entry, veh/h	348	603	613	585
Cap Entry, veh/h	605	900	989	774
V/C Ratio	0.575	0.670	0.620	0.757
Control Delay, s/veh	16.5	15.1	12.5	21.4
LOS	C	C	B	C
95th %tile Queue, veh	4	5	4	7

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	472	255	438	563	6	39	281	331	339	91
v/c Ratio	0.14	0.43	0.73	0.44	0.41	0.05	0.31	0.58	0.76	0.77	0.16
Control Delay	38.3	24.9	45.2	15.6	1.3	36.3	42.8	13.4	39.4	39.8	0.6
Queue Delay	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	24.9	45.2	16.1	1.4	36.3	42.8	13.4	39.4	39.8	0.6
Queue Length 50th (ft)	8	111	115	137	0	3	19	26	156	160	0
Queue Length 95th (ft)	27	146	#257	271	25	15	49	82	#263	#278	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	115	1185	349	1005	1376	118	125	481	466	473	577
Starvation Cap Reductn	0	0	0	234	105	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.40	0.73	0.57	0.44	0.05	0.31	0.58	0.71	0.72	0.16

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 (veh/h)	15	413	31	240	412	529	6	37	264	546	84	86
Future Volume (veh/h)	15	413	31	240	412	529	6	37	264	546	84	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	16	439	33	255	438	563	6	39	281	645	0	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	34	613	46	563	898	1091	112	118	600	782	0	346
Arrive On Green	0.02	0.18	0.18	0.31	0.48	0.48	0.06	0.06	0.06	0.22	0.00	0.22
Sat Flow, veh/h	1795	3375	253	1795	1885	1560	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	16	232	240	255	438	563	6	39	281	645	0	91
Grp Sat Flow(s),veh/h/ln	1795	1791	1836	1795	1885	1560	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	0.7	9.8	9.8	9.1	12.7	13.8	0.3	1.6	0.0	13.7	0.0	3.8
Cycle Q Clear(g_c), s	0.7	9.8	9.8	9.1	12.7	13.8	0.3	1.6	0.0	13.7	0.0	3.8
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	325	333	563	898	1091	112	118	600	782	0	346
V/C Ratio(X)	0.48	0.71	0.72	0.45	0.49	0.52	0.05	0.33	0.47	0.83	0.00	0.26
Avail Cap(c_a), veh/h	112	504	516	563	898	1091	112	118	600	987	0	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.9	30.8	30.8	22.0	14.3	5.9	35.3	35.9	18.9	29.8	0.0	26.0
Incr Delay (d2), s/veh	10.1	12.6	12.6	0.4	0.3	0.3	0.2	1.6	0.6	4.7	0.0	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	0.4	5.3	5.4	3.7	5.1	7.8	0.1	0.8	3.8	6.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	43.4	43.4	22.4	14.6	6.2	35.5	37.5	19.5	34.5	0.0	26.4
LnGrp LOS	D	D	D	C	B	A	D	D	B	C	A	C
Approach Vol, veh/h		488			1256			326			736	
Approach Delay, s/veh		43.6			12.4			21.9			33.5	
Approach LOS		D			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	19.0		21.9	6.0	42.6		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	25.5	22.5		22.0	5.0	30.0		5.0				
Max Q Clear Time (g_c+I1), s	11.1	11.8		15.7	2.7	15.8		3.6				
Green Ext Time (p_c), s	0.1	2.2		1.6	0.0	4.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	1213	20	965	253	263	30	438	8	26
v/c Ratio	0.48	0.57	0.14	0.56	0.29	0.75	0.06	0.80	0.02	0.04
Control Delay	39.1	11.6	33.2	16.3	3.0	38.3	18.8	25.2	18.1	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	12.1	33.2	16.3	3.0	38.3	18.8	25.2	18.1	0.1
Queue Length 50th (ft)	37	154	8	172	0	100	9	92	3	0
Queue Length 95th (ft)	79	297	28	233	39	#180	27	#207	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	193	2116	138	1728	887	404	546	603	403	671
Starvation Cap Reductn	0	450	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	0.46	0.73	0.14	0.56	0.29	0.65	0.05	0.73	0.02	0.04

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 (veh/h)	83	1098	30	19	897	235	245	28	407	7	0	24
Future Volume (veh/h)	83	1098	30	19	897	235	245	28	407	7	0	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	89	1181	32	20	965	0	263	30	438	8	0	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	115	1418	38	208	1613		495	552	468	365	0	468
Arrive On Green	0.06	0.40	0.40	0.12	0.45	0.00	0.29	0.29	0.29	0.29	0.00	0.29
Sat Flow, veh/h	1795	3559	96	1795	3582	1598	1396	1885	1598	932	0	1598
Grp Volume(v), veh/h	89	594	619	20	965	0	263	30	438	8	0	26
Grp Sat Flow(s),veh/h/ln	1795	1791	1865	1795	1791	1598	1396	1885	1598	932	0	1598
Q Serve(g_s), s	3.4	20.9	20.9	0.7	14.2	0.0	11.7	0.8	18.7	0.4	0.0	0.8
Cycle Q Clear(g_c), s	3.4	20.9	20.9	0.7	14.2	0.0	12.5	0.8	18.7	1.2	0.0	0.8
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	713	743	208	1613		495	552	468	365	0	468
V/C Ratio(X)	0.77	0.83	0.83	0.10	0.60		0.53	0.05	0.94	0.02	0.00	0.06
Avail Cap(c_a), veh/h	192	806	839	208	1613		495	552	468	365	0	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	19.0	19.0	27.7	14.5	0.0	22.3	17.8	24.1	18.2	0.0	17.8
Incr Delay (d2), s/veh	8.5	9.0	8.7	0.2	1.6	0.0	1.1	0.0	26.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.6	10.0	0.3	5.5	0.0	3.7	0.3	9.8	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	27.9	27.7	27.9	16.1	0.0	23.4	17.8	50.5	18.3	0.0	17.8
LnGrp LOS	D	C	C	C	B		C	B	D	B	A	B
Approach Vol, veh/h		1302			985	A		731			34	
Approach Delay, s/veh		28.7			16.4			39.4			17.9	
Approach LOS		C			B			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	32.4		25.0	9.0	36.0		25.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	31.5		20.5	7.5	29.0		20.5				
Max Q Clear Time (g_c+I1), s	2.7	22.9		3.2	5.4	16.2		20.7				
Green Ext Time (p_c), s	0.0	5.0		0.1	0.0	5.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	196	568	294	98	471	379	189	472	350	456	151
v/c Ratio	0.75	0.82	0.38	0.59	0.48	0.53	0.73	0.64	0.73	0.64	0.33
Control Delay	54.7	36.3	4.3	55.3	26.3	5.9	53.3	32.8	45.8	35.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	36.3	4.3	55.3	26.3	5.9	53.3	32.8	45.8	35.1	5.0
Queue Length 50th (ft)	105	278	0	53	107	0	101	119	96	122	0
Queue Length 95th (ft)	#220	#479	52	#126	158	63	#209	169	#165	172	32
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150			170		140	230		245		25
Base Capacity (vph)	285	766	814	173	1233	792	285	953	509	913	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.74	0.36	0.57	0.38	0.48	0.66	0.50	0.69	0.50	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 (veh/h)	184	534	276	92	443	356	178	375	69	329	429	142
Future Volume (veh/h)	184	534	276	92	443	356	178	375	69	329	429	142
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	196	568	294	98	471	379	189	399	73	350	456	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	240	675	570	126	1056	470	232	570	103	453	676	297
Arrive On Green	0.13	0.36	0.36	0.07	0.29	0.29	0.13	0.19	0.19	0.13	0.19	0.19
Sat Flow, veh/h	1795	1885	1592	1795	3582	1596	1795	3028	549	3483	3582	1572
Grp Volume(v), veh/h	196	568	294	98	471	379	189	235	237	350	456	151
Grp Sat Flow(s),veh/h/ln	1795	1885	1592	1795	1791	1596	1795	1791	1786	1742	1791	1572
Q Serve(g_s), s	7.5	19.7	10.3	3.8	7.6	15.6	7.3	8.7	8.8	6.9	8.4	6.1
Cycle Q Clear(g_c), s	7.5	19.7	10.3	3.8	7.6	15.6	7.3	8.7	8.8	6.9	8.4	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	240	675	570	126	1056	470	232	337	336	453	676	297
V/C Ratio(X)	0.82	0.84	0.52	0.78	0.45	0.81	0.81	0.70	0.71	0.77	0.67	0.51
Avail Cap(c_a), veh/h	316	847	715	192	1362	607	316	530	528	564	1009	443
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	29.9	21.0	18.0	32.5	20.3	23.2	30.1	26.9	27.0	29.9	26.8	25.8
Incr Delay (d2), s/veh	11.9	6.3	0.7	10.4	0.3	6.1	11.0	2.6	2.7	5.2	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.8	3.5	1.9	2.9	6.0	3.7	3.7	3.8	3.1	3.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	27.3	18.7	42.8	20.6	29.3	41.1	29.5	29.7	35.1	28.0	27.2
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1058			948			661			957	
Approach Delay, s/veh		27.6			26.4			32.9			30.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	17.9	9.5	29.9	13.7	17.9	14.0	25.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	21.0	7.6	31.9	12.5	20.0	12.5	27.0
Max Q Clear Time (g_c+I1), s	9.9	10.8	5.8	21.7	9.3	10.4	9.5	17.6
Green Ext Time (p_c), s	0.3	1.9	0.0	3.3	0.1	2.4	0.1	3.0

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	252	984	525	121	725	153	367	336	201	503
v/c Ratio	0.94	0.87	0.59	0.88	0.64	0.25	0.56	0.44	0.61	0.68
Control Delay	85.2	39.9	9.0	94.8	30.3	6.1	35.1	27.5	40.9	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.2	39.9	9.0	94.8	30.3	6.1	35.1	27.5	40.9	34.0
Queue Length 50th (ft)	68	248	65	63	166	0	90	68	98	117
Queue Length 95th (ft)	#181	#509	175	#205	305	49	150	125	180	191
Internal Link Dist (ft)		1510			1609			962		896
Turn Bay Length (ft)	140			80			150		110	
Base Capacity (vph)	267	1125	1043	137	1125	601	1042	1132	573	1196
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	0.94	0.87	0.50	0.88	0.64	0.25	0.35	0.30	0.35	0.42

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 (veh/h)	242	945	504	116	696	147	352	238	84	193	361	122
Future Volume (veh/h)	242	945	504	116	696	147	352	238	84	193	361	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	252	984	525	121	725	153	367	248	88	201	376	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	303	1181	755	153	1175	523	497	529	183	254	531	177
Arrive On Green	0.09	0.33	0.33	0.09	0.33	0.33	0.14	0.20	0.20	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	3582	1595	3483	2611	903	1795	2635	878
Grp Volume(v), veh/h	252	984	525	121	725	153	367	168	168	201	254	249
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1595	1742	1791	1723	1795	1791	1722
Q Serve(g_s), s	5.3	19.0	5.3	4.9	12.7	5.3	7.5	6.2	6.4	8.1	9.9	10.1
Cycle Q Clear(g_c), s	5.3	19.0	5.3	4.9	12.7	5.3	7.5	6.2	6.4	8.1	9.9	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		0.51
Lane Grp Cap(c), veh/h	303	1181	755	153	1175	523	497	363	349	254	361	347
V/C Ratio(X)	0.83	0.83	0.70	0.79	0.62	0.29	0.74	0.46	0.48	0.79	0.70	0.72
Avail Cap(c_a), veh/h	303	1270	794	156	1270	565	1179	647	622	649	688	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	23.2	5.0	33.5	21.2	18.7	30.7	26.2	26.3	31.0	27.8	27.9
Incr Delay (d2), s/veh	17.6	4.6	2.5	23.0	0.8	0.3	2.2	0.9	1.0	5.5	2.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.9	2.1	3.0	5.0	1.8	3.1	2.5	2.6	3.7	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	27.8	7.5	56.5	22.0	19.0	32.9	27.1	27.3	36.5	30.3	30.7
LnGrp LOS	D	C	A	E	C	B	C	C	C	D	C	C
Approach Vol, veh/h		1761			999			703			704	
Approach Delay, s/veh		25.1			25.7			30.2			32.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	29.1	15.2	19.6	11.0	29.0	15.1	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	25.3	28.7	6.5	26.5	27.0	27.0
Max Q Clear Time (g_c+I1), s	6.9	21.0	9.5	12.1	7.3	14.7	10.1	8.4
Green Ext Time (p_c), s	0.0	3.7	1.1	2.6	0.0	4.0	0.5	1.7

Intersection Summary

HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Near Term

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	252	1214	1254	120	155	263
v/c Ratio	0.70	0.38	0.83	0.16	0.61	0.41
Control Delay	53.4	0.3	30.9	3.7	56.8	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	0.3	30.9	3.7	56.8	21.2
Queue Length 50th (ft)	159	0	383	0	101	98
Queue Length 95th (ft)	#340	0	582	33	209	216
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	470	3223	2680	1219	470	917
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	0.54	0.38	0.47	0.10	0.33	0.29

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)	232	1117	1154	110	143	242
Future Volume (vph)	232	1117	1154	110	143	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	1214	1254	120	155	263
RTOR Reduction (vph)	0	0	0	63	0	29
Lane Group Flow (vph)	252	1214	1254	57	155	234
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.4	107.6	51.0	51.0	17.2	45.6
Effective Green, g (s)	24.4	107.6	51.0	51.0	17.2	45.6
Actuated g/C Ratio	0.23	1.00	0.47	0.47	0.16	0.42
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	365	3223	1527	683	257	611
v/s Ratio Prot	c0.16	0.38	c0.39		c0.10	0.16
v/s Ratio Perm				0.04		
v/c Ratio	0.69	0.38	0.82	0.08	0.60	0.38
Uniform Delay, d1	38.1	0.0	24.4	15.5	42.0	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.3	3.9	0.1	4.2	0.4
Delay (s)	43.7	0.3	28.2	15.6	46.2	21.7
Level of Service	D	A	C	B	D	C
Approach Delay (s)		7.8	27.1		30.8	
Approach LOS		A	C		C	

Intersection Summary

HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	107.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	227	850	292	39	959	186	264	298	93	173	151
v/c Ratio	0.56	0.62	0.37	0.11	0.81	0.29	0.59	0.42	0.35	0.62	0.41
Control Delay	53.0	30.9	4.7	46.4	37.9	5.0	52.2	39.1	55.8	55.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	30.9	4.7	46.4	37.9	5.0	52.2	39.1	55.8	55.0	10.9
Queue Length 50th (ft)	76	272	0	11	307	0	89	92	31	112	0
Queue Length 95th (ft)	146	423	61	34	477	49	165	163	71	223	62
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	551	2210	1082	573	2210	1048	612	1283	612	681	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.38	0.27	0.07	0.43	0.18	0.43	0.23	0.15	0.25	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	782	269	36	882	171	243	256	18	86	159	139
Future Volume (vph)	209	782	269	36	882	171	243	256	18	86	159	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3217		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3217		3155	1712	1455
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)	227	850	292	39	959	186	264	278	20	93	173	151
RTOR Reduction (vph)	0	0	171	0	0	116	0	3	0	0	0	126
Lane Group Flow (vph)	227	850	121	39	959	70	264	295	0	93	173	25
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	14.0	45.1	45.1	10.1	41.2	41.2	15.3	23.8		9.2	17.7	17.7
Effective Green, g (s)	14.0	45.1	45.1	10.1	41.2	41.2	15.3	23.8		9.2	17.7	17.7
Actuated g/C Ratio	0.13	0.41	0.41	0.09	0.38	0.38	0.14	0.22		0.08	0.16	0.16
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	405	1348	603	292	1231	550	443	703		266	278	236
v/s Ratio Prot	0.07	c0.26		0.01	c0.29		c0.08	0.09		0.03	c0.10	
v/s Ratio Perm			0.08			0.05						0.02
v/c Ratio	0.56	0.63	0.20	0.13	0.78	0.13	0.60	0.42		0.35	0.62	0.10
Uniform Delay, d1	44.5	25.2	20.3	45.3	29.8	22.1	43.9	36.6		47.0	42.4	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	1.0	0.2	0.1	3.2	0.1	2.2	0.4		0.8	4.3	0.2
Delay (s)	46.3	26.2	20.5	45.4	33.0	22.2	46.0	37.0		47.8	46.7	39.0
Level of Service	D	C	C	D	C	C	D	D		D	D	D
Approach Delay (s)		28.3			31.7			41.2			44.2	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	108.8	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	782	269	36	882	171	243	256	18	86	159	139
Future Volume (veh/h)	209	782	269	36	882	171	243	256	18	86	159	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	227	850	292	39	959	186	264	278	20	93	173	151
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	321	1143	510	295	1256	560	364	644	46	157	247	209
Arrive On Green	0.10	0.35	0.35	0.09	0.38	0.38	0.11	0.21	0.21	0.05	0.14	0.14
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3120	223	3209	1737	1472
Grp Volume(v), veh/h	227	850	292	39	959	186	264	146	152	93	173	151
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1693	1605	1737	1472
Q Serve(g_s), s	5.3	17.7	7.6	0.9	19.8	7.0	6.2	6.0	6.1	2.2	7.4	7.7
Cycle Q Clear(g_c), s	5.3	17.7	7.6	0.9	19.8	7.0	6.2	6.0	6.1	2.2	7.4	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	321	1143	510	295	1256	560	364	341	350	157	247	209
V/C Ratio(X)	0.71	0.74	0.57	0.13	0.76	0.33	0.73	0.43	0.43	0.59	0.70	0.72
Avail Cap(c_a), veh/h	740	2959	1320	740	2959	1320	822	867	889	822	912	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	22.5	7.6	32.6	21.1	17.1	33.4	27.0	27.0	36.3	31.9	32.0
Incr Delay (d2), s/veh	2.9	1.0	1.0	0.1	1.0	0.3	2.8	0.9	0.9	3.5	3.6	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.0	3.7	0.3	6.5	2.2	2.4	2.3	2.4	0.9	3.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	23.4	8.6	32.7	22.1	17.5	36.2	27.8	27.8	39.8	35.5	36.7
LnGrp LOS	D	C	A	C	C	B	D	C	C	D	D	D
Approach Vol, veh/h		1369			1184			562			417	
Approach Delay, s/veh		22.5			21.7			31.8			36.9	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	34.3	12.9	16.4	11.8	37.0	7.8	21.4
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	19.7	8.2	9.7	7.3	21.8	4.2	8.1
Green Ext Time (p_c), s	0.0	7.3	0.7	1.4	0.5	7.9	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	839	46	276	1080	0	9	0	247	0	0	0
Future Volume (Veh/h)	1	839	46	276	1080	0	9	0	247	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	912	50	300	1174	0	10	0	268	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1174			962			2126	2713	481	2232	2738	587
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1174			962			2126	2713	481	2232	2738	587
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			54			38	100	47	100	100	100
cM capacity (veh/h)	542			658			16	10	508	6	9	431

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	608	354	300	783	391	278	0
Volume Left	1	0	0	300	0	0	10	0
Volume Right	0	0	50	0	0	0	268	0
cSH	542	1700	1700	658	1700	1700	347	1700
Volume to Capacity	0.00	0.36	0.21	0.46	0.46	0.23	0.80	0.00
Queue Length 95th (ft)	0	0	0	60	0	0	169	0
Control Delay (s)	11.7	0.0	0.0	15.0	0.0	0.0	46.4	0.0
Lane LOS	B			B			E	A
Approach Delay (s)	0.0			3.0			46.4	0.0
Approach LOS							E	A

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	53.3%	ICU Level of Service		A
Analysis Period (min)	15			

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	1	839	46	276	1080	0	9	0	247	0	0	0
Future Vol, veh/h	1	839	46	276	1080	0	9	0	247	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	340	-	-	195	-	-	-	-	25	-	-	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, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	912	50	300	1174	0	10	0	268	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1174	0	0	962	0	0	2126	2713	481	2232	2738	587
Stage 1	-	-	-	-	-	-	939	939	-	1774	1774	-
Stage 2	-	-	-	-	-	-	1187	1774	-	458	964	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	542	-	-	658	-	-	25	18	508	21	17	431
Stage 1	-	-	-	-	-	-	267	321	-	78	122	-
Stage 2	-	-	-	-	-	-	186	122	-	529	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	542	-	-	658	-	-	16	10	508	6	9	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	10	-	6	9	-
Stage 1	-	-	-	-	-	-	266	320	-	78	66	-
Stage 2	-	-	-	-	-	-	101	66	-	249	311	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3	33.4	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	16	508	542	-	-	658	-	-	-	-
HCM Lane V/C Ratio	0.611	0.529	0.002	-	-	0.456	-	-	-	-
HCM Control Delay (s)	$ 406.3	19.8	11.7	-	-	15	-	-	0	0
HCM Lane LOS	F	C	B	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	1.6	3.1	0	-	-	2.4	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	357	729	1173	19	5	182
Future Volume (Veh/h)	357	729	1173	19	5	182
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	388	792	1275	21	5	198
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1296				2447	638
vC1, stage 1 conf vol					1275	
vC2, stage 2 conf vol					1172	
vCu, unblocked vol	1296				2447	638
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	21				89	51
cM capacity (veh/h)	489				47	401

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	388	396	396	638	638	21	203
Volume Left	388	0	0	0	0	0	5
Volume Right	0	0	0	0	0	21	198
cSH	489	1700	1700	1700	1700	1700	411
Volume to Capacity	0.79	0.23	0.23	0.38	0.38	0.01	0.49
Queue Length 95th (ft)	182	0	0	0	0	0	66
Control Delay (s)	35.0	0.0	0.0	0.0	0.0	0.0	24.1
Lane LOS	D						C
Approach Delay (s)	11.5			0.0			24.1
Approach LOS							C

Intersection Summary			
Average Delay		6.9	
Intersection Capacity Utilization		65.5%	ICU Level of Service C
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	357	729	1173	19	5	182
Future Vol, veh/h	357	729	1173	19	5	182
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	388	792	1275	21	5	198

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1296	0	-	0	2447	638
Stage 1	-	-	-	-	1275	-
Stage 2	-	-	-	-	1172	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	489	-	-	-	23	401
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	241	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	489	-	-	-	~ 5	401
Mov Cap-2 Maneuver	-	-	-	-	41	-
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	241	-

Approach	EB	WB	SB
HCM Control Delay, s	11.5	0	24.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	489	-	-	-	41	401
HCM Lane V/C Ratio	0.794	-	-	-	0.133	0.493
HCM Control Delay (s)	35.1	-	-	-	105.8	22.4
HCM Lane LOS	E	-	-	-	F	C
HCM 95th %tile Q(veh)	7.3	-	-	-	0.4	2.6

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	715	19	2	1184	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	715	19	2	1184	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	777	21	2	1287	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1287			798			1424	2068	388	1680	2089	644
vC1, stage 1 conf vol							777	777		1291	1291	
vC2, stage 2 conf vol							648	1291		389	798	
vCu, unblocked vol	1287			798			1424	2068	388	1680	2089	644
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	479			753			263	184	580	150	182	390

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	388	388	21	2	858	429	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	753	1700	1700	292	1700
Volume to Capacity	0.00	0.23	0.23	0.01	0.00	0.50	0.25	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	3	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.8	0.0	0.0	18.4	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			18.4	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		42.7%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	715	19	2	1184	0	8	0	1	0	0	0
Future Vol, veh/h	0	715	19	2	1184	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	777	21	2	1287	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1287	0	0	798	0	0	1425	2068	389	1680	2089	644
Stage 1	-	-	-	-	-	-	777	777	-	1291	1291	-
Stage 2	-	-	-	-	-	-	648	1291	-	389	798	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	479	-	-	753	-	-	87	47	579	55	45	390
Stage 1	-	-	-	-	-	-	333	380	-	157	212	-
Stage 2	-	-	-	-	-	-	400	212	-	578	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	479	-	-	753	-	-	87	47	579	55	45	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	179	-	146	177	-
Stage 1	-	-	-	-	-	-	333	380	-	157	211	-
Stage 2	-	-	-	-	-	-	399	211	-	577	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.7	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	256	579	479	-	-	753	-	-	-
HCM Lane V/C Ratio	0.034	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	19.6	11.2	0	-	-	9.8	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	91	120	94	266	103	71	42	343	208	42	292	53
Future Volume (veh/h)	91	120	94	266	103	71	42	343	208	42	292	53
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
Hourly flow rate (vph)	99	130	102	289	112	77	46	373	226	46	317	58
Approach Volume (veh/h)		331			478			645			421	
Crossing Volume (veh/h)		652			518			275			447	
High Capacity (veh/h)		826			920			1116			974	
High v/c (veh/h)		0.40			0.52			0.58			0.43	
Low Capacity (veh/h)		660			743			918			790	
Low v/c (veh/h)		0.50			0.64			0.70			0.53	

Intersection Summary						
Maximum v/c High			0.58			
Maximum v/c Low			0.70			
Intersection Capacity Utilization			91.4%	ICU Level of Service		F

Intersection	
Intersection Delay, s/veh	13.0
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	331	478	645	421
Demand Flow Rate, veh/h	341	492	664	434
Vehicles Circulating, veh/h	672	533	283	460
Vehicles Exiting, veh/h	222	414	730	565
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.8	14.8	13.0	11.1
Approach LOS	B	B	B	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	341	492	664	434
Cap Entry Lane, veh/h	695	801	1034	863
Entry HV Adj Factor	0.971	0.971	0.971	0.971
Flow Entry, veh/h	331	478	645	421
Cap Entry, veh/h	675	778	1004	838
V/C Ratio	0.490	0.614	0.642	0.503
Control Delay, s/veh	12.8	14.8	13.0	11.1
LOS	B	B	B	B
95th %tile Queue, veh	3	4	5	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Future Volume (Veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	16	5	3	76	0	16	1	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	76			21			102	102	18	105	105	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			21			102	102	18	105	105	76
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1486			1557			862	774	1043	857	772	969

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	79	19	0
Volume Left	1	3	16	0
Volume Right	5	0	2	0
cSH	1486	1557	873	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.2	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.2	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			14.7%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	15	5	3	70	0	15	1	2	0	0	0
Future Vol, veh/h	1	15	5	3	70	0	15	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	16	5	3	76	0	16	1	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	21	0	0	103	103	19	104	105	76
Stage 1	-	-	-	-	-	-	21	21	-	82	82	-
Stage 2	-	-	-	-	-	-	82	82	-	22	23	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1486	-	-	1557	-	-	863	776	1042	862	774	969
Stage 1	-	-	-	-	-	-	982	866	-	912	815	-
Stage 2	-	-	-	-	-	-	912	815	-	981	864	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1557	-	-	861	774	1042	858	772	969
Mov Cap-2 Maneuver	-	-	-	-	-	-	861	774	-	858	772	-
Stage 1	-	-	-	-	-	-	981	865	-	911	813	-
Stage 2	-	-	-	-	-	-	910	813	-	977	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	872	1486	-	-	1557	-	-	-
HCM Lane V/C Ratio	0.022	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.2	7.4	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	347	345	425	637	7	21	139	283	283	35
v/c Ratio	0.01	0.57	0.74	0.48	0.59	0.05	0.13	0.53	0.70	0.68	0.07
Control Delay	48.0	37.3	40.8	18.6	4.0	43.5	44.1	16.1	41.1	40.2	0.3
Queue Delay	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	37.3	40.9	19.0	4.2	43.5	44.1	16.1	41.1	40.2	0.3
Queue Length 50th (ft)	1	85	161	135	0	3	10	0	137	136	0
Queue Length 95th (ft)	6	165	328	316	65	19	40	59	296	295	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	110	1002	717	1173	1229	397	418	457	597	608	631
Starvation Cap Reductn	0	0	29	303	151	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.35	0.50	0.49	0.59	0.02	0.05	0.30	0.47	0.47	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	290	29	317	391	586	6	19	128	433	87	32
Future Volume (vph)	1	290	29	317	391	586	6	19	128	433	87	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3445		1752	1845	1568	1752	1845	1544	1665	1696	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3445		1752	1845	1568	1752	1845	1544	1665	1696	1521
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)	1	315	32	345	425	637	7	21	139	471	95	35
RTOR Reduction (vph)	0	6	0	0	0	342	0	0	127	0	0	27
Lane Group Flow (vph)	1	341	0	345	425	295	7	21	12	283	283	8
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.7	18.7		22.3	40.3	40.3	7.5	7.5	7.5	20.5	20.5	20.5
Effective Green, g (s)	0.7	18.7		22.3	40.3	40.3	7.5	7.5	7.5	20.5	20.5	20.5
Actuated g/C Ratio	0.01	0.21		0.26	0.46	0.46	0.09	0.09	0.09	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	740		449	854	726	151	159	133	392	399	358
v/s Ratio Prot	0.00	0.10		c0.20	c0.23		0.00	c0.01		c0.17	0.17	
v/s Ratio Perm						0.19			0.01			0.01
v/c Ratio	0.07	0.46		0.77	0.50	0.41	0.05	0.13	0.09	0.72	0.71	0.02
Uniform Delay, d1	42.8	29.8		30.0	16.3	15.4	36.5	36.7	36.6	30.6	30.5	25.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.5		7.7	0.5	0.4	0.1	0.4	0.3	6.4	5.7	0.0
Delay (s)	45.0	30.2		37.7	16.7	15.8	36.6	37.1	36.9	37.1	36.2	25.6
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		30.3			21.5			36.9			36.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	61.0%	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)	1	290	29	317	391	586	6	19	128	433	87	32
Future Volume (veh/h)	1	290	29	317	391	586	6	19	128	433	87	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	315	32	345	425	637	7	21	139	539	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	763	77	398	854	724	199	209	177	700	0	307
Arrive On Green	0.00	0.24	0.24	0.23	0.46	0.46	0.11	0.11	0.11	0.20	0.00	0.20
Sat Flow, veh/h	1767	3228	325	1767	1856	1572	1767	1856	1568	3534	0	1553
Grp Volume(v), veh/h	1	171	176	345	425	637	7	21	139	539	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1790	1767	1856	1572	1767	1856	1568	1767	0	1553
Q Serve(g_s), s	0.0	6.5	6.6	14.9	12.7	29.1	0.3	0.8	6.8	11.4	0.0	1.5
Cycle Q Clear(g_c), s	0.0	6.5	6.6	14.9	12.7	29.1	0.3	0.8	6.8	11.4	0.0	1.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	417	423	398	854	724	199	209	177	700	0	307
V/C Ratio(X)	0.41	0.41	0.42	0.87	0.50	0.88	0.04	0.10	0.79	0.77	0.00	0.11
Avail Cap(c_a), veh/h	112	513	521	726	1185	1004	402	422	357	1274	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	25.5	25.6	29.5	14.9	19.4	31.2	31.5	34.1	30.0	0.0	26.0
Incr Delay (d2), s/veh	84.9	0.6	0.7	5.8	0.5	6.9	0.1	0.2	7.5	1.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.7	2.8	6.7	5.0	11.0	0.1	0.4	2.9	4.8	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	124.4	26.2	26.2	35.3	15.4	26.3	31.3	31.7	41.6	31.8	0.0	26.2
LnGrp LOS	F	C	C	D	B	C	C	C	D	C	A	C
Approach Vol, veh/h		348			1407			167			574	
Approach Delay, s/veh		26.5			25.2			39.9			31.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.3	23.2		20.2	4.6	40.9		13.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	16.9	8.6		13.4	2.0	31.1		8.8				
Green Ext Time (p_c), s	0.9	1.8		1.9	0.0	5.3		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			27.8									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	856	49	1166	360	234	12	249	5	8
v/c Ratio	0.35	0.46	0.27	0.67	0.41	0.67	0.03	0.43	0.01	0.01
Control Delay	45.4	14.1	45.1	19.1	6.0	40.6	26.8	6.5	26.8	0.0
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	14.2	45.1	19.1	6.0	40.6	26.8	6.5	26.8	0.0
Queue Length 50th (ft)	34	145	25	232	27	113	5	0	2	0
Queue Length 95th (ft)	88	251	69	389	97	216	20	57	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	265	2332	239	2322	1101	613	816	832	611	809
Starvation Cap Reductn	0	564	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	0.26	0.48	0.21	0.50	0.33	0.38	0.01	0.30	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	740	48	45	1073	331	215	11	229	5	0	7
Future Volume (vph)	63	740	48	45	1073	331	215	11	229	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3466		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3466		1752	3505	1530	1388	1845	1568	1383	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)	68	804	52	49	1166	360	234	12	249	5	0	8
RTOR Reduction (vph)	0	4	0	0	0	131	0	0	187	0	6	0
Lane Group Flow (vph)	68	852	0	49	1166	229	234	12	62	5	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.6	42.3		4.4	40.1	40.1	20.0	20.0	20.0	20.0	20.0	
Effective Green, g (s)	6.6	42.3		4.4	40.1	40.1	20.0	20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.08	0.53		0.05	0.50	0.50	0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	144	1828		96	1752	765	346	460	391	344	391	
v/s Ratio Prot	c0.04	0.25		0.03	c0.33			0.01			0.00	
v/s Ratio Perm						0.15	c0.17		0.04	0.00		
v/c Ratio	0.47	0.47		0.51	0.67	0.30	0.68	0.03	0.16	0.01	0.01	
Uniform Delay, d1	35.1	11.9		36.9	15.0	11.8	27.2	22.7	23.5	22.7	22.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.4	0.2		4.5	1.0	0.2	5.2	0.0	0.2	0.0	0.0	
Delay (s)	37.6	12.1		41.4	16.0	12.0	32.3	22.8	23.7	22.7	22.6	
Level of Service	D	B		D	B	B	C	C	C	C	C	
Approach Delay (s)		13.9			15.9			27.8			22.7	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	63.7%	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)	63	740	48	45	1073	331	215	11	229	5	0	7
Future Volume (veh/h)	63	740	48	45	1073	331	215	11	229	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	804	52	49	1166	0	234	12	249	5	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	102	1655	107	84	1699		432	414	351	368	0	351
Arrive On Green	0.06	0.49	0.49	0.05	0.48	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3360	217	1767	3526	1572	1396	1856	1572	1110	0	1572
Grp Volume(v), veh/h	68	422	434	49	1166	0	234	12	249	5	0	8
Grp Sat Flow(s),veh/h/ln	1767	1763	1815	1767	1763	1572	1396	1856	1572	1110	0	1572
Q Serve(g_s), s	2.1	9.1	9.1	1.5	14.6	0.0	9.0	0.3	8.3	0.2	0.0	0.2
Cycle Q Clear(g_c), s	2.1	9.1	9.1	1.5	14.6	0.0	9.2	0.3	8.3	0.5	0.0	0.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	868	894	84	1699		432	414	351	368	0	351
V/C Ratio(X)	0.67	0.49	0.49	0.59	0.69		0.54	0.03	0.71	0.01	0.00	0.02
Avail Cap(c_a), veh/h	326	1588	1635	295	3114		873	1000	848	719	0	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.3	9.6	9.6	26.6	11.4	0.0	20.9	17.3	20.4	17.5	0.0	17.3
Incr Delay (d2), s/veh	7.2	0.4	0.4	6.4	0.5	0.0	1.1	0.0	2.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.0	3.0	0.8	4.7	0.0	2.7	0.1	3.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	10.1	10.1	32.9	11.9	0.0	21.9	17.3	23.1	17.5	0.0	17.3
LnGrp LOS	C	B	B	C	B		C	B	C	B	A	B
Approach Vol, veh/h		924			1215	A		495			13	
Approach Delay, s/veh		11.8			12.8			22.4			17.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	32.6		17.2	7.8	32.0		17.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	3.5	11.1		2.5	4.1	16.6		11.2				
Green Ext Time (p_c), s	0.0	6.5		0.0	0.1	10.9		1.5				

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

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	214	844	61	883	395	193	49	133	598
v/c Ratio	0.55	0.63	0.39	0.77	0.68	0.24	0.11	0.56	0.77
Control Delay	49.7	25.3	54.7	34.3	46.2	33.5	1.0	52.5	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	25.3	54.7	34.3	46.2	33.5	1.0	52.5	32.2
Queue Length 50th (ft)	66	205	37	256	121	52	0	80	124
Queue Length 95th (ft)	124	315	91	375	203	98	4	161	216
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	464	1693	201	1642	761	1053	538	354	1030
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.50	0.30	0.54	0.52	0.18	0.09	0.38	0.58

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	500	277	56	722	90	363	178	45	122	187	363
Future Volume (vph)	197	500	277	56	722	90	363	178	45	122	187	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3332		1770	3475		3433	3539	1583	1770	3189	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3332		1770	3475		3433	3539	1583	1770	3189	
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)	214	543	301	61	785	98	395	193	49	133	203	395
RTOR Reduction (vph)	0	63	0	0	9	0	0	0	38	0	168	0
Lane Group Flow (vph)	214	781	0	61	874	0	395	193	11	133	430	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.0	37.1		7.0	33.1		16.4	22.0	22.0	12.9	18.5	
Effective Green, g (s)	11.0	37.1		7.0	33.1		16.4	22.0	22.0	12.9	18.5	
Actuated g/C Ratio	0.11	0.38		0.07	0.34		0.17	0.23	0.23	0.13	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	389	1274		127	1185		580	802	359	235	608	
v/s Ratio Prot	c0.06	c0.23		0.03	c0.25		c0.12	c0.05		0.08	c0.14	
v/s Ratio Perm									0.01			
v/c Ratio	0.55	0.61		0.48	0.74		0.68	0.24	0.03	0.57	0.71	
Uniform Delay, d1	40.7	24.2		43.3	28.1		37.8	30.7	29.2	39.4	36.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.9		2.8	2.4		3.3	0.2	0.0	3.1	3.8	
Delay (s)	42.3	25.0		46.1	30.6		41.1	30.8	29.2	42.5	40.5	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		28.5			31.6			37.1			40.9	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	97.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	70.7%	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)	197	500	277	56	722	90	363	178	45	122	187	363
Future Volume (veh/h)	197	500	277	56	722	90	363	178	45	122	187	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	214	543	0	61	785	98	395	193	49	133	203	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	1392		94	1106	138	549	584	261	174	368	
Arrive On Green	0.10	0.39	0.00	0.05	0.35	0.35	0.16	0.16	0.16	0.10	0.10	0.00
Sat Flow, veh/h	3456	3647	0	1781	3174	396	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	214	543	0	61	439	444	395	193	49	133	203	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1793	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	3.7	6.7	0.0	2.1	13.1	13.1	6.7	2.9	1.6	4.5	3.3	0.0
Cycle Q Clear(g_c), s	3.7	6.7	0.0	2.1	13.1	13.1	6.7	2.9	1.6	4.5	3.3	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	331	1392		94	619	625	549	584	261	174	368	
V/C Ratio(X)	0.65	0.39		0.65	0.71	0.71	0.72	0.33	0.19	0.76	0.55	
Avail Cap(c_a), veh/h	704	2634		305	1259	1271	1154	1592	710	537	1476	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	13.4	0.0	28.5	17.3	17.3	24.5	22.7	22.1	27.0	26.2	0.0
Incr Delay (d2), s/veh	2.1	0.2	0.0	7.4	1.5	1.5	1.8	0.3	0.3	6.8	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.4	0.0	1.0	4.9	5.0	2.6	1.1	0.6	2.0	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	13.6	0.0	35.9	18.8	18.8	26.3	23.0	22.5	33.8	27.5	0.0
LnGrp LOS	C	B		D	B	B	C	C	C	C	C	
Approach Vol, veh/h		757	A		944			637			336	A
Approach Delay, s/veh		17.9			19.9			25.0			30.0	
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	28.6	14.2	10.9	10.4	25.9	10.5	14.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.1	8.7	8.7	5.3	5.7	15.1	6.5	4.9
Green Ext Time (p_c), s	0.0	4.1	1.1	1.0	0.4	6.1	0.2	1.2

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

Notes

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

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	71	410	1024	510	101
v/c Ratio	0.31	0.21	0.72	0.60	0.22
Control Delay	41.2	10.1	20.2	31.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	10.1	20.2	31.3	8.9
Queue Length 50th (ft)	27	34	142	95	0
Queue Length 95th (ft)	103	133	407	256	47
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	306	2805	2141	1332	676
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	0.23	0.15	0.48	0.38	0.15

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	65	377	508	434	469	93
Future Volume (vph)	65	377	508	434	469	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3240		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3240		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	410	552	472	510	101
RTOR Reduction (vph)	0	0	121	0	0	77
Lane Group Flow (vph)	71	410	903	0	510	24
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.8	39.9	28.6		17.7	17.7
Effective Green, g (s)	6.8	39.9	28.6		17.7	17.7
Actuated g/C Ratio	0.09	0.54	0.38		0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	160	1882	1247		809	373
v/s Ratio Prot	c0.04	0.12	c0.28			
v/s Ratio Perm					c0.15	0.02
v/c Ratio	0.44	0.22	0.72		0.63	0.06
Uniform Delay, d1	32.0	9.0	19.5		25.4	21.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.1	2.1		1.6	0.1
Delay (s)	33.9	9.1	21.6		27.0	22.0
Level of Service	C	A	C		C	C
Approach Delay (s)		12.7	21.6		26.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	177	151	34	312	248	280	646	182	696
v/c Ratio	0.50	0.37	0.29	0.21	0.49	0.51	0.73	0.66	0.60	0.73
Control Delay	40.0	26.5	6.3	39.9	31.6	8.6	43.4	28.6	40.3	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	26.5	6.3	39.9	31.6	8.6	43.4	28.6	40.3	22.3
Queue Length 50th (ft)	58	73	0	15	72	0	127	141	81	101
Queue Length 95th (ft)	124	134	43	48	119	60	#297	236	165	185
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	349	725	692	178	1035	626	427	1182	401	1212
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	0.24	0.22	0.19	0.30	0.40	0.66	0.55	0.45	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)	118	163	139	31	287	228	258	556	39	167	327	314
Future Volume (vph)	118	163	139	31	287	228	258	556	39	167	327	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1533	1752	3505	1534	1752	3467		1752	3206	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1533	1752	3505	1534	1752	3467		1752	3206	
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)	128	177	151	34	312	248	280	604	42	182	355	341
RTOR Reduction (vph)	0	0	112	0	0	200	0	6	0	0	195	0
Lane Group Flow (vph)	128	177	39	34	312	48	280	640	0	182	501	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.4	19.0	19.0	3.6	14.2	14.2	16.0	20.5		12.6	17.1	
Effective Green, g (s)	8.4	19.0	19.0	3.6	14.2	14.2	16.0	20.5		12.6	17.1	
Actuated g/C Ratio	0.11	0.26	0.26	0.05	0.19	0.19	0.22	0.28		0.17	0.23	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	475	395	85	675	295	380	964		299	743	
v/s Ratio Prot	c0.07	0.10		0.02	c0.09		c0.16	c0.18		0.10	0.16	
v/s Ratio Perm			0.03			0.03						
v/c Ratio	0.64	0.37	0.10	0.40	0.46	0.16	0.74	0.66		0.61	0.67	
Uniform Delay, d1	31.2	22.5	20.8	34.0	26.4	24.8	26.9	23.6		28.3	25.8	
Progression Factor	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	0.5	0.1	3.1	0.5	0.3	7.3	1.7		3.5	2.4	
Delay (s)	38.2	23.0	20.9	37.1	26.9	25.1	34.2	25.3		31.8	28.2	
Level of Service	D	C	C	D	C	C	C	C		C	C	
Approach Delay (s)		26.6			26.7			28.0			28.9	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	65.8%	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)	118	163	139	31	287	228	258	556	39	167	327	314
Future Volume (veh/h)	118	163	139	31	287	228	258	556	39	167	327	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	177	151	34	312	248	280	604	42	182	355	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	503	422	60	750	330	326	1065	74	226	462	406
Arrive On Green	0.09	0.27	0.27	0.03	0.21	0.21	0.18	0.32	0.32	0.13	0.26	0.26
Sat Flow, veh/h	1767	1856	1557	1767	3526	1553	1767	3343	232	1767	1763	1551
Grp Volume(v), veh/h	128	177	151	34	312	248	280	318	328	182	355	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1557	1767	1763	1553	1767	1763	1813	1767	1763	1551
Q Serve(g_s), s	5.1	5.6	5.7	1.4	5.5	10.8	11.1	10.9	10.9	7.3	13.5	15.1
Cycle Q Clear(g_c), s	5.1	5.6	5.7	1.4	5.5	10.8	11.1	10.9	10.9	7.3	13.5	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	164	503	422	60	750	330	326	561	577	226	462	406
V/C Ratio(X)	0.78	0.35	0.36	0.56	0.42	0.75	0.86	0.57	0.57	0.81	0.77	0.84
Avail Cap(c_a), veh/h	329	681	571	168	973	428	402	561	577	378	535	471
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	32.1	21.3	21.3	34.5	24.6	26.7	28.6	20.5	20.5	30.7	24.7	25.3
Incr Delay (d2), s/veh	7.8	0.4	0.5	8.0	0.4	5.3	14.4	1.3	1.3	6.7	5.8	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.3	2.0	0.7	2.2	4.2	5.7	4.3	4.5	3.4	6.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	21.7	21.8	42.4	25.0	32.1	43.1	21.9	21.9	37.4	30.5	36.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		456			594			926			878	
Approach Delay, s/veh		26.9			29.0			28.3			34.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	27.6	7.0	24.2	17.9	23.5	11.2	19.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	9.3	12.9	3.4	7.7	13.1	17.1	7.1	12.8
Green Ext Time (p_c), s	0.2	2.8	0.0	1.3	0.3	1.9	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	38	47	681	48	51	485
Future Volume (Veh/h)	38	47	681	48	51	485
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	51	740	52	55	527
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1403	766			792	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1403	766			792	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	87			93	
cM capacity (veh/h)	144	403			829	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	92	792	55	527
Volume Left	41	0	55	0
Volume Right	51	52	0	0
cSH	223	1700	829	1700
Volume to Capacity	0.41	0.47	0.07	0.31
Queue Length 95th (ft)	47	0	5	0
Control Delay (s)	31.9	0.0	9.7	0.0
Lane LOS	D		A	
Approach Delay (s)	31.9	0.0	0.9	
Approach LOS	D			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	47	681	48	51	485
Future Vol, veh/h	38	47	681	48	51	485
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	-	-	-	60	-
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	41	51	740	52	55	527

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1403	766	0	0	792	0
Stage 1	766	-	-	-	-	-
Stage 2	637	-	-	-	-	-
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	154	403	-	-	829	-
Stage 1	459	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	144	403	-	-	829	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	492	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.1	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	223	829	-
HCM Lane V/C Ratio	-	-	0.414	0.067	-
HCM Control Delay (s)	-	-	32.1	9.7	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	6	40	8	15	98	34	490	3	33	391	77
Future Volume (Veh/h)	95	6	40	8	15	98	34	490	3	33	391	77
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	7	43	9	16	107	37	533	3	36	425	84
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1226	1115	431	1154	1198	538	515			538		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1226	1115	431	1154	1198	538	515			538		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	5	96	93	94	91	80	96			96		
cM capacity (veh/h)	108	192	621	148	172	542	1045			1028		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	153	132	37	536	36	425	84
Volume Left	103	9	37	0	36	0	0
Volume Right	43	107	0	3	0	0	84
cSH	145	376	1045	1700	1028	1700	1700
Volume to Capacity	1.06	0.35	0.04	0.32	0.04	0.25	0.05
Queue Length 95th (ft)	202	39	3	0	3	0	0
Control Delay (s)	151.7	19.7	8.6	0.0	8.6	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	151.7	19.7	0.6		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	18.8			
Intersection Capacity Utilization	49.6%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	15.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	95	6	40	8	15	98	34	490	3	33	391	77
Future Vol, veh/h	95	6	40	8	15	98	34	490	3	33	391	77
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	7	43	9	16	107	37	533	3	36	425	84

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1174	1115	431	1175	1198	538	515	0	0	538	0	0
Stage 1	503	503	-	611	611	-	-	-	-	-	-	-
Stage 2	671	612	-	564	587	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	169	208	624	168	186	543	1051	-	-	1030	-	-
Stage 1	551	541	-	481	484	-	-	-	-	-	-	-
Stage 2	446	484	-	510	497	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	192	620	144	172	541	1045	-	-	1028	-	-
Mov Cap-2 Maneuver	118	192	-	144	172	-	-	-	-	-	-	-
Stage 1	528	519	-	463	466	-	-	-	-	-	-	-
Stage 2	333	466	-	452	477	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	123.1	19.8	0.6	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1045	-	-	157	374	1028	-	-
HCM Lane V/C Ratio	0.035	-	-	0.976	0.352	0.035	-	-
HCM Control Delay (s)	8.6	-	-	123.1	19.8	8.6	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	7.4	1.5	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	7	210	5	264	9	243	109	230	199	10
Future Volume (vph)	20	9	7	210	5	264	9	243	109	230	199	10
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
Hourly flow rate (vph)	22	10	8	228	5	287	10	264	118	250	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	40	520	274	118	358	119
Volume Left (vph)	22	228	10	0	250	0
Volume Right (vph)	8	287	0	118	0	11
Hadj (s)	0.02	-0.21	0.05	-0.67	0.38	-0.03
Departure Headway (s)	8.1	6.2	7.5	6.8	7.7	7.2
Degree Utilization, x	0.09	0.90	0.57	0.22	0.76	0.24
Capacity (veh/h)	405	565	453	500	450	480
Control Delay (s)	11.9	42.3	19.0	10.5	30.1	11.3
Approach Delay (s)	11.9	42.3	16.4		25.4	
Approach LOS	B	E	C		D	

Intersection Summary				
Delay	28.7			
Level of Service	D			
Intersection Capacity Utilization	69.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	30.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	7	210	5	264	0	9	243	109	230	199
Future Vol, veh/h	20	9	7	210	5	264	0	9	243	109	230	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	10	8	228	5	287	0	10	264	118	250	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.1	45.1	17.4	26.6
HCM LOS	B	E	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	56%	44%	70%	0%
Vol Thru, %	96%	0%	25%	1%	30%	91%
Vol Right, %	0%	100%	19%	55%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	109	36	479	330	110
LT Vol	9	0	20	210	230	0
Through Vol	243	0	9	5	100	100
RT Vol	0	109	7	264	0	10
Lane Flow Rate	274	118	39	521	358	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.573	0.224	0.089	0.916	0.763	0.24
Departure Headway (Hd)	7.536	6.794	8.206	6.332	7.67	7.245
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	526	434	573	469	494
Service Time	5.305	4.563	6.306	4.378	5.435	5.009
HCM Lane V/C Ratio	0.574	0.224	0.09	0.909	0.763	0.241
HCM Control Delay	20	11.5	12.1	45.1	31.3	12.3
HCM Lane LOS	C	B	B	E	D	B
HCM 95th-tile Q	3.5	0.9	0.3	11.3	6.5	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	153	136	229	208	125	292
Future Volume (Veh/h)	153	136	229	208	125	292
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	148	249	226	136	317
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	747	136	453			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	747	136	453			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	38	83	77			
cM capacity (veh/h)	268	885	1097			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	314	249	113	113	136	317
Volume Left	166	249	0	0	0	0
Volume Right	148	0	0	0	0	317
cSH	507	1097	1700	1700	1700	1700
Volume to Capacity	0.62	0.23	0.07	0.07	0.08	0.19
Queue Length 95th (ft)	104	22	0	0	0	0
Control Delay (s)	24.8	9.2	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	24.8	4.8			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay		8.1	
Intersection Capacity Utilization		37.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	153	136	229	208	125	292
Future Vol, veh/h	153	136	229	208	125	292
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	145	105	-	-	0
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	166	148	249	226	136	317

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	747	136	453	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	362	909	1100	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	280	909	1100	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	687	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	4.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1100	-	280	909	-	-
HCM Lane V/C Ratio	0.226	-	0.594	0.163	-	-
HCM Control Delay (s)	9.2	-	35	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	3.5	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	55	1	109	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	55	1	109	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	60	1	118	10	0	0	0	0	352	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	424	360	360	420	368	0	368			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	424	360	360	420	368	0	368			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	91	100	79	99	100			100		
cM capacity (veh/h)	449	567	684	496	561	1085	1191			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	89	129	368
Volume Left	29	1	0
Volume Right	60	10	16
cSH	584	608	1700
Volume to Capacity	0.15	0.21	0.22
Queue Length 95th (ft)	13	20	0
Control Delay (s)	12.3	12.8	0.0
Lane LOS	B	B	
Approach Delay (s)	12.3	12.8	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		4.7			
Intersection Capacity Utilization		36.2%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	55	1	109	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	55	1	109	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	60	1	118	10	0	0	0	0	352	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	424	360	360	390	368	0				-	-	0
Stage 1	360	360	-	0	0	-				-	-	-
Stage 2	64	0	-	390	368	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	540	567	684	569	561	-				0	-	-
Stage 1	658	626	-	-	-	-				0	-	-
Stage 2	-	-	-	634	621	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	567	684	519	561	-				-	-	-
Mov Cap-2 Maneuver	-	567	-	519	561	-				-	-	-
Stage 1	658	626	-	-	-	-				-	-	-
Stage 2	-	-	-	579	621	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	561	-	-	-
HCM Lane V/C Ratio	-	0.213	-	-	-
HCM Control Delay (s)	-	13.1	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	318	1049	275	458	91	293	538	323	276
v/c Ratio	0.09	0.67	0.73	0.35	0.42	0.57	0.62	0.33	0.64	0.41
Control Delay	54.5	46.6	33.5	26.5	2.2	72.9	58.1	4.7	56.7	43.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	46.6	33.5	26.5	2.2	72.9	58.1	4.7	56.7	43.5
Queue Length 50th (ft)	14	95	346	144	0	70	118	31	126	97
Queue Length 95th (ft)	44	168	522	258	42	#158	192	57	203	155
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	314	661	1844	1001	1166	188	716	1899	727	1066
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	0.06	0.48	0.57	0.27	0.39	0.48	0.41	0.28	0.44	0.26

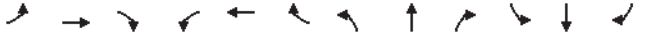
Intersection Summary

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)	18	178	115	965	253	421	84	270	495	297	205	49
Future Volume (vph)	18	178	115	965	253	421	84	270	495	297	205	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3331		3433	1863	1568	1770	3539	2787	3433	3422	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3331		3433	1863	1568	1770	3539	2787	3433	3422	
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)	20	193	125	1049	275	458	91	293	538	323	223	53
RTOR Reduction (vph)	0	73	0	0	0	196	0	0	98	0	15	0
Lane Group Flow (vph)	20	245	0	1049	275	262	91	293	440	323	261	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	14.5	14.5		50.2	50.2	67.9	10.8	16.0	66.2	17.7	22.9	
Effective Green, g (s)	14.5	14.5		50.2	50.2	67.9	10.8	16.0	66.2	17.7	22.9	
Actuated g/C Ratio	0.12	0.12		0.42	0.42	0.57	0.09	0.13	0.56	0.15	0.19	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	215	406		1449	786	895	160	476	1551	511	659	
v/s Ratio Prot	0.01	c0.07		c0.31	0.15	0.04	0.05	c0.08	0.12	c0.09	0.08	
v/s Ratio Perm						0.12			0.04			
v/c Ratio	0.09	0.60		0.72	0.35	0.29	0.57	0.62	0.28	0.63	0.40	
Uniform Delay, d1	46.4	49.5		28.6	23.3	13.1	51.8	48.5	13.9	47.5	42.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	2.5		1.8	0.3	0.2	4.6	2.4	0.1	2.6	0.4	
Delay (s)	46.5	52.0		30.4	23.6	13.3	56.4	50.9	14.0	50.1	42.4	
Level of Service	D	D		C	C	B	E	D	B	D	D	
Approach Delay (s)		51.7			25.0			29.9			46.5	
Approach LOS		D			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	69.2%	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)	18	178	115	965	253	421	84	270	495	297	205	49
Future Volume (veh/h)	18	178	115	965	253	421	84	270	495	297	205	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	193	125	1049	275	458	91	293	538	323	223	53
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	226	268	165	1325	717	791	117	568	1516	417	583	136
Arrive On Green	0.13	0.13	0.13	0.38	0.38	0.38	0.07	0.16	0.16	0.12	0.20	0.20
Sat Flow, veh/h	1781	2111	1302	3456	1870	1564	1781	3554	2790	3456	2860	666
Grp Volume(v), veh/h	20	161	157	1049	275	458	91	293	538	323	137	139
Grp Sat Flow(s),veh/h/ln	1781	1777	1636	1728	1870	1564	1781	1777	1395	1728	1777	1749
Q Serve(g_s), s	1.0	8.5	9.1	26.3	10.4	20.1	4.9	7.4	10.7	8.9	6.5	6.8
Cycle Q Clear(g_c), s	1.0	8.5	9.1	26.3	10.4	20.1	4.9	7.4	10.7	8.9	6.5	6.8
Prop In Lane	1.00		0.80	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	226	225	208	1325	717	791	117	568	1516	417	362	356
V/C Ratio(X)	0.09	0.71	0.76	0.79	0.38	0.58	0.78	0.52	0.35	0.77	0.38	0.39
Avail Cap(c_a), veh/h	371	370	341	2172	1175	1174	222	841	1730	857	640	630
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	37.8	41.1	41.3	26.7	21.8	17.0	45.1	37.7	12.7	41.8	33.7	33.8
Incr Delay (d2), s/veh	0.2	4.2	5.5	1.1	0.3	0.7	10.7	0.7	0.1	3.1	0.7	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	0.4	4.0	4.0	10.3	4.4	6.7	2.4	3.1	6.4	3.9	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	45.2	46.9	27.8	22.2	17.7	55.8	38.4	12.8	44.9	34.3	34.5
LnGrp LOS	D	D	D	C	C	B	E	D	B	D	C	C
Approach Vol, veh/h		338			1782			922			599	
Approach Delay, s/veh		45.6			24.4			25.2			40.1	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	21.5		17.0	12.2	25.8		43.0				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	10.9	12.7		11.1	6.9	8.8		28.3				
Green Ext Time (p_c), s	0.9	3.0		1.3	0.1	1.6		9.2				

Intersection Summary												
HCM 6th Ctrl Delay			29.1									
HCM 6th LOS			C									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	590	276	96	1153	657	372	287	445
v/c Ratio	0.53	0.45	0.36	0.54	0.87	0.86	0.57	0.81	0.72
Control Delay	60.8	29.0	4.9	59.2	38.5	53.9	43.7	59.5	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	29.0	4.9	59.2	38.5	53.9	43.7	59.5	42.3
Queue Length 50th (ft)	40	167	0	66	370	233	127	193	132
Queue Length 95th (ft)	74	251	60	126	#527	#359	180	#329	188
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	210	1309	759	225	1443	785	860	421	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.45	0.36	0.43	0.80	0.84	0.43	0.68	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)	102	543	254	88	824	236	604	305	37	264	265	144
Future Volume (vph)	102	543	254	88	824	236	604	305	37	264	265	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3402		3433	3475		1770	3352	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3402		3433	3475		1770	3352	
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)	111	590	276	96	896	257	657	332	40	287	288	157
RTOR Reduction (vph)	0	0	175	0	21	0	0	8	0	0	66	0
Lane Group Flow (vph)	111	590	101	96	1132	0	657	364	0	287	379	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.6	39.5	39.5	9.1	42.0		23.7	19.7		21.5	17.5	
Effective Green, g (s)	6.6	39.5	39.5	9.1	42.0		23.7	19.7		21.5	17.5	
Actuated g/C Ratio	0.06	0.37	0.37	0.08	0.39		0.22	0.18		0.20	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	1296	580	149	1325		754	635		353	544	
v/s Ratio Prot	0.03	0.17		c0.05	c0.33		c0.19	0.10		c0.16	0.11	
v/s Ratio Perm			0.06									
v/c Ratio	0.53	0.46	0.17	0.64	0.85		0.87	0.57		0.81	0.70	
Uniform Delay, d1	49.1	26.0	23.1	47.8	30.1		40.6	40.2		41.2	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.3	0.1	9.2	5.6		10.8	1.3		13.3	3.9	
Delay (s)	51.5	26.2	23.3	57.0	35.7		51.4	41.5		54.6	46.5	
Level of Service	D	C	C	E	D		D	D		D	D	
Approach Delay (s)		28.3			37.3			47.8			49.7	
Approach LOS		C			D			D			D	

Intersection Summary					
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.87				
Actuated Cycle Length (s)	107.8	Sum of lost time (s)		18.0	
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)	102	543	254	88	824	236	604	305	37	264	265	144
Future Volume (veh/h)	102	543	254	88	824	236	604	305	37	264	265	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	590	276	96	896	257	657	332	40	287	288	157
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	171	1288	575	123	1039	297	741	656	78	325	388	206
Arrive On Green	0.05	0.36	0.36	0.07	0.38	0.38	0.21	0.21	0.21	0.18	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2721	779	3456	3194	382	1781	2243	1190
Grp Volume(v), veh/h	111	590	276	96	585	568	657	184	188	287	227	218
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1723	1728	1777	1798	1781	1777	1656
Q Serve(g_s), s	3.1	12.6	7.0	5.3	30.1	30.3	18.3	9.1	9.3	15.6	12.0	12.5
Cycle Q Clear(g_c), s	3.1	12.6	7.0	5.3	30.1	30.3	18.3	9.1	9.3	15.6	12.0	12.5
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.21	1.00		0.72
Lane Grp Cap(c), veh/h	171	1288	575	123	678	658	741	365	369	325	308	287
V/C Ratio(X)	0.65	0.46	0.48	0.78	0.86	0.86	0.89	0.50	0.51	0.88	0.74	0.76
Avail Cap(c_a), veh/h	226	1333	595	242	792	768	838	465	470	451	484	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	24.2	6.7	45.6	28.3	28.4	37.9	35.0	35.1	39.6	39.0	39.2
Incr Delay (d2), s/veh	4.1	0.3	0.6	10.3	8.6	9.0	10.4	1.1	1.1	14.3	3.4	4.2
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	1.4	5.1	4.4	2.6	13.6	13.3	8.5	3.9	4.0	7.9	5.4	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	24.5	7.3	55.9	36.9	37.3	48.3	36.1	36.2	53.9	42.4	43.3
LnGrp LOS	D	C	A	E	D	D	D	D	D	D	D	D
Approach Vol, veh/h		977			1249			1029			732	
Approach Delay, s/veh		22.6			38.6			43.9			47.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	40.6	25.8	21.7	9.4	42.5	22.6	24.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	7.3	14.6	20.3	14.5	5.1	32.3	17.6	11.3
Green Ext Time (p_c), s	0.1	4.8	1.0	2.0	0.0	5.7	0.5	1.7

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	200	166	5	312	212	4
v/c Ratio	0.28	0.24	0.01	0.23	0.41	0.01
Control Delay	10.4	3.2	9.2	9.1	12.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	3.2	9.2	9.1	12.6	7.0
Queue Length 50th (ft)	20	0	1	15	21	0
Queue Length 95th (ft)	90	30	7	63	100	5
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1606	1352	1011	3052	1456	1304
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	0.12	0.12	0.00	0.10	0.15	0.00

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	184	153	5	287	195	4
Future Volume (vph)	184	153	5	287	195	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1533	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.63	1.00	0.95	1.00
Satd. Flow (perm)	1845	1533	1164	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	166	5	312	212	4
RTOR Reduction (vph)	0	100	0	0	0	3
Lane Group Flow (vph)	200	66	5	312	212	1
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	14.7	14.7	14.7	14.7	11.4	11.4
Effective Green, g (s)	14.7	14.7	14.7	14.7	11.4	11.4
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.31	0.31
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	735	610	463	1396	541	484
v/s Ratio Prot	c0.11			0.09		0.00
v/s Ratio Perm		0.04	0.00		c0.12	
v/c Ratio	0.27	0.11	0.01	0.22	0.39	0.00
Uniform Delay, d1	7.5	7.0	6.7	7.3	10.0	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.0	0.2	0.0
Delay (s)	7.6	7.0	6.7	7.4	10.2	8.8
Level of Service	A	A	A	A	B	A
Approach Delay (s)	7.3			7.4	10.2	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	10.8
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	184	153	5	287	195	4
Future Volume (veh/h)	184	153	5	287	195	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	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	200	166	5	312	212	4
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	620	522	536	1178	433	385
Arrive On Green	0.33	0.33	0.33	0.33	0.24	0.24
Sat Flow, veh/h	1856	1563	1005	3618	1767	1572
Grp Volume(v), veh/h	200	166	5	312	212	4
Grp Sat Flow(s),veh/h/ln	1856	1563	1005	1763	1767	1572
Q Serve(g_s), s	2.1	2.0	0.1	1.7	2.6	0.0
Cycle Q Clear(g_c), s	2.1	2.0	2.2	1.7	2.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	620	522	536	1178	433	385
V/C Ratio(X)	0.32	0.32	0.01	0.26	0.49	0.01
Avail Cap(c_a), veh/h	2502	2108	1555	4754	2039	1814
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	6.4	6.4	7.2	6.2	8.3	7.3
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.0	0.2	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.5	6.5	7.2	6.3	8.6	7.3
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	366			317	216	
Approach Delay, s/veh	6.5			6.3	8.6	
Approach LOS	A			A	A	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	14.0				14.0	11.7
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	4.1				4.2	4.6
Green Ext Time (p_c), s	0.9				1.3	0.3

Intersection Summary			
HCM 6th Ctrl Delay		6.9	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	0	24	1	3	4	40	161	0	0	79	18
Future Volume (vph)	15	0	24	1	3	4	40	161	0	0	79	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	26	1	3	4	43	175	0	0	86	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	42	8	218	106
Volume Left (vph)	16	1	43	0
Volume Right (vph)	26	4	0	20
Hadj (s)	-0.16	-0.14	0.18	0.02
Departure Headway (s)	4.5	4.5	4.3	4.3
Degree Utilization, x	0.05	0.01	0.26	0.13
Capacity (veh/h)	739	725	818	825
Control Delay (s)	7.7	7.6	8.8	7.9
Approach Delay (s)	7.7	7.6	8.8	7.9
Approach LOS	A	A	A	A

Intersection Summary					
Delay		8.4			
Level of Service		A			
Intersection Capacity Utilization		29.4%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	24	1	3	4	40	161	0	0	79	18
Future Vol, veh/h	15	0	24	1	3	4	40	161	0	0	79	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	16	0	26	1	3	4	43	175	0	0	86	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.6	8.8	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	38%	12%	0%
Vol Thru, %	80%	0%	38%	81%
Vol Right, %	0%	62%	50%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	39	8	97
LT Vol	40	15	1	0
Through Vol	161	0	3	79
RT Vol	0	24	4	18
Lane Flow Rate	218	42	9	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.258	0.053	0.011	0.122
Departure Headway (Hd)	4.246	4.477	4.536	4.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	839	805	793	845
Service Time	2.306	2.477	2.538	2.272
HCM Lane V/C Ratio	0.26	0.052	0.011	0.124
HCM Control Delay	8.8	7.7	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.2	0	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	10	20	0	9	18	40	61	0	7	30	92
Future Volume (Veh/h)	45	10	20	0	9	18	40	61	0	7	30	92
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	11	22	0	10	20	43	66	0	8	33	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	30			33			256	150	22	173	151	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			33			256	150	22	173	151	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			93	91	100	99	95	90
cM capacity (veh/h)	1570			1566			590	715	1049	713	714	1052

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	82	30	109	8	133
Volume Left	49	0	43	8	0
Volume Right	22	20	0	0	100
cSH	1570	1566	660	713	941
Volume to Capacity	0.03	0.00	0.17	0.01	0.14
Queue Length 95th (ft)	2	0	15	1	12
Control Delay (s)	4.5	0.0	11.5	10.1	9.5
Lane LOS	A		B	B	A
Approach Delay (s)	4.5	0.0	11.5	9.5	
Approach LOS			B	A	

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	33.6%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	10	20	0	9	18	40	61	0	7	30	92
Future Vol, veh/h	45	10	20	0	9	18	40	61	0	7	30	92
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	49	11	22	0	10	20	43	66	0	8	33	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	33	0	0	207	150	22	173	151	20
Stage 1	-	-	-	-	-	-	120	120	-	20	20	-
Stage 2	-	-	-	-	-	-	87	30	-	153	131	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1570	-	-	1566	-	-	746	738	1049	786	737	1052
Stage 1	-	-	-	-	-	-	880	793	-	994	875	-
Stage 2	-	-	-	-	-	-	916	866	-	845	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1566	-	-	636	714	1049	713	713	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	636	714	-	713	713	-
Stage 1	-	-	-	-	-	-	852	768	-	962	875	-
Stage 2	-	-	-	-	-	-	798	866	-	747	759	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	0	11.3	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	681	1570	-	-	1566	-	-	713	942
HCM Lane V/C Ratio	0.161	0.031	-	-	-	-	-	0.011	0.141
HCM Control Delay (s)	11.3	7.4	0	-	0	-	-	10.1	9.4
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0	0.5



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	38	70	5	1	6
Future Volume (Veh/h)	3	38	70	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	41	76	5	1	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	81				126	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81				126	78
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1510				865	979

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	44	81	8
Volume Left	3	0	1
Volume Right	0	5	7
cSH	1510	1700	963
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.5	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	8.8
Approach LOS			A

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		14.5%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	38	70	5	1	6
Future Vol, veh/h	3	38	70	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	41	76	5	1	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	81	0	-	0	126	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1510	-	-	-	866	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1510	-	-	-	864	979
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	973	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1510	-	-	-	961
HCM Lane V/C Ratio	0.002	-	-	-	0.008
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	257	1269	1286	109	111	231
v/c Ratio	0.67	0.38	0.82	0.14	0.50	0.36
Control Delay	47.5	0.3	28.1	3.7	52.7	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	0.3	28.1	3.7	52.7	19.5
Queue Length 50th (ft)	148	0	355	0	67	78
Queue Length 95th (ft)	300	0	548	30	149	175
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	518	3312	2895	1309	518	1006
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	0.38	0.44	0.08	0.21	0.23

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	254	1256	1273	108	110	229
Future Volume (vph)	254	1256	1273	108	110	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	257	1269	1286	109	111	231
RTOR Reduction (vph)	0	0	0	57	0	27
Lane Group Flow (vph)	257	1269	1286	52	111	204
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	23.5	99.9	47.8	47.8	13.6	41.1
Effective Green, g (s)	23.5	99.9	47.8	47.8	13.6	41.1
Actuated g/C Ratio	0.24	1.00	0.48	0.48	0.14	0.41
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	389	3312	1584	709	225	609
v/s Ratio Prot	c0.16	0.38	c0.39		0.07	0.14
v/s Ratio Perm				0.04		
v/c Ratio	0.66	0.38	0.81	0.07	0.49	0.33
Uniform Delay, d1	34.6	0.0	22.2	14.1	40.0	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.3	3.5	0.1	2.0	0.3
Delay (s)	38.8	0.3	25.7	14.1	42.0	20.4
Level of Service	D	A	C	B	D	C
Approach Delay (s)		6.8	24.8		27.4	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	68.8%	ICU Level of Service	C	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	196	971	241	52	887	127	225	264	193	305	312
v/c Ratio	0.52	0.75	0.34	0.19	0.79	0.22	0.55	0.33	0.51	0.74	0.58
Control Delay	55.9	36.3	4.9	55.8	40.9	6.2	55.0	35.6	55.9	53.7	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	36.3	4.9	55.8	40.9	6.2	55.0	35.6	55.9	53.7	14.3
Queue Length 50th (ft)	67	318	0	17	293	0	77	75	66	199	35
Queue Length 95th (ft)	138	527	58	47	486	46	154	144	136	381	146
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	554	2220	1052	554	2220	1022	615	1273	615	684	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.44	0.23	0.09	0.40	0.12	0.37	0.21	0.31	0.45	0.42

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	942	234	50	860	123	218	210	47	187	296	303
Future Volume (vph)	190	942	234	50	860	123	218	210	47	187	296	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1476	3273	3374	1489	3273	3274		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1476	3273	3374	1489	3273	3274		3273	1776	1509
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)	196	971	241	52	887	127	225	216	48	193	305	312
RTOR Reduction (vph)	0	0	148	0	0	83	0	11	0	0	0	192
Lane Group Flow (vph)	196	971	93	52	887	44	225	253	0	193	305	120
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.0	43.2	43.2	8.2	38.4	38.4	14.1	27.2		12.9	26.0	26.0
Effective Green, g (s)	13.0	43.2	43.2	8.2	38.4	38.4	14.1	27.2		12.9	26.0	26.0
Actuated g/C Ratio	0.12	0.39	0.39	0.07	0.34	0.34	0.13	0.24		0.12	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	379	1300	568	239	1155	510	411	794		376	411	349
v/s Ratio Prot	0.06	c0.29		0.02	c0.26		c0.07	0.08		0.06	c0.17	
v/s Ratio Perm			0.06			0.03						0.08
v/c Ratio	0.52	0.75	0.16	0.22	0.77	0.09	0.55	0.32		0.51	0.74	0.34
Uniform Delay, d1	46.6	29.7	22.6	48.9	32.9	25.0	46.0	34.8		46.6	39.9	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	2.4	0.1	0.2	3.1	0.1	1.5	0.2		1.2	7.1	0.6
Delay (s)	47.8	32.1	22.7	49.1	36.0	25.0	47.5	35.1		47.8	47.0	36.5
Level of Service	D	C	C	D	D	C	D	D		D	D	D
Approach Delay (s)		32.7			35.3			40.8			43.2	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	112.1	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	68.3%	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)	190	942	234	50	860	123	218	210	47	187	296	303
Future Volume (veh/h)	190	942	234	50	860	123	218	210	47	187	296	303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	196	971	241	52	887	127	225	216	48	193	305	312
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	277	1246	555	107	1195	532	311	716	156	276	443	375
Arrive On Green	0.08	0.37	0.37	0.03	0.35	0.35	0.09	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3319	3413	1520	3319	3413	1521	3319	2785	607	3319	1796	1522
Grp Volume(v), veh/h	196	971	241	52	887	127	225	131	133	193	305	312
Grp Sat Flow(s),veh/h/ln	1659	1706	1520	1659	1706	1521	1659	1706	1685	1659	1796	1522
Q Serve(g_s), s	5.2	23.0	7.1	1.4	20.8	5.4	6.0	5.6	5.8	5.2	14.0	17.7
Cycle Q Clear(g_c), s	5.2	23.0	7.1	1.4	20.8	5.4	6.0	5.6	5.8	5.2	14.0	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	277	1246	555	107	1195	532	311	438	433	276	443	375
V/C Ratio(X)	0.71	0.78	0.43	0.49	0.74	0.24	0.72	0.30	0.31	0.70	0.69	0.83
Avail Cap(c_a), veh/h	657	2626	1169	657	2626	1170	729	769	759	729	809	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	25.6	9.4	43.3	26.0	21.0	40.1	27.2	27.3	40.6	31.1	32.5
Incr Delay (d2), s/veh	3.3	1.1	0.5	1.3	0.9	0.2	3.2	0.4	0.4	3.2	1.9	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	8.4	3.5	0.6	7.6	1.8	2.5	2.2	2.3	2.2	6.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	26.7	9.9	44.6	26.9	21.2	43.3	27.6	27.7	43.8	33.0	37.3
LnGrp LOS	D	C	A	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		1408			1066			489			810	
Approach Delay, s/veh		26.2			27.1			34.8			37.3	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	40.5	12.5	27.7	11.6	39.1	11.6	28.7
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.4	25.0	8.0	19.7	7.2	22.8	7.2	7.8
Green Ext Time (p_c), s	0.0	8.2	0.6	2.7	0.4	6.8	0.5	1.5

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1074	102	309	1015	0	18	0	380	0	0	0
Future Volume (Veh/h)	0	1074	102	309	1015	0	18	0	380	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1107	105	319	1046	0	19	0	392	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1047			1212			2320	2844	606	2238	2897	524
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047			1212			2320	2844	606	2238	2897	524
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			41			0	100	8	100	100	100
cM capacity (veh/h)	631			544			10	6	428	1	6	485

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	738	474	319	697	349	411	0
Volume Left	0	0	0	319	0	0	19	0
Volume Right	0	0	105	0	0	0	392	0
cSH	1700	1700	1700	544	1700	1700	156	1700
Volume to Capacity	0.00	0.43	0.28	0.59	0.41	0.21	2.64	0.00
Queue Length 95th (ft)	0	0	0	94	0	0	904	0
Control Delay (s)	0.0	0.0	0.0	20.6	0.0	0.0	799.7	0.0
Lane LOS				C			F	A
Approach Delay (s)	0.0			4.8			799.7	0.0
Approach LOS							F	A

Intersection Summary					
Average Delay		112.2			
Intersection Capacity Utilization		63.4%	ICU Level of Service		B
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	16.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1074	102	309	1015	0	18	0	380	0	0	0
Future Vol, veh/h	0	1074	102	309	1015	0	18	0	380	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	1107	105	319	1046	0	19	0	392	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1047	0	0	1212	0	0	2321	2845	606	2239	2897	524
Stage 1	-	-	-	-	-	-	1160	1160	-	1685	1685	-
Stage 2	-	-	-	-	-	-	1161	1685	-	554	1212	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	631	-	-	544	-	-	19	16	428	22	14	485
Stage 1	-	-	-	-	-	-	200	258	-	93	141	-
Stage 2	-	-	-	-	-	-	199	141	-	472	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	630	-	-	544	-	-	~ 10	7	428	1	6	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	7	-	1	6	-
Stage 1	-	-	-	-	-	-	200	258	-	93	58	-
Stage 2	-	-	-	-	-	-	82	58	-	40	243	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.8	105.2	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	10	428	630	-	-	544	-	-	-	-
HCM Lane V/C Ratio	1.856	0.915	-	-	-	0.586	-	-	-	-
HCM Control Delay (s)	$ 1138.6	56.2	0	-	-	20.5	-	-	0	0
HCM Lane LOS	F	F	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	3.2	10.1	0	-	-	3.7	-	-	-	-

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	279	1175	970	13	11	355
Future Volume (Veh/h)	279	1175	970	13	11	355
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	297	1250	1032	14	12	378
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1046				2251	516
vC1, stage 1 conf vol					1032	
vC2, stage 2 conf vol					1219	
vCu, unblocked vol	1046				2251	516
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	52				89	22
cM capacity (veh/h)	615				105	483

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	297	625	625	516	516	14	390
Volume Left	297	0	0	0	0	0	12
Volume Right	0	0	0	0	0	14	378
cSH	615	1700	1700	1700	1700	1700	499
Volume to Capacity	0.48	0.37	0.37	0.30	0.30	0.01	0.78
Queue Length 95th (ft)	66	0	0	0	0	0	177
Control Delay (s)	16.2	0.0	0.0	0.0	0.0	0.0	34.6
Lane LOS	C						D
Approach Delay (s)	3.1			0.0			34.6
Approach LOS							D

Intersection Summary			
Average Delay		6.1	
Intersection Capacity Utilization		55.6%	ICU Level of Service B
Analysis Period (min)		15	

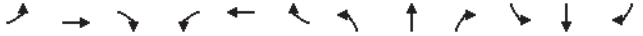
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	279	1175	970	13	11	355
Future Vol, veh/h	279	1175	970	13	11	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	297	1250	1032	14	12	378

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1046	0	-	0	2251	516
Stage 1	-	-	-	-	1032	-
Stage 2	-	-	-	-	1219	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	615	-	-	-	32	483
Stage 1	-	-	-	-	287	-
Stage 2	-	-	-	-	227	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	615	-	-	-	17	483
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	227	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	34.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	615	-	-	-	116	483
HCM Lane V/C Ratio	0.483	-	-	-	0.101	0.782
HCM Control Delay (s)	16.2	-	-	-	39.5	34.3
HCM Lane LOS	C	-	-	-	E	D
HCM 95th %tile Q(veh)	2.6	-	-	-	0.3	7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1175	11	1	967	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	1175	11	1	967	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1211	11	1	997	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	997			1222			1712	2210	606	1606	2221	498
vC1, stage 1 conf vol							1211	1211		999	999	
vC2, stage 2 conf vol							502	999		608	1222	
vCu, unblocked vol	997			1222			1712	2210	606	1606	2221	498
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			89	100	99	100	100	100
cM capacity (veh/h)	632			514			167	182	417	211	180	492

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	606	606	11	1	665	332	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	11	0	0	0	4	1
cSH	1700	1700	1700	1700	514	1700	1700	204	492
Volume to Capacity	0.00	0.36	0.36	0.01	0.00	0.39	0.20	0.11	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	9	0
Control Delay (s)	0.0	0.0	0.0	0.0	12.0	0.0	0.0	26.4	12.3
Lane LOS					B			D	B
Approach Delay (s)	0.0				0.0			26.4	12.3
Approach LOS								D	B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		49.1%	ICU Level of Service
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1175	11	1	967	0	17	0	4	0	0	1
Future Vol, veh/h	0	1175	11	1	967	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1211	11	1	997	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	997	0	0	1222	0	0	1712	2210	606	1605	2221	499
Stage 1	-	-	-	-	-	-	1211	1211	-	999	999	-
Stage 2	-	-	-	-	-	-	501	999	-	606	1222	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	632	-	-	514	-	-	53	38	416	64	38	491
Stage 1	-	-	-	-	-	-	178	234	-	243	298	-
Stage 2	-	-	-	-	-	-	496	298	-	427	231	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	632	-	-	514	-	-	53	38	416	63	38	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	176	-	206	175	-
Stage 1	-	-	-	-	-	-	178	234	-	243	297	-
Stage 2	-	-	-	-	-	-	494	297	-	423	231	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	26.8	12.3
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	416	632	-	-	514	-	-	491
HCM Lane V/C Ratio	0.108	0.01	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	29.9	13.7	0	-	-	12	-	-	12.3
HCM Lane LOS	D	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.4	0	0	-	-	0	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	69	235	64	290	204	109	49	245	279	34	395	95
Future Volume (veh/h)	69	235	64	290	204	109	49	245	279	34	395	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	74	253	69	312	219	117	53	263	300	37	425	102
Approach Volume (veh/h)		396			648			616			564	
Crossing Volume (veh/h)		774			390			364			584	
High Capacity (veh/h)		749			1019			1040			873	
High v/c (veh/h)		0.53			0.64			0.59			0.65	
Low Capacity (veh/h)		592			831			850			701	
Low v/c (veh/h)		0.67			0.78			0.73			0.80	

Intersection Summary					
Maximum v/c High		0.65			
Maximum v/c Low		0.80			
Intersection Capacity Utilization		109.1%	ICU Level of Service		H

Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	396	648	616	564
Demand Flow Rate, veh/h	401	654	623	569
Vehicles Circulating, veh/h	781	395	368	590
Vehicles Exiting, veh/h	378	596	814	459
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	19.1	16.5	14.2	21.7
Approach LOS	C	C	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	401	654	623	569
Cap Entry Lane, veh/h	622	922	948	756
Entry HV Adj Factor	0.989	0.991	0.989	0.991
Flow Entry, veh/h	396	648	616	564
Cap Entry, veh/h	615	913	938	749
V/C Ratio	0.645	0.709	0.657	0.753
Control Delay, s/veh	19.1	16.5	14.2	21.7
LOS	C	C	B	C
95th %tile Queue, veh	5	6	5	7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	87	11	2	65	0	11	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	65			98			164	164	92	165	169	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			98			164	164	92	165	169	65
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1524			1483			796	724	959	792	719	993

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	67	13	0
Volume Left	1	2	11	0
Volume Right	11	0	1	0
cSH	1524	1483	800	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.2%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	80	10	2	60	0	10	1	1	0	0	0
Future Vol, veh/h	1	80	10	2	60	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	87	11	2	65	0	11	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	98	0	0	164	164	93	165	169	65
Stage 1	-	-	-	-	-	-	95	95	-	69	69	-
Stage 2	-	-	-	-	-	-	69	69	-	96	100	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1524	-	-	1483	-	-	796	725	959	795	720	993
Stage 1	-	-	-	-	-	-	907	812	-	936	834	-
Stage 2	-	-	-	-	-	-	936	834	-	906	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1483	-	-	794	724	959	792	719	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	724	-	792	719	-
Stage 1	-	-	-	-	-	-	906	811	-	935	833	-
Stage 2	-	-	-	-	-	-	935	833	-	903	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1524	-	-	1483	-	-	-
HCM Lane V/C Ratio	0.016	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	481	255	437	627	6	47	281	335	341	110
v/c Ratio	0.19	0.66	0.69	0.54	0.61	0.03	0.25	0.68	0.73	0.73	0.21
Control Delay	53.0	39.0	45.7	24.6	4.8	43.3	45.7	14.7	41.7	41.6	4.2
Queue Delay	0.0	0.0	0.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	39.0	45.7	25.2	5.2	43.3	45.7	14.7	41.7	41.6	4.2
Queue Length 50th (ft)	11	128	132	161	0	3	25	0	175	178	0
Queue Length 95th (ft)	44	234	268	372	78	17	69	80	357	364	28
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	113	1041	567	1030	1136	396	417	573	661	671	689
Starvation Cap Reductn	0	0	9	291	138	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.46	0.46	0.59	0.63	0.02	0.11	0.49	0.51	0.51	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	421	31	240	411	589	6	44	264	552	84	103
Future Volume (vph)	20	421	31	240	411	589	6	44	264	552	84	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3531		1787	1881	1558	1787	1881	1599	1698	1723	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3531		1787	1881	1558	1787	1881	1599	1698	1723	1561
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)	21	448	33	255	437	627	6	47	281	587	89	110
RTOR Reduction (vph)	0	5	0	0	0	363	0	0	253	0	0	81
Lane Group Flow (vph)	21	476	0	255	437	264	6	47	28	335	341	29
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	21.6		18.4	38.3	38.3	8.9	8.9	8.9	24.0	24.0	24.0
Effective Green, g (s)	1.7	21.6		18.4	38.3	38.3	8.9	8.9	8.9	24.0	24.0	24.0
Actuated g/C Ratio	0.02	0.24		0.20	0.42	0.42	0.10	0.10	0.10	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	839		361	792	656	174	184	156	448	454	412
v/s Ratio Prot	0.01	0.13		c0.14	c0.23		0.00	c0.02		0.20	c0.20	
v/s Ratio Perm						0.17			0.02			0.02
v/c Ratio	0.64	0.57		0.71	0.55	0.40	0.03	0.26	0.18	0.75	0.75	0.07
Uniform Delay, d1	44.3	30.5		33.7	19.8	18.3	37.1	37.9	37.6	30.7	30.7	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.9	0.9		6.2	0.8	0.4	0.1	0.7	0.5	6.7	6.9	0.1
Delay (s)	78.1	31.4		39.9	20.7	18.7	37.2	38.7	38.2	37.4	37.6	25.2
Level of Service	E	C		D	C	B	D	D	D	D	D	C
Approach Delay (s)		33.4			23.5			38.2			35.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	62.1%	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	421	31	240	411	589	6	44	264	552	84	103
Future Volume (veh/h)	20	421	31	240	411	589	6	44	264	552	84	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	448	33	255	437	627	6	47	281	651	0	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	946	69	291	792	655	312	328	278	771	0	341
Arrive On Green	0.02	0.28	0.28	0.16	0.42	0.42	0.17	0.17	0.17	0.21	0.00	0.21
Sat Flow, veh/h	1795	3381	248	1795	1885	1559	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	21	237	244	255	437	627	6	47	281	651	0	110
Grp Sat Flow(s),veh/h/ln	1795	1791	1838	1795	1885	1559	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	1.2	11.7	11.7	14.7	18.6	41.5	0.3	2.2	18.5	18.5	0.0	6.2
Cycle Q Clear(g_c), s	1.2	11.7	11.7	14.7	18.6	41.5	0.3	2.2	18.5	18.5	0.0	6.2
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	501	514	291	792	655	312	328	278	771	0	341
V/C Ratio(X)	0.54	0.47	0.48	0.88	0.55	0.96	0.02	0.14	1.01	0.84	0.00	0.32
Avail Cap(c_a), veh/h	89	501	514	447	810	670	312	328	278	1097	0	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	31.8	31.8	43.5	23.3	29.9	36.4	37.2	43.9	40.1	0.0	35.2
Incr Delay (d2), s/veh	11.0	0.7	0.7	11.7	0.8	24.3	0.0	0.2	56.9	4.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.2	5.3	7.4	8.3	19.4	0.1	1.0	11.5	8.5	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	32.5	32.5	55.2	24.0	54.2	36.4	37.4	100.8	44.4	0.0	35.8
LnGrp LOS	E	C	C	E	C	D	D	D	F	D	A	D
Approach Vol, veh/h		502			1319			334			761	
Approach Delay, s/veh		33.7			44.4			90.7			43.1	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.8	34.3		27.3	6.8	49.2		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	16.7	13.7		20.5	3.2	43.5		20.5				
Green Ext Time (p_c), s	0.5	2.2		2.3	0.0	1.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			47.5									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	1239	20	1030	255	276	30	447	8	27
v/c Ratio	0.40	0.66	0.14	0.68	0.33	0.65	0.05	0.76	0.02	0.04
Control Delay	44.3	17.6	46.7	23.2	7.7	34.0	22.3	26.7	22.1	0.1
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	18.2	46.7	23.2	7.7	34.0	22.3	26.7	22.1	0.1
Queue Length 50th (ft)	45	192	10	222	23	124	11	140	3	0
Queue Length 95th (ft)	109	435	38	382	88	233	33	285	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	324	2329	142	2102	994	758	1024	938	755	963
Starvation Cap Reductn	0	616	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	0.28	0.72	0.14	0.49	0.26	0.36	0.03	0.48	0.01	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1122	31	19	958	237	257	28	416	7	0	25
Future Volume (vph)	85	1122	31	19	958	237	257	28	416	7	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3557		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3557		1787	3574	1564	1391	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	91	1206	33	20	1030	255	276	30	447	8	0	27
RTOR Reduction (vph)	0	1	0	0	0	101	0	0	105	0	19	0
Lane Group Flow (vph)	91	1238	0	20	1030	154	276	30	342	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.5	41.1		1.7	35.3	35.3	23.9	23.9	23.9	23.9	23.9	
Effective Green, g (s)	7.5	41.1		1.7	35.3	35.3	23.9	23.9	23.9	23.9	23.9	
Actuated g/C Ratio	0.09	0.51		0.02	0.44	0.44	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	167	1822		37	1573	688	414	560	476	413	476	
v/s Ratio Prot	c0.05	c0.35		0.01	0.29			0.02			0.01	
v/s Ratio Perm						0.10	0.20		c0.21	0.01		
v/c Ratio	0.54	0.68		0.54	0.65	0.22	0.67	0.05	0.72	0.02	0.02	
Uniform Delay, d1	34.7	14.6		38.9	17.7	13.9	24.7	20.1	25.2	19.9	19.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.6	1.0		15.1	1.0	0.2	4.0	0.0	5.2	0.0	0.0	
Delay (s)	38.3	15.6		54.0	18.6	14.1	28.7	20.1	30.3	19.9	19.9	
Level of Service	D	B		D	B	B	C	C	C	B	B	
Approach Delay (s)		17.2			18.3			29.3			19.9	
Approach LOS		B			B			C			B	

Intersection Summary				
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	73.2%	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)	85	1122	31	19	958	237	257	28	416	7	0	25
Future Volume (veh/h)	85	1122	31	19	958	237	257	28	416	7	0	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	91	1206	33	20	1030	0	276	30	447	8	0	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	119	1616	44	41	1472		544	616	522	397	0	522
Arrive On Green	0.07	0.45	0.45	0.02	0.41	0.00	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1795	3558	97	1795	3582	1598	1394	1885	1598	925	0	1598
Grp Volume(v), veh/h	91	607	632	20	1030	0	276	30	447	8	0	27
Grp Sat Flow(s),veh/h/ln	1795	1791	1865	1795	1791	1598	1394	1885	1598	925	0	1598
Q Serve(g_s), s	3.4	19.3	19.3	0.8	16.4	0.0	11.6	0.7	18.0	0.4	0.0	0.8
Cycle Q Clear(g_c), s	3.4	19.3	19.3	0.8	16.4	0.0	12.4	0.7	18.0	1.2	0.0	0.8
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	813	847	41	1472		544	616	522	397	0	522
V/C Ratio(X)	0.77	0.75	0.75	0.48	0.70		0.51	0.05	0.86	0.02	0.00	0.05
Avail Cap(c_a), veh/h	326	1261	1313	143	2158		848	1026	870	598	0	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	15.5	15.5	33.2	16.8	0.0	20.1	15.9	21.7	16.3	0.0	15.9
Incr Delay (d2), s/veh	9.8	1.4	1.3	8.4	0.6	0.0	0.7	0.0	4.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	7.3	7.6	0.4	6.2	0.0	3.5	0.3	6.7	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	16.9	16.9	41.7	17.4	0.0	20.9	15.9	26.2	16.3	0.0	15.9
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		1330			1050	A		753			35	
Approach Delay, s/veh		18.6			17.9			23.8			16.0	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	35.8		27.0	9.1	32.8		27.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.8	21.3		3.2	5.4	18.4		20.0				
Green Ext Time (p_c), s	0.0	10.0		0.1	0.1	8.1		2.5				

Intersection Summary				
HCM 6th Ctrl Delay		19.6		
HCM 6th LOS		B		

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	415	1211	63	730	282	232	67	64	577
v/c Ratio	0.68	0.77	0.40	0.62	0.62	0.27	0.14	0.41	0.76
Control Delay	46.6	26.2	56.1	29.8	50.4	35.2	0.6	57.2	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	26.2	56.1	29.8	50.4	35.2	0.6	57.2	28.0
Queue Length 50th (ft)	132	332	40	201	90	67	0	40	98
Queue Length 95th (ft)	211	478	94	300	156	114	0	95	177
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	809	2003	203	1630	545	1098	585	188	1031
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.60	0.31	0.45	0.52	0.21	0.11	0.34	0.56

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	394	797	353	60	620	73	268	220	64	61	222	326
Future Volume (vph)	394	797	353	60	620	73	268	220	64	61	222	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3395		1787	3513		3467	3574	1599	1787	3230	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3395		1787	3513		3467	3574	1599	1787	3230	
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)	415	839	372	63	653	77	282	232	67	64	234	343
RTOR Reduction (vph)	0	42	0	0	8	0	0	0	51	0	229	0
Lane Group Flow (vph)	415	1169	0	63	722	0	282	232	16	64	348	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	17.1	44.3		6.9	34.1		12.8	23.5	23.5	6.7	17.4	
Effective Green, g (s)	17.1	44.3		6.9	34.1		12.8	23.5	23.5	6.7	17.4	
Actuated g/C Ratio	0.17	0.45		0.07	0.34		0.13	0.24	0.24	0.07	0.18	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	596	1513		124	1205		446	844	378	120	565	
v/s Ratio Prot	c0.12	c0.34		0.04	0.21		c0.08	0.06		0.04	c0.11	
v/s Ratio Perm									0.01			
v/c Ratio	0.70	0.77		0.51	0.60		0.63	0.27	0.04	0.53	0.62	
Uniform Delay, d1	38.7	23.3		44.6	27.0		41.1	31.0	29.3	44.8	37.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	2.5		3.3	0.8		2.9	0.2	0.0	4.5	2.0	
Delay (s)	42.2	25.8		47.9	27.8		44.0	31.2	29.3	49.3	39.9	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		30.0			29.4			37.2			40.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	76.9%	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)	394	797	353	60	620	73	268	220	64	61	222	326
Future Volume (veh/h)	394	797	353	60	620	73	268	220	64	61	222	326
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	415	839	0	63	653	77	282	232	67	64	234	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	581	1463		97	954	112	416	650	290	98	417	
Arrive On Green	0.17	0.41	0.00	0.05	0.30	0.30	0.12	0.18	0.18	0.05	0.12	0.00
Sat Flow, veh/h	3483	3676	0	1795	3222	379	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	415	839	0	63	363	367	282	232	67	64	234	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1811	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	6.7	10.8	0.0	2.1	10.7	10.7	4.6	3.4	2.1	2.1	3.7	0.0
Cycle Q Clear(g_c), s	6.7	10.8	0.0	2.1	10.7	10.7	4.6	3.4	2.1	2.1	3.7	0.0
Prop In Lane	1.00		0.00	1.00		0.21	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	581	1463		97	530	536	416	650	290	98	417	
V/C Ratio(X)	0.71	0.57		0.65	0.68	0.69	0.68	0.36	0.23	0.65	0.56	
Avail Cap(c_a), veh/h	1253	3206		315	1273	1287	845	1696	756	291	1408	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.6	13.7	0.0	27.7	18.6	18.6	25.2	21.4	20.9	27.7	25.0	0.0
Incr Delay (d2), s/veh	1.7	0.4	0.0	7.0	1.6	1.6	1.9	0.3	0.4	7.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.9	0.0	1.0	4.1	4.2	1.8	1.3	0.7	1.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	14.0	0.0	34.7	20.1	20.1	27.1	21.7	21.3	34.8	26.1	0.0
LnGrp LOS	C	B		C	C	C	C	C	C	C	C	
Approach Vol, veh/h		1254	A		793			581			298	A
Approach Delay, s/veh		17.7			21.3			24.3			28.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	28.9	11.6	11.5	14.5	22.2	7.8	15.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	4.1	12.8	6.6	5.7	8.7	12.7	4.1	5.4
Green Ext Time (p_c), s	0.0	7.2	0.6	1.1	1.2	4.8	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	429	893	554	73
v/c Ratio	0.23	0.24	0.64	0.56	0.15
Control Delay	38.3	11.1	17.3	27.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	11.1	17.3	27.1	9.1
Queue Length 50th (ft)	19	34	103	89	0
Queue Length 95th (ft)	88	143	328	272	40
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	342	2955	2378	1709	815
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	0.17	0.15	0.38	0.32	0.09

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	416	451	415	537	71
Future Volume (vph)	56	416	451	415	537	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3292		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3292		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	429	465	428	554	73
RTOR Reduction (vph)	0	0	131	0	0	54
Lane Group Flow (vph)	58	429	762	0	554	19
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	4.4	33.6	24.7		18.1	18.1
Effective Green, g (s)	4.4	33.6	24.7		18.1	18.1
Actuated g/C Ratio	0.06	0.49	0.36		0.27	0.27
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	115	1763	1194		921	419
v/s Ratio Prot	c0.03	0.12	c0.23			
v/s Ratio Perm					c0.16	0.01
v/c Ratio	0.50	0.24	0.64		0.60	0.05
Uniform Delay, d1	30.8	9.9	18.0		21.8	18.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.1	1.1		1.1	0.0
Delay (s)	34.2	10.0	19.1		23.0	18.6
Level of Service	C	B	B		C	B
Approach Delay (s)		12.9	19.1		22.5	
Approach LOS		B	B		C	

Intersection Summary				
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	56.7%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	199	288	329	95	305	263	212	529	185	706
v/c Ratio	0.68	0.58	0.50	0.47	0.48	0.53	0.71	0.58	0.62	0.78
Control Delay	46.6	33.1	6.2	43.9	32.4	8.3	48.2	29.3	42.3	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	33.1	6.2	43.9	32.4	8.3	48.2	29.3	42.3	33.4
Queue Length 50th (ft)	99	140	0	48	77	0	106	120	92	168
Queue Length 95th (ft)	#200	225	63	100	116	61	#219	194	165	253
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	340	593	720	246	939	608	340	1002	387	1065
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	0.59	0.49	0.46	0.39	0.32	0.43	0.62	0.53	0.48	0.66

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)	187	271	309	89	287	247	199	444	54	174	518	146
Future Volume (vph)	187	271	309	89	287	247	199	444	54	174	518	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1572	1787	3574	1578	1787	3516		1787	3438	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1572	1787	3574	1578	1787	3516		1787	3438	
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)	199	288	329	95	305	263	212	472	57	185	551	155
RTOR Reduction (vph)	0	0	243	0	0	212	0	10	0	0	28	0
Lane Group Flow (vph)	199	288	86	95	305	51	212	519	0	185	678	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.8	20.7	20.7	7.3	15.2	15.2	13.0	20.1		13.0	20.1	
Effective Green, g (s)	12.8	20.7	20.7	7.3	15.2	15.2	13.0	20.1		13.0	20.1	
Actuated g/C Ratio	0.16	0.26	0.26	0.09	0.19	0.19	0.16	0.25		0.16	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	289	492	411	164	686	303	293	893		293	873	
v/s Ratio Prot	c0.11	c0.15		0.05	0.09		c0.12	0.15		0.10	c0.20	
v/s Ratio Perm			0.05			0.03						
v/c Ratio	0.69	0.59	0.21	0.58	0.44	0.17	0.72	0.58		0.63	0.78	
Uniform Delay, d1	31.3	25.5	22.8	34.4	28.2	26.7	31.3	25.8		30.8	27.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.7	1.8	0.3	4.9	0.5	0.3	8.5	1.0		4.4	4.4	
Delay (s)	37.9	27.2	23.1	39.3	28.7	26.9	39.9	26.8		35.2	31.8	
Level of Service	D	C	C	D	C	C	D	C		D	C	
Approach Delay (s)		28.2			29.5			30.5			32.5	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	64.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	271	309	89	287	247	199	444	54	174	518	146
Future Volume (veh/h)	187	271	309	89	287	247	199	444	54	174	518	146
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	199	288	329	95	305	263	212	472	57	185	551	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	245	524	442	123	754	336	258	867	104	231	701	196
Arrive On Green	0.14	0.28	0.28	0.07	0.21	0.21	0.14	0.27	0.27	0.13	0.25	0.25
Sat Flow, veh/h	1795	1885	1591	1795	3582	1595	1795	3219	387	1795	2754	772
Grp Volume(v), veh/h	199	288	329	95	305	263	212	262	267	185	358	348
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1595	1795	1791	1816	1795	1791	1735
Q Serve(g_s), s	7.6	9.2	13.3	3.7	5.2	11.0	8.1	8.8	8.9	7.1	13.1	13.2
Cycle Q Clear(g_c), s	7.6	9.2	13.3	3.7	5.2	11.0	8.1	8.8	8.9	7.1	13.1	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.44
Lane Grp Cap(c), veh/h	245	524	442	123	754	336	258	482	489	231	455	441
V/C Ratio(X)	0.81	0.55	0.74	0.77	0.40	0.78	0.82	0.54	0.55	0.80	0.78	0.79
Avail Cap(c_a), veh/h	369	641	541	267	1014	452	369	533	540	419	583	565
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	29.6	21.7	23.2	32.3	24.1	26.3	29.3	22.1	22.1	29.9	24.5	24.6
Incr Delay (d2), s/veh	8.1	0.9	4.4	9.6	0.3	6.3	9.5	1.0	1.0	6.3	5.4	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.8	5.0	1.8	2.1	4.4	4.0	3.6	3.6	3.3	5.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	22.6	27.6	42.0	24.4	32.6	38.9	23.0	23.1	36.2	29.9	30.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		816			663			741			891	
Approach Delay, s/veh		28.3			30.2			27.6			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	23.5	9.4	24.1	14.7	22.5	14.1	19.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	9.1	10.9	5.7	15.3	10.1	15.2	9.6	13.0
Green Ext Time (p_c), s	0.3	2.2	0.1	1.9	0.2	2.6	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	56	564	38	85	741
Future Volume (Veh/h)	48	56	564	38	85	741
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	52	60	606	41	91	797
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1608	628			649	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1608	628			649	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	50	88			90	
cM capacity (veh/h)	105	483			940	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	112	647	91	797
Volume Left	52	0	91	0
Volume Right	60	41	0	0
cSH	180	1700	940	1700
Volume to Capacity	0.62	0.38	0.10	0.47
Queue Length 95th (ft)	87	0	8	0
Control Delay (s)	53.1	0.0	9.2	0.0
Lane LOS	F		A	
Approach Delay (s)	53.1	0.0	0.9	
Approach LOS	F			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	56	564	38	85	741
Future Vol, veh/h	48	56	564	38	85	741
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	52	60	606	41	91	797

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1608	629	0	0	649	0
Stage 1	629	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	116	484	-	-	942	-
Stage 1	533	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	105	483	-	-	940	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	330	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	52.6	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	181	940	-
HCM Lane V/C Ratio	-	-	0.618	0.097	-
HCM Control Delay (s)	-	-	52.6	9.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	3.5	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	4	13	4	1	38	21	391	10	48	499	128
Future Volume (Veh/h)	104	4	13	4	1	38	21	391	10	48	499	128
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	105	4	13	4	1	38	21	395	10	48	504	129
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1084	1052	509	1057	1176	404	638			405		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1084	1052	509	1057	1176	404	638			405		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	39	98	98	98	99	94	98			96		
cM capacity (veh/h)	172	212	563	186	179	646	946			1159		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	122	43	21	405	48	504	129
Volume Left	105	4	21	0	48	0	0
Volume Right	13	38	0	10	0	0	129
cSH	187	501	946	1700	1159	1700	1700
Volume to Capacity	0.65	0.09	0.02	0.24	0.04	0.30	0.08
Queue Length 95th (ft)	96	7	2	0	3	0	0
Control Delay (s)	54.5	12.9	8.9	0.0	8.2	0.0	0.0
Lane LOS	F	B	A		A		
Approach Delay (s)	54.5	12.9	0.4		0.6		
Approach LOS	F	B					

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	53.0%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	4	13	4	1	38	21	391	10	48	499	128
Future Vol, veh/h	104	4	13	4	1	38	21	391	10	48	499	128
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	105	4	13	4	1	38	21	395	10	48	504	129

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1071	1052	509	1115	1176	404	638	0	0	405	0	0
Stage 1	605	605	-	442	442	-	-	-	-	-	-	-
Stage 2	466	447	-	673	734	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	199	227	566	186	192	649	951	-	-	1159	-	-
Stage 1	486	489	-	596	578	-	-	-	-	-	-	-
Stage 2	579	575	-	446	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	212	563	170	179	647	946	-	-	1159	-	-
Mov Cap-2 Maneuver	176	212	-	170	179	-	-	-	-	-	-	-
Stage 1	473	467	-	583	565	-	-	-	-	-	-	-
Stage 2	530	562	-	414	407	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	52.3	13.1	0.4	0.6
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	191	489	1159	-	-
HCM Lane V/C Ratio	0.022	-	-	0.64	0.089	0.042	-	-
HCM Control Delay (s)	8.9	-	-	52.3	13.1	8.2	-	-
HCM Lane LOS	A	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.7	0.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	9	135	3	165	11	248	209	258	246	12
Future Volume (vph)	8	2	9	135	3	165	11	248	209	258	246	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	10	145	3	177	12	267	225	277	265	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	21	325	279	225	410	146
Volume Left (vph)	9	145	12	0	277	0
Volume Right (vph)	10	177	0	225	0	13
Hadj (s)	-0.18	-0.22	0.04	-0.68	0.36	-0.05
Departure Headway (s)	7.3	6.2	6.6	5.9	6.8	6.4
Degree Utilization, x	0.04	0.56	0.51	0.37	0.78	0.26
Capacity (veh/h)	424	550	517	587	510	545
Control Delay (s)	10.6	16.8	15.2	11.1	28.3	10.4
Approach Delay (s)	10.6	16.8	13.4		23.6	
Approach LOS	B	C	B		C	

Intersection Summary				
Delay	18.2			
Level of Service	C			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	9	135	3	165	0	11	248	209	258	246
Future Vol, veh/h	8	2	9	135	3	165	0	11	248	209	258	246
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	10	145	3	177	0	12	267	225	277	265
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.8	17.2	14.3	24.2
HCM LOS	B	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	42%	45%	68%	0%
Vol Thru, %	96%	0%	11%	1%	32%	91%
Vol Right, %	0%	100%	47%	54%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	259	209	19	303	381	135
LT Vol	11	0	8	135	258	0
Through Vol	248	0	2	3	123	123
RT Vol	0	209	9	165	0	12
Lane Flow Rate	278	225	20	326	410	145
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.509	0.365	0.042	0.564	0.769	0.256
Departure Headway (Hd)	6.576	5.839	7.429	6.232	6.759	6.35
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	611	485	577	533	562
Service Time	4.363	3.626	5.429	4.312	4.542	4.133
HCM Lane V/C Ratio	0.509	0.368	0.041	0.565	0.769	0.258
HCM Control Delay	16.1	12	10.8	17.2	28.8	11.3
HCM Lane LOS	C	B	B	C	D	B
HCM 95th-tile Q	2.9	1.7	0.1	3.5	6.9	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	268	247	148	200	198	192
Future Volume (Veh/h)	268	247	148	200	198	192
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	276	255	153	206	204	198
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	613	204	402			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613	204	402			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	25	68	87			
cM capacity (veh/h)	370	806	1160			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	531	153	103	103	204	198
Volume Left	276	153	0	0	0	0
Volume Right	255	0	0	0	0	198
cSH	712	1160	1700	1700	1700	1700
Volume to Capacity	0.75	0.13	0.06	0.06	0.12	0.12
Queue Length 95th (ft)	169	11	0	0	0	0
Control Delay (s)	25.4	8.6	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	25.4	3.7			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		11.5	
Intersection Capacity Utilization		43.5%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	268	247	148	200	198	192
Future Vol, veh/h	268	247	148	200	198	192
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	276	255	153	206	204	198

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	613	204	402	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	442	839	1161	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	384	839	1161	-	-	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.6	3.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1161	-	384	839	-	-
HCM Lane V/C Ratio	0.131	-	0.72	0.304	-	-
HCM Control Delay (s)	8.6	-	35	11.2	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.5	-	5.5	1.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	109	0	168	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	109	0	168	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	118	0	183	15	0	0	0	0	308	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	426	326	326	444	345	0	345			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426	326	326	444	345	0	345			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	84	100	68	99	100			100		
cM capacity (veh/h)	403	593	717	439	580	1088	1220			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	147	198	345
Volume Left	29	0	0
Volume Right	118	15	37
cSH	621	614	1700
Volume to Capacity	0.24	0.32	0.20
Queue Length 95th (ft)	23	35	0
Control Delay (s)	12.6	13.6	0.0
Lane LOS	B	B	
Approach Delay (s)	12.6	13.6	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		6.6			
Intersection Capacity Utilization	44.0%	ICU Level of Service		A	
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	109	0	168	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	109	0	168	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	29	0	118	0	183	15	0	0	0	0	308	37

Major/Minor	Minor2			Minor1					Major2		
Conflicting Flow All	426	327	327	386	345	0			-	-	0
Stage 1	327	327	-	0	0	-			-	-	-
Stage 2	99	0	-	386	345	-			-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21			-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-			-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309			-	-	-
Pot Cap-1 Maneuver	540	593	717	574	580	-			0	-	-
Stage 1	688	650	-	-	-	-			0	-	-
Stage 2	-	-	-	639	638	-			0	-	-
Platoon blocked, %										-	-
Mov Cap-1 Maneuver	-	593	717	479	580	-			-	-	-
Mov Cap-2 Maneuver	-	593	-	479	580	-			-	-	-
Stage 1	688	650	-	-	-	-			-	-	-
Stage 2	-	-	-	533	638	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	580	-	-	-
HCM Lane V/C Ratio	-	0.315	-	-	-
HCM Control Delay (s)	-	14	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	1.3	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	413	673	190	422	99	368	1053	587	324
v/c Ratio	0.18	0.73	0.65	0.34	0.42	0.57	0.69	0.79	0.76	0.33
Control Delay	51.6	56.7	43.0	38.6	3.6	71.1	59.6	20.4	53.8	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	56.7	43.0	38.6	3.6	71.1	59.6	20.4	53.8	36.2
Queue Length 50th (ft)	39	166	252	124	15	82	160	196	244	110
Queue Length 95th (ft)	86	246	367	219	68	154	230	286	335	162
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	358	709	1186	643	1098	238	829	1446	1006	1363
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	0.15	0.58	0.57	0.30	0.38	0.42	0.44	0.73	0.58	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	299	102	653	184	409	96	357	1021	569	256	58
Future Volume (vph)	50	299	102	653	184	409	96	357	1021	569	256	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3425		3467	1881	1585	1787	3574	2814	3467	3475	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3425		3467	1881	1585	1787	3574	2814	3467	3475	
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)	52	308	105	673	190	422	99	368	1053	587	264	60
RTOR Reduction (vph)	0	23	0	0	0	180	0	0	58	0	14	0
Lane Group Flow (vph)	52	390	0	673	190	242	99	368	995	587	310	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	19.9	19.9		37.5	37.5	65.4	12.2	18.7	56.2	27.9	34.4	
Effective Green, g (s)	19.9	19.9		37.5	37.5	65.4	12.2	18.7	56.2	27.9	34.4	
Actuated g/C Ratio	0.16	0.16		0.30	0.30	0.53	0.10	0.15	0.45	0.22	0.28	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	547		1044	566	832	175	536	1270	776	960	
v/s Ratio Prot	0.03	c0.11		0.19	0.10	0.07	0.06	0.10	c0.24	c0.17	0.09	
v/s Ratio Perm						0.09			0.12			
v/c Ratio	0.18	0.71		0.64	0.34	0.29	0.57	0.69	0.78	0.76	0.32	
Uniform Delay, d1	45.3	49.6		37.7	33.8	16.6	53.6	50.1	29.0	45.1	35.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	4.4		1.4	0.4	0.2	4.1	3.6	3.2	4.2	0.2	
Delay (s)	45.6	54.0		39.1	34.2	16.7	57.8	53.8	32.2	49.4	36.0	
Level of Service	D	D		D	C	B	E	D	C	D	D	
Approach Delay (s)		53.0			31.0			39.1			44.6	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	124.5	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	75.7%	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)	50	299	102	653	184	409	96	357	1021	569	256	58
Future Volume (veh/h)	50	299	102	653	184	409	96	357	1021	569	256	58
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	52	308	105	673	190	422	99	368	1053	587	264	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	264	386	129	886	479	718	124	836	1371	681	1020	228
Arrive On Green	0.15	0.15	0.15	0.25	0.25	0.25	0.07	0.23	0.23	0.20	0.35	0.35
Sat Flow, veh/h	1795	2626	877	3483	1885	1594	1795	3582	2812	3483	2909	650
Grp Volume(v), veh/h	52	208	205	673	190	422	99	368	1053	587	161	163
Grp Sat Flow(s),veh/h/ln	1795	1791	1712	1742	1885	1594	1795	1791	1406	1742	1791	1768
Q Serve(g_s), s	3.1	13.5	14.0	21.6	10.1	23.9	6.6	10.6	28.2	19.7	7.7	8.0
Cycle Q Clear(g_c), s	3.1	13.5	14.0	21.6	10.1	23.9	6.6	10.6	28.2	19.7	7.7	8.0
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	264	264	252	886	479	718	124	836	1371	681	628	620
V/C Ratio(X)	0.20	0.79	0.81	0.76	0.40	0.59	0.80	0.44	0.77	0.86	0.26	0.26
Avail Cap(c_a), veh/h	363	362	346	1199	649	861	241	836	1371	1018	701	692
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	45.2	49.7	49.9	41.6	37.4	24.9	55.4	39.6	23.1	47.0	28.0	28.1
Incr Delay (d2), s/veh	0.4	7.9	10.1	2.0	0.5	0.8	11.0	0.4	2.7	5.1	0.2	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	1.4	6.7	6.8	9.3	4.6	8.8	3.3	4.6	16.3	9.0	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	57.6	60.0	43.6	37.9	25.6	66.4	39.9	25.8	52.2	28.2	28.3
LnGrp LOS	D	E	E	D	D	C	E	D	C	D	C	C
Approach Vol, veh/h		465			1285			1520			911	
Approach Delay, s/veh		57.3			36.9			31.8			43.7	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.3	34.0		22.4	14.2	48.1		36.1				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	21.7	30.2		16.0	8.6	10.0		25.9				
Green Ext Time (p_c), s	1.9	0.0		1.8	0.1	2.1		4.8				

Intersection Summary			
HCM 6th Ctrl Delay		38.8	
HCM 6th LOS		D	

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	269	858	627	101	783	426	330	163	543
v/c Ratio	0.60	0.66	0.70	0.52	0.72	0.73	0.40	0.64	0.73
Control Delay	50.6	32.5	11.1	57.0	35.0	50.5	34.7	55.8	42.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	32.5	11.1	57.0	35.0	50.5	34.7	55.8	42.9
Queue Length 50th (ft)	92	268	59	67	241	145	95	108	175
Queue Length 95th (ft)	148	378	216	132	338	221	154	191	252
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	550	1483	960	265	1419	692	995	357	990
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.58	0.65	0.38	0.55	0.62	0.33	0.46	0.55

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	824	602	97	627	125	409	263	54	156	393	129
Future Volume (vph)	258	824	602	97	627	125	409	263	54	156	393	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3477		3467	3483		1787	3429	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3477		3467	3483		1787	3429	
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)	269	858	627	101	653	130	426	274	56	162	409	134
RTOR Reduction (vph)	0	0	325	0	14	0	0	14	0	0	27	0
Lane Group Flow (vph)	269	858	302	101	769	0	426	316	0	163	516	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	13.1	36.7	36.7	9.1	32.7		17.1	23.6		14.6	21.1	
Effective Green, g (s)	13.1	36.7	36.7	9.1	32.7		17.1	23.6		14.6	21.1	
Actuated g/C Ratio	0.13	0.36	0.36	0.09	0.32		0.17	0.23		0.14	0.21	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	445	1285	575	159	1114		581	805		255	709	
v/s Ratio Prot	c0.08	c0.24		0.06	0.22		c0.12	0.09		0.09	c0.15	
v/s Ratio Perm			0.19									
v/c Ratio	0.60	0.67	0.53	0.64	0.69		0.73	0.39		0.64	0.73	
Uniform Delay, d1	42.0	27.5	25.8	44.8	30.2		40.3	33.1		41.2	37.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	1.3	0.9	8.0	1.9		4.8	0.3		5.2	3.7	
Delay (s)	44.3	28.8	26.7	52.9	32.1		45.1	33.5		46.4	41.5	
Level of Service	D	C	C	D	C		D	C		D	D	
Approach Delay (s)		30.4			34.5			40.0			42.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	71.2%	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)	258	824	602	97	627	125	409	263	54	156	393	129
Future Volume (veh/h)	258	824	602	97	627	125	409	263	54	156	393	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	269	858	627	101	653	130	426	274	56	162	409	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	369	1220	544	131	916	182	539	741	149	203	552	179
Arrive On Green	0.11	0.34	0.34	0.07	0.31	0.31	0.15	0.25	0.25	0.11	0.21	0.21
Sat Flow, veh/h	3483	3582	1598	1795	2976	592	3483	2970	598	1795	2656	861
Grp Volume(v), veh/h	269	858	627	101	393	390	426	164	166	162	274	269
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1777	1742	1791	1778	1795	1791	1726
Q Serve(g_s), s	6.0	16.7	16.3	4.4	15.6	15.7	9.5	6.1	6.2	7.1	11.5	11.8
Cycle Q Clear(g_c), s	6.0	16.7	16.3	4.4	15.6	15.7	9.5	6.1	6.2	7.1	11.5	11.8
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.34	1.00		0.50
Lane Grp Cap(c), veh/h	369	1220	544	131	551	547	539	447	443	203	372	359
V/C Ratio(X)	0.73	0.70	1.15	0.77	0.71	0.71	0.79	0.37	0.38	0.80	0.74	0.75
Avail Cap(c_a), veh/h	671	1803	804	324	879	873	844	612	608	435	612	590
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	34.8	23.0	9.4	36.6	24.7	24.7	32.7	24.9	25.0	34.8	29.8	29.9
Incr Delay (d2), s/veh	2.8	0.8	82.1	9.1	1.7	1.7	2.7	0.5	0.5	7.0	2.9	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.6	16.9	2.2	6.3	6.3	4.0	2.5	2.5	3.3	4.9	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	23.7	91.5	45.7	26.4	26.5	35.5	25.4	25.5	41.8	32.7	33.1
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1754			884			756			705	
Approach Delay, s/veh		50.1			28.6			31.1			34.9	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	31.9	17.0	21.2	13.0	29.3	13.6	24.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	6.4	18.7	11.5	13.8	8.0	17.7	9.1	8.2
Green Ext Time (p_c), s	0.1	8.7	1.0	2.6	0.5	4.7	0.3	1.6

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	314	213	17	297	248	11
v/c Ratio	0.45	0.30	0.04	0.23	0.46	0.02
Control Delay	12.2	3.2	9.4	9.3	13.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	3.2	9.4	9.3	13.7	6.2
Queue Length 50th (ft)	36	0	2	16	29	0
Queue Length 95th (ft)	143	34	14	61	117	8
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1638	1383	932	3113	1440	1294
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	0.19	0.15	0.02	0.10	0.17	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	289	196	16	273	228	10
Future Volume (vph)	289	196	16	273	228	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1520	1734	3471	1733	1553
Flt Permitted	1.00	1.00	0.57	1.00	0.95	1.00
Satd. Flow (perm)	1827	1520	1040	3471	1733	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	314	213	17	297	248	11
RTOR Reduction (vph)	0	130	0	0	0	7
Lane Group Flow (vph)	314	83	17	297	248	4
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	14.5	14.5	14.5	14.5	11.9	11.9
Effective Green, g (s)	14.5	14.5	14.5	14.5	11.9	11.9
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.32	0.32
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	712	592	405	1352	554	496
v/s Ratio Prot	c0.17			0.09		0.00
v/s Ratio Perm		0.05	0.02		c0.14	
v/c Ratio	0.44	0.14	0.04	0.22	0.45	0.01
Uniform Delay, d1	8.4	7.3	7.0	7.6	10.0	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.2	0.0
Delay (s)	8.5	7.4	7.1	7.6	10.3	8.6
Level of Service	A	A	A	A	B	A
Approach Delay (s)	8.1			7.6	10.2	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	10.8
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	289	196	16	273	228	10
Future Volume (veh/h)	289	196	16	273	228	10
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	314	213	17	297	248	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	590	499	435	1122	458	408
Arrive On Green	0.32	0.32	0.32	0.32	0.26	0.26
Sat Flow, veh/h	1841	1555	861	3589	1753	1560
Grp Volume(v), veh/h	314	213	17	297	248	11
Grp Sat Flow(s),veh/h/ln	1841	1555	861	1749	1753	1560
Q Serve(g_s), s	3.6	2.8	0.4	1.6	3.1	0.1
Cycle Q Clear(g_c), s	3.6	2.8	4.0	1.6	3.1	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	590	499	435	1122	458	408
V/C Ratio(X)	0.53	0.43	0.04	0.26	0.54	0.03
Avail Cap(c_a), veh/h	2464	2082	1311	4682	2008	1787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.2	6.9	8.8	6.5	8.2	7.1
Incr Delay (d2), s/veh	0.3	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.4	0.0	0.3	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.5	7.1	8.9	6.6	8.6	7.1
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	527			314	259	
Approach Delay, s/veh	7.3			6.7	8.5	
Approach LOS	A			A	A	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	13.7				13.7	12.2
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s	5.6				6.0	5.1
Green Ext Time (p_c), s	1.4				1.2	0.3

Intersection Summary			
HCM 6th Ctrl Delay		7.4	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	16	0	51	0	3	8	32	117	2	13	181	9
Future Volume (vph)	16	0	51	0	3	8	32	117	2	13	181	9
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
Hourly flow rate (vph)	17	0	55	0	3	9	35	127	2	14	197	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	72	12	164	221
Volume Left (vph)	17	0	35	14
Volume Right (vph)	55	9	2	10
Hadj (s)	-0.39	-0.43	0.05	0.00
Departure Headway (s)	4.4	4.4	4.4	4.3
Degree Utilization, x	0.09	0.01	0.20	0.26
Capacity (veh/h)	750	733	795	813
Control Delay (s)	7.8	7.5	8.5	8.8
Approach Delay (s)	7.8	7.5	8.5	8.8
Approach LOS	A	A	A	A

Intersection Summary					
Delay		8.5			
Level of Service		A			
Intersection Capacity Utilization		34.9%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	51	0	3	8	32	117	2	13	181	9
Future Vol, veh/h	16	0	51	0	3	8	32	117	2	13	181	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	17	0	55	0	3	9	35	127	2	14	197	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.5	8.5	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	24%	0%	6%
Vol Thru, %	77%	0%	27%	89%
Vol Right, %	1%	76%	73%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	67	11	203
LT Vol	32	16	0	13
Through Vol	117	0	3	181
RT Vol	2	51	8	9
Lane Flow Rate	164	73	12	221
Geometry Grp	1	1	1	1
Degree of Util (X)	0.2	0.088	0.015	0.256
Departure Headway (Hd)	4.378	4.37	4.417	4.28
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	824	823	813	845
Service Time	2.378	2.38	2.43	2.28
HCM Lane V/C Ratio	0.199	0.089	0.015	0.262
HCM Control Delay	8.5	7.8	7.5	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	0	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	12	46	0	9	14	31	46	0	17	69	64
Future Volume (Veh/h)	82	12	46	0	9	14	31	46	0	17	69	64
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	13	50	0	10	15	34	50	0	18	75	70
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	25			69			347	247	44	258	264	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			69			347	247	44	258	264	18
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			93	92	100	97	88	93
cM capacity (veh/h)	1596			1530			489	617	1023	623	603	1064

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	152	25	84	18	145
Volume Left	89	0	34	18	0
Volume Right	50	15	0	0	70
cSH	1596	1530	558	623	763
Volume to Capacity	0.06	0.00	0.15	0.03	0.19
Queue Length 95th (ft)	4	0	13	2	17
Control Delay (s)	4.5	0.0	12.6	10.9	10.8
Lane LOS	A		B	B	B
Approach Delay (s)	4.5	0.0	12.6	10.8	
Approach LOS			B	B	

Intersection Summary				
Average Delay	8.3			
Intersection Capacity Utilization	36.5%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	12	46	0	9	14	31	46	0	17	69	64
Future Vol, veh/h	82	12	46	0	9	14	31	46	0	17	69	64
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	89	13	50	0	10	15	34	50	0	18	75	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	69	0	0	312	247	44	259	265	18
Stage 1	-	-	-	-	-	-	222	222	-	18	18	-
Stage 2	-	-	-	-	-	-	90	25	-	241	247	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1596	-	-	1538	-	-	642	657	1029	696	642	1063
Stage 1	-	-	-	-	-	-	783	722	-	1004	882	-
Stage 2	-	-	-	-	-	-	920	876	-	765	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1596	-	-	1529	-	-	516	615	1023	624	601	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	516	615	-	624	601	-
Stage 1	-	-	-	-	-	-	734	676	-	946	882	-
Stage 2	-	-	-	-	-	-	787	876	-	667	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.3	0	12.4	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	571	1596	-	-	1529	-	-	624	760
HCM Lane V/C Ratio	0.147	0.056	-	-	-	-	-	0.03	0.19
HCM Control Delay (s)	12.4	7.4	0	-	0	-	-	10.9	10.8
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	0.1	0.7



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	65	70	5	3	6
Future Volume (Veh/h)	6	65	70	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	71	76	5	3	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	81				164	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81				164	78
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1504				819	977

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	78	81	10
Volume Left	7	0	3
Volume Right	0	5	7
cSH	1504	1700	923
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.7	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.9
Approach LOS			A

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		18.4%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	65	70	5	3	6
Future Vol, veh/h	6	65	70	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	7	71	76	5	3	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	81	0	-	0	164	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1504	-	-	-	822	976
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1504	-	-	-	818	976
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	933	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1504	-	-	-	917
HCM Lane V/C Ratio	0.004	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Near Term Plus 1293-Unit Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	252	1222	1276	134	160	263
v/c Ratio	0.71	0.38	0.83	0.18	0.62	0.42
Control Delay	55.4	0.3	31.3	3.6	58.3	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	0.3	31.3	3.6	58.3	22.2
Queue Length 50th (ft)	164	0	402	0	107	103
Queue Length 95th (ft)	#353	0	604	34	220	225
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	460	3223	2631	1201	460	896
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	0.55	0.38	0.48	0.11	0.35	0.29

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)	232	1124	1174	123	147	242
Future Volume (vph)	232	1124	1174	123	147	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	1222	1276	134	160	263
RTOR Reduction (vph)	0	0	0	70	0	27
Lane Group Flow (vph)	252	1222	1276	64	160	236
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.6	110.3	52.9	52.9	17.8	46.4
Effective Green, g (s)	24.6	110.3	52.9	52.9	17.8	46.4
Actuated g/C Ratio	0.22	1.00	0.48	0.48	0.16	0.42
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	359	3223	1545	691	260	606
v/s Ratio Prot	c0.16	0.38	c0.40		c0.10	0.16
v/s Ratio Perm				0.04		
v/c Ratio	0.70	0.38	0.83	0.09	0.62	0.39
Uniform Delay, d1	39.5	0.0	24.7	15.6	43.1	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.3	3.9	0.1	4.5	0.4
Delay (s)	45.6	0.3	28.7	15.7	47.6	22.5
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.1	27.4		32.0	
Approach LOS		A	C		C	

Intersection Summary

HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	227	850	304	39	959	186	300	327	93	183	151
v/c Ratio	0.57	0.63	0.39	0.11	0.82	0.29	0.63	0.43	0.35	0.64	0.41
Control Delay	54.9	32.1	4.8	47.8	39.5	5.0	53.5	39.1	57.3	56.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	32.1	4.8	47.8	39.5	5.0	53.5	39.1	57.3	56.7	10.8
Queue Length 50th (ft)	79	285	0	12	322	0	104	103	32	124	0
Queue Length 95th (ft)	148	428	63	34	484	49	189	179	72	236	61
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	533	2139	1061	555	2139	1020	592	1243	592	659	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.40	0.29	0.07	0.45	0.18	0.51	0.26	0.16	0.28	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	782	280	36	882	171	276	282	18	86	168	139
Future Volume (vph)	209	782	280	36	882	171	276	282	18	86	168	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3220		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3220		3155	1712	1455
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)	227	850	304	39	959	186	300	307	20	93	183	151
RTOR Reduction (vph)	0	0	180	0	0	116	0	3	0	0	0	126
Lane Group Flow (vph)	227	850	124	39	959	70	300	324	0	93	183	25
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	14.0	45.9	45.9	10.2	42.1	42.1	16.8	26.1		9.3	18.6	18.6
Effective Green, g (s)	14.0	45.9	45.9	10.2	42.1	42.1	16.8	26.1		9.3	18.6	18.6
Actuated g/C Ratio	0.12	0.41	0.41	0.09	0.38	0.38	0.15	0.23		0.08	0.17	0.17
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	394	1331	595	287	1221	546	472	749		261	284	241
v/s Ratio Prot	0.07	c0.26		0.01	c0.29		c0.10	0.10		0.03	c0.11	
v/s Ratio Perm			0.09			0.05						0.02
v/c Ratio	0.58	0.64	0.21	0.14	0.79	0.13	0.64	0.43		0.36	0.64	0.10
Uniform Delay, d1	46.3	26.5	21.4	46.9	31.0	23.0	44.8	36.7		48.6	43.7	39.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.0	1.0	0.2	0.1	3.4	0.1	2.8	0.4		0.8	4.9	0.2
Delay (s)	48.3	27.5	21.6	47.0	34.4	23.1	47.6	37.1		49.4	48.6	39.9
Level of Service	D	C	C	D	C	C	D	D		D	D	D
Approach Delay (s)		29.6			33.0			42.1			45.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	112.1	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	64.2%	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)	209	782	280	36	882	171	276	282	18	86	168	139
Future Volume (veh/h)	209	782	280	36	882	171	276	282	18	86	168	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	227	850	304	39	959	186	300	307	20	93	183	151
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	318	1135	506	294	1246	556	399	690	45	156	250	212
Arrive On Green	0.10	0.34	0.34	0.09	0.38	0.38	0.12	0.22	0.22	0.05	0.14	0.14
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3144	204	3209	1737	1472
Grp Volume(v), veh/h	227	850	304	39	959	186	300	160	167	93	183	151
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1697	1605	1737	1472
Q Serve(g_s), s	5.5	18.4	8.2	0.9	20.6	7.3	7.3	6.8	6.9	2.3	8.1	7.9
Cycle Q Clear(g_c), s	5.5	18.4	8.2	0.9	20.6	7.3	7.3	6.8	6.9	2.3	8.1	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	318	1135	506	294	1246	556	399	362	373	156	250	212
V/C Ratio(X)	0.71	0.75	0.60	0.13	0.77	0.33	0.75	0.44	0.45	0.59	0.73	0.71
Avail Cap(c_a), veh/h	715	2861	1276	715	2861	1276	795	838	862	795	882	747
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	35.3	23.4	7.8	33.7	22.1	17.9	34.2	27.2	27.3	37.6	33.1	33.0
Incr Delay (d2), s/veh	3.0	1.0	1.1	0.1	1.0	0.4	2.9	0.8	0.8	3.6	4.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.3	4.1	0.3	6.9	2.3	2.9	2.6	2.7	0.9	3.5	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	24.4	9.0	33.8	23.1	18.3	37.0	28.1	28.1	41.2	37.2	37.3
LnGrp LOS	D	C	A	C	C	B	D	C	C	D	D	D
Approach Vol, veh/h		1381			1184			627			427	
Approach Delay, s/veh		23.3			22.7			32.4			38.1	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	35.1	14.0	16.9	12.0	37.8	7.9	23.0
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	20.4	9.3	10.1	7.5	22.6	4.3	8.9
Green Ext Time (p_c), s	0.0	7.4	0.8	1.5	0.5	7.9	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	839	46	280	1080	0	9	0	260	0	0	0
Future Volume (Veh/h)	1	839	46	280	1080	0	9	0	260	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	912	50	304	1174	0	10	0	283	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1174			962			2134	2721	481	2240	2746	587
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1174			962			2134	2721	481	2240	2746	587
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			54			37	100	44	100	100	100
cM capacity (veh/h)	542			658			16	10	508	6	9	431

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	608	354	304	783	391	293	0
Volume Left	1	0	0	304	0	0	10	0
Volume Right	0	0	50	0	0	0	283	0
cSH	542	1700	1700	658	1700	1700	356	1700
Volume to Capacity	0.00	0.36	0.21	0.46	0.46	0.23	0.82	0.00
Queue Length 95th (ft)	0	0	0	61	0	0	182	0
Control Delay (s)	11.7	0.0	0.0	15.1	0.0	0.0	48.4	0.0
Lane LOS	B			C			E	A
Approach Delay (s)	0.0			3.1			48.4	0.0
Approach LOS							E	A

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	839	46	280	1080	0	9	0	260	0	0	0
Future Vol, veh/h	1	839	46	280	1080	0	9	0	260	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	340	-	-	195	-	-	-	-	25	-	-	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, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	912	50	304	1174	0	10	0	283	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1174	0	0	962	0	0	2134	2721	481	2240	2746	587
Stage 1	-	-	-	-	-	-	939	939	-	1782	1782	-
Stage 2	-	-	-	-	-	-	1195	1782	-	458	964	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	542	-	-	658	-	-	25	18	508	21	17	431
Stage 1	-	-	-	-	-	-	267	321	-	77	121	-
Stage 2	-	-	-	-	-	-	184	121	-	529	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	542	-	-	658	-	-	16	10	508	6	9	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	10	-	6	9	-
Stage 1	-	-	-	-	-	-	266	320	-	77	65	-
Stage 2	-	-	-	-	-	-	99	65	-	234	311	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.1	33.5	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	16	508	542	-	-	658	-	-	-	-
HCM Lane V/C Ratio	0.611	0.556	0.002	-	-	0.463	-	-	-	-
HCM Control Delay (s)	$ 406.3	20.6	11.7	-	-	15.1	-	-	0	0
HCM Lane LOS	F	C	B	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	1.6	3.4	0	-	-	2.4	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	364	736	1175	19	5	184
Future Volume (Veh/h)	364	736	1175	19	5	184
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	396	800	1277	21	5	200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1298				2469	638
vC1, stage 1 conf vol					1277	
vC2, stage 2 conf vol					1192	
vCu, unblocked vol	1298				2469	638
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	19				88	50
cM capacity (veh/h)	489				42	400

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	396	400	400	638	638	21	205
Volume Left	396	0	0	0	0	0	5
Volume Right	0	0	0	0	0	21	200
cSH	489	1700	1700	1700	1700	1700	410
Volume to Capacity	0.81	0.24	0.24	0.38	0.38	0.01	0.50
Queue Length 95th (ft)	193	0	0	0	0	0	68
Control Delay (s)	36.9	0.0	0.0	0.0	0.0	0.0	24.6
Lane LOS	E						C
Approach Delay (s)	12.2			0.0			24.6
Approach LOS							C

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	7.3

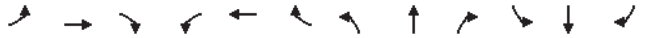
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	364	736	1175	19	5	184
Future Vol, veh/h	364	736	1175	19	5	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	396	800	1277	21	5	200

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1298	0	-	0	2469	639
Stage 1	-	-	-	-	1277	-
Stage 2	-	-	-	-	1192	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	489	-	-	-	22	400
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	235	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	489	-	-	-	~ 4	400
Mov Cap-2 Maneuver	-	-	-	-	37	-
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	235	-

Approach	EB	WB	SB
HCM Control Delay, s	12.1	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	489	-	-	-	37	400
HCM Lane V/C Ratio	0.809	-	-	-	0.147	0.5
HCM Control Delay (s)	36.7	-	-	-	118.4	22.7
HCM Lane LOS	E	-	-	-	F	C
HCM 95th %tile Q(veh)	7.7	-	-	-	0.5	2.7

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	722	19	2	1186	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	722	19	2	1186	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	785	21	2	1289	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1289			806			1434	2078	392	1686	2099	644
vC1, stage 1 conf vol							785	785		1293	1293	
vC2, stage 2 conf vol							648	1293		393	806	
vCu, unblocked vol	1289			806			1434	2078	392	1686	2099	644
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	478			747			261	183	576	149	181	390

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	392	392	21	2	859	430	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	747	1700	1700	290	1700
Volume to Capacity	0.00	0.23	0.23	0.01	0.00	0.51	0.25	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	3	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.8	0.0	0.0	18.5	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			18.5	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	722	19	2	1186	0	8	0	1	0	0	0
Future Vol, veh/h	0	722	19	2	1186	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	785	21	2	1289	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1289	0	0	806	0	0	1434	2078	393	1686	2099	645
Stage 1	-	-	-	-	-	-	785	785	-	1293	1293	-
Stage 2	-	-	-	-	-	-	649	1293	-	393	806	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	478	-	-	747	-	-	85	46	576	54	45	390
Stage 1	-	-	-	-	-	-	329	377	-	157	211	-
Stage 2	-	-	-	-	-	-	399	211	-	574	368	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	478	-	-	747	-	-	85	46	576	54	45	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	177	-	146	176	-
Stage 1	-	-	-	-	-	-	329	377	-	157	210	-
Stage 2	-	-	-	-	-	-	398	210	-	573	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	576	478	-	-	747	-	-	-
HCM Lane V/C Ratio	0.034	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	19.7	11.3	0	-	-	9.8	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	91	120	94	273	103	71	42	416	228	42	317	53
Future Volume (veh/h)	91	120	94	273	103	71	42	416	228	42	317	53
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
Hourly flow rate (vph)	99	130	102	297	112	77	46	452	248	46	345	58
Approach Volume (veh/h)		331			486			746			449	
Crossing Volume (veh/h)		688			597			275			455	
High Capacity (veh/h)		803			864			1116			968	
High v/c (veh/h)		0.41			0.56			0.67			0.46	
Low Capacity (veh/h)		639			693			918			785	
Low v/c (veh/h)		0.52			0.70			0.81			0.57	

Intersection Summary					
Maximum v/c High		0.67			
Maximum v/c Low		0.81			
Intersection Capacity Utilization		97.1%	ICU Level of Service		F

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	331	486	746	449
Demand Flow Rate, veh/h	341	500	768	462
Vehicles Circulating, veh/h	708	615	283	468
Vehicles Exiting, veh/h	222	436	766	647
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.7	18.4	16.9	12.0
Approach LOS	B	C	C	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	341	500	768	462
Cap Entry Lane, veh/h	670	737	1034	856
Entry HV Adj Factor	0.971	0.971	0.972	0.971
Flow Entry, veh/h	331	486	746	449
Cap Entry, veh/h	651	716	1004	831
V/C Ratio	0.509	0.678	0.743	0.540
Control Delay, s/veh	13.7	18.4	16.9	12.0
LOS	B	C	C	B
95th %tile Queue, veh	3	5	7	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇳			⇳			⇳			⇳	
Traffic Volume (veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Future Volume (Veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	16	5	3	76	0	16	1	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	76			21			102	102	18	105	105	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			21			102	102	18	105	105	76
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1486			1557			862	774	1043	857	772	969

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	79	19	0
Volume Left	1	3	16	0
Volume Right	5	0	2	0
cSH	1486	1557	873	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.2	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.2	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			14.7%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇳			⇳			⇳			⇳	
Traffic Vol, veh/h	1	15	5	3	70	0	15	1	2	0	0	0
Future Vol, veh/h	1	15	5	3	70	0	15	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	16	5	3	76	0	16	1	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	21	0	0	103	103	19	104	105	76
Stage 1	-	-	-	-	-	-	21	21	-	82	82	-
Stage 2	-	-	-	-	-	-	82	82	-	22	23	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1486	-	-	1557	-	-	863	776	1042	862	774	969
Stage 1	-	-	-	-	-	-	982	866	-	912	815	-
Stage 2	-	-	-	-	-	-	912	815	-	981	864	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1557	-	-	861	774	1042	858	772	969
Mov Cap-2 Maneuver	-	-	-	-	-	-	861	774	-	858	772	-
Stage 1	-	-	-	-	-	-	981	865	-	911	813	-
Stage 2	-	-	-	-	-	-	910	813	-	977	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	872	1486	-	-	1557	-	-	-
HCM Lane V/C Ratio	0.022	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.2	7.4	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	360	345	461	673	7	21	139	285	293	35
v/c Ratio	0.01	0.58	0.75	0.52	0.61	0.05	0.13	0.53	0.70	0.70	0.07
Control Delay	49.0	37.7	41.3	19.5	4.2	43.7	44.4	16.1	41.0	41.1	0.3
Queue Delay	0.0	0.0	0.1	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	37.7	41.4	19.9	4.4	43.7	44.4	16.1	41.0	41.1	0.3
Queue Length 50th (ft)	1	90	164	152	0	3	11	0	141	145	0
Queue Length 95th (ft)	6	171	328	350	68	19	40	59	300	307	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	109	992	708	1160	1235	392	413	454	590	601	626
Starvation Cap Reductn	0	0	29	298	147	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.36	0.51	0.53	0.62	0.02	0.05	0.31	0.48	0.49	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	302	29	317	424	619	6	19	128	444	87	32
Future Volume (vph)	1	302	29	317	424	619	6	19	128	444	87	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3447		1752	1845	1568	1752	1845	1544	1665	1695	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3447		1752	1845	1568	1752	1845	1544	1665	1695	1521
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)	1	328	32	345	461	673	7	21	139	483	95	35
RTOR Reduction (vph)	0	6	0	0	0	361	0	0	127	0	0	27
Lane Group Flow (vph)	1	354	0	345	461	312	7	21	12	285	293	8
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	19.1		22.4	40.7	40.7	7.5	7.5	7.5	20.9	20.9	20.9
Effective Green, g (s)	0.8	19.1		22.4	40.7	40.7	7.5	7.5	7.5	20.9	20.9	20.9
Actuated g/C Ratio	0.01	0.22		0.25	0.46	0.46	0.09	0.09	0.09	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	15	749		446	854	726	149	157	131	395	403	361
v/s Ratio Prot	0.00	0.10		c0.20	c0.25		0.00	c0.01		0.17	c0.17	
v/s Ratio Perm						0.20			0.01			0.01
v/c Ratio	0.07	0.47		0.77	0.54	0.43	0.05	0.13	0.09	0.72	0.73	0.02
Uniform Delay, d1	43.2	30.0		30.4	16.9	15.8	36.9	37.2	37.1	30.8	30.9	25.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.5		8.1	0.7	0.4	0.1	0.4	0.3	6.4	6.4	0.0
Delay (s)	45.1	30.5		38.5	17.6	16.2	37.0	37.6	37.4	37.2	37.3	25.7
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		30.5			21.8			37.4			36.6	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	61.5%	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)	1	302	29	317	424	619	6	19	128	444	87	32
Future Volume (veh/h)	1	302	29	317	424	619	6	19	128	444	87	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	328	32	345	461	673	7	21	139	551	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	829	80	394	885	750	197	207	175	699	0	307
Arrive On Green	0.00	0.26	0.26	0.22	0.48	0.48	0.11	0.11	0.11	0.20	0.00	0.20
Sat Flow, veh/h	1767	3242	314	1767	1856	1572	1767	1856	1568	3534	0	1553
Grp Volume(v), veh/h	1	177	183	345	461	673	7	21	139	551	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1793	1767	1856	1572	1767	1856	1568	1767	0	1553
Q Serve(g_s), s	0.0	7.1	7.2	16.0	14.7	33.2	0.3	0.9	7.3	12.6	0.0	1.6
Cycle Q Clear(g_c), s	0.0	7.1	7.2	16.0	14.7	33.2	0.3	0.9	7.3	12.6	0.0	1.6
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	451	458	394	885	750	197	207	175	699	0	307
V/C Ratio(X)	0.41	0.39	0.40	0.88	0.52	0.90	0.04	0.10	0.79	0.79	0.00	0.11
Avail Cap(c_a), veh/h	104	478	486	677	1105	937	375	394	333	1188	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.3	26.1	26.2	31.8	15.4	20.3	33.6	33.8	36.7	32.3	0.0	27.9
Incr Delay (d2), s/veh	85.1	0.6	0.6	6.7	0.5	9.7	0.1	0.2	7.9	2.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.0	3.1	7.3	5.9	13.1	0.1	0.4	3.1	5.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.4	26.7	26.7	38.5	15.9	29.9	33.7	34.1	44.6	34.4	0.0	28.1
LnGrp LOS	F	C	C	D	B	C	C	C	D	C	A	C
Approach Vol, veh/h		361			1479			167			586	
Approach Delay, s/veh		27.0			27.5			42.9			34.0	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.4	26.2		21.3	4.6	45.0		14.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	18.0	9.2		14.6	2.0	35.2		9.3				
Green Ext Time (p_c), s	0.9	1.8		1.9	0.0	5.3		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			29.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	881	49	1239	374	234	12	249	5	8
v/c Ratio	0.36	0.47	0.28	0.70	0.42	0.68	0.03	0.43	0.01	0.01
Control Delay	46.5	14.1	46.0	19.7	6.5	41.8	27.2	6.5	27.0	0.0
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	14.3	46.0	19.7	6.5	41.8	27.2	6.5	27.0	0.0
Queue Length 50th (ft)	36	155	26	261	33	122	5	0	2	0
Queue Length 95th (ft)	88	260	69	425	109	216	20	57	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	254	2276	229	2267	1079	587	782	808	586	780
Starvation Cap Reductn	0	621	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	0.27	0.53	0.21	0.55	0.35	0.40	0.02	0.31	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	763	48	45	1140	344	215	11	229	5	0	7
Future Volume (vph)	63	763	48	45	1140	344	215	11	229	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3467		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3467		1752	3505	1530	1388	1845	1568	1383	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)	68	829	52	49	1239	374	234	12	249	5	0	8
RTOR Reduction (vph)	0	4	0	0	0	126	0	0	188	0	6	0
Lane Group Flow (vph)	68	877	0	49	1239	248	234	12	61	5	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.6	44.4		4.5	42.3	42.3	20.3	20.3	20.3	20.3	20.3	
Effective Green, g (s)	6.6	44.4		4.5	42.3	42.3	20.3	20.3	20.3	20.3	20.3	
Actuated g/C Ratio	0.08	0.54		0.05	0.51	0.51	0.25	0.25	0.25	0.25	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1861		95	1792	782	340	452	384	339	384	
v/s Ratio Prot	c0.04	0.25		0.03	c0.35			0.01			0.00	
v/s Ratio Perm						0.16	c0.17		0.04	0.00		
v/c Ratio	0.49	0.47		0.52	0.69	0.32	0.69	0.03	0.16	0.01	0.01	
Uniform Delay, d1	36.4	11.9		38.0	15.3	11.8	28.3	23.7	24.5	23.6	23.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	0.2		4.7	1.2	0.2	5.7	0.0	0.2	0.0	0.0	
Delay (s)	39.1	12.1		42.7	16.4	12.0	34.0	23.7	24.7	23.6	23.6	
Level of Service	D	B		D	B	B	C	C	C	C	C	
Approach Delay (s)		14.0			16.2			29.1			23.6	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	65.5%	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)	63	763	48	45	1140	344	215	11	229	5	0	7
Future Volume (veh/h)	63	763	48	45	1140	344	215	11	229	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	829	52	49	1239	0	234	12	249	5	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	1713	107	82	1758		422	409	346	359	0	346
Arrive On Green	0.06	0.51	0.51	0.05	0.50	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3368	211	1767	3526	1572	1396	1856	1572	1110	0	1572
Grp Volume(v), veh/h	68	434	447	49	1239	0	234	12	249	5	0	8
Grp Sat Flow(s),veh/h/ln	1767	1763	1816	1767	1763	1572	1396	1856	1572	1110	0	1572
Q Serve(g_s), s	2.3	9.6	9.6	1.6	16.3	0.0	9.5	0.3	8.8	0.2	0.0	0.2
Cycle Q Clear(g_c), s	2.3	9.6	9.6	1.6	16.3	0.0	9.7	0.3	8.8	0.5	0.0	0.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	897	924	82	1758		422	409	346	359	0	346
V/C Ratio(X)	0.68	0.48	0.48	0.60	0.70		0.55	0.03	0.72	0.01	0.00	0.02
Avail Cap(c_a), veh/h	309	1505	1550	279	2951		827	948	803	681	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	9.6	9.6	28.1	11.6	0.0	22.2	18.4	21.7	18.6	0.0	18.4
Incr Delay (d2), s/veh	7.9	0.4	0.4	6.7	0.5	0.0	1.1	0.0	2.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.2	3.3	0.8	5.4	0.0	2.9	0.1	3.2	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	10.0	10.0	34.8	12.2	0.0	23.3	18.4	24.5	18.6	0.0	18.4
LnGrp LOS	D	B	B	C	B		C	B	C	B	A	B
Approach Vol, veh/h		949			1288	A		495			13	
Approach Delay, s/veh		11.9			13.0			23.8			18.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	35.1		17.7	7.9	34.5		17.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	3.6	11.6		2.5	4.3	18.3		11.7				
Green Ext Time (p_c), s	0.0	6.8		0.0	0.1	11.6		1.5				

Intersection Summary				
HCM 6th Ctrl Delay	14.6			
HCM 6th LOS	B			

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	214	868	61	940	430	193	49	135	598
v/c Ratio	0.57	0.63	0.40	0.79	0.73	0.24	0.11	0.59	0.86dr
Control Delay	52.0	25.6	57.2	35.6	49.3	34.3	1.0	55.2	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	25.6	57.2	35.6	49.3	34.3	1.0	55.2	34.5
Queue Length 50th (ft)	71	224	39	293	141	54	0	87	136
Queue Length 95th (ft)	124	327	91	406	221	98	4	163	221
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	442	1616	191	1564	725	1009	519	337	983
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.54	0.32	0.60	0.59	0.19	0.09	0.40	0.61

Intersection Summary

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	511	288	56	768	97	396	178	45	124	187	363
Future Volume (vph)	197	511	288	56	768	97	396	178	45	124	187	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3329		1770	3475		3433	3539	1583	1770	3189	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3329		1770	3475		3433	3539	1583	1770	3189	
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)	214	555	313	61	835	105	430	193	49	135	203	395
RTOR Reduction (vph)	0	64	0	0	8	0	0	0	38	0	160	0
Lane Group Flow (vph)	214	804	0	61	932	0	430	193	11	135	438	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.1	39.7		7.0	35.6		17.4	23.4	23.4	13.1	19.1	
Effective Green, g (s)	11.1	39.7		7.0	35.6		17.4	23.4	23.4	13.1	19.1	
Actuated g/C Ratio	0.11	0.39		0.07	0.35		0.17	0.23	0.23	0.13	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	376	1305		122	1222		590	818	366	229	601	
v/s Ratio Prot	c0.06	c0.24		0.03	c0.27		c0.13	c0.05		0.08	c0.14	
v/s Ratio Perm									0.01			
v/c Ratio	0.57	0.62		0.50	0.76		0.73	0.24	0.03	0.59	0.86dr	
Uniform Delay, d1	42.8	24.6		45.4	29.1		39.7	31.6	30.1	41.5	38.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.0	0.9		3.2	2.9		4.5	0.1	0.0	3.8	4.4	
Delay (s)	44.8	25.5		48.6	31.9		44.2	31.8	30.2	45.4	43.0	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		29.3			32.9			39.6			43.5	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	73.1%	ICU Level of Service	D	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	511	288	56	768	97	396	178	45	124	187	363
Future Volume (veh/h)	197	511	288	56	768	97	396	178	45	124	187	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	214	555	0	61	835	105	430	193	49	135	203	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1436		91	1145	144	577	601	268	176	358	
Arrive On Green	0.09	0.40	0.00	0.05	0.36	0.36	0.17	0.17	0.17	0.10	0.10	0.00
Sat Flow, veh/h	3456	3647	0	1781	3171	399	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	214	555	0	61	468	472	430	193	49	135	203	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1793	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	3.9	7.2	0.0	2.2	14.8	14.9	7.7	3.1	1.7	4.8	3.5	0.0
Cycle Q Clear(g_c), s	3.9	7.2	0.0	2.2	14.8	14.9	7.7	3.1	1.7	4.8	3.5	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	326	1436		91	642	647	577	601	268	176	358	
V/C Ratio(X)	0.66	0.39		0.67	0.73	0.73	0.75	0.32	0.18	0.77	0.57	
Avail Cap(c_a), veh/h	664	2487		288	1189	1199	1089	1503	670	507	1394	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.4	13.7	0.0	30.3	18.0	18.0	25.8	23.7	23.2	28.6	27.9	0.0
Incr Delay (d2), s/veh	2.3	0.2	0.0	8.1	1.6	1.6	1.9	0.3	0.3	6.8	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	0.0	1.1	5.6	5.7	3.0	1.2	0.6	2.2	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	13.9	0.0	38.4	19.6	19.6	27.7	24.0	23.5	35.4	29.3	0.0
LnGrp LOS	C	B		D	B	B	C	C	C	D	C	
Approach Vol, veh/h		769	A		1001			672			338	A
Approach Delay, s/veh		18.5			20.8			26.4			31.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	30.8	15.4	11.1	10.6	28.0	10.9	15.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.2	9.2	9.7	5.5	5.9	16.9	6.8	5.1
Green Ext Time (p_c), s	0.0	4.2	1.2	1.0	0.4	6.5	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	71	435	1218	547	101
v/c Ratio	0.38	0.21	0.74	0.71	0.23
Control Delay	47.5	9.8	20.8	38.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	9.8	20.8	38.1	9.2
Queue Length 50th (ft)	35	39	201	134	0
Queue Length 95th (ft)	103	141	#585	#290	47
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	240	2479	1830	1046	552
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	0.30	0.18	0.67	0.52	0.18

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)	65	400	588	533	503	93
Future Volume (vph)	65	400	588	533	503	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3231		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3231		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	435	639	579	547	101
RTOR Reduction (vph)	0	0	113	0	0	79
Lane Group Flow (vph)	71	435	1105	0	547	22
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.8	50.8	39.5		18.9	18.9
Effective Green, g (s)	6.8	50.8	39.5		18.9	18.9
Actuated g/C Ratio	0.08	0.58	0.45		0.22	0.22
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	137	2048	1468		739	341
v/s Ratio Prot	c0.04	0.12	c0.34			
v/s Ratio Perm					c0.16	0.01
v/c Ratio	0.52	0.21	0.75		0.74	0.06
Uniform Delay, d1	38.5	8.6	19.6		31.7	27.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.1	2.2		4.0	0.1
Delay (s)	41.8	8.6	21.9		35.7	27.1
Level of Service	D	A	C		D	C
Approach Delay (s)		13.3	21.9		34.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	267	163	55	558	428	316	683	239	706
v/c Ratio	0.54	0.48	0.28	0.38	0.70	0.63	0.84	0.74	0.76	0.76
Control Delay	44.2	27.7	5.7	46.8	35.5	8.0	56.7	33.9	51.1	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	27.7	5.7	46.8	35.5	8.0	56.7	33.9	51.1	24.8
Queue Length 50th (ft)	68	124	0	30	150	0	176	181	128	122
Queue Length 95th (ft)	124	199	44	68	213	80	#347	252	#250	191
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	305	659	651	156	906	712	374	1036	351	1089
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	0.42	0.41	0.25	0.35	0.62	0.60	0.84	0.66	0.68	0.65

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)	118	246	150	51	513	394	291	582	46	220	336	314
Future Volume (vph)	118	246	150	51	513	394	291	582	46	220	336	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1531	1752	3505	1532	1752	3462		1752	3208	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1531	1752	3505	1532	1752	3462		1752	3208	
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)	128	267	163	55	558	428	316	633	50	239	365	341
RTOR Reduction (vph)	0	0	115	0	0	328	0	7	0	0	191	0
Lane Group Flow (vph)	128	267	48	55	558	100	316	676	0	239	515	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.9	24.3	24.3	3.7	19.1	19.1	17.2	21.4		14.5	18.7	
Effective Green, g (s)	8.9	24.3	24.3	3.7	19.1	19.1	17.2	21.4		14.5	18.7	
Actuated g/C Ratio	0.11	0.30	0.30	0.05	0.23	0.23	0.21	0.26		0.18	0.23	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	547	454	79	817	357	367	904		310	732	
v/s Ratio Prot	c0.07	0.14		0.03	c0.16		c0.18	c0.20		0.14	0.16	
v/s Ratio Perm			0.03			0.07						
v/c Ratio	0.67	0.49	0.11	0.70	0.68	0.28	0.86	0.75		0.77	0.70	
Uniform Delay, d1	35.1	23.7	20.9	38.5	28.6	25.8	31.2	27.8		32.1	29.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	0.7	0.1	23.4	2.4	0.4	18.3	3.4		11.2	3.1	
Delay (s)	44.2	24.4	21.0	61.9	31.0	26.2	49.5	31.2		43.4	32.1	
Level of Service	D	C	C	E	C	C	D	C		D	C	
Approach Delay (s)		27.9			30.7			37.0			35.0	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	72.4%	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)	118	246	150	51	513	394	291	582	46	220	336	314
Future Volume (veh/h)	118	246	150	51	513	394	291	582	46	220	336	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	267	163	55	558	428	316	633	50	239	365	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	539	453	77	854	377	351	961	76	278	439	386
Arrive On Green	0.09	0.29	0.29	0.04	0.24	0.24	0.20	0.29	0.29	0.16	0.25	0.25
Sat Flow, veh/h	1767	1856	1558	1767	3526	1555	1767	3309	261	1767	1763	1550
Grp Volume(v), veh/h	128	267	163	55	558	428	316	337	346	239	365	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1558	1767	1763	1555	1767	1763	1807	1767	1763	1550
Q Serve(g_s), s	5.9	9.8	6.8	2.5	11.8	20.0	14.4	13.8	13.9	10.9	16.2	17.5
Cycle Q Clear(g_c), s	5.9	9.8	6.8	2.5	11.8	20.0	14.4	13.8	13.9	10.9	16.2	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	162	539	453	77	854	377	351	512	525	278	439	386
V/C Ratio(X)	0.79	0.50	0.36	0.72	0.65	1.14	0.90	0.66	0.66	0.86	0.83	0.88
Avail Cap(c_a), veh/h	289	598	502	148	854	377	353	512	525	332	470	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	24.3	23.2	39.0	28.1	31.3	32.3	25.7	25.7	33.9	29.3	29.8
Incr Delay (d2), s/veh	8.3	0.7	0.5	11.8	1.8	88.7	24.8	3.1	3.0	17.3	11.4	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.1	2.4	1.3	4.9	16.3	8.3	5.9	6.1	5.8	7.9	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	25.0	23.7	50.7	29.9	120.0	57.1	28.8	28.7	51.2	40.7	48.6
LnGrp LOS	D	C	C	D	C	F	E	C	C	D	D	D
Approach Vol, veh/h		558			1041			999			945	
Approach Delay, s/veh		29.2			68.0			37.7			46.2	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	28.5	8.1	28.5	20.9	25.1	12.1	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	12.9	15.9	4.5	11.8	16.4	19.5	7.9	22.0
Green Ext Time (p_c), s	0.2	2.3	0.0	1.7	0.0	1.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	60	733	50	55	520
Future Volume (Veh/h)	45	60	733	50	55	520
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	65	797	54	60	565
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1509	824			851	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1509	824			851	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	83			92	
cM capacity (veh/h)	123	373			788	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	114	851	60	565
Volume Left	49	0	60	0
Volume Right	65	54	0	0
cSH	199	1700	788	1700
Volume to Capacity	0.57	0.50	0.08	0.33
Queue Length 95th (ft)	78	0	6	0
Control Delay (s)	45.0	0.0	9.9	0.0
Lane LOS	E		A	
Approach Delay (s)	45.0	0.0	1.0	
Approach LOS	E			

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	60	733	50	55	520
Future Vol, veh/h	45	60	733	50	55	520
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	-	-	-	60	-
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	49	65	797	54	60	565

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1509	824	0	0	851	0
Stage 1	824	-	-	-	-	-
Stage 2	685	-	-	-	-	-
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	133	373	-	-	788	-
Stage 1	431	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	123	373	-	-	788	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	462	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.9	0	1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	199	788	-
HCM Lane V/C Ratio	-	-	0.574	0.076	-
HCM Control Delay (s)	-	-	44.9	9.9	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	3.1	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	6	40	8	15	98	34	542	3	33	409	84
Future Volume (Veh/h)	97	6	40	8	15	98	34	542	3	33	409	84
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	7	43	9	16	107	37	589	3	36	445	91
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1302	1191	451	1230	1280	594	542			594		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1302	1191	451	1230	1280	594	542			594		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	93	93	90	79	96			96		
cM capacity (veh/h)	93	173	605	130	153	504	1021			980		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	155	132	37	592	36	445	91
Volume Left	105	9	37	0	36	0	0
Volume Right	43	107	0	3	0	0	91
cSH	125	342	1021	1700	980	1700	1700
Volume to Capacity	1.24	0.39	0.04	0.35	0.04	0.26	0.05
Queue Length 95th (ft)	243	44	3	0	3	0	0
Control Delay (s)	224.6	22.0	8.7	0.0	8.8	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	224.6	22.0	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	25.8			
Intersection Capacity Utilization	50.2%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	21.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	6	40	8	15	98	34	542	3	33	409	84
Future Vol, veh/h	97	6	40	8	15	98	34	542	3	33	409	84
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	7	43	9	16	107	37	589	3	36	445	91

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1250	1191	451	1255	1281	594	542	0	0	594	0	0
Stage 1	523	523	-	667	667	-	-	-	-	-	-	-
Stage 2	727	668	-	588	614	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	150	187	608	148	166	505	1027	-	-	982	-	-
Stage 1	537	530	-	448	457	-	-	-	-	-	-	-
Stage 2	415	456	-	495	483	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 102	172	605	126	153	504	1021	-	-	980	-	-
Mov Cap-2 Maneuver	~ 102	172	-	126	153	-	-	-	-	-	-	-
Stage 1	514	507	-	431	440	-	-	-	-	-	-	-
Stage 2	303	439	-	437	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	184.7	22.1	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	136	340	980	-	-
HCM Lane V/C Ratio	0.036	-	-	1.143	0.387	0.037	-	-
HCM Control Delay (s)	8.7	-	-	184.7	22.1	8.8	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	8.9	1.8	0.1	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	7	276	5	316	9	243	131	248	199	10
Future Volume (vph)	20	9	7	276	5	316	9	243	131	248	199	10
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
Hourly flow rate (vph)	22	10	8	300	5	343	10	264	142	270	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	40	648	274	142	378	119
Volume Left (vph)	22	300	10	0	270	0
Volume Right (vph)	8	343	0	142	0	11
Hadj (s)	0.02	-0.19	0.05	-0.67	0.39	-0.03
Departure Headway (s)	8.3	6.4	7.6	6.9	7.8	7.3
Degree Utilization, x	0.09	1.15	0.58	0.27	0.82	0.24
Capacity (veh/h)	397	557	456	509	453	482
Control Delay (s)	12.1	109.4	19.5	11.3	35.6	11.5
Approach Delay (s)	12.1	109.4	16.7		29.9	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	58.2			
Level of Service	F			
Intersection Capacity Utilization	78.7%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	61.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	7	276	5	316	0	9	243	131	248	199
Future Vol, veh/h	20	9	7	276	5	316	0	9	243	131	248	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	10	8	300	5	343	0	10	264	142	270	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.9	114.8	18.9	32.8
HCM LOS	B	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	56%	46%	71%	0%
Vol Thru, %	96%	0%	25%	1%	29%	91%
Vol Right, %	0%	100%	19%	53%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	131	36	597	348	110
LT Vol	9	0	20	276	248	0
Through Vol	243	0	9	5	100	100
RT Vol	0	131	7	316	0	10
Lane Flow Rate	274	142	39	649	378	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.583	0.275	0.091	1.162	0.817	0.243
Departure Headway (Hd)	8.259	7.511	9.006	6.448	8.365	7.928
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	481	400	565	434	456
Service Time	5.959	5.211	7.006	4.51	6.065	5.628
HCM Lane V/C Ratio	0.621	0.295	0.098	1.149	0.871	0.261
HCM Control Delay	21.9	13	12.9	114.8	39	13.2
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	3.6	1.1	0.3	22.1	7.6	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	175	136	229	208	125	358
Future Volume (Veh/h)	175	136	229	208	125	358
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	190	148	249	226	136	389
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	747	136	525			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	747	136	525			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	28	83	76			
cM capacity (veh/h)	263	885	1031			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	338	249	113	113	136	389
Volume Left	190	249	0	0	0	0
Volume Right	148	0	0	0	0	389
cSH	468	1031	1700	1700	1700	1700
Volume to Capacity	0.72	0.24	0.07	0.07	0.08	0.23
Queue Length 95th (ft)	144	24	0	0	0	0
Control Delay (s)	31.1	9.6	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	31.1	5.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		9.7	
Intersection Capacity Utilization		41.5%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	175	136	229	208	125	358
Future Vol, veh/h	175	136	229	208	125	358
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	145	105	-	-	0
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	190	148	249	226	136	389

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	747	136	525	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	362	909	1034	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	275	909	1034	-	-	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.4	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1034	-	275	909	-	-
HCM Lane V/C Ratio	0.241	-	0.692	0.163	-	-
HCM Control Delay (s)	9.6	-	43	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	4.7	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	55	1	113	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	55	1	113	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	60	1	123	10	0	0	0	0	352	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	426	360	360	420	368	0	368			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426	360	360	420	368	0	368			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	91	100	78	99	100			100		
cM capacity (veh/h)	443	567	684	496	561	1085	1191			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	89	134	368
Volume Left	29	1	0
Volume Right	60	10	16
cSH	581	606	1700
Volume to Capacity	0.15	0.22	0.22
Queue Length 95th (ft)	13	21	0
Control Delay (s)	12.3	12.9	0.0
Lane LOS	B	B	
Approach Delay (s)	12.3	12.9	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		4.8			
Intersection Capacity Utilization		36.2%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	55	1	113	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	55	1	113	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	60	1	123	10	0	0	0	0	352	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	427	360	360	390	368	0				-	-	0
Stage 1	360	360	-	0	0	-				-	-	-
Stage 2	67	0	-	390	368	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	538	567	684	569	561	-				0	-	-
Stage 1	658	626	-	-	-	-				0	-	-
Stage 2	-	-	-	634	621	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	567	684	519	561	-				-	-	-
Mov Cap-2 Maneuver	-	567	-	519	561	-				-	-	-
Stage 1	658	626	-	-	-	-				-	-	-
Stage 2	-	-	-	579	621	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	561	-	-	-
HCM Lane V/C Ratio	-	0.221	-	-	-
HCM Control Delay (s)	-	13.2	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	328	1185	303	486	91	293	585	337	276
v/c Ratio	0.09	0.70	0.79	0.37	0.43	0.61	0.65	0.35	0.67	0.42
Control Delay	55.6	52.1	36.4	27.0	2.5	78.0	62.0	5.4	60.3	45.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	52.1	36.4	27.0	2.5	78.0	62.0	5.4	60.3	45.6
Queue Length 50th (ft)	16	114	427	166	5	77	130	41	144	106
Queue Length 95th (ft)	44	181	622	287	50	#158	192	69	212	155
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	291	609	1706	926	1173	174	662	1824	673	987
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	0.07	0.54	0.69	0.33	0.41	0.52	0.44	0.32	0.50	0.28

Intersection Summary

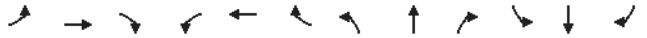
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	187	115	1090	279	447	84	270	538	310	205	49
Future Volume (vph)	18	187	115	1090	279	447	84	270	538	310	205	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3337		3433	1863	1568	1770	3539	2787	3433	3422	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3337		3433	1863	1568	1770	3539	2787	3433	3422	
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)	20	203	125	1185	303	486	91	293	585	337	223	53
RTOR Reduction (vph)	0	63	0	0	0	194	0	0	85	0	15	0
Lane Group Flow (vph)	20	265	0	1185	303	292	91	293	500	337	261	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	15.4	15.4		55.8	55.8	74.5	10.9	16.4	72.2	18.7	24.2	
Effective Green, g (s)	15.4	15.4		55.8	55.8	74.5	10.9	16.4	72.2	18.7	24.2	
Actuated g/C Ratio	0.12	0.12		0.44	0.44	0.59	0.09	0.13	0.57	0.15	0.19	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	214	405		1510	819	921	152	457	1586	506	653	
v/s Ratio Prot	0.01	c0.08		c0.35	0.16	0.05	0.05	c0.08	0.14	c0.10	0.08	
v/s Ratio Perm						0.14			0.04			
v/c Ratio	0.09	0.65		0.78	0.37	0.32	0.60	0.64	0.32	0.67	0.40	
Uniform Delay, d1	49.5	53.2		30.4	23.7	13.3	55.8	52.4	14.3	51.1	44.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	3.8		2.8	0.3	0.2	6.2	3.1	0.1	3.3	0.4	
Delay (s)	49.7	56.9		33.1	24.0	13.5	62.1	55.5	14.4	54.4	45.3	
Level of Service	D	E		C	C	B	E	E	B	D	D	
Approach Delay (s)		56.5			26.9			31.3			50.3	
Approach LOS		E			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	126.8	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	73.3%	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)	18	187	115	1090	279	447	84	270	538	310	205	49
Future Volume (veh/h)	18	187	115	1090	279	447	84	270	538	310	205	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	203	125	1185	303	486	91	293	585	337	223	53
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	222	269	158	1429	773	839	115	557	1591	419	582	135
Arrive On Green	0.12	0.12	0.12	0.41	0.41	0.41	0.06	0.16	0.16	0.12	0.20	0.20
Sat Flow, veh/h	1781	2152	1267	3456	1870	1564	1781	3554	2790	3456	2860	666
Grp Volume(v), veh/h	20	166	162	1185	303	486	91	293	585	337	137	139
Grp Sat Flow(s),veh/h/ln	1781	1777	1642	1728	1870	1564	1781	1777	1395	1728	1777	1749
Q Serve(g_s), s	1.1	10.1	10.7	34.2	12.7	23.4	5.6	8.5	12.7	10.6	7.4	7.7
Cycle Q Clear(g_c), s	1.1	10.1	10.7	34.2	12.7	23.4	5.6	8.5	12.7	10.6	7.4	7.7
Prop In Lane	1.00		0.77	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	222	222	205	1429	773	839	115	557	1591	419	361	356
V/C Ratio(X)	0.09	0.75	0.79	0.83	0.39	0.58	0.79	0.53	0.37	0.80	0.38	0.39
Avail Cap(c_a), veh/h	326	325	300	1908	1033	1056	195	739	1733	753	562	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	47.1	47.4	29.2	22.9	17.5	51.4	43.2	13.0	47.7	38.4	38.5
Incr Delay (d2), s/veh	0.2	5.4	8.5	2.4	0.3	0.6	11.3	0.8	0.1	3.7	0.7	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	0.5	4.8	4.9	13.9	5.4	8.0	2.8	3.7	8.0	4.8	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	52.5	55.9	31.6	23.2	18.2	62.7	44.0	13.2	51.4	39.0	39.2
LnGrp LOS	D	D	E	C	C	B	E	D	B	D	D	D
Approach Vol, veh/h		348			1974			969			613	
Approach Delay, s/veh		53.6			27.0			27.1			45.9	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	23.3		18.5	13.0	28.5		51.5				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	12.6	14.7		12.7	7.6	9.7		36.2				
Green Ext Time (p_c), s	0.9	2.8		1.2	0.1	1.6		10.0				

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	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	654	288	124	1375	692	396	303	449
v/c Ratio	0.56	0.53	0.39	0.66	1.00	0.92	0.63	0.85	0.74
Control Delay	63.0	31.7	5.0	65.8	57.3	61.3	46.5	64.4	44.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	31.7	5.0	65.8	57.3	61.3	46.5	64.4	44.5
Queue Length 50th (ft)	40	197	0	85	499	250	138	204	135
Queue Length 95th (ft)	74	281	61	#157	#737	#392	191	#358	191
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	200	1243	743	214	1377	754	819	401	876
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.53	0.39	0.58	1.00	0.92	0.48	0.76	0.51

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)	102	602	265	114	983	282	637	318	46	279	269	144
Future Volume (vph)	102	602	265	114	983	282	637	318	46	279	269	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3402		3433	3464		1770	3354	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3402		3433	3464		1770	3354	
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)	111	654	288	124	1068	307	692	346	50	303	292	157
RTOR Reduction (vph)	0	0	187	0	21	0	0	10	0	0	65	0
Lane Group Flow (vph)	111	654	101	124	1354	0	692	386	0	303	384	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.5	39.1	39.1	11.8	44.4		24.5	19.8		22.6	17.9	
Effective Green, g (s)	6.5	39.1	39.1	11.8	44.4		24.5	19.8		22.6	17.9	
Actuated g/C Ratio	0.06	0.35	0.35	0.11	0.40		0.22	0.18		0.20	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	1243	556	187	1357		755	616		359	539	
v/s Ratio Prot	0.03	0.18		c0.07	c0.40		c0.20	0.11		c0.17	0.11	
v/s Ratio Perm			0.06									
v/c Ratio	0.56	0.53	0.18	0.66	1.00		0.92	0.63		0.84	0.71	
Uniform Delay, d1	51.0	28.7	25.0	47.8	33.4		42.4	42.3		42.7	44.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.4	0.2	8.5	23.7		15.8	2.0		16.4	4.4	
Delay (s)	54.3	29.1	25.2	56.4	57.1		58.2	44.3		59.0	48.7	
Level of Service	D	C	C	E	E		E	D		E	D	
Approach Delay (s)		30.7			57.0			53.1			52.9	
Approach LOS		C			E			D			D	

Intersection Summary					
HCM 2000 Control Delay	49.0	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.96				
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	85.8%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	602	265	114	983	282	637	318	46	279	269	144
Future Volume (veh/h)	102	602	265	114	983	282	637	318	46	279	269	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	654	288	124	1068	307	692	346	50	303	292	157
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	167	1300	580	152	1097	313	747	614	88	335	381	200
Arrive On Green	0.05	0.37	0.37	0.09	0.40	0.40	0.22	0.20	0.20	0.19	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2724	776	3456	3117	446	1781	2254	1181
Grp Volume(v), veh/h	111	654	288	124	693	682	692	196	200	303	229	220
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1724	1728	1777	1786	1781	1777	1658
Q Serve(g_s), s	3.5	15.7	8.2	7.5	42.0	43.0	21.6	10.9	11.1	18.3	13.5	14.0
Cycle Q Clear(g_c), s	3.5	15.7	8.2	7.5	42.0	43.0	21.6	10.9	11.1	18.3	13.5	14.0
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.25	1.00		0.71
Lane Grp Cap(c), veh/h	167	1300	580	152	716	694	747	350	352	335	300	280
V/C Ratio(X)	0.66	0.50	0.50	0.81	0.97	0.98	0.93	0.56	0.57	0.90	0.76	0.79
Avail Cap(c_a), veh/h	204	1300	580	219	716	694	757	420	422	408	438	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	27.1	7.6	49.4	32.2	32.4	42.3	39.9	39.9	43.7	43.6	43.8
Incr Delay (d2), s/veh	5.8	0.3	0.7	14.2	26.0	29.5	17.3	1.4	1.4	20.4	4.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.5	5.2	3.9	22.1	22.5	10.7	4.8	4.9	9.7	6.2	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	27.4	8.3	63.7	58.1	61.9	59.6	41.3	41.4	64.1	48.1	50.0
LnGrp LOS	E	C	A	E	E	E	E	D	D	E	D	D
Approach Vol, veh/h		1053			1499			1088			752	
Approach Delay, s/veh		25.3			60.3			52.9			55.1	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	44.7	28.3	23.1	9.8	48.8	25.2	26.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	9.5	17.7	23.6	16.0	5.5	45.0	20.3	13.1
Green Ext Time (p_c), s	0.1	5.1	0.2	1.9	0.0	0.0	0.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D

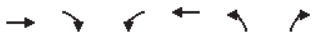
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	363	166	13	782	212	7
v/c Ratio	0.45	0.22	0.03	0.51	0.43	0.02
Control Delay	11.6	3.0	9.1	10.8	14.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	3.0	9.1	10.8	14.3	7.0
Queue Length 50th (ft)	43	0	1	50	29	0
Queue Length 95th (ft)	167	30	12	165	100	7
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1595	1343	852	3030	1348	1209
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	0.23	0.12	0.02	0.26	0.16	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	334	153	12	719	195	6
Future Volume (vph)	334	153	12	719	195	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.54	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	987	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	363	166	13	782	212	7
RTOR Reduction (vph)	0	92	0	0	0	5
Lane Group Flow (vph)	363	74	13	782	212	2
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	18.0	18.0	18.0	18.0	11.7	11.7
Effective Green, g (s)	18.0	18.0	18.0	18.0	11.7	11.7
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.29	0.29
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	820	680	438	1557	506	452
v/s Ratio Prot	0.20			c0.22		0.00
v/s Ratio Perm		0.05	0.01		c0.12	
v/c Ratio	0.44	0.11	0.03	0.50	0.42	0.00
Uniform Delay, d1	7.8	6.6	6.3	8.0	11.7	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.1	0.2	0.0
Delay (s)	7.9	6.6	6.3	8.1	11.9	10.3
Level of Service	A	A	A	A	B	B
Approach Delay (s)	7.5			8.1	11.8	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	10.8
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	334	153	12	719	195	6
Future Volume (veh/h)	334	153	12	719	195	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	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	363	166	13	782	212	7
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	701	591	454	1331	414	369
Arrive On Green	0.38	0.38	0.38	0.38	0.23	0.23
Sat Flow, veh/h	1856	1564	866	3618	1767	1572
Grp Volume(v), veh/h	363	166	13	782	212	7
Grp Sat Flow(s),veh/h/ln	1856	1564	866	1763	1767	1572
Q Serve(g_s), s	4.2	2.1	0.3	4.9	2.9	0.1
Cycle Q Clear(g_c), s	4.2	2.1	4.5	4.9	2.9	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	701	591	454	1331	414	369
V/C Ratio(X)	0.52	0.28	0.03	0.59	0.51	0.02
Avail Cap(c_a), veh/h	2306	1944	1203	4381	1879	1672
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	6.7	6.0	8.5	6.9	9.3	8.2
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.3	0.0	0.8	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.9	6.1	8.5	7.1	9.6	8.2
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	529			795	219	
Approach Delay, s/veh	6.7			7.1	9.6	
Approach LOS	A			A	A	

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		15.9				15.9	11.9
Change Period (Y+Rc), s		5.4				5.4	5.4
Max Green Setting (Gmax), s		34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s		6.2				6.9	4.9
Green Ext Time (p_c), s		1.5				3.6	0.3

Intersection Summary			
HCM 6th Ctrl Delay		7.3	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	262	78	5	680	0	50	0	5	0	0	0
Future Volume (Veh/h)	0	262	78	5	680	0	50	0	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	285	85	5	739	0	54	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	739			370			707	1076	328	1079	1119	370
vC1, stage 1 conf vol							328	328		749	749	
vC2, stage 2 conf vol							380	749		330	370	
vCu, unblocked vol	739			218			600	1020	170	1022	1068	370
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			90	100	99	100	100	100
cM capacity (veh/h)	863			1189			535	380	744	341	374	628

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	370	374	370	59	0
Volume Left	0	5	0	54	0
Volume Right	85	0	0	5	0
cSH	863	1189	1700	585	1700
Volume to Capacity	0.00	0.00	0.22	0.10	0.00
Queue Length 95th (ft)	0	0	0	8	0
Control Delay (s)	0.0	0.1	0.0	12.3	0.0
Lane LOS		A		B	A
Approach Delay (s)	0.0	0.1		12.3	0.0
Approach LOS				B	A

Intersection Summary					
Average Delay		0.7			
Intersection Capacity Utilization		32.3%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	262	78	5	680	0	50	0	5	0	0	0
Future Vol, veh/h	0	262	78	5	680	0	50	0	5	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	85	5	739	0	54	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	370	0	0	708	1077	328	1079	1119	370
Stage 1	-	-	-	-	-	-	328	328	-	749	749	-
Stage 2	-	-	-	-	-	-	380	749	-	330	370	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	865	-	-	1187	-	-	335	218	713	184	206	628
Stage 1	-	-	-	-	-	-	684	646	-	371	418	-
Stage 2	-	-	-	-	-	-	615	418	-	682	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	865	-	-	1187	-	-	333	216	713	182	205	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	370	-	335	364	-
Stage 1	-	-	-	-	-	-	684	646	-	371	415	-
Stage 2	-	-	-	-	-	-	611	415	-	677	619	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	713	865	-	-	1187	-	-	-
HCM Lane V/C Ratio	0.106	0.008	-	-	-	0.005	-	-	-
HCM Control Delay (s)	12.9	10.1	0	-	-	8	0	-	0
HCM Lane LOS	B	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	24	119	95	23	265	2	246	9	34	7	9	72
Future Volume (veh/h)	24	119	95	23	265	2	246	9	34	7	9	72
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
Hourly flow rate (vph)	26	129	103	25	288	2	267	10	37	8	10	78
Approach Volume (veh/h)		258			315			314			96	
Crossing Volume (veh/h)		43			303			163			580	
High Capacity (veh/h)		1339			1092			1219			875	
High v/c (veh/h)		0.19			0.29			0.26			0.11	
Low Capacity (veh/h)		1120			896			1011			703	
Low v/c (veh/h)		0.23			0.35			0.31			0.14	

Intersection Summary				
Maximum v/c High	0.29			
Maximum v/c Low	0.35			
Intersection Capacity Utilization	48.6%	ICU Level of Service		A

Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	258	315	314	96
Demand Flow Rate, veh/h	264	322	320	98
Vehicles Circulating, veh/h	43	309	167	591
Vehicles Exiting, veh/h	646	178	140	39
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	7.0	5.7	6.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	264	322	320	98
Cap Entry Lane, veh/h	1321	1007	1164	755
Entry HV Adj Factor	0.979	0.979	0.981	0.978
Flow Entry, veh/h	258	315	314	96
Cap Entry, veh/h	1293	986	1141	738
V/C Ratio	0.200	0.320	0.275	0.130
Control Delay, s/veh	4.5	7.0	5.7	6.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	8	24	1	24	13	40	168	1	9	99	25
Future Volume (vph)	17	8	24	1	24	13	40	168	1	9	99	25
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
Hourly flow rate (vph)	18	9	26	1	26	14	43	183	1	10	108	27

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	53	41	227	145
Volume Left (vph)	18	1	43	10
Volume Right (vph)	26	14	1	27
Hadj (s)	-0.09	-0.06	0.17	0.04
Departure Headway (s)	4.7	4.8	4.5	4.4
Degree Utilization, x	0.07	0.05	0.28	0.18
Capacity (veh/h)	696	689	783	780
Control Delay (s)	8.1	8.0	9.2	8.4
Approach Delay (s)	8.1	8.0	9.2	8.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	8	24	1	24	13	40	168	1	9	99	25
Future Vol, veh/h	17	8	24	1	24	13	40	168	1	9	99	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	18	9	26	1	26	14	43	183	1	10	108	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8	9.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	35%	3%	7%
Vol Thru, %	80%	16%	63%	74%
Vol Right, %	0%	49%	34%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	209	49	38	133
LT Vol	40	17	1	9
Through Vol	168	8	24	99
RT Vol	1	24	13	25
Lane Flow Rate	227	53	41	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0.281	0.07	0.054	0.177
Departure Headway (Hd)	4.454	4.708	4.748	4.409
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	809	762	755	815
Service Time	2.47	2.732	2.774	2.427
HCM Lane V/C Ratio	0.281	0.07	0.054	0.178
HCM Control Delay	9.2	8.1	8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.2	0.2	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	51	20	0	128	18	40	65	0	7	43	92
Future Volume (Veh/h)	45	51	20	0	128	18	40	65	0	7	43	92
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	55	22	0	139	20	43	71	0	8	47	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	159			77			436	323	66	348	324	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159			77			436	323	66	348	324	149
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			90	88	100	98	92	89
cM capacity (veh/h)	1408			1509			427	571	992	531	570	892

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	126	159	114	8	147
Volume Left	49	0	43	8	0
Volume Right	22	20	0	0	100
cSH	1408	1509	506	531	756
Volume to Capacity	0.03	0.00	0.23	0.02	0.19
Queue Length 95th (ft)	3	0	21	1	18
Control Delay (s)	3.1	0.0	14.2	11.9	10.9
Lane LOS	A		B	B	B
Approach Delay (s)	3.1	0.0	14.2	11.0	
Approach LOS			B	B	

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	41.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	45	51	20	0	128	18	40	65	0	7	43	92
Future Vol, veh/h	45	51	20	0	128	18	40	65	0	7	43	92
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	49	55	22	0	139	20	43	71	0	8	47	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	77	0	0	387	323	66	349	324	149
Stage 1	-	-	-	-	-	-	164	164	-	149	149	-
Stage 2	-	-	-	-	-	-	223	159	-	200	175	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1408	-	-	1509	-	-	568	591	992	602	590	892
Stage 1	-	-	-	-	-	-	833	759	-	849	770	-
Stage 2	-	-	-	-	-	-	775	762	-	797	750	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1408	-	-	1509	-	-	460	570	992	530	569	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	570	-	530	569	-
Stage 1	-	-	-	-	-	-	803	732	-	818	770	-
Stage 2	-	-	-	-	-	-	646	762	-	694	723	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0	13.8	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	522	1408	-	-	1509	-	-	530	755
HCM Lane V/C Ratio	0.219	0.035	-	-	-	-	-	0.014	0.194
HCM Control Delay (s)	13.8	7.6	0	-	0	-	-	11.9	10.9
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0	0.7



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	2	142	107	7	110	48
Future Volume (veh/h)	2	142	107	7	110	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	154	116	8	120	52
Approach Volume (veh/h)	156		124			172
Crossing Volume (veh/h)	116		120			2
High Capacity (veh/h)	1265		1261			1382
High v/c (veh/h)	0.12		0.10			0.12
Low Capacity (veh/h)	1052		1049			1159
Low v/c (veh/h)	0.15		0.12			0.15

Intersection Summary				
Maximum v/c High	0.12			
Maximum v/c Low	0.15			
Intersection Capacity Utilization	30.8%	ICU Level of Service		A

Intersection	
Intersection Delay, s/veh	3.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	156	124	172
Demand Flow Rate, veh/h	159	126	175
Vehicles Circulating, veh/h	118	122	2
Vehicles Exiting, veh/h	130	55	275
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.1	3.9	3.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	159	126	175
Cap Entry Lane, veh/h	1223	1218	1377
Entry HV Adj Factor	0.981	0.982	0.983
Flow Entry, veh/h	156	124	172
Cap Entry, veh/h	1200	1196	1353
V/C Ratio	0.130	0.103	0.127
Control Delay, s/veh	4.1	3.9	3.7
LOS	A	A	A
95th %tile Queue, veh	0	0	0



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	65	80	5	1	6
Future Volume (Veh/h)	3	65	80	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	71	87	5	1	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	92				166	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92				166	90
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1496				820	966

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	74	92	8
Volume Left	3	0	1
Volume Right	0	5	7
cSH	1496	1700	945
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.3	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	65	80	5	1	6
Future Vol, veh/h	3	65	80	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	71	87	5	1	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	92	0	-	0	167	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1496	-	-	-	821	965
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1496	-	-	-	819	965
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1496	-	-	-	941
HCM Lane V/C Ratio	0.002	-	-	-	0.008
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	257	1291	1299	118	125	231
v/c Ratio	0.68	0.39	0.82	0.15	0.53	0.36
Control Delay	49.6	0.3	29.0	3.6	54.2	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	0.3	29.0	3.6	54.2	20.1
Queue Length 50th (ft)	154	0	373	0	77	81
Queue Length 95th (ft)	312	0	570	32	168	181
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	505	3312	2848	1291	505	979
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	0.39	0.46	0.09	0.25	0.24

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	254	1278	1286	117	124	229
Future Volume (vph)	254	1278	1286	117	124	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	257	1291	1299	118	125	231
RTOR Reduction (vph)	0	0	0	61	0	26
Lane Group Flow (vph)	257	1291	1299	57	125	205
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	23.8	102.9	49.4	49.4	14.7	42.5
Effective Green, g (s)	23.8	102.9	49.4	49.4	14.7	42.5
Actuated g/C Ratio	0.23	1.00	0.48	0.48	0.14	0.41
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	383	3312	1590	711	236	612
v/s Ratio Prot	c0.16	0.39	c0.39		c0.08	0.14
v/s Ratio Perm				0.04		
v/c Ratio	0.67	0.39	0.82	0.08	0.53	0.34
Uniform Delay, d1	36.0	0.0	22.9	14.5	40.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.3	3.6	0.1	2.4	0.3
Delay (s)	40.6	0.3	26.4	14.5	43.3	20.9
Level of Service	D	A	C	B	D	C
Approach Delay (s)		7.0	25.4		28.8	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	69.4%	ICU Level of Service	C	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	196	971	279	52	887	127	248	283	193	336	312
v/c Ratio	0.53	0.76	0.38	0.19	0.80	0.22	0.59	0.33	0.53	0.77	0.56
Control Delay	58.6	38.3	5.0	58.3	43.0	6.4	57.9	35.9	58.6	56.1	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	38.3	5.0	58.3	43.0	6.4	57.9	35.9	58.6	56.1	14.3
Queue Length 50th (ft)	72	341	0	19	314	0	91	85	71	234	39
Queue Length 95th (ft)	139	536	62	48	495	46	170	154	138	423	149
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	527	2116	1028	527	2116	980	586	1222	586	652	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.46	0.27	0.10	0.42	0.13	0.42	0.23	0.33	0.52	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	942	271	50	860	123	241	228	47	187	326	303
Future Volume (vph)	190	942	271	50	860	123	241	228	47	187	326	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1475	3273	3374	1489	3273	3280		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1475	3273	3374	1489	3273	3280		3273	1776	1509
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)	196	971	279	52	887	127	248	235	48	193	336	312
RTOR Reduction (vph)	0	0	173	0	0	84	0	10	0	0	0	186
Lane Group Flow (vph)	196	971	106	52	887	43	248	273	0	193	336	126
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.2	44.6	44.6	8.2	39.6	39.6	15.0	30.6		13.1	28.7	28.7
Effective Green, g (s)	13.2	44.6	44.6	8.2	39.6	39.6	15.0	30.6		13.1	28.7	28.7
Actuated g/C Ratio	0.11	0.38	0.38	0.07	0.34	0.34	0.13	0.26		0.11	0.25	0.25
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	368	1285	561	229	1140	503	419	857		366	435	369
v/s Ratio Prot	0.06	c0.29		0.02	c0.26		c0.08	0.08		0.06	c0.19	
v/s Ratio Perm			0.07			0.03						0.08
v/c Ratio	0.53	0.76	0.19	0.23	0.78	0.09	0.59	0.32		0.53	0.77	0.34
Uniform Delay, d1	49.0	31.5	24.2	51.5	34.8	26.4	48.2	34.9		49.1	41.2	36.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	2.6	0.2	0.2	3.4	0.1	2.2	0.2		1.4	8.3	0.6
Delay (s)	50.5	34.1	24.4	51.6	38.2	26.5	50.4	35.1		50.5	49.4	37.0
Level of Service	D	C	C	D	D	C	D	D		D	D	D
Approach Delay (s)		34.4			37.5			42.2			45.1	
Approach LOS		C			D			D			D	

Intersection Summary					
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.75				
Actuated Cycle Length (s)	117.1	Sum of lost time (s)		20.6	
Intersection Capacity Utilization	70.6%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	942	271	50	860	123	241	228	47	187	326	303
Future Volume (veh/h)	190	942	271	50	860	123	241	228	47	187	326	303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	196	971	279	52	887	127	248	235	48	193	336	312
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	275	1245	554	105	1191	531	333	750	150	274	444	376
Arrive On Green	0.08	0.36	0.36	0.03	0.35	0.35	0.10	0.26	0.26	0.08	0.25	0.25
Sat Flow, veh/h	3319	3413	1520	3319	3413	1521	3319	2831	568	3319	1796	1522
Grp Volume(v), veh/h	196	971	279	52	887	127	248	140	143	193	336	312
Grp Sat Flow(s),veh/h/ln	1659	1706	1520	1659	1706	1521	1659	1706	1692	1659	1796	1522
Q Serve(g_s), s	5.4	23.6	8.7	1.4	21.3	5.5	6.8	6.1	6.3	5.3	16.2	18.1
Cycle Q Clear(g_c), s	5.4	23.6	8.7	1.4	21.3	5.5	6.8	6.1	6.3	5.3	16.2	18.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	275	1245	554	105	1191	531	333	452	448	274	444	376
V/C Ratio(X)	0.71	0.78	0.50	0.49	0.74	0.24	0.74	0.31	0.32	0.70	0.76	0.83
Avail Cap(c_a), veh/h	640	2561	1141	640	2561	1141	711	750	744	711	789	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	26.3	9.8	44.4	26.7	21.6	40.8	27.5	27.5	41.7	32.5	33.3
Incr Delay (d2), s/veh	3.4	1.1	0.7	1.3	0.9	0.2	3.3	0.4	0.4	3.3	2.7	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.6	4.2	0.6	7.9	1.9	2.8	2.4	2.5	2.2	7.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	27.4	10.5	45.8	27.7	21.8	44.1	27.9	27.9	45.0	35.2	38.0
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1446			1066			531			841	
Approach Delay, s/veh		26.5			27.9			35.5			38.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	41.3	13.4	28.3	11.7	39.8	11.7	30.0
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.4	25.6	8.8	20.1	7.4	23.3	7.3	8.3
Green Ext Time (p_c), s	0.0	8.5	0.6	2.9	0.4	6.8	0.5	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1074	102	323	1015	0	18	0	389	0	0	0
Future Volume (Veh/h)	0	1074	102	323	1015	0	18	0	389	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1107	105	333	1046	0	19	0	401	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1047			1212			2348	2872	606	2266	2925	524
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047			1212			2348	2872	606	2266	2925	524
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			39			0	100	6	100	100	100
cM capacity (veh/h)	631			544			9	6	428	1	5	485

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	738	474	333	697	349	420	0
Volume Left	0	0	0	333	0	0	19	0
Volume Right	0	0	105	0	0	0	401	0
cSH	1700	1700	1700	544	1700	1700	147	1700
Volume to Capacity	0.00	0.43	0.28	0.61	0.41	0.21	2.86	0.00
Queue Length 95th (ft)	0	0	0	102	0	0	957	0
Control Delay (s)	0.0	0.0	0.0	21.5	0.0	0.0	904.0	0.0
Lane LOS				C			F	A
Approach Delay (s)	0.0			5.2			904.0	0.0
Approach LOS							F	A

Intersection Summary				
Average Delay		128.5		
Intersection Capacity Utilization		64.2%	ICU Level of Service	C
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	18.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1074	102	323	1015	0	18	0	389	0	0	0
Future Vol, veh/h	0	1074	102	323	1015	0	18	0	389	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	1107	105	333	1046	0	19	0	401	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1047	0	0	1212	0	0	2349	2873	606	2267	2925	524
Stage 1	-	-	-	-	-	-	1160	1160	-	1713	1713	-
Stage 2	-	-	-	-	-	-	1189	1713	-	554	1212	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	631	-	-	544	-	-	~ 18	15	428	21	14	485
Stage 1	-	-	-	-	-	-	200	258	-	89	137	-
Stage 2	-	-	-	-	-	-	192	137	-	472	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	630	-	-	544	-	-	~ 9	6	428	1	5	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	6	-	1	5	-
Stage 1	-	-	-	-	-	-	200	258	-	89	53	-
Stage 2	-	-	-	-	-	-	74	53	-	30	243	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.2	115.2	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	9	428	630	-	-	544	-	-	-	-
HCM Lane V/C Ratio	2.062	0.937	-	-	-	0.612	-	-	-	-
HCM Control Delay (s)	$ 1298.3	60.5	0	-	-	21.5	-	-	0	0
HCM Lane LOS	F	F	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	3.3	10.7	0	-	-	4.1	-	-	-	-

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	283	1179	977	13	11	362
Future Volume (Veh/h)	283	1179	977	13	11	362
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	301	1254	1039	14	12	385
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1053				2268	520
vC1, stage 1 conf vol					1039	
vC2, stage 2 conf vol					1229	
vCu, unblocked vol	1053				2268	520
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	51				88	20
cM capacity (veh/h)	611				103	481

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	301	627	627	520	520	14	397
Volume Left	301	0	0	0	0	0	12
Volume Right	0	0	0	0	0	14	385
cSH	611	1700	1700	1700	1700	1700	496
Volume to Capacity	0.49	0.37	0.37	0.31	0.31	0.01	0.80
Queue Length 95th (ft)	68	0	0	0	0	0	187
Control Delay (s)	16.5	0.0	0.0	0.0	0.0	0.0	36.5
Lane LOS	C						E
Approach Delay (s)	3.2			0.0			36.5
Approach LOS							E

Intersection Summary			
Average Delay		6.5	
Intersection Capacity Utilization		56.1%	ICU Level of Service
Analysis Period (min)		15	

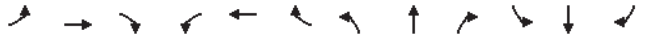
Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	283	1179	977	13	11	362
Future Vol, veh/h	283	1179	977	13	11	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	301	1254	1039	14	12	385

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1053	0	-	0	2268	520
Stage 1	-	-	-	-	1039	-
Stage 2	-	-	-	-	1229	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	611	-	-	-	31	481
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	224	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	611	-	-	-	16	481
Mov Cap-2 Maneuver	-	-	-	-	114	-
Stage 1	-	-	-	-	144	-
Stage 2	-	-	-	-	224	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	611	-	-	-	114	481
HCM Lane V/C Ratio	0.493	-	-	-	0.103	0.801
HCM Control Delay (s)	16.5	-	-	-	40.2	36.2
HCM Lane LOS	C	-	-	-	E	E
HCM 95th %tile Q(veh)	2.7	-	-	-	0.3	7.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1179	11	1	974	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	1179	11	1	974	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1215	11	1	1004	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1004			1226			1720	2221	608	1616	2232	502
vC1, stage 1 conf vol							1215	1215		1006	1006	
vC2, stage 2 conf vol							505	1006		610	1226	
vCu, unblocked vol	1004			1226			1720	2221	608	1616	2232	502
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			89	100	99	100	100	100
cM capacity (veh/h)	628			512			166	181	415	210	179	489

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	608	608	11	1	669	335	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	11	0	0	0	4	1
cSH	1700	1700	1700	1700	512	1700	1700	202	489
Volume to Capacity	0.00	0.36	0.36	0.01	0.00	0.39	0.20	0.11	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	9	0
Control Delay (s)	0.0	0.0	0.0	0.0	12.0	0.0	0.0	26.5	12.4
Lane LOS					B			D	B
Approach Delay (s)	0.0				0.0			26.5	12.4
Approach LOS								D	B

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization	49.3%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1179	11	1	974	0	17	0	4	0	0	1
Future Vol, veh/h	0	1179	11	1	974	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1215	11	1	1004	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1004	0	0	1226	0	0	1719	2221	608	1614	2232	502
Stage 1	-	-	-	-	-	-	1215	1215	-	1006	1006	-
Stage 2	-	-	-	-	-	-	504	1006	-	608	1226	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	628	-	-	512	-	-	52	38	415	63	37	489
Stage 1	-	-	-	-	-	-	177	233	-	240	296	-
Stage 2	-	-	-	-	-	-	493	296	-	426	230	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	628	-	-	512	-	-	52	38	415	62	37	489
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	175	-	204	173	-
Stage 1	-	-	-	-	-	-	177	233	-	240	295	-
Stage 2	-	-	-	-	-	-	491	295	-	422	230	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	27	12.4
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	161	415	628	-	-	512	-	-	489
HCM Lane V/C Ratio	0.109	0.01	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	30.1	13.8	0	-	-	12	-	-	12.4
HCM Lane LOS	D	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.4	0	0	-	-	0	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	69	235	64	313	204	109	49	294	293	34	476	95
Future Volume (veh/h)	69	235	64	313	204	109	49	294	293	34	476	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	74	253	69	337	219	117	53	316	315	37	512	102
Approach Volume (veh/h)		396			673			684			651	
Crossing Volume (veh/h)		886			443			364			609	
High Capacity (veh/h)		683			977			1040			855	
High v/c (veh/h)		0.58			0.69			0.66			0.76	
Low Capacity (veh/h)		535			793			850			685	
Low v/c (veh/h)		0.74			0.85			0.81			0.95	

Intersection Summary					
Maximum v/c High		0.76			
Maximum v/c Low		0.95			
Intersection Capacity Utilization		115.1%	ICU Level of Service		H

Intersection	
Intersection Delay, s/veh	24.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	396	673	684	651
Demand Flow Rate, veh/h	401	679	691	657
Vehicles Circulating, veh/h	894	448	368	615
Vehicles Exiting, veh/h	378	611	927	512
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	25.5	20.9	17.1	35.7
Approach LOS	D	C	C	E

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	401	679	691	657
Cap Entry Lane, veh/h	554	874	948	737
Entry HV Adj Factor	0.989	0.991	0.990	0.991
Flow Entry, veh/h	396	673	684	651
Cap Entry, veh/h	548	866	938	730
V/C Ratio	0.723	0.777	0.729	0.892
Control Delay, s/veh	25.5	20.9	17.1	35.7
LOS	D	C	C	E
95th %tile Queue, veh	6	8	7	11



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	87	11	2	65	0	11	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	65			98			164	164	92	165	169	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			98			164	164	92	165	169	65
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1524			1483			796	724	959	792	719	993

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	67	13	0
Volume Left	1	2	11	0
Volume Right	11	0	1	0
cSH	1524	1483	800	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.2%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	80	10	2	60	0	10	1	1	0	0	0
Future Vol, veh/h	1	80	10	2	60	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	87	11	2	65	0	11	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	98	0	0	164	164	93	165	169	65
Stage 1	-	-	-	-	-	-	95	95	-	69	69	-
Stage 2	-	-	-	-	-	-	69	69	-	96	100	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1524	-	-	1483	-	-	796	725	959	795	720	993
Stage 1	-	-	-	-	-	-	907	812	-	936	834	-
Stage 2	-	-	-	-	-	-	936	834	-	906	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1483	-	-	794	724	959	792	719	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	724	-	792	719	-
Stage 1	-	-	-	-	-	-	906	811	-	935	833	-
Stage 2	-	-	-	-	-	-	935	833	-	903	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1524	-	-	1483	-	-	-
HCM Lane V/C Ratio	0.016	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	520	255	462	650	6	47	281	357	358	110
v/c Ratio	0.19	0.69	0.70	0.57	0.62	0.03	0.26	0.69	0.76	0.75	0.21
Control Delay	54.0	40.3	47.3	25.5	4.9	44.0	46.9	15.0	43.8	43.1	4.2
Queue Delay	0.0	0.0	0.0	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	40.3	47.4	26.6	5.3	44.0	46.9	15.0	43.8	43.1	4.2
Queue Length 50th (ft)	12	147	141	183	0	3	27	0	197	197	0
Queue Length 95th (ft)	44	255	268	398	79	17	69	80	#405	#388	28
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	109	1001	546	990	1127	381	401	562	636	645	668
Starvation Cap Reductn	0	0	9	298	144	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.52	0.47	0.67	0.66	0.02	0.12	0.50	0.56	0.56	0.16

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)	20	458	31	240	434	611	6	44	264	588	84	103
Future Volume (vph)	20	458	31	240	434	611	6	44	264	588	84	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3534		1787	1881	1558	1787	1881	1599	1698	1722	1560
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3534		1787	1881	1558	1787	1881	1599	1698	1722	1560
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)	21	487	33	255	462	650	6	47	281	626	89	110
RTOR Reduction (vph)	0	4	0	0	0	374	0	0	254	0	0	80
Lane Group Flow (vph)	21	516	0	255	462	276	6	47	27	357	358	30
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	22.8		18.7	39.8	39.8	8.9	8.9	8.9	25.4	25.4	25.4
Effective Green, g (s)	1.7	22.8		18.7	39.8	39.8	8.9	8.9	8.9	25.4	25.4	25.4
Actuated g/C Ratio	0.02	0.24		0.20	0.42	0.42	0.09	0.09	0.09	0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	32	859		356	798	661	169	178	151	459	466	422
v/s Ratio Prot	0.01	0.15		c0.14	c0.25		0.00	c0.02		c0.21	0.21	
v/s Ratio Perm						0.18			0.02			0.02
v/c Ratio	0.66	0.60		0.72	0.58	0.42	0.04	0.26	0.18	0.78	0.77	0.07
Uniform Delay, d1	45.8	31.5		35.1	20.6	18.9	38.6	39.4	39.1	31.6	31.5	25.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.4	1.2		6.7	1.0	0.4	0.1	0.8	0.6	8.1	7.5	0.1
Delay (s)	85.1	32.7		41.8	21.6	19.3	38.6	40.2	39.6	39.7	38.9	25.5
Level of Service	F	C		D	C	B	D	D	D	D	D	C
Approach Delay (s)		34.7			24.3			39.7			37.5	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.0%	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	458	31	240	434	611	6	44	264	588	84	103
Future Volume (veh/h)	20	458	31	240	434	611	6	44	264	588	84	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	487	33	255	462	650	6	47	281	690	0	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	950	64	290	790	654	305	320	271	805	0	357
Arrive On Green	0.02	0.28	0.28	0.16	0.42	0.42	0.17	0.17	0.17	0.22	0.00	0.22
Sat Flow, veh/h	1795	3403	230	1795	1885	1559	1795	1885	1598	3591	0	1590
Grp Volume(v), veh/h	21	256	264	255	462	650	6	47	281	690	0	110
Grp Sat Flow(s),veh/h/ln	1795	1791	1842	1795	1885	1559	1795	1885	1598	1795	0	1590
Q Serve(g_s), s	1.3	13.1	13.2	15.1	20.5	45.3	0.3	2.3	18.5	20.1	0.0	6.3
Cycle Q Clear(g_c), s	1.3	13.1	13.2	15.1	20.5	45.3	0.3	2.3	18.5	20.1	0.0	6.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	500	514	290	790	654	305	320	271	805	0	357
V/C Ratio(X)	0.54	0.51	0.51	0.88	0.58	0.99	0.02	0.15	1.04	0.86	0.00	0.31
Avail Cap(c_a), veh/h	87	500	514	437	790	654	305	320	271	1071	0	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	33.0	33.1	44.6	24.3	31.5	37.7	38.5	45.2	40.6	0.0	35.2
Incr Delay (d2), s/veh	11.3	0.9	0.9	12.7	1.1	33.7	0.0	0.2	64.4	5.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.8	6.0	7.7	9.2	22.5	0.1	1.1	12.0	9.3	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	33.9	33.9	57.3	25.5	65.2	37.7	38.7	109.6	46.1	0.0	35.7
LnGrp LOS	E	C	C	E	C	E	D	D	F	D	A	D
Approach Vol, veh/h		541			1367			334			800	
Approach Delay, s/veh		35.1			50.3			98.4			44.6	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	34.9		28.9	6.9	50.2		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	17.1	15.2		22.1	3.3	47.3		20.5				
Green Ext Time (p_c), s	0.5	2.2		2.3	0.0	0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			51.4									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

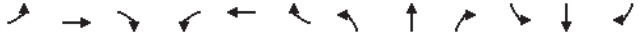
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	1319	20	1077	265	276	30	447	8	27
v/c Ratio	0.42	0.70	0.15	0.69	0.34	0.66	0.05	0.77	0.02	0.04
Control Delay	45.4	18.5	47.4	23.7	8.2	34.7	22.6	28.0	22.4	0.1
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	19.3	47.4	23.7	8.2	34.7	22.6	28.0	22.4	0.1
Queue Length 50th (ft)	47	217	10	241	27	130	12	152	3	0
Queue Length 95th (ft)	109	479	38	406	96	233	33	290	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	312	2309	137	2070	982	729	986	906	727	933
Starvation Cap Reductn	0	623	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	0.29	0.78	0.15	0.52	0.27	0.38	0.03	0.49	0.01	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1196	31	19	1002	246	257	28	416	7	0	25
Future Volume (vph)	85	1196	31	19	1002	246	257	28	416	7	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3558		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3558		1787	3574	1564	1391	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	91	1286	33	20	1077	265	276	30	447	8	0	27
RTOR Reduction (vph)	0	1	0	0	0	99	0	0	101	0	19	0
Lane Group Flow (vph)	91	1318	0	20	1077	166	276	30	346	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.5	42.7		1.7	36.9	36.9	24.3	24.3	24.3	24.3	24.3	
Effective Green, g (s)	7.5	42.7		1.7	36.9	36.9	24.3	24.3	24.3	24.3	24.3	
Actuated g/C Ratio	0.09	0.52		0.02	0.45	0.45	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	163	1848		36	1604	702	411	556	472	410	472	
v/s Ratio Prot	c0.05	c0.37		0.01	0.30			0.02			0.00	
v/s Ratio Perm						0.11	0.20		c0.22	0.01		
v/c Ratio	0.56	0.71		0.56	0.67	0.24	0.67	0.05	0.73	0.02	0.02	
Uniform Delay, d1	35.8	15.1		39.9	17.9	14.0	25.4	20.7	26.0	20.5	20.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.1	1.3		17.3	1.1	0.2	4.3	0.0	5.8	0.0	0.0	
Delay (s)	39.9	16.4		57.1	19.0	14.1	29.7	20.8	31.9	20.5	20.5	
Level of Service	D	B		E	B	B	C	C	C	C	C	
Approach Delay (s)		17.9			18.6			30.6			20.5	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	75.2%	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)	85	1196	31	19	1002	246	257	28	416	7	0	25
Future Volume (veh/h)	85	1196	31	19	1002	246	257	28	416	7	0	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	91	1286	33	20	1077	0	276	30	447	8	0	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	119	1673	43	41	1526		533	610	517	387	0	517
Arrive On Green	0.07	0.47	0.47	0.02	0.43	0.00	0.32	0.32	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1795	3565	91	1795	3582	1598	1394	1885	1598	925	0	1598
Grp Volume(v), veh/h	91	646	673	20	1077	0	276	30	447	8	0	27
Grp Sat Flow(s),veh/h/ln	1795	1791	1866	1795	1791	1598	1394	1885	1598	925	0	1598
Q Serve(g_s), s	3.7	21.9	22.0	0.8	18.1	0.0	12.4	0.8	19.3	0.4	0.0	0.9
Cycle Q Clear(g_c), s	3.7	21.9	22.0	0.8	18.1	0.0	13.3	0.8	19.3	1.2	0.0	0.9
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	841	876	41	1526		533	610	517	387	0	517
V/C Ratio(X)	0.77	0.77	0.77	0.49	0.71		0.52	0.05	0.86	0.02	0.00	0.05
Avail Cap(c_a), veh/h	306	1185	1235	135	2029		796	965	818	561	0	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	16.1	16.1	35.4	17.3	0.0	21.6	17.0	23.3	17.5	0.0	17.1
Incr Delay (d2), s/veh	9.8	2.0	1.9	8.7	0.7	0.0	0.8	0.0	5.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.4	8.8	0.4	6.9	0.0	3.9	0.3	7.5	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	18.1	18.1	44.1	18.0	0.0	22.4	17.1	29.1	17.5	0.0	17.1
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		1410			1097	A		753			35	
Approach Delay, s/veh		19.7			18.5			26.2			17.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	38.9		28.2	9.3	35.7		28.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.8	24.0		3.2	5.7	20.1		21.3				
Green Ext Time (p_c), s	0.0	10.4		0.1	0.1	8.2		2.5				

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

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	415	1289	63	766	306	232	67	72	577
v/c Ratio	0.69	0.80	0.41	0.63	0.67	0.27	0.14	0.46	0.77
Control Delay	47.9	27.7	57.4	30.3	52.7	36.0	0.6	60.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	27.7	57.4	30.3	52.7	36.0	0.6	60.0	28.9
Queue Length 50th (ft)	141	375	42	219	105	72	0	48	105
Queue Length 95th (ft)	211	526	94	318	169	114	0	104	177
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	785	1944	197	1581	529	1064	571	182	1008
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.66	0.32	0.48	0.58	0.22	0.12	0.40	0.57

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	394	834	390	60	651	77	291	220	64	68	222	326
Future Volume (vph)	394	834	390	60	651	77	291	220	64	68	222	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3389		1787	3512		3467	3574	1599	1787	3230	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3389		1787	3512		3467	3574	1599	1787	3230	
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)	415	878	411	63	685	81	306	232	67	72	234	343
RTOR Reduction (vph)	0	45	0	0	8	0	0	0	51	0	230	0
Lane Group Flow (vph)	415	1244	0	63	758	0	306	232	16	72	347	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	17.4	46.3		6.9	35.8		13.2	24.0	24.0	6.8	17.6	
Effective Green, g (s)	17.4	46.3		6.9	35.8		13.2	24.0	24.0	6.8	17.6	
Actuated g/C Ratio	0.17	0.45		0.07	0.35		0.13	0.24	0.24	0.07	0.17	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	591	1538		120	1232		448	840	376	119	557	
v/s Ratio Prot	c0.12	c0.37		0.04	0.22		c0.09	0.06		0.04	c0.11	
v/s Ratio Perm									0.01			
v/c Ratio	0.70	0.81		0.53	0.62		0.68	0.28	0.04	0.61	0.62	
Uniform Delay, d1	39.9	24.0		46.0	27.4		42.4	31.9	30.1	46.3	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	3.2		4.1	0.9		4.3	0.2	0.0	8.4	2.2	
Delay (s)	43.6	27.3		50.1	28.3		46.7	32.1	30.2	54.7	41.3	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		31.3			30.0			39.2			42.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	79.8%	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)	394	834	390	60	651	77	291	220	64	68	222	326
Future Volume (veh/h)	394	834	390	60	651	77	291	220	64	68	222	326
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	415	878	0	63	685	81	306	232	67	72	234	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	574	1491		96	981	116	438	656	292	103	411	
Arrive On Green	0.16	0.42	0.00	0.05	0.30	0.30	0.13	0.18	0.18	0.06	0.11	0.00
Sat Flow, veh/h	3483	3676	0	1795	3221	380	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	415	878	0	63	381	385	306	232	67	72	234	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1810	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	7.0	11.8	0.0	2.1	11.6	11.7	5.2	3.5	2.2	2.4	3.8	0.0
Cycle Q Clear(g_c), s	7.0	11.8	0.0	2.1	11.6	11.7	5.2	3.5	2.2	2.4	3.8	0.0
Prop In Lane	1.00		0.00	1.00		0.21	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	574	1491		96	546	552	438	656	292	103	411	
V/C Ratio(X)	0.72	0.59		0.66	0.70	0.70	0.70	0.35	0.23	0.70	0.57	
Avail Cap(c_a), veh/h	1207	3089		304	1227	1240	814	1634	729	281	1357	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.6	14.0	0.0	28.8	19.0	19.1	26.0	22.1	21.6	28.7	26.0	0.0
Incr Delay (d2), s/veh	1.7	0.4	0.0	7.4	1.6	1.6	2.0	0.3	0.4	8.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.3	0.0	1.1	4.5	4.6	2.1	1.4	0.8	1.2	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	14.4	0.0	36.2	20.7	20.7	28.0	22.5	22.0	37.0	27.3	0.0
LnGrp LOS	C	B		D	C	C	C	C	C	D	C	
Approach Vol, veh/h		1293	A		829			605			306	A
Approach Delay, s/veh		18.2			21.9			25.2			29.6	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	30.3	12.3	11.6	14.7	23.4	8.1	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	4.1	13.8	7.2	5.8	9.0	13.7	4.4	5.5
Green Ext Time (p_c), s	0.0	7.6	0.6	1.1	1.2	5.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	506	1020	668	73
v/c Ratio	0.29	0.28	0.74	0.64	0.14
Control Delay	43.1	12.3	21.8	30.4	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	12.3	21.8	30.4	8.9
Queue Length 50th (ft)	24	54	156	128	0
Queue Length 95th (ft)	88	170	401	#367	40
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	271	2665	2056	1357	662
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	0.21	0.19	0.50	0.49	0.11

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)	56	491	506	483	648	71
Future Volume (vph)	56	491	506	483	648	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3286		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3286		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	506	522	498	668	73
RTOR Reduction (vph)	0	0	136	0	0	52
Lane Group Flow (vph)	58	506	884	0	668	21
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.3	39.2	28.4		22.3	22.3
Effective Green, g (s)	6.3	39.2	28.4		22.3	22.3
Actuated g/C Ratio	0.08	0.50	0.36		0.28	0.28
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	143	1787	1190		986	448
v/s Ratio Prot	c0.03	0.14	c0.27			
v/s Ratio Perm					c0.19	0.01
v/c Ratio	0.41	0.28	0.74		0.68	0.05
Uniform Delay, d1	34.3	11.4	21.8		24.9	20.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.1	2.5		1.9	0.0
Delay (s)	36.1	11.5	24.4		26.7	20.4
Level of Service	D	B	C		C	C
Approach Delay (s)		14.0	24.4		26.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	199	573	367	109	470	384	235	571	368	737
v/c Ratio	0.73	1.06	0.51	0.56	0.62	0.60	0.81	0.72	1.05	0.81
Control Delay	52.0	88.4	5.9	49.0	34.7	7.8	58.8	35.8	97.4	37.0
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	88.4	5.9	49.0	34.7	7.8	58.8	35.8	97.4	37.0
Queue Length 50th (ft)	108	~385	0	59	126	0	131	151	~244	197
Queue Length 95th (ft)	#200	#585	65	112	177	73	#252	209	#415	#271
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	309	541	714	224	855	669	309	893	352	973
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	0.64	1.06	0.51	0.49	0.55	0.57	0.76	0.64	1.05	0.76

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	539	345	102	442	361	221	461	76	346	547	146
Future Volume (vph)	187	539	345	102	442	361	221	461	76	346	547	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1571	1787	3574	1578	1787	3498		1787	3443	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1571	1787	3574	1578	1787	3498		1787	3443	
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)	199	573	367	109	470	384	235	490	81	368	582	155
RTOR Reduction (vph)	0	0	262	0	0	298	0	15	0	0	27	0
Lane Group Flow (vph)	199	573	105	109	470	86	235	556	0	368	710	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	13.0	24.4	24.4	7.7	19.1	19.1	13.7	18.8		16.7	21.8	
Effective Green, g (s)	13.0	24.4	24.4	7.7	19.1	19.1	13.7	18.8		16.7	21.8	
Actuated g/C Ratio	0.15	0.29	0.29	0.09	0.22	0.22	0.16	0.22		0.20	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	271	536	447	160	797	352	286	768		348	876	
v/s Ratio Prot	c0.11	c0.30		0.06	0.13		0.13	0.16		c0.21	c0.21	
v/s Ratio Perm			0.07			0.05						
v/c Ratio	0.73	1.07	0.23	0.68	0.59	0.24	0.82	0.72		1.06	0.81	
Uniform Delay, d1	34.7	30.6	23.4	37.8	29.7	27.3	34.8	31.0		34.4	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.9	58.6	0.3	11.3	1.1	0.4	17.0	3.4		64.2	5.7	
Delay (s)	44.5	89.2	23.7	49.1	30.9	27.7	51.8	34.4		98.7	35.7	
Level of Service	D	F	C	D	C	C	D	C		F	D	
Approach Delay (s)		60.3			31.7			39.5			56.7	
Approach LOS		E			C			D			E	

Intersection Summary

HCM 2000 Control Delay	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	539	345	102	442	361	221	461	76	346	547	146
Future Volume (veh/h)	187	539	345	102	442	361	221	461	76	346	547	146
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	199	573	367	109	470	384	235	490	81	368	582	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	239	564	476	140	874	389	275	622	102	361	699	186
Arrive On Green	0.13	0.30	0.30	0.08	0.24	0.24	0.15	0.20	0.20	0.20	0.25	0.25
Sat Flow, veh/h	1795	1885	1591	1795	3582	1596	1795	3078	506	1795	2791	741
Grp Volume(v), veh/h	199	573	367	109	470	384	235	284	287	368	373	364
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1596	1795	1791	1794	1795	1791	1741
Q Serve(g_s), s	8.9	24.5	17.2	4.9	9.4	19.6	10.5	12.3	12.5	16.5	16.2	16.3
Cycle Q Clear(g_c), s	8.9	24.5	17.2	4.9	9.4	19.6	10.5	12.3	12.5	16.5	16.2	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.43
Lane Grp Cap(c), veh/h	239	564	476	140	874	389	275	362	363	361	449	436
V/C Ratio(X)	0.83	1.02	0.77	0.78	0.54	0.99	0.86	0.78	0.79	1.02	0.83	0.83
Avail Cap(c_a), veh/h	318	564	476	230	874	389	318	459	459	361	502	488
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	34.6	28.7	26.2	37.1	27.0	30.9	33.8	31.0	31.1	32.7	29.1	29.1
Incr Delay (d2), s/veh	13.2	41.8	7.6	9.1	0.7	41.9	18.1	6.8	7.2	52.1	10.4	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	16.7	7.0	2.4	3.8	11.5	5.8	5.8	5.9	12.0	7.9	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	70.6	33.7	46.2	27.6	72.8	51.9	37.8	38.2	84.9	39.4	40.1
LnGrp LOS	D	F	C	D	C	E	D	D	D	F	D	D
Approach Vol, veh/h		1139			963			806			1105	
Approach Delay, s/veh		54.7			47.7			42.1			54.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	21.1	10.9	29.0	17.0	25.0	15.4	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	18.5	14.5	6.9	26.5	12.5	18.3	10.9	21.6
Green Ext Time (p_c), s	0.0	1.8	0.1	0.0	0.1	1.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	53	65	616	46	99	804
Future Volume (Veh/h)	53	65	616	46	99	804
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	57	70	662	49	106	865
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1766	688			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1766	688			713	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	30	84			88	
cM capacity (veh/h)	82	447			890	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	127	711	106	865
Volume Left	57	0	106	0
Volume Right	70	49	0	0
cSH	148	1700	890	1700
Volume to Capacity	0.86	0.42	0.12	0.51
Queue Length 95th (ft)	142	0	10	0
Control Delay (s)	98.8	0.0	9.6	0.0
Lane LOS	F		A	
Approach Delay (s)	98.8	0.0	1.0	
Approach LOS	F			

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	65	616	46	99	804
Future Vol, veh/h	53	65	616	46	99	804
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	57	70	662	49	106	865

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1766	689	0	0	713	0
Stage 1	689	-	-	-	-	-
Stage 2	1077	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	93	447	-	-	892	-
Stage 1	500	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	82	446	-	-	890	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	289	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	97.6	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	149	890	-
HCM Lane V/C Ratio	-	-	0.852	0.12	-
HCM Control Delay (s)	-	-	97.6	9.6	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	5.7	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	4	14	4	1	38	22	425	10	48	556	133
Future Volume (Veh/h)	112	4	14	4	1	38	22	425	10	48	556	133
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	113	4	14	4	1	38	22	429	10	48	562	134
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1178	1146	567	1152	1275	438	701			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1178	1146	567	1152	1275	438	701			439		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	23	98	97	97	99	94	98			96		
cM capacity (veh/h)	147	186	522	159	156	618	896			1126		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	131	43	22	439	48	562	134
Volume Left	113	4	22	0	48	0	0
Volume Right	14	38	0	10	0	0	134
cSH	161	462	896	1700	1126	1700	1700
Volume to Capacity	0.81	0.09	0.02	0.26	0.04	0.33	0.08
Queue Length 95th (ft)	135	8	2	0	3	0	0
Control Delay (s)	85.4	13.6	9.1	0.0	8.3	0.0	0.0
Lane LOS	F	B	A		A		
Approach Delay (s)	85.4	13.6	0.4		0.5		
Approach LOS	F	B					

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	56.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	4	14	4	1	38	22	425	10	48	556	133
Future Vol, veh/h	112	4	14	4	1	38	22	425	10	48	556	133
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	113	4	14	4	1	38	22	429	10	48	562	134

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1165	1146	567	1212	1275	438	701	0	0	439	0	0
Stage 1	663	663	-	478	478	-	-	-	-	-	-	-
Stage 2	502	483	-	734	797	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	172	200	525	160	168	621	901	-	-	1126	-	-
Stage 1	452	460	-	570	557	-	-	-	-	-	-	-
Stage 2	553	554	-	413	400	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	151	186	523	145	156	619	897	-	-	1126	-	-
Mov Cap-2 Maneuver	151	186	-	145	156	-	-	-	-	-	-	-
Stage 1	439	438	-	556	543	-	-	-	-	-	-	-
Stage 2	503	540	-	381	381	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	80.5	13.8	0.4	0.5
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	897	-	-	165	451	1126	-	-
HCM Lane V/C Ratio	0.025	-	-	0.796	0.096	0.043	-	-
HCM Control Delay (s)	9.1	-	-	80.5	13.8	8.3	-	-
HCM Lane LOS	A	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.2	0.3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	9	179	3	200	11	248	282	316	246	12
Future Volume (vph)	8	2	9	179	3	200	11	248	282	316	246	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	10	192	3	215	12	267	303	340	265	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	21	410	279	303	473	146
Volume Left (vph)	9	192	12	0	340	0
Volume Right (vph)	10	215	0	303	0	13
Hadj (s)	-0.18	-0.20	0.04	-0.68	0.38	-0.05
Departure Headway (s)	8.3	6.6	7.3	6.6	7.5	7.0
Degree Utilization, x	0.05	0.75	0.57	0.55	0.98	0.28
Capacity (veh/h)	394	410	491	545	478	502
Control Delay (s)	11.7	27.0	18.2	16.2	62.3	11.6
Approach Delay (s)	11.7	27.0	17.1		50.4	
Approach LOS	B	D	C		F	

Intersection Summary				
Delay	32.1			
Level of Service	D			
Intersection Capacity Utilization	70.3%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	33.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	9	179	3	200	0	11	248	282	316	246
Future Vol, veh/h	8	2	9	179	3	200	0	11	248	282	316	246
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	10	192	3	215	0	12	267	303	340	265
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.9	28.5	18.3	51.8
HCM LOS	B	D	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	42%	47%	72%	0%
Vol Thru, %	96%	0%	11%	1%	28%	91%
Vol Right, %	0%	100%	47%	52%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	259	282	19	382	439	135
LT Vol	11	0	8	179	316	0
Through Vol	248	0	2	3	123	123
RT Vol	0	282	9	200	0	12
Lane Flow Rate	278	303	20	411	472	145
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.567	0.554	0.048	0.766	0.981	0.284
Departure Headway (Hd)	7.325	6.582	8.415	6.711	7.485	7.052
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	546	424	538	486	510
Service Time	5.077	4.334	6.497	4.748	5.234	4.8
HCM Lane V/C Ratio	0.564	0.555	0.047	0.764	0.971	0.284
HCM Control Delay	19.3	17.3	11.9	28.5	63.8	12.6
HCM Lane LOS	C	C	B	D	F	B
HCM 95th-tile Q	3.5	3.4	0.2	6.8	12.7	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	341	247	148	200	198	236
Future Volume (Veh/h)	341	247	148	200	198	236
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	352	255	153	206	204	243
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	613	204	447			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613	204	447			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	4	68	86			
cM capacity (veh/h)	368	806	1117			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	607	153	103	103	204	243
Volume Left	352	153	0	0	0	0
Volume Right	255	0	0	0	0	243
cSH	595	1117	1700	1700	1700	1700
Volume to Capacity	1.02	0.14	0.06	0.06	0.12	0.14
Queue Length 95th (ft)	396	12	0	0	0	0
Control Delay (s)	68.3	8.7	0.0	0.0	0.0	0.0
Lane LOS	F	A				
Approach Delay (s)	68.3	3.7			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	30.3		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	18.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	341	247	148	200	198	236
Future Vol, veh/h	341	247	148	200	198	236
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	352	255	153	206	204	243

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	613	204	447	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	442	839	1118	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	381	839	1118	-	-	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.7	3.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1118	-	381	839	-	-
HCM Lane V/C Ratio	0.136	-	0.923	0.304	-	-
HCM Control Delay (s)	8.7	-	62.1	11.2	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	9.8	1.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	109	0	182	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	109	0	182	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	118	0	198	15	0	0	0	0	308	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	433	326	326	444	345	0	345			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	326	326	444	345	0	345			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	84	100	66	99	100			100		
cM capacity (veh/h)	388	593	717	439	580	1088	1220			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	147	213	345
Volume Left	29	0	0
Volume Right	118	15	37
cSH	614	611	1700
Volume to Capacity	0.24	0.35	0.20
Queue Length 95th (ft)	23	39	0
Control Delay (s)	12.7	14.0	0.0
Lane LOS	B	B	
Approach Delay (s)	12.7	14.0	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay	6.9				
Intersection Capacity Utilization	44.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	109	0	182	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	109	0	182	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	29	0	118	0	198	15	0	0	0	0	308	37

Major/Minor	Minor2			Minor1					Major2		
Conflicting Flow All	434	327	327	386	345	0			-	-	0
Stage 1	327	327	-	0	0	-			-	-	-
Stage 2	107	0	-	386	345	-			-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21			-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-			-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309			-	-	-
Pot Cap-1 Maneuver	534	593	717	574	580	-			0	-	-
Stage 1	688	650	-	-	-	-			0	-	-
Stage 2	-	-	-	639	638	-			0	-	-
Platoon blocked, %										-	-
Mov Cap-1 Maneuver	-	593	717	479	580	-			-	-	-
Mov Cap-2 Maneuver	-	593	-	479	580	-			-	-	-
Stage 1	688	650	-	-	-	-			-	-	-
Stage 2	-	-	-	533	638	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

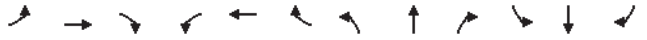
Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	580	-	-	-
HCM Lane V/C Ratio	-	0.341	-	-	-
HCM Control Delay (s)	-	14.4	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	1.5	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	443	761	207	440	99	368	1196	632	324
v/c Ratio	0.18	0.78	0.71	0.35	0.43	0.59	0.71	0.89	0.81	0.33
Control Delay	52.5	61.9	46.0	39.7	3.9	74.3	62.9	30.0	57.6	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	61.9	46.0	39.7	3.9	74.3	62.9	30.0	57.6	37.0
Queue Length 50th (ft)	40	187	309	143	22	85	166	298	273	112
Queue Length 95th (ft)	86	267	424	238	81	154	230	398	363	162
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	335	664	1110	602	1089	223	776	1364	942	1276
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	0.16	0.67	0.69	0.34	0.40	0.44	0.47	0.88	0.67	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	328	102	738	201	427	96	357	1160	613	256	58
Future Volume (vph)	50	328	102	738	201	427	96	357	1160	613	256	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3435		3467	1881	1585	1787	3574	2814	3467	3475	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3435		3467	1881	1585	1787	3574	2814	3467	3475	
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)	52	338	105	761	207	440	99	368	1196	632	264	60
RTOR Reduction (vph)	0	20	0	0	0	175	0	0	48	0	14	0
Lane Group Flow (vph)	52	423	0	761	207	265	99	368	1148	632	310	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	20.9	20.9		41.0	41.0	70.8	12.4	19.1	60.1	29.8	36.5	
Effective Green, g (s)	20.9	20.9		41.0	41.0	70.8	12.4	19.1	60.1	29.8	36.5	
Actuated g/C Ratio	0.16	0.16		0.31	0.31	0.54	0.09	0.15	0.46	0.23	0.28	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	284	546		1082	587	854	168	519	1288	786	966	
v/s Ratio Prot	0.03	c0.12		0.22	0.11	0.07	0.06	0.10	c0.28	c0.18	0.09	
v/s Ratio Perm						0.10			0.13			
v/c Ratio	0.18	0.77		0.70	0.35	0.31	0.59	0.71	0.89	0.80	0.32	
Uniform Delay, d1	47.8	52.9		39.8	34.9	16.7	57.0	53.5	32.6	48.0	37.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	6.8		2.1	0.4	0.2	5.2	4.4	8.1	6.0	0.2	
Delay (s)	48.1	59.7		41.9	35.3	16.9	62.2	57.9	40.7	54.0	37.8	
Level of Service	D	E		D	D	B	E	E	D	D	D	
Approach Delay (s)		58.5			33.1			45.8			48.5	
Approach LOS		E			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	131.3	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	82.6%	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)	50	328	102	738	201	427	96	357	1160	613	256	58
Future Volume (veh/h)	50	328	102	738	201	427	96	357	1160	613	256	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	52	338	105	761	207	440	99	368	1196	632	264	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	273	410	125	908	492	745	123	789	1353	719	1017	227
Arrive On Green	0.15	0.15	0.15	0.26	0.26	0.26	0.07	0.22	0.22	0.21	0.35	0.35
Sat Flow, veh/h	1795	2692	822	3483	1885	1594	1795	3582	2812	3483	2909	650
Grp Volume(v), veh/h	52	223	220	761	207	440	99	368	1196	632	161	163
Grp Sat Flow(s),veh/h/ln	1795	1791	1723	1742	1885	1594	1795	1791	1406	1742	1791	1768
Q Serve(g_s), s	3.2	15.4	15.9	26.4	11.7	26.0	7.0	11.4	28.2	22.5	8.2	8.5
Cycle Q Clear(g_c), s	3.2	15.4	15.9	26.4	11.7	26.0	7.0	11.4	28.2	22.5	8.2	8.5
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	273	273	262	908	492	745	123	789	1353	719	626	618
V/C Ratio(X)	0.19	0.82	0.84	0.84	0.42	0.59	0.80	0.47	0.88	0.88	0.26	0.26
Avail Cap(c_a), veh/h	342	342	328	1132	613	848	227	789	1353	961	662	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	52.5	52.7	44.7	39.3	25.1	58.7	43.3	24.5	49.2	29.7	29.8
Incr Delay (d2), s/veh	0.3	11.8	14.4	4.7	0.6	0.9	11.4	0.4	7.3	7.4	0.2	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	1.5	7.9	8.0	11.7	5.4	9.7	3.5	5.0	20.5	10.5	3.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	64.3	67.1	49.4	39.8	25.9	70.1	43.8	31.8	56.7	30.0	30.1
LnGrp LOS	D	E	E	D	D	C	E	D	C	E	C	C
Approach Vol, veh/h		495			1408			1663			956	
Approach Delay, s/veh		63.8			40.7			36.7			47.6	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.1	34.0		24.1	14.6	50.5		38.8				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	24.5	30.2		17.9	9.0	10.5		28.4				
Green Ext Time (p_c), s	1.9	0.0		1.6	0.1	2.1		4.9				

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

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	269	1057	665	119	928	449	369	216	558
v/c Ratio	0.64	0.83	0.76	0.61	0.77	0.79	0.49	0.77	0.77
Control Delay	54.5	40.2	15.1	62.5	37.4	56.0	37.8	64.4	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	40.2	15.1	62.5	37.4	56.0	37.8	64.4	46.9
Queue Length 50th (ft)	98	373	110	85	312	164	116	152	193
Queue Length 95th (ft)	148	#500	291	151	418	#244	167	#271	261
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	501	1351	906	241	1294	631	908	325	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.78	0.73	0.49	0.72	0.71	0.41	0.66	0.62

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)	258	1015	638	114	734	156	431	272	83	207	407	129
Future Volume (vph)	258	1015	638	114	734	156	431	272	83	207	407	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3471		3467	3449		1787	3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3471		3467	3449		1787	3433	
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)	269	1057	665	119	765	162	449	283	86	216	424	134
RTOR Reduction (vph)	0	0	313	0	14	0	0	24	0	0	26	0
Lane Group Flow (vph)	269	1057	352	119	914	0	449	345	0	216	532	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	13.3	38.6	38.6	11.9	37.2		17.9	23.0		17.1	22.2	
Effective Green, g (s)	13.3	38.6	38.6	11.9	37.2		17.9	23.0		17.1	22.2	
Actuated g/C Ratio	0.12	0.36	0.36	0.11	0.34		0.16	0.21		0.16	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	424	1270	568	195	1188		571	730		281	701	
v/s Ratio Prot	c0.08	c0.30		0.07	0.26		c0.13	0.10		0.12	c0.15	
v/s Ratio Perm			0.22									
v/c Ratio	0.63	0.83	0.62	0.61	0.77		0.79	0.47		0.77	0.76	
Uniform Delay, d1	45.3	32.0	28.9	46.1	31.9		43.5	37.5		43.9	40.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	4.8	2.0	5.5	3.1		7.0	0.5		11.9	4.7	
Delay (s)	48.4	36.9	30.9	51.7	34.9		50.6	38.0		55.8	45.4	
Level of Service	D	D	C	D	C		D	D		E	D	
Approach Delay (s)		36.4			36.8			44.9			48.3	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	108.6	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	77.8%	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)	258	1015	638	114	734	156	431	272	83	207	407	129
Future Volume (veh/h)	258	1015	638	114	734	156	431	272	83	207	407	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	269	1057	665	119	765	162	449	283	86	216	424	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	353	1323	590	150	1035	219	540	586	175	254	541	169
Arrive On Green	0.10	0.37	0.37	0.08	0.35	0.35	0.16	0.22	0.22	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	2940	623	3483	2720	810	1795	2682	839
Grp Volume(v), veh/h	269	1057	665	119	466	461	449	184	185	216	282	276
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1772	1742	1791	1739	1795	1791	1730
Q Serve(g_s), s	7.1	25.0	21.1	6.2	21.6	21.6	11.8	8.5	8.8	11.1	14.1	14.4
Cycle Q Clear(g_c), s	7.1	25.0	21.1	6.2	21.6	21.6	11.8	8.5	8.8	11.1	14.1	14.4
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.47	1.00		0.49
Lane Grp Cap(c), veh/h	353	1323	590	150	630	624	540	386	375	254	361	349
V/C Ratio(X)	0.76	0.80	1.13	0.79	0.74	0.74	0.83	0.48	0.49	0.85	0.78	0.79
Avail Cap(c_a), veh/h	570	1532	683	275	747	739	717	520	505	370	520	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	26.7	10.9	42.6	26.9	26.9	38.8	32.5	32.6	39.7	35.8	35.9
Incr Delay (d2), s/veh	3.4	2.7	76.4	9.0	3.2	3.3	6.3	0.9	1.0	12.0	4.7	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	10.4	18.8	3.0	9.2	9.1	5.3	3.6	3.7	5.6	6.4	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	29.4	87.2	51.6	30.1	30.2	45.1	33.4	33.6	51.7	40.5	41.4
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1991			1046			818			774	
Approach Delay, s/veh		50.8			32.6			39.9			43.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	39.5	19.2	23.6	14.1	37.8	17.9	24.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	8.2	27.0	13.8	16.4	9.1	23.6	13.1	10.8
Green Ext Time (p_c), s	0.1	8.0	0.8	2.4	0.5	5.1	0.3	1.8

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	841	213	22	616	248	18
v/c Ratio	0.78	0.22	0.11	0.30	0.62	0.05
Control Delay	19.1	2.2	9.9	7.9	26.9	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	2.2	9.9	7.9	26.9	8.5
Queue Length 50th (ft)	187	0	3	47	79	0
Queue Length 95th (ft)	#592	32	19	123	137	12
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1078	983	203	2048	851	772
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	0.78	0.22	0.11	0.30	0.29	0.02

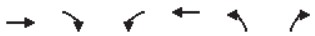
Intersection Summary

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)	774	196	20	567	228	17
Future Volume (vph)	774	196	20	567	228	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1519	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.19	1.00	0.95	1.00
Satd. Flow (perm)	1827	1519	345	3471	1732	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	841	213	22	616	248	18
RTOR Reduction (vph)	0	88	0	0	0	13
Lane Group Flow (vph)	841	125	22	616	248	5
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	35.7	35.7	35.7	35.7	14.1	14.1
Effective Green, g (s)	35.7	35.7	35.7	35.7	14.1	14.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.23	0.23
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1076	894	203	2044	402	361
v/s Ratio Prot	c0.46			0.18		0.00
v/s Ratio Perm		0.08	0.06		c0.14	
v/c Ratio	0.78	0.14	0.11	0.30	0.62	0.01
Uniform Delay, d1	9.5	5.6	5.5	6.2	20.8	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.0	0.1	0.0	2.0	0.0
Delay (s)	13.0	5.6	5.6	6.3	22.8	17.9
Level of Service	B	A	A	A	C	B
Approach Delay (s)	11.5			6.2	22.5	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	10.8
Intersection Capacity Utilization	62.4%	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)	774	196	20	567	228	17
Future Volume (veh/h)	774	196	20	567	228	17
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	841	213	22	616	248	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	992	839	260	1885	333	297
Arrive On Green	0.54	0.54	0.54	0.54	0.19	0.19
Sat Flow, veh/h	1841	1557	527	3589	1753	1560
Grp Volume(v), veh/h	841	213	22	616	248	18
Grp Sat Flow(s),veh/h/ln	1841	1557	527	1749	1753	1560
Q Serve(g_s), s	15.5	2.9	1.5	3.9	5.3	0.4
Cycle Q Clear(g_c), s	15.5	2.9	16.9	3.9	5.3	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	992	839	260	1885	333	297
V/C Ratio(X)	0.85	0.25	0.08	0.33	0.74	0.06
Avail Cap(c_a), veh/h	1597	1351	433	3035	1301	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.8	4.9	15.0	5.1	15.2	13.2
Incr Delay (d2), s/veh	1.3	0.1	0.1	0.0	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.4	0.1	0.7	1.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	5.0	15.0	5.2	16.5	13.3
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	1054			638	266	
Approach Delay, s/veh	8.2			5.5	16.3	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	26.9	26.9	13.0
Change Period (Y+Rc), s	5.4	5.4	5.4
Max Green Setting (Gmax), s	34.6	34.6	29.6
Max Q Clear Time (g_c+I1), s	17.5	18.9	7.3
Green Ext Time (p_c), s	3.9	2.5	0.3

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	730	61	11	481	0	107	0	11	0	0	0
Future Volume (Veh/h)	0	730	61	11	481	0	107	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	793	66	12	523	0	116	0	12	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.59			0.59	0.59	0.59	0.59	0.59	
vC, conflicting volume	523			859			1112	1373	826	1379	1406	262
vC1, stage 1 conf vol							826	826		547	547	
vC2, stage 2 conf vol							286	547		832	859	
vCu, unblocked vol	523			418			844	1286	363	1296	1341	262
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			66	100	97	100	100	100
cM capacity (veh/h)	1040			674			340	304	376	279	285	737

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	859	274	262	128	0
Volume Left	0	12	0	116	0
Volume Right	66	0	0	12	0
cSH	1040	674	1700	375	1700
Volume to Capacity	0.00	0.02	0.15	0.34	0.00
Queue Length 95th (ft)	0	1	0	37	0
Control Delay (s)	0.0	0.7	0.0	20.4	0.0
Lane LOS		A		C	A
Approach Delay (s)	0.0	0.3		20.4	0.0
Approach LOS				C	A

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	54.7%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	0	730	61	11	481	0	107	0	11	0	0	0
Future Vol, veh/h	0	730	61	11	481	0	107	0	11	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	793	66	12	523	0	116	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	523	0	0	859	0	0	1112	1373	826	1379	1406	262
Stage 1	-	-	-	-	-	-	826	826	-	547	547	-
Stage 2	-	-	-	-	-	-	286	547	-	832	859	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1042	-	-	780	-	-	174	145	371	112	139	737
Stage 1	-	-	-	-	-	-	365	386	-	490	517	-
Stage 2	-	-	-	-	-	-	698	517	-	363	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1042	-	-	780	-	-	171	142	371	107	136	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	317	-	281	302	-
Stage 1	-	-	-	-	-	-	365	386	-	490	506	-
Stage 2	-	-	-	-	-	-	683	506	-	351	372	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	21.2	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	371	1042	-	-	780	-	-	-
HCM Lane V/C Ratio	0.354	0.032	-	-	-	0.015	-	-	-
HCM Control Delay (s)	21.8	15	0	-	-	9.7	0.1	-	0
HCM Lane LOS	C	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.6	0.1	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	79	300	253	43	177	8	156	11	33	5	11	47
Future Volume (veh/h)	79	300	253	43	177	8	156	11	33	5	11	47
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
Hourly flow rate (vph)	86	326	275	47	192	9	170	12	36	5	12	51
Approach Volume (veh/h)		687			248			218			68	
Crossing Volume (veh/h)		64			268			417			409	
High Capacity (veh/h)		1317			1122			997			1004	
High v/c (veh/h)		0.52			0.22			0.22			0.07	
Low Capacity (veh/h)		1100			923			811			817	
Low v/c (veh/h)		0.62			0.27			0.27			0.08	

Intersection Summary				
Maximum v/c High		0.52		
Maximum v/c Low		0.62		
Intersection Capacity Utilization		67.4%	ICU Level of Service	C

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	687	248	218	68
Demand Flow Rate, veh/h	701	253	222	69
Vehicles Circulating, veh/h	65	273	426	417
Vehicles Exiting, veh/h	421	375	340	109
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.9	5.8	6.7	4.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	701	253	222	69
Cap Entry Lane, veh/h	1291	1045	894	902
Entry HV Adj Factor	0.981	0.981	0.981	0.982
Flow Entry, veh/h	687	248	218	68
Cap Entry, veh/h	1266	1025	877	886
V/C Ratio	0.543	0.242	0.248	0.077
Control Delay, s/veh	8.9	5.8	6.7	4.8
LOS	A	A	A	A
95th %tile Queue, veh	3	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	25	51	1	18	19	32	139	3	24	194	13
Future Volume (vph)	23	25	51	1	18	19	32	139	3	24	194	13
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
Hourly flow rate (vph)	25	27	55	1	20	21	35	151	3	26	211	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	107	42	189	251
Volume Left (vph)	25	1	35	26
Volume Right (vph)	55	21	3	14
Hadj (s)	-0.24	-0.28	0.04	0.00
Departure Headway (s)	4.7	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.24	0.31
Capacity (veh/h)	689	668	747	765
Control Delay (s)	8.5	8.1	9.1	9.5
Approach Delay (s)	8.5	8.1	9.1	9.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	25	51	1	18	19	32	139	3	24	194	13
Future Vol, veh/h	23	25	51	1	18	19	32	139	3	24	194	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	25	27	55	1	20	21	35	151	3	26	211	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.1	9.1	9.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	23%	3%	10%
Vol Thru, %	80%	25%	47%	84%
Vol Right, %	2%	52%	50%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	99	38	231
LT Vol	32	23	1	24
Through Vol	139	25	18	194
RT Vol	3	51	19	13
Lane Flow Rate	189	108	41	251
Geometry Grp	1	1	1	1
Degree of Util (X)	0.24	0.141	0.055	0.312
Departure Headway (Hd)	4.574	4.704	4.763	4.47
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	761	749	803
Service Time	2.611	2.745	2.811	2.505
HCM Lane V/C Ratio	0.241	0.142	0.055	0.313
HCM Control Delay	9.1	8.5	8.1	9.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.5	0.2	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	144	46	1	89	14	31	60	1	17	78	64
Future Volume (Veh/h)	82	144	46	1	89	14	31	60	1	17	78	64
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	157	50	1	97	15	34	65	1	18	85	70
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	112			213			585	480	188	500	498	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	112			213			585	480	188	500	498	104
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			89	86	100	96	81	93
cM capacity (veh/h)	1484			1355			317	455	852	408	444	953

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	296	113	100	18	155
Volume Left	89	1	34	18	0
Volume Right	50	15	1	0	70
cSH	1484	1355	398	408	585
Volume to Capacity	0.06	0.00	0.25	0.04	0.26
Queue Length 95th (ft)	5	0	25	3	26
Control Delay (s)	2.6	0.1	17.1	14.2	13.4
Lane LOS	A	A	C	B	B
Approach Delay (s)	2.6	0.1	17.1	13.4	
Approach LOS			C	B	

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	82	144	46	1	89	14	31	60	1	17	78	64
Future Vol, veh/h	82	144	46	1	89	14	31	60	1	17	78	64
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	89	157	50	1	97	15	34	65	1	18	85	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	213	0	0	550	480	188	500	498	105
Stage 1	-	-	-	-	-	-	366	366	-	107	107	-
Stage 2	-	-	-	-	-	-	184	114	-	393	391	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1484	-	-	1363	-	-	447	487	857	483	475	952
Stage 1	-	-	-	-	-	-	655	624	-	901	809	-
Stage 2	-	-	-	-	-	-	820	803	-	634	609	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1484	-	-	1355	-	-	333	450	852	407	439	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	450	-	407	439	-
Stage 1	-	-	-	-	-	-	607	578	-	840	808	-
Stage 2	-	-	-	-	-	-	680	802	-	524	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.1	16.8	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	404	1484	-	-	1355	-	-	407	580
HCM Lane V/C Ratio	0.248	0.06	-	-	0.001	-	-	0.045	0.266
HCM Control Delay (s)	16.8	7.6	0	-	7.7	0	-	14.3	13.4
HCM Lane LOS	C	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	0.1	1.1



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	8	123	89	5	163	134
Future Volume (veh/h)	8	123	89	5	163	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	134	97	5	177	146
Approach Volume (veh/h)	143		102			323
Crossing Volume (veh/h)	97		177			9
High Capacity (veh/h)	1284		1206			1375
High v/c (veh/h)	0.11		0.08			0.23
Low Capacity (veh/h)	1069		999			1152
Low v/c (veh/h)	0.13		0.10			0.28

Intersection Summary			
Maximum v/c High	0.23		
Maximum v/c Low	0.28		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	143	102	323
Demand Flow Rate, veh/h	146	104	330
Vehicles Circulating, veh/h	99	181	9
Vehicles Exiting, veh/h	186	158	236
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.9	4.0	4.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	146	104	330
Cap Entry Lane, veh/h	1247	1147	1367
Entry HV Adj Factor	0.979	0.981	0.979
Flow Entry, veh/h	143	102	323
Cap Entry, veh/h	1222	1126	1339
V/C Ratio	0.117	0.091	0.241
Control Delay, s/veh	3.9	4.0	4.7
LOS	A	A	A
95th %tile Queue, veh	0	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	84	101	5	3	6
Future Volume (Veh/h)	6	84	101	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	91	110	5	3	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	115				218	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115				218	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1462				763	935

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	98	115	10
Volume Left	7	0	3
Volume Right	0	5	7
cSH	1462	1700	876
Volume to Capacity	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		19.4%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	84	101	5	3	6
Future Vol, veh/h	6	84	101	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	7	91	110	5	3	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	115	0	-	0	218	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1462	-	-	-	766	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	914	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	762	934
Mov Cap-2 Maneuver	-	-	-	-	762	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	869
HCM Lane V/C Ratio	0.004	-	-	-	0.011
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Near Term Plus 1293-Unit Project (Phase 1)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	240	160	48	480	372	304	672	222	703
v/c Ratio	0.53	0.44	0.29	0.32	0.63	0.60	0.80	0.72	0.71	0.75
Control Delay	43.1	27.1	5.8	44.5	33.7	8.0	51.5	32.7	47.1	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	27.1	5.8	44.5	33.7	8.0	51.5	32.7	47.1	24.3
Queue Length 50th (ft)	66	109	0	25	124	0	162	173	114	117
Queue Length 95th (ft)	124	179	44	62	182	73	#330	247	#225	189
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	319	673	659	163	946	684	390	1080	366	1128
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	0.40	0.36	0.24	0.29	0.51	0.54	0.78	0.62	0.61	0.62

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)	118	221	147	44	442	342	280	574	44	204	333	314
Future Volume (vph)	118	221	147	44	442	342	280	574	44	204	333	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1532	1752	3505	1533	1752	3463		1752	3208	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1532	1752	3505	1533	1752	3463		1752	3208	
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)	128	240	160	48	480	372	304	624	48	222	362	341
RTOR Reduction (vph)	0	0	114	0	0	289	0	6	0	0	194	0
Lane Group Flow (vph)	128	240	46	48	480	83	304	666	0	222	509	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.7	22.9	22.9	3.6	17.8	17.8	16.9	20.9		14.0	18.0	
Effective Green, g (s)	8.7	22.9	22.9	3.6	17.8	17.8	16.9	20.9		14.0	18.0	
Actuated g/C Ratio	0.11	0.29	0.29	0.05	0.22	0.22	0.21	0.26		0.18	0.23	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	191	532	441	79	785	343	372	911		308	727	
v/s Ratio Prot	c0.07	0.13		0.03	c0.14		c0.17	c0.19		0.13	0.16	
v/s Ratio Perm			0.03			0.05						
v/c Ratio	0.67	0.45	0.10	0.61	0.61	0.24	0.82	0.73		0.72	0.70	
Uniform Delay, d1	34.0	23.1	20.7	37.2	27.7	25.3	29.8	26.7		30.9	28.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.9	0.6	0.1	12.5	1.4	0.4	13.0	3.1		8.1	3.1	
Delay (s)	42.9	23.7	20.8	49.7	29.1	25.6	42.8	29.7		38.9	31.3	
Level of Service	D	C	C	D	C	C	D	C		D	C	
Approach Delay (s)		27.5			28.8			33.8			33.1	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	70.3%	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)	118	221	147	44	442	342	280	574	44	204	333	314
Future Volume (veh/h)	118	221	147	44	442	342	280	574	44	204	333	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	240	160	48	480	372	304	624	48	222	362	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	549	461	72	863	381	341	978	75	262	441	388
Arrive On Green	0.09	0.30	0.30	0.04	0.24	0.24	0.19	0.29	0.29	0.15	0.25	0.25
Sat Flow, veh/h	1767	1856	1558	1767	3526	1555	1767	3316	255	1767	1763	1550
Grp Volume(v), veh/h	128	240	160	48	480	372	304	331	341	222	362	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1558	1767	1763	1555	1767	1763	1808	1767	1763	1550
Q Serve(g_s), s	5.8	8.5	6.6	2.2	9.7	19.4	13.7	13.3	13.4	10.0	15.8	17.3
Cycle Q Clear(g_c), s	5.8	8.5	6.6	2.2	9.7	19.4	13.7	13.3	13.4	10.0	15.8	17.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	162	549	461	72	863	381	341	520	533	262	441	388
V/C Ratio(X)	0.79	0.44	0.35	0.67	0.56	0.98	0.89	0.64	0.64	0.85	0.82	0.88
Avail Cap(c_a), veh/h	292	604	507	149	863	381	357	520	533	335	475	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	23.3	22.6	38.7	27.0	30.6	32.1	25.0	25.0	33.9	28.9	29.4
Incr Delay (d2), s/veh	8.3	0.5	0.4	10.2	0.8	40.0	22.7	2.6	2.6	14.7	10.4	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	2.3	1.1	3.9	11.0	7.7	5.6	5.8	5.2	7.6	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	23.8	23.0	48.9	27.8	70.6	54.8	27.6	27.6	48.6	39.3	47.5
LnGrp LOS	D	C	C	D	C	E	D	C	C	D	D	D
Approach Vol, veh/h		528			900			976			925	
Approach Delay, s/veh		28.6			46.6			36.1			44.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	28.6	7.8	28.7	20.3	24.9	12.0	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	12.0	15.4	4.2	10.5	15.7	19.3	7.8	21.4
Green Ext Time (p_c), s	0.2	2.4	0.0	1.6	0.1	1.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	56	717	50	54	509
Future Volume (Veh/h)	42	56	717	50	54	509
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	61	779	54	59	553
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1477	806			833	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1477	806			833	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	84			93	
cM capacity (veh/h)	129	382			800	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	107	833	59	553
Volume Left	46	0	59	0
Volume Right	61	54	0	0
cSH	207	1700	800	1700
Volume to Capacity	0.52	0.49	0.07	0.33
Queue Length 95th (ft)	66	0	6	0
Control Delay (s)	39.7	0.0	9.9	0.0
Lane LOS	E		A	
Approach Delay (s)	39.7	0.0	1.0	
Approach LOS	E			

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	56	717	50	54	509
Future Vol, veh/h	42	56	717	50	54	509
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	-	-	-	60	-
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	46	61	779	54	59	553

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1477	806	0	0	833	0
Stage 1	806	-	-	-	-	-
Stage 2	671	-	-	-	-	-
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	139	382	-	-	800	-
Stage 1	439	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	129	382	-	-	800	-
Mov Cap-2 Maneuver	129	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.2	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	208	800	-
HCM Lane V/C Ratio	-	-	0.512	0.073	-
HCM Control Delay (s)	-	-	39.2	9.9	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	2.6	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	7	255	5	300	9	243	124	242	199	10
Future Volume (vph)	20	9	7	255	5	300	9	243	124	242	199	10
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
Hourly flow rate (vph)	22	10	8	277	5	326	10	264	135	263	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	40	608	274	135	371	119
Volume Left (vph)	22	277	10	0	263	0
Volume Right (vph)	8	326	0	135	0	11
Hadj (s)	0.02	-0.20	0.05	-0.67	0.39	-0.03
Departure Headway (s)	8.3	6.4	7.6	6.9	7.8	7.3
Degree Utilization, x	0.09	1.07	0.58	0.26	0.80	0.24
Capacity (veh/h)	401	559	457	510	453	483
Control Delay (s)	12.1	83.6	19.5	11.1	33.9	11.5
Approach Delay (s)	12.1	83.6	16.7		28.4	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	46.6			
Level of Service	E			
Intersection Capacity Utilization	75.8%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	48.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	7	255	5	300	0	9	243	124	242	199
Future Vol, veh/h	20	9	7	255	5	300	0	9	243	124	242	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	10	8	277	5	326	0	10	264	135	263	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.7	85.7	18.4	30.5
HCM LOS	B	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	56%	46%	71%	0%
Vol Thru, %	96%	0%	25%	1%	29%	91%
Vol Right, %	0%	100%	19%	54%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	124	36	560	342	110
LT Vol	9	0	20	255	242	0
Through Vol	243	0	9	5	100	100
RT Vol	0	124	7	300	0	10
Lane Flow Rate	274	135	39	609	371	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.58	0.259	0.092	1.078	0.799	0.242
Departure Headway (Hd)	8.038	7.293	8.766	6.373	8.155	7.722
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	496	411	566	445	468
Service Time	5.738	4.993	6.766	4.472	5.855	5.422
HCM Lane V/C Ratio	0.606	0.272	0.095	1.076	0.834	0.254
HCM Control Delay	21.3	12.5	12.7	85.7	36.2	12.9
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	3.6	1	0.3	18	7.2	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	168	136	229	208	125	337
Future Volume (Veh/h)	168	136	229	208	125	337
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	183	148	249	226	136	366
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	747	136	502			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	747	136	502			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	31	83	76			
cM capacity (veh/h)	264	885	1052			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	331	249	113	113	136	366
Volume Left	183	249	0	0	0	0
Volume Right	148	0	0	0	0	366
cSH	478	1052	1700	1700	1700	1700
Volume to Capacity	0.69	0.24	0.07	0.07	0.08	0.22
Queue Length 95th (ft)	131	23	0	0	0	0
Control Delay (s)	29.0	9.5	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	29.0	5.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		9.1	
Intersection Capacity Utilization		40.2%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	168	136	229	208	125	337
Future Vol, veh/h	168	136	229	208	125	337
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	145	105	-	-	0
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	183	148	249	226	136	366

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	747	136	502	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	362	909	1054	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	277	909	1054	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.4	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1054	-	277	909	-	-
HCM Lane V/C Ratio	0.236	-	0.659	0.163	-	-
HCM Control Delay (s)	9.5	-	40	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	4.3	0.6	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	199	489	355	104	423	350	228	558	314	727
v/c Ratio	0.73	0.91	0.50	0.54	0.56	0.58	0.79	0.71	0.89	0.80
Control Delay	51.7	54.0	5.9	48.1	33.5	7.7	56.6	35.4	63.7	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	54.0	5.9	48.1	33.5	7.7	56.6	35.4	63.7	36.2
Queue Length 50th (ft)	108	275	0	56	112	0	126	147	179	194
Queue Length 95th (ft)	#200	#474	65	108	159	70	#243	204	#340	#262
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	311	543	706	225	861	645	311	898	355	979
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	0.64	0.90	0.50	0.46	0.49	0.54	0.73	0.62	0.88	0.74

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)	187	460	334	98	398	329	214	456	69	295	538	146
Future Volume (vph)	187	460	334	98	398	329	214	456	69	295	538	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1571	1787	3574	1578	1787	3504		1787	3441	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1571	1787	3574	1578	1787	3504		1787	3441	
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)	199	489	355	104	423	350	228	485	73	314	572	155
RTOR Reduction (vph)	0	0	254	0	0	272	0	13	0	0	28	0
Lane Group Flow (vph)	199	489	101	104	423	78	228	545	0	314	699	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	13.0	24.3	24.3	7.6	18.9	18.9	13.6	18.6		16.7	21.7	
Effective Green, g (s)	13.0	24.3	24.3	7.6	18.9	18.9	13.6	18.6		16.7	21.7	
Actuated g/C Ratio	0.15	0.29	0.29	0.09	0.22	0.22	0.16	0.22		0.20	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	272	536	448	159	792	350	285	764		350	876	
v/s Ratio Prot	c0.11	c0.26		0.06	0.12		0.13	0.16		c0.18	c0.20	
v/s Ratio Perm			0.06			0.05						
v/c Ratio	0.73	0.91	0.23	0.65	0.53	0.22	0.80	0.71		0.90	0.80	
Uniform Delay, d1	34.4	29.4	23.3	37.5	29.3	27.1	34.5	30.8		33.4	29.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.7	19.9	0.3	9.3	0.7	0.3	14.8	3.2		24.3	5.1	
Delay (s)	44.2	49.3	23.5	46.8	30.0	27.5	49.2	34.0		57.7	34.8	
Level of Service	D	D	C	D	C	C	D	C		E	C	
Approach Delay (s)		39.5			31.0			38.4			41.7	
Approach LOS		D			C			D			D	

Intersection Summary

HCM 2000 Control Delay	37.9	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.90				
Actuated Cycle Length (s)	85.2	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	76.2%	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)	187	460	334	98	398	329	214	456	69	295	538	146
Future Volume (veh/h)	187	460	334	98	398	329	214	456	69	295	538	146
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	199	489	355	104	423	350	228	485	73	314	572	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	240	571	482	134	873	389	269	628	94	353	688	186
Arrive On Green	0.13	0.30	0.30	0.07	0.24	0.24	0.15	0.20	0.20	0.20	0.25	0.25
Sat Flow, veh/h	1795	1885	1591	1795	3582	1596	1795	3124	468	1795	2779	751
Grp Volume(v), veh/h	199	489	355	104	423	350	228	277	281	314	368	359
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1596	1795	1791	1801	1795	1791	1739
Q Serve(g_s), s	8.6	19.5	16.0	4.5	8.1	17.0	9.9	11.7	11.8	13.6	15.5	15.6
Cycle Q Clear(g_c), s	8.6	19.5	16.0	4.5	8.1	17.0	9.9	11.7	11.8	13.6	15.5	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		0.43
Lane Grp Cap(c), veh/h	240	571	482	134	873	389	269	360	362	353	443	430
V/C Ratio(X)	0.83	0.86	0.74	0.78	0.48	0.90	0.85	0.77	0.78	0.89	0.83	0.83
Avail Cap(c_a), veh/h	326	571	482	236	897	400	326	471	474	371	516	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	26.2	25.0	36.3	25.9	29.3	33.1	30.2	30.2	31.3	28.5	28.5
Incr Delay (d2), s/veh	12.2	12.3	5.9	9.2	0.4	22.5	16.0	5.6	5.9	21.8	9.7	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	10.0	6.3	2.2	3.3	8.5	5.3	5.4	5.5	7.7	7.5	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	38.5	30.9	45.5	26.3	51.7	49.0	35.8	36.1	53.1	38.1	38.8
LnGrp LOS	D	D	C	D	C	D	D	D	D	D	D	D
Approach Vol, veh/h		1043			877			786			1041	
Approach Delay, s/veh		37.3			38.7			39.8			42.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	20.5	10.5	28.7	16.5	24.3	15.2	24.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	15.6	13.8	6.5	21.5	11.9	17.6	10.6	19.0
Green Ext Time (p_c), s	0.1	1.9	0.1	1.1	0.2	2.1	0.2	0.4

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	52	62	600	44	95	785
Future Volume (Veh/h)	52	62	600	44	95	785
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	56	67	645	47	102	844
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1718	670			694	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1718	670			694	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	36	85			89	
cM capacity (veh/h)	88	458			904	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	123	692	102	844
Volume Left	56	0	102	0
Volume Right	67	47	0	0
cSH	157	1700	904	1700
Volume to Capacity	0.78	0.41	0.11	0.50
Queue Length 95th (ft)	125	0	9	0
Control Delay (s)	81.7	0.0	9.5	0.0
Lane LOS	F		A	
Approach Delay (s)	81.7	0.0	1.0	
Approach LOS	F			

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	62	600	44	95	785
Future Vol, veh/h	52	62	600	44	95	785
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	56	67	645	47	102	844

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1719	671	0	0	694	0
Stage 1	671	-	-	-	-	-
Stage 2	1048	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	99	458	-	-	906	-
Stage 1	510	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	457	-	-	904	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	301	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	81	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 157	904	-
HCM Lane V/C Ratio	-	- 0.781	0.113	-
HCM Control Delay (s)	-	- 81	9.5	-
HCM Lane LOS	-	- F	A	-
HCM 95th %tile Q(veh)	-	- 5	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	9	166	3	190	11	248	260	299	246	12
Future Volume (vph)	8	2	9	166	3	190	11	248	260	299	246	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	10	178	3	204	12	267	280	322	265	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	21	385	279	280	455	146
Volume Left (vph)	9	178	12	0	322	0
Volume Right (vph)	10	204	0	280	0	13
Hadj (s)	-0.18	-0.21	0.04	-0.68	0.37	-0.05
Departure Headway (s)	8.0	6.5	7.1	6.4	7.3	6.8
Degree Utilization, x	0.05	0.69	0.55	0.49	0.92	0.28
Capacity (veh/h)	391	538	486	549	455	513
Control Delay (s)	11.4	22.9	17.2	14.2	48.4	11.2
Approach Delay (s)	11.4	22.9	15.7		39.4	
Approach LOS	B	C	C		E	

Intersection Summary				
Delay	26.5			
Level of Service	D			
Intersection Capacity Utilization	68.1%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	27.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	9	166	3	190	0	11	248	260	299	246
Future Vol, veh/h	8	2	9	166	3	190	0	11	248	260	299	246
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	10	178	3	204	0	12	267	280	322	265
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.6	24.2	16.8	40.7
HCM LOS	B	C	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	42%	46%	71%	0%
Vol Thru, %	96%	0%	11%	1%	29%	91%
Vol Right, %	0%	100%	47%	53%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	259	260	19	359	422	135
LT Vol	11	0	8	166	299	0
Through Vol	248	0	2	3	123	123
RT Vol	0	260	9	190	0	12
Lane Flow Rate	278	280	20	386	454	145
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.551	0.496	0.046	0.71	0.919	0.277
Departure Headway (Hd)	7.122	6.381	8.104	6.626	7.291	6.863
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	565	440	548	499	523
Service Time	4.875	4.133	6.184	4.626	5.04	4.613
HCM Lane V/C Ratio	0.548	0.496	0.045	0.704	0.91	0.277
HCM Control Delay	18.3	15.3	11.6	24.2	49.8	12.2
HCM Lane LOS	C	C	B	C	E	B
HCM 95th-tile Q	3.3	2.7	0.1	5.7	10.8	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	319	247	148	200	198	223
Future Volume (Veh/h)	319	247	148	200	198	223
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	329	255	153	206	204	230
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	613	204	434			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613	204	434			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	11	68	86			
cM capacity (veh/h)	369	806	1129			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	584	153	103	103	204	230
Volume Left	329	153	0	0	0	0
Volume Right	255	0	0	0	0	230
cSH	655	1129	1700	1700	1700	1700
Volume to Capacity	0.89	0.14	0.06	0.06	0.12	0.14
Queue Length 95th (ft)	276	12	0	0	0	0
Control Delay (s)	37.5	8.7	0.0	0.0	0.0	0.0
Lane LOS	E	A				
Approach Delay (s)	37.5	3.7			0.0	
Approach LOS	E					

Intersection Summary			
Average Delay		16.9	
Intersection Capacity Utilization		46.3%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	15.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	319	247	148	200	198	223
Future Vol, veh/h	319	247	148	200	198	223
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	329	255	153	206	204	230

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	613	204	434	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	442	839	1130	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	382	839	1130	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.7	3.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1130	-	382	839	-	-
HCM Lane V/C Ratio	0.135	-	0.861	0.304	-	-
HCM Control Delay (s)	8.7	-	51.2	11.2	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	8.3	1.3	-	-

Near Term Plus 1293-Unit and School Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	252	1227	1280	137	164	263
v/c Ratio	0.72	0.38	0.83	0.18	0.63	0.42
Control Delay	56.2	0.3	31.6	3.6	58.7	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	0.3	31.6	3.6	58.7	22.4
Queue Length 50th (ft)	166	0	408	0	111	104
Queue Length 95th (ft)	#359	0	612	35	225	227
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	456	3223	2613	1195	456	889
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	0.55	0.38	0.49	0.11	0.36	0.30

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)	232	1129	1178	126	151	242
Future Volume (vph)	232	1129	1178	126	151	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1612	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1612	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	1227	1280	137	164	263
RTOR Reduction (vph)	0	0	0	71	0	27
Lane Group Flow (vph)	252	1227	1280	66	164	236
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	24.7	111.2	53.3	53.3	18.2	46.9
Effective Green, g (s)	24.7	111.2	53.3	53.3	18.2	46.9
Actuated g/C Ratio	0.22	1.00	0.48	0.48	0.16	0.42
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	358	3223	1544	691	263	608
v/s Ratio Prot	c0.16	0.38	c0.40		c0.10	0.16
v/s Ratio Perm				0.05		
v/c Ratio	0.70	0.38	0.83	0.10	0.62	0.39
Uniform Delay, d1	39.9	0.0	25.0	15.8	43.3	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.3	4.0	0.1	4.8	0.4
Delay (s)	46.0	0.3	29.0	15.9	48.1	22.6
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.1	27.8		32.4	
Approach LOS		A	C		C	

Intersection Summary

HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	227	850	314	39	959	186	308	333	93	190	151
v/c Ratio	0.57	0.63	0.40	0.11	0.82	0.29	0.64	0.43	0.36	0.65	0.40
Control Delay	55.7	32.6	4.8	48.3	40.0	5.0	54.3	39.1	58.1	57.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	32.6	4.8	48.3	40.0	5.0	54.3	39.1	58.1	57.3	10.6
Queue Length 50th (ft)	80	290	0	12	328	0	108	105	33	131	0
Queue Length 95th (ft)	149	433	63	35	488	50	195	184	73	246	60
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	527	2113	1055	549	2113	1010	585	1228	585	651	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.40	0.30	0.07	0.45	0.18	0.53	0.27	0.16	0.29	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	782	289	36	882	171	283	288	18	86	175	139
Future Volume (vph)	209	782	289	36	882	171	283	288	18	86	175	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3220		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3220		3155	1712	1455
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)	227	850	314	39	959	186	308	313	20	93	190	151
RTOR Reduction (vph)	0	0	186	0	0	116	0	3	0	0	0	126
Lane Group Flow (vph)	227	850	128	39	959	70	308	330	0	93	190	25
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	14.1	46.2	46.2	10.3	42.4	42.4	17.2	27.0		9.3	19.1	19.1
Effective Green, g (s)	14.1	46.2	46.2	10.3	42.4	42.4	17.2	27.0		9.3	19.1	19.1
Actuated g/C Ratio	0.12	0.41	0.41	0.09	0.37	0.37	0.15	0.24		0.08	0.17	0.17
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	392	1324	592	286	1215	544	478	766		258	288	245
v/s Ratio Prot	0.07	c0.26		0.01	c0.29		c0.10	0.10		0.03	c0.11	
v/s Ratio Perm			0.09			0.05						0.02
v/c Ratio	0.58	0.64	0.22	0.14	0.79	0.13	0.64	0.43		0.36	0.66	0.10
Uniform Delay, d1	46.8	27.0	21.8	47.5	31.5	23.3	45.2	36.7		49.2	44.1	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	1.1	0.2	0.1	3.5	0.1	3.0	0.4		0.9	5.4	0.2
Delay (s)	48.9	28.0	22.0	47.5	35.0	23.4	48.2	37.1		50.1	49.5	40.1
Level of Service	D	C	C	D	D	C	D	D		D	D	D
Approach Delay (s)		30.1			33.6			42.4			46.4	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	113.4	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	64.8%	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)	209	782	289	36	882	171	283	288	18	86	175	139
Future Volume (veh/h)	209	782	289	36	882	171	283	288	18	86	175	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	227	850	314	39	959	186	308	313	20	93	190	151
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	316	1132	505	293	1241	554	406	710	45	156	257	218
Arrive On Green	0.10	0.34	0.34	0.09	0.38	0.38	0.13	0.23	0.23	0.05	0.15	0.15
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	3148	200	3209	1737	1472
Grp Volume(v), veh/h	227	850	314	39	959	186	308	163	170	93	190	151
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1698	1605	1737	1472
Q Serve(g_s), s	5.6	18.7	8.7	0.9	21.0	7.4	7.6	7.0	7.1	2.3	8.6	8.0
Cycle Q Clear(g_c), s	5.6	18.7	8.7	0.9	21.0	7.4	7.6	7.0	7.1	2.3	8.6	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	316	1132	505	293	1241	554	406	372	383	156	257	218
V/C Ratio(X)	0.72	0.75	0.62	0.13	0.77	0.34	0.76	0.44	0.44	0.60	0.74	0.69
Avail Cap(c_a), veh/h	704	2816	1256	704	2816	1256	782	825	849	782	868	736
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	35.9	23.8	8.0	34.3	22.5	18.3	34.6	27.3	27.3	38.2	33.4	33.2
Incr Delay (d2), s/veh	3.1	1.0	1.3	0.1	1.1	0.4	2.9	0.8	0.8	3.6	4.2	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.4	4.3	0.3	7.1	2.4	3.0	2.7	2.8	1.0	3.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	24.9	9.3	34.4	23.6	18.6	37.6	28.1	28.1	41.8	37.6	37.1
LnGrp LOS	D	C	A	C	C	B	D	C	C	D	D	D
Approach Vol, veh/h		1391			1184			641			434	
Approach Delay, s/veh		23.6			23.1			32.7			38.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	35.4	14.4	17.4	12.1	38.2	8.0	23.8
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	20.7	9.6	10.6	7.6	23.0	4.3	9.1
Green Ext Time (p_c), s	0.0	7.4	0.8	1.5	0.5	7.9	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	839	46	284	1080	0	9	0	263	0	0	0
Future Volume (Veh/h)	1	839	46	284	1080	0	9	0	263	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	912	50	309	1174	0	10	0	286	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1174			962			2144	2731	481	2250	2756	587
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1174			962			2144	2731	481	2250	2756	587
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			53			35	100	44	100	100	100
cM capacity (veh/h)	542			658			15	9	508	6	9	431

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	608	354	309	783	391	296	0
Volume Left	1	0	0	309	0	0	10	0
Volume Right	0	0	50	0	0	0	286	0
cSH	542	1700	1700	658	1700	1700	350	1700
Volume to Capacity	0.00	0.36	0.21	0.47	0.46	0.23	0.84	0.00
Queue Length 95th (ft)	0	0	0	63	0	0	192	0
Control Delay (s)	11.7	0.0	0.0	15.2	0.0	0.0	51.9	0.0
Lane LOS	B			C			F	A
Approach Delay (s)	0.0			3.2			51.9	0.0
Approach LOS							F	A

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	53.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	839	46	284	1080	0	9	0	263	0	0	0
Future Vol, veh/h	1	839	46	284	1080	0	9	0	263	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	340	-	-	195	-	-	-	-	25	-	-	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, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	912	50	309	1174	0	10	0	286	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1174	0	0	962	0	0	2144	2731	481	2250	2756	587
Stage 1	-	-	-	-	-	-	939	939	-	1792	1792	-
Stage 2	-	-	-	-	-	-	1205	1792	-	458	964	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	6.72	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.72	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	4.11	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	542	-	-	658	-	-	24	17	508	20	17	431
Stage 1	-	-	-	-	-	-	267	321	-	76	119	-
Stage 2	-	-	-	-	-	-	181	119	-	529	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	542	-	-	658	-	-	15	9	508	6	9	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	15	9	-	6	9	-
Stage 1	-	-	-	-	-	-	266	320	-	76	63	-
Stage 2	-	-	-	-	-	-	96	63	-	231	311	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	34.8	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	15	508	542	-	-	658	-	-	-	-
HCM Lane V/C Ratio	0.652	0.563	0.002	-	-	0.469	-	-	-	-
HCM Control Delay (s)	$ 443.4	20.8	11.7	-	-	15.2	-	-	0	0
HCM Lane LOS	F	C	B	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	1.6	3.4	0	-	-	2.5	-	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	365	737	1177	19	5	186
Future Volume (Veh/h)	365	737	1177	19	5	186
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	397	801	1279	21	5	202
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1300				2474	640
vC1, stage 1 conf vol					1279	
vC2, stage 2 conf vol					1194	
vCu, unblocked vol	1300				2474	640
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	19				88	49
cM capacity (veh/h)	488				41	400

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	397	400	400	640	640	21	207
Volume Left	397	0	0	0	0	0	5
Volume Right	0	0	0	0	0	21	202
cSH	488	1700	1700	1700	1700	1700	410
Volume to Capacity	0.81	0.24	0.24	0.38	0.38	0.01	0.51
Queue Length 95th (ft)	195	0	0	0	0	0	69
Control Delay (s)	37.3	0.0	0.0	0.0	0.0	0.0	24.8
Lane LOS	E						C
Approach Delay (s)	12.4			0.0			24.8
Approach LOS							C

Intersection Summary			
Average Delay		7.4	
Intersection Capacity Utilization		66.1%	ICU Level of Service C
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	365	737	1177	19	5	186
Future Vol, veh/h	365	737	1177	19	5	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	397	801	1279	21	5	202

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1300	0	-	0	2474	640
Stage 1	-	-	-	-	1279	-
Stage 2	-	-	-	-	1195	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	488	-	-	-	22	399
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	234	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	488	-	-	-	~ 4	399
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	234	-

Approach	EB	WB	SB
HCM Control Delay, s	12.3	0	25.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	488	-	-	-	36	399
HCM Lane V/C Ratio	0.813	-	-	-	0.151	0.507
HCM Control Delay (s)	37.2	-	-	-	122	22.9
HCM Lane LOS	E	-	-	-	F	C
HCM 95th %tile Q(veh)	7.8	-	-	-	0.5	2.8

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	723	19	2	1188	0	8	0	1	0	0	0
Future Volume (Veh/h)	0	723	19	2	1188	0	8	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	786	21	2	1291	0	9	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1291			807			1436	2081	393	1688	2102	646
vC1, stage 1 conf vol							786	786		1295	1295	
vC2, stage 2 conf vol							650	1295		394	807	
vCu, unblocked vol	1291			807			1436	2081	393	1688	2102	646
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	477			746			260	182	576	149	181	389

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	393	393	21	2	861	430	10	0
Volume Left	0	0	0	0	2	0	0	9	0
Volume Right	0	0	0	21	0	0	0	1	0
cSH	1700	1700	1700	1700	746	1700	1700	289	1700
Volume to Capacity	0.00	0.23	0.23	0.01	0.00	0.51	0.25	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	3	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.8	0.0	0.0	18.5	0.0
Lane LOS					A			C	A
Approach Delay (s)	0.0				0.0			18.5	0.0
Approach LOS								C	A

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		42.8%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	723	19	2	1188	0	8	0	1	0	0	0
Future Vol, veh/h	0	723	19	2	1188	0	8	0	1	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	786	21	2	1291	0	9	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1291	0	0	807	0	0	1436	2081	393	1688	2102	646
Stage 1	-	-	-	-	-	-	786	786	-	1295	1295	-
Stage 2	-	-	-	-	-	-	650	1295	-	393	807	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	477	-	-	746	-	-	85	46	576	54	45	389
Stage 1	-	-	-	-	-	-	328	376	-	156	211	-
Stage 2	-	-	-	-	-	-	399	211	-	574	367	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	477	-	-	746	-	-	85	46	576	54	45	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	177	-	145	176	-
Stage 1	-	-	-	-	-	-	328	376	-	156	210	-
Stage 2	-	-	-	-	-	-	398	210	-	573	367	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	576	477	-	-	746	-	-	-
HCM Lane V/C Ratio	0.034	0.002	-	-	-	0.003	-	-	-
HCM Control Delay (s)	19.7	11.3	0	-	-	9.8	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	91	120	94	278	103	71	42	433	232	42	337	53
Future Volume (veh/h)	91	120	94	278	103	71	42	433	232	42	337	53
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
Hourly flow rate (vph)	99	130	102	302	112	77	46	471	252	46	366	58
Approach Volume (veh/h)		331			491			769			470	
Crossing Volume (veh/h)		714			616			275			460	
High Capacity (veh/h)		786			851			1116			964	
High v/c (veh/h)		0.42			0.58			0.69			0.49	
Low Capacity (veh/h)		624			681			918			781	
Low v/c (veh/h)		0.53			0.72			0.84			0.60	

Intersection Summary												
Maximum v/c High			0.69									
Maximum v/c Low			0.84									
Intersection Capacity Utilization			98.9%		ICU Level of Service				F			

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	331	491	769	470
Demand Flow Rate, veh/h	341	505	792	484
Vehicles Circulating, veh/h	735	634	283	473
Vehicles Exiting, veh/h	222	441	793	666
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	14.4	19.6	18.1	12.8
Approach LOS	B	C	C	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	341	505	792	484
Cap Entry Lane, veh/h	652	723	1034	852
Entry HV Adj Factor	0.971	0.972	0.971	0.971
Flow Entry, veh/h	331	491	769	470
Cap Entry, veh/h	633	702	1003	827
V/C Ratio	0.523	0.699	0.766	0.568
Control Delay, s/veh	14.4	19.6	18.1	12.8
LOS	B	C	C	B
95th %tile Queue, veh	3	6	8	4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Future Volume (Veh/h)	1	15	5	3	70	0	15	1	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	16	5	3	76	0	16	1	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	76			21			102	102	18	105	105	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			21			102	102	18	105	105	76
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			98	100	100	100	100	100
cM capacity (veh/h)	1486			1557			862	774	1043	857	772	969

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	79	19	0
Volume Left	1	3	16	0
Volume Right	5	0	2	0
cSH	1486	1557	873	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.3	0.3	9.2	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.3	9.2	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			14.7%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	15	5	3	70	0	15	1	2	0	0	0
Future Vol, veh/h	1	15	5	3	70	0	15	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	1	16	5	3	76	0	16	1	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	21	0	0	103	103	19	104	105	76
Stage 1	-	-	-	-	-	-	21	21	-	82	82	-
Stage 2	-	-	-	-	-	-	82	82	-	22	23	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1486	-	-	1557	-	-	863	776	1042	862	774	969
Stage 1	-	-	-	-	-	-	982	866	-	912	815	-
Stage 2	-	-	-	-	-	-	912	815	-	981	864	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1557	-	-	861	774	1042	858	772	969
Mov Cap-2 Maneuver	-	-	-	-	-	-	861	774	-	858	772	-
Stage 1	-	-	-	-	-	-	981	865	-	911	813	-
Stage 2	-	-	-	-	-	-	910	813	-	977	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	872	1486	-	-	1557	-	-	-
HCM Lane V/C Ratio	0.022	0.001	-	-	0.002	-	-	-
HCM Control Delay (s)	9.2	7.4	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	370	345	468	680	7	21	139	290	297	35
v/c Ratio	0.01	0.59	0.75	0.53	0.61	0.05	0.13	0.53	0.70	0.71	0.07
Control Delay	49.0	38.0	42.0	19.7	4.2	44.3	44.9	16.3	41.6	41.7	0.3
Queue Delay	0.0	0.0	0.1	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	38.0	42.1	20.1	4.5	44.3	44.9	16.3	41.6	41.7	0.3
Queue Length 50th (ft)	1	94	166	157	0	4	11	0	145	148	0
Queue Length 95th (ft)	6	175	332	356	67	19	39	59	308	314	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	107	982	701	1148	1232	388	409	451	584	595	620
Starvation Cap Reductn	0	0	29	304	150	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.38	0.51	0.55	0.63	0.02	0.05	0.31	0.50	0.50	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	311	29	317	431	626	6	19	128	453	87	32
Future Volume (vph)	1	311	29	317	431	626	6	19	128	453	87	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3449		1752	1845	1568	1752	1845	1544	1665	1695	1521
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3449		1752	1845	1568	1752	1845	1544	1665	1695	1521
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)	1	338	32	345	468	680	7	21	139	492	95	35
RTOR Reduction (vph)	0	5	0	0	0	364	0	0	127	0	0	27
Lane Group Flow (vph)	1	365	0	345	468	316	7	21	12	290	297	8
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	19.6		22.5	41.3	41.3	7.5	7.5	7.5	21.3	21.3	21.3
Effective Green, g (s)	0.8	19.6		22.5	41.3	41.3	7.5	7.5	7.5	21.3	21.3	21.3
Actuated g/C Ratio	0.01	0.22		0.25	0.46	0.46	0.08	0.08	0.08	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	15	760		443	857	728	147	155	130	398	406	364
v/s Ratio Prot	0.00	0.11		c0.20	c0.25		0.00	c0.01		0.17	c0.18	
v/s Ratio Perm						0.20			0.01			0.01
v/c Ratio	0.07	0.48		0.78	0.55	0.43	0.05	0.14	0.09	0.73	0.73	0.02
Uniform Delay, d1	43.7	30.2		30.9	17.1	16.0	37.4	37.7	37.6	31.1	31.2	25.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.5		8.4	0.7	0.4	0.1	0.4	0.3	6.5	6.7	0.0
Delay (s)	45.6	30.7		39.3	17.8	16.4	37.6	38.1	37.9	37.7	37.8	25.9
Level of Service	D	C		D	B	B	D	D	D	D	D	C
Approach Delay (s)		30.7			22.1			37.9			37.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	61.9%	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)	1	311	29	317	431	626	6	19	128	453	87	32
Future Volume (veh/h)	1	311	29	317	431	626	6	19	128	453	87	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	338	32	345	468	680	7	21	139	560	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	2	842	79	393	890	754	197	206	174	704	0	309
Arrive On Green	0.00	0.26	0.26	0.22	0.48	0.48	0.11	0.11	0.11	0.20	0.00	0.20
Sat Flow, veh/h	1767	3252	306	1767	1856	1572	1767	1856	1568	3534	0	1553
Grp Volume(v), veh/h	1	182	188	345	468	680	7	21	139	560	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1795	1767	1856	1572	1767	1856	1568	1767	0	1553
Q Serve(g_s), s	0.0	7.4	7.5	16.3	15.2	34.2	0.3	0.9	7.5	13.0	0.0	1.6
Cycle Q Clear(g_c), s	0.0	7.4	7.5	16.3	15.2	34.2	0.3	0.9	7.5	13.0	0.0	1.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	456	464	393	890	754	197	206	174	704	0	309
V/C Ratio(X)	0.41	0.40	0.40	0.88	0.53	0.90	0.04	0.10	0.80	0.80	0.00	0.11
Avail Cap(c_a), veh/h	102	470	478	665	1085	920	368	387	327	1167	0	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.1	26.5	26.5	32.4	15.6	20.6	34.2	34.5	37.4	32.9	0.0	28.3
Incr Delay (d2), s/veh	85.1	0.6	0.6	7.2	0.5	10.4	0.1	0.2	8.0	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.1	3.2	7.5	6.1	13.7	0.1	0.4	3.2	5.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.2	27.0	27.1	39.6	16.1	31.0	34.3	34.7	45.5	35.0	0.0	28.5
LnGrp LOS	F	C	C	D	B	C	C	C	D	C	A	C
Approach Vol, veh/h		371			1493			167			595	
Approach Delay, s/veh		27.3			28.3			43.6			34.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.7	26.8		21.7	4.6	45.9		14.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	23.0		28.5	5.0	50.5		18.0				
Max Q Clear Time (g_c+I1), s	18.3	9.5		15.0	2.0	36.2		9.5				
Green Ext Time (p_c), s	0.9	1.9		1.9	0.0	5.2		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			30.6									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	901	49	1255	377	234	12	249	5	8
v/c Ratio	0.36	0.48	0.28	0.71	0.42	0.68	0.03	0.43	0.01	0.01
Control Delay	46.6	14.2	46.1	19.9	6.7	42.0	27.2	6.5	27.0	0.0
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	14.5	46.1	19.9	6.7	42.0	27.2	6.5	27.0	0.0
Queue Length 50th (ft)	37	160	26	266	34	123	5	0	2	0
Queue Length 95th (ft)	88	267	69	433	113	216	20	57	12	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	253	2270	228	2261	1076	585	779	805	583	777
Starvation Cap Reductn	0	623	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	0.27	0.55	0.21	0.56	0.35	0.40	0.02	0.31	0.01	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	781	48	45	1155	347	215	11	229	5	0	7
Future Volume (vph)	63	781	48	45	1155	347	215	11	229	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3468		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1752	3468		1752	3505	1530	1388	1845	1568	1383	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)	68	849	52	49	1255	377	234	12	249	5	0	8
RTOR Reduction (vph)	0	4	0	0	0	124	0	0	188	0	6	0
Lane Group Flow (vph)	68	897	0	49	1255	253	234	12	61	5	2	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.6	44.6		4.5	42.5	42.5	20.3	20.3	20.3	20.3	20.3	
Effective Green, g (s)	6.6	44.6		4.5	42.5	42.5	20.3	20.3	20.3	20.3	20.3	
Actuated g/C Ratio	0.08	0.54		0.05	0.51	0.51	0.24	0.24	0.24	0.24	0.24	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1865		95	1796	784	339	451	383	338	383	
v/s Ratio Prot	c0.04	0.26		0.03	c0.36			0.01			0.00	
v/s Ratio Perm						0.17	c0.17		0.04	0.00		
v/c Ratio	0.49	0.48		0.52	0.70	0.32	0.69	0.03	0.16	0.01	0.01	
Uniform Delay, d1	36.5	11.9		38.1	15.3	11.8	28.4	23.8	24.6	23.7	23.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	0.2		4.7	1.2	0.2	5.9	0.0	0.2	0.0	0.0	
Delay (s)	39.2	12.1		42.8	16.5	12.0	34.4	23.8	24.8	23.7	23.7	
Level of Service	D	B		D	B	B	C	C	C	C	C	
Approach Delay (s)		14.0			16.3			29.3			23.7	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	65.9%	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)	63	781	48	45	1155	347	215	11	229	5	0	7
Future Volume (veh/h)	63	781	48	45	1155	347	215	11	229	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	849	52	49	1255	0	234	12	249	5	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	1727	106	82	1770		420	408	346	357	0	346
Arrive On Green	0.06	0.51	0.51	0.05	0.50	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3373	207	1767	3526	1572	1396	1856	1572	1110	0	1572
Grp Volume(v), veh/h	68	444	457	49	1255	0	234	12	249	5	0	8
Grp Sat Flow(s),veh/h/ln	1767	1763	1817	1767	1763	1572	1396	1856	1572	1110	0	1572
Q Serve(g_s), s	2.3	10.0	10.0	1.7	16.7	0.0	9.6	0.3	8.9	0.2	0.0	0.2
Cycle Q Clear(g_c), s	2.3	10.0	10.0	1.7	16.7	0.0	9.8	0.3	8.9	0.5	0.0	0.2
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	902	930	82	1770		420	408	346	357	0	346
V/C Ratio(X)	0.69	0.49	0.49	0.60	0.71		0.56	0.03	0.72	0.01	0.00	0.02
Avail Cap(c_a), veh/h	305	1487	1533	276	2917		818	937	794	673	0	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	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	9.7	9.7	28.4	11.7	0.0	22.5	18.6	22.0	18.8	0.0	18.6
Incr Delay (d2), s/veh	8.1	0.4	0.4	6.8	0.5	0.0	1.2	0.0	2.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.3	3.4	0.8	5.5	0.0	3.0	0.1	3.2	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	10.1	10.1	35.3	12.2	0.0	23.6	18.7	24.8	18.9	0.0	18.6
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		969			1304	A		495			13	
Approach Delay, s/veh		11.9			13.1			24.1			18.7	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	35.6		17.9	7.9	35.0		17.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	51.3		30.7	10.5	50.3		30.7				
Max Q Clear Time (g_c+I1), s	3.7	12.0		2.5	4.3	18.7		11.8				
Green Ext Time (p_c), s	0.0	7.0		0.0	0.1	11.8		1.5				

Intersection Summary				
HCM 6th Ctrl Delay		14.7		
HCM 6th LOS		B		

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	214	888	61	954	438	193	49	137	598
v/c Ratio	0.57	0.64	0.41	0.79	0.74	0.23	0.11	0.59	0.86dr
Control Delay	52.5	25.9	57.6	36.0	50.1	34.6	1.0	55.6	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	25.9	57.6	36.0	50.1	34.6	1.0	55.6	34.9
Queue Length 50th (ft)	72	233	40	302	145	55	0	89	138
Queue Length 95th (ft)	124	336	91	414	225	98	4	165	222
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	438	1603	189	1551	719	999	515	334	975
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.55	0.32	0.62	0.61	0.19	0.10	0.41	0.61

Intersection Summary

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	520	297	56	779	98	403	178	45	126	187	363
Future Volume (vph)	197	520	297	56	779	98	403	178	45	126	187	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3328		1770	3475		3433	3539	1583	1770	3189	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3328		1770	3475		3433	3539	1583	1770	3189	
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)	214	565	323	61	847	107	438	193	49	137	203	395
RTOR Reduction (vph)	0	65	0	0	8	0	0	0	38	0	158	0
Lane Group Flow (vph)	214	823	0	61	946	0	438	193	11	137	440	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	11.1	40.2		7.0	36.1		17.5	23.6	23.6	13.3	19.4	
Effective Green, g (s)	11.1	40.2		7.0	36.1		17.5	23.6	23.6	13.3	19.4	
Actuated g/C Ratio	0.11	0.39		0.07	0.35		0.17	0.23	0.23	0.13	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	373	1310		121	1228		588	818	365	230	605	
v/s Ratio Prot	c0.06	c0.25		0.03	c0.27		c0.13	c0.05		0.08	c0.14	
v/s Ratio Perm									0.01			
v/c Ratio	0.57	0.63		0.50	0.77		0.74	0.24	0.03	0.60	0.86dr	
Uniform Delay, d1	43.3	24.9		45.9	29.3		40.2	31.9	30.4	41.9	38.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.9		3.3	3.0		5.1	0.1	0.0	4.1	4.4	
Delay (s)	45.4	25.9		49.2	32.4		45.3	32.1	30.4	46.0	43.2	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		29.7			33.4			40.5			43.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	102.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	73.6%	ICU Level of Service	D	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	520	297	56	779	98	403	178	45	126	187	363
Future Volume (veh/h)	197	520	297	56	779	98	403	178	45	126	187	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	214	565	0	61	847	107	438	193	49	137	203	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1446		91	1154	146	583	600	268	178	356	
Arrive On Green	0.09	0.41	0.00	0.05	0.36	0.36	0.17	0.17	0.17	0.10	0.10	0.00
Sat Flow, veh/h	3456	3647	0	1781	3169	400	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	214	565	0	61	475	479	438	193	49	137	203	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1792	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	3.9	7.4	0.0	2.2	15.3	15.3	8.0	3.1	1.7	4.9	3.6	0.0
Cycle Q Clear(g_c), s	3.9	7.4	0.0	2.2	15.3	15.3	8.0	3.1	1.7	4.9	3.6	0.0
Prop In Lane	1.00		0.00	1.00		0.22	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	324	1446		91	647	653	583	600	268	178	356	
V/C Ratio(X)	0.66	0.39		0.67	0.73	0.73	0.75	0.32	0.18	0.77	0.57	
Avail Cap(c_a), veh/h	655	2452		284	1172	1182	1074	1482	661	500	1374	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	13.8	0.0	30.7	18.2	18.2	26.1	24.1	23.5	28.9	28.3	0.0
Incr Delay (d2), s/veh	2.3	0.2	0.0	8.3	1.6	1.6	2.0	0.3	0.3	6.8	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.7	0.0	1.1	5.8	5.9	3.1	1.2	0.6	2.3	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	14.0	0.0	39.0	19.8	19.8	28.1	24.4	23.8	35.7	29.7	0.0
LnGrp LOS	C	B		D	B	B	C	C	C	D	C	
Approach Vol, veh/h		779	A		1015			680			340	A
Approach Delay, s/veh		18.7			21.0			26.7			32.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	31.3	15.6	11.1	10.7	28.5	11.1	15.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	45.5	20.5	25.5	12.5	43.5	18.5	27.5
Max Q Clear Time (g_c+I1), s	4.2	9.4	10.0	5.6	5.9	17.3	6.9	5.1
Green Ext Time (p_c), s	0.0	4.3	1.2	1.0	0.4	6.6	0.2	1.2

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

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	71	454	1263	576	101
v/c Ratio	0.41	0.21	0.75	0.74	0.23
Control Delay	49.2	10.0	21.6	39.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	10.0	21.6	39.8	9.1
Queue Length 50th (ft)	35	43	223	142	0
Queue Length 95th (ft)	103	147	#624	#315	47
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	222	2372	1705	965	517
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	0.32	0.19	0.74	0.60	0.20

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)	65	418	606	556	530	93
Future Volume (vph)	65	418	606	556	530	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3230		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3230		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	454	659	604	576	101
RTOR Reduction (vph)	0	0	112	0	0	79
Lane Group Flow (vph)	71	454	1151	0	576	22
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.0	53.9	42.4		19.7	19.7
Effective Green, g (s)	7.0	53.9	42.4		19.7	19.7
Actuated g/C Ratio	0.08	0.59	0.47		0.22	0.22
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	134	2076	1504		736	339
v/s Ratio Prot	c0.04	0.13	c0.36			
v/s Ratio Perm					c0.17	0.01
v/c Ratio	0.53	0.22	0.77		0.78	0.06
Uniform Delay, d1	40.4	8.7	20.2		33.6	28.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	0.1	2.4		5.4	0.1
Delay (s)	44.2	8.7	22.5		39.1	28.4
Level of Service	D	A	C		D	C
Approach Delay (s)		13.5	22.5		37.5	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	338	173	60	614	470	324	694	284	714
v/c Ratio	0.55	0.66	0.31	0.42	0.75	0.67	0.90	0.78	0.84	0.75
Control Delay	44.8	33.9	5.8	48.7	37.6	9.3	63.8	36.2	58.8	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	33.9	5.8	48.7	37.6	9.3	63.8	36.2	58.8	24.9
Queue Length 50th (ft)	68	165	0	33	169	9	182	184	157	126
Queue Length 95th (ft)	124	256	45	73	#239	101	#358	256	#313	196
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	296	615	625	151	879	721	362	1005	340	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.55	0.28	0.40	0.70	0.65	0.90	0.69	0.84	0.67

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)	118	311	159	55	565	432	298	588	51	261	343	314
Future Volume (vph)	118	311	159	55	565	432	298	588	51	261	343	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1531	1752	3505	1532	1752	3458		1752	3211	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1531	1752	3505	1532	1752	3458		1752	3211	
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)	128	338	173	60	614	470	324	639	55	284	373	341
RTOR Reduction (vph)	0	0	125	0	0	346	0	7	0	0	186	0
Lane Group Flow (vph)	128	338	48	60	614	124	324	687	0	284	528	0
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.0	22.9	22.9	5.2	19.1	19.1	17.0	20.9		15.8	19.7	
Effective Green, g (s)	9.0	22.9	22.9	5.2	19.1	19.1	17.0	20.9		15.8	19.7	
Actuated g/C Ratio	0.11	0.28	0.28	0.06	0.23	0.23	0.21	0.25		0.19	0.24	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	510	423	110	808	353	359	872		334	763	
v/s Ratio Prot	c0.07	c0.18		0.03	c0.18		c0.18	c0.20		0.16	0.16	
v/s Ratio Perm			0.03			0.08						
v/c Ratio	0.67	0.66	0.11	0.55	0.76	0.35	0.90	0.79		0.85	0.69	
Uniform Delay, d1	35.5	26.5	22.4	37.7	29.7	26.7	32.1	28.9		32.4	28.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	3.2	0.1	5.4	4.1	0.6	24.9	4.7		18.3	2.7	
Delay (s)	44.6	29.8	22.5	43.1	33.9	27.3	57.0	33.6		50.7	31.5	
Level of Service	D	C	C	D	C	C	E	C		D	C	
Approach Delay (s)		30.8			31.6			41.1			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	74.1%	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)	118	311	159	55	565	432	298	588	51	261	343	314
Future Volume (veh/h)	118	311	159	55	565	432	298	588	51	261	343	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	338	173	60	614	470	324	639	55	284	373	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	535	449	80	853	376	353	878	76	320	439	386
Arrive On Green	0.09	0.29	0.29	0.05	0.24	0.24	0.20	0.27	0.27	0.18	0.25	0.25
Sat Flow, veh/h	1767	1856	1558	1767	3526	1555	1767	3284	282	1767	1763	1550
Grp Volume(v), veh/h	128	338	173	60	614	470	324	343	351	284	373	341
Grp Sat Flow(s),veh/h/ln	1767	1856	1558	1767	1763	1555	1767	1763	1803	1767	1763	1550
Q Serve(g_s), s	5.9	13.1	7.4	2.8	13.2	20.0	14.9	14.6	14.7	13.0	16.7	17.5
Cycle Q Clear(g_c), s	5.9	13.1	7.4	2.8	13.2	20.0	14.9	14.6	14.7	13.0	16.7	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	162	535	449	80	853	376	353	472	482	320	439	386
V/C Ratio(X)	0.79	0.63	0.39	0.75	0.72	1.25	0.92	0.73	0.73	0.89	0.85	0.88
Avail Cap(c_a), veh/h	289	597	501	147	853	376	353	490	502	331	469	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	25.6	23.6	39.0	28.8	31.3	32.4	27.5	27.5	33.0	29.6	29.9
Incr Delay (d2), s/veh	8.3	1.8	0.5	13.1	3.0	132.6	28.4	5.1	5.1	23.3	13.1	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.6	2.6	1.4	5.6	20.8	8.8	6.5	6.7	7.4	8.3	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	27.4	24.1	52.1	31.7	163.9	60.8	32.7	32.6	56.4	42.7	48.7
LnGrp LOS	D	C	C	D	C	F	E	C	C	E	D	D
Approach Vol, veh/h		639			1144			1018			998	
Approach Delay, s/veh		30.1			87.1			41.6			48.6	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	26.6	8.2	28.3	21.0	25.1	12.1	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	6.9	26.6	16.5	22.0	13.5	20.0
Max Q Clear Time (g_c+I1), s	15.0	16.7	4.8	15.1	16.9	19.5	7.9	22.0
Green Ext Time (p_c), s	0.1	2.2	0.0	1.9	0.0	1.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	55.2
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	63	750	52	59	537
Future Volume (Veh/h)	46	63	750	52	59	537
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	68	815	57	64	584
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1556	844			872	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1556	844			872	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	56	81			92	
cM capacity (veh/h)	114	363			773	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	118	872	64	584
Volume Left	50	0	64	0
Volume Right	68	57	0	0
cSH	189	1700	773	1700
Volume to Capacity	0.63	0.51	0.08	0.34
Queue Length 95th (ft)	89	0	7	0
Control Delay (s)	51.5	0.0	10.1	0.0
Lane LOS	F		B	
Approach Delay (s)	51.5	0.0	1.0	
Approach LOS	F			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	63	750	52	59	537
Future Vol, veh/h	46	63	750	52	59	537
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	-	-	-	60	-
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	50	68	815	57	64	584

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1556	844	0	0	872	0
Stage 1	844	-	-	-	-	-
Stage 2	712	-	-	-	-	-
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	124	363	-	-	773	-
Stage 1	422	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	114	363	-	-	773	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	422	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	51.5	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	189	773	-
HCM Lane V/C Ratio	-	-	0.627	0.083	-
HCM Control Delay (s)	-	-	51.5	10.1	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.6	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	6	40	8	15	98	34	555	3	33	423	85
Future Volume (Veh/h)	99	6	40	8	15	98	34	555	3	33	423	85
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	108	7	43	9	16	107	37	603	3	36	460	92
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1331	1220	466	1259	1310	608	558			608		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1331	1220	466	1259	1310	608	558			608		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	93	93	89	78	96			96		
cM capacity (veh/h)	88	166	593	124	146	495	1007			969		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	158	132	37	606	36	460	92
Volume Left	108	9	37	0	36	0	0
Volume Right	43	107	0	3	0	0	92
cSH	118	331	1007	1700	969	1700	1700
Volume to Capacity	1.34	0.40	0.04	0.36	0.04	0.27	0.05
Queue Length 95th (ft)	265	46	3	0	3	0	0
Control Delay (s)	267.5	22.9	8.7	0.0	8.9	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	267.5	22.9	0.5		0.5		
Approach LOS	F	C					

Intersection Summary				
Average Delay	30.2			
Intersection Capacity Utilization	51.0%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	25.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	6	40	8	15	98	34	555	3	33	423	85
Future Vol, veh/h	99	6	40	8	15	98	34	555	3	33	423	85
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	7	43	9	16	107	37	603	3	36	460	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1279	1220	466	1284	1311	608	558	0	0	608	0	0
Stage 1	538	538	-	681	681	-	-	-	-	-	-	-
Stage 2	741	682	-	603	630	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	180	597	142	159	496	1013	-	-	970	-	-
Stage 1	527	522	-	440	450	-	-	-	-	-	-	-
Stage 2	408	450	-	486	475	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 96	166	594	120	146	495	1007	-	-	968	-	-
Mov Cap-2 Maneuver	~ 96	166	-	120	146	-	-	-	-	-	-	-
Stage 1	505	500	-	423	432	-	-	-	-	-	-	-
Stage 2	297	432	-	428	455	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	220.4	23	0.5	0.5
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1007	-	-	128	329	968	-	-
HCM Lane V/C Ratio	0.037	-	-	1.231	0.4	0.037	-	-
HCM Control Delay (s)	8.7	-	-	220.4	23	8.9	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	9.8	1.9	0.1	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	9	7	291	5	329	9	243	149	262	199	10
Future Volume (vph)	20	9	7	291	5	329	9	243	149	262	199	10
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
Hourly flow rate (vph)	22	10	8	316	5	358	10	264	162	285	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	40	679	274	162	393	119
Volume Left (vph)	22	316	10	0	285	0
Volume Right (vph)	8	358	0	162	0	11
Hadj (s)	0.02	-0.19	0.05	-0.67	0.40	-0.03
Departure Headway (s)	8.4	6.5	7.7	7.0	7.8	7.4
Degree Utilization, x	0.09	1.22	0.58	0.31	0.85	0.24
Capacity (veh/h)	395	541	454	507	452	480
Control Delay (s)	12.3	135.8	19.7	11.9	40.3	11.5
Approach Delay (s)	12.3	135.8	16.8		33.6	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	70.4			
Level of Service	F			
Intersection Capacity Utilization	81.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	75.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	9	7	291	5	329	0	9	243	149	262	199
Future Vol, veh/h	20	9	7	291	5	329	0	9	243	149	262	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	10	8	316	5	358	0	10	264	162	285	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.3	143.6	19.4	37.7
HCM LOS	B	F	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	56%	47%	72%	0%
Vol Thru, %	96%	0%	25%	1%	28%	91%
Vol Right, %	0%	100%	19%	53%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	149	36	625	362	110
LT Vol	9	0	20	291	262	0
Through Vol	243	0	9	5	100	100
RT Vol	0	149	7	329	0	10
Lane Flow Rate	274	162	39	679	393	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.587	0.315	0.093	1.237	0.857	0.245
Departure Headway (Hd)	8.49	7.741	9.31	6.556	8.578	8.134
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	468	387	557	424	444
Service Time	6.19	5.441	7.31	4.594	6.278	5.834
HCM Lane V/C Ratio	0.642	0.346	0.101	1.219	0.927	0.268
HCM Control Delay	22.6	14	13.3	143.6	45	13.5
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	3.7	1.3	0.3	25.9	8.5	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	193	136	229	208	125	373
Future Volume (Veh/h)	193	136	229	208	125	373
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	210	148	249	226	136	405
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	747	136	541			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	747	136	541			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	20	83	76			
cM capacity (veh/h)	262	885	1017			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	358	249	113	113	136	405
Volume Left	210	249	0	0	0	0
Volume Right	148	0	0	0	0	405
cSH	446	1017	1700	1700	1700	1700
Volume to Capacity	0.80	0.24	0.07	0.07	0.08	0.24
Queue Length 95th (ft)	183	24	0	0	0	0
Control Delay (s)	37.9	9.7	0.0	0.0	0.0	0.0
Lane LOS	E	A				
Approach Delay (s)	37.9	5.1			0.0	
Approach LOS	E					

Intersection Summary			
Average Delay		11.6	
Intersection Capacity Utilization		42.4%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	193	136	229	208	125	373
Future Vol, veh/h	193	136	229	208	125	373
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	145	105	-	-	0
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	210	148	249	226	136	405

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	747	136	541	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	362	909	1020	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	274	909	1020	-	-	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.9	5.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1020	-	274	909	-	-
HCM Lane V/C Ratio	0.244	-	0.766	0.163	-	-
HCM Control Delay (s)	9.7	-	50.9	9.7	-	-
HCM Lane LOS	A	-	F	A	-	-
HCM 95th %tile Q(veh)	1	-	5.7	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	55	1	117	9	0	0	0	0	324	15
Future Volume (Veh/h)	27	0	55	1	117	9	0	0	0	0	324	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	60	1	127	10	0	0	0	0	352	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	428	360	360	420	368	0	368			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	428	360	360	420	368	0	368			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	91	100	77	99	100			100		
cM capacity (veh/h)	439	567	684	496	561	1085	1191			1623		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	89	138	368
Volume Left	29	1	0
Volume Right	60	10	16
cSH	579	604	1700
Volume to Capacity	0.15	0.23	0.22
Queue Length 95th (ft)	14	22	0
Control Delay (s)	12.3	13.0	0.0
Lane LOS	B	B	
Approach Delay (s)	12.3	13.0	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		4.9			
Intersection Capacity Utilization		36.2%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	55	1	117	9	0	0	0	0	324	15
Future Vol, veh/h	27	0	55	1	117	9	0	0	0	0	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	60	1	127	10	0	0	0	0	352	16

Major/Minor	Minor2			Minor1						Major2		
Conflicting Flow All	429	360	360	390	368	0				-	-	0
Stage 1	360	360	-	0	0	-				-	-	-
Stage 2	69	0	-	390	368	-				-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22				-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-				-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318				-	-	-
Pot Cap-1 Maneuver	536	567	684	569	561	-				0	-	-
Stage 1	658	626	-	-	-	-				0	-	-
Stage 2	-	-	-	634	621	-				0	-	-
Platoon blocked, %											-	-
Mov Cap-1 Maneuver	-	567	684	519	561	-				-	-	-
Mov Cap-2 Maneuver	-	567	-	519	561	-				-	-	-
Stage 1	658	626	-	-	-	-				-	-	-
Stage 2	-	-	-	579	621	-				-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	561	-	-	-
HCM Lane V/C Ratio	-	0.229	-	-	-
HCM Control Delay (s)	-	13.3	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	336	1217	310	492	91	293	622	349	276
v/c Ratio	0.09	0.72	0.80	0.38	0.44	0.61	0.65	0.37	0.69	0.41
Control Delay	55.7	54.4	37.6	27.5	2.6	79.6	63.1	6.0	61.5	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	54.4	37.6	27.5	2.6	79.6	63.1	6.0	61.5	46.0
Queue Length 50th (ft)	16	121	454	174	7	78	131	49	151	106
Queue Length 95th (ft)	44	188	646	294	52	#158	192	80	219	155
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	284	593	1667	905	1171	170	647	1785	657	965
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	0.07	0.57	0.73	0.34	0.42	0.54	0.45	0.35	0.53	0.29

Intersection Summary

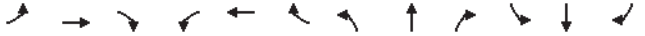
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	194	115	1120	285	453	84	270	572	321	205	49
Future Volume (vph)	18	194	115	1120	285	453	84	270	572	321	205	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3342		3433	1863	1568	1770	3539	2787	3433	3422	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3342		3433	1863	1568	1770	3539	2787	3433	3422	
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)	20	211	125	1217	310	492	91	293	622	349	223	53
RTOR Reduction (vph)	0	59	0	0	0	192	0	0	78	0	15	0
Lane Group Flow (vph)	20	277	0	1217	310	300	91	293	544	349	261	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	15.9	15.9		57.2	57.2	76.4	10.9	16.5	73.7	19.2	24.8	
Effective Green, g (s)	15.9	15.9		57.2	57.2	76.4	10.9	16.5	73.7	19.2	24.8	
Actuated g/C Ratio	0.12	0.12		0.44	0.44	0.59	0.08	0.13	0.57	0.15	0.19	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	217	410		1518	824	926	149	451	1588	509	656	
v/s Ratio Prot	0.01	c0.08		c0.35	0.17	0.05	0.05	c0.08	0.15	c0.10	0.08	
v/s Ratio Perm						0.14			0.04			
v/c Ratio	0.09	0.68		0.80	0.38	0.32	0.61	0.65	0.34	0.69	0.40	
Uniform Delay, d1	50.3	54.2		31.1	24.1	13.4	57.2	53.7	14.9	52.2	45.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	4.4		3.1	0.3	0.2	7.2	3.2	0.1	3.8	0.4	
Delay (s)	50.5	58.6		34.3	24.4	13.6	64.4	56.9	15.0	56.0	46.1	
Level of Service	D	E		C	C	B	E	E	B	E	D	
Approach Delay (s)		58.2			27.7			31.7			51.6	
Approach LOS		E			C			C			D	

Intersection Summary

HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	129.3	Sum of lost time (s)	20.5
Intersection Capacity Utilization	74.7%	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)	18	194	115	1120	285	453	84	270	572	321	205	49
Future Volume (veh/h)	18	194	115	1120	285	453	84	270	572	321	205	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	211	125	1217	310	492	91	293	622	349	223	53
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	223	273	155	1441	780	848	115	569	1610	427	600	140
Arrive On Green	0.13	0.13	0.13	0.42	0.42	0.42	0.06	0.16	0.16	0.12	0.21	0.21
Sat Flow, veh/h	1781	2184	1240	3456	1870	1564	1781	3554	2790	3456	2860	666
Grp Volume(v), veh/h	20	170	166	1217	310	492	91	293	622	349	137	139
Grp Sat Flow(s),veh/h/ln	1781	1777	1647	1728	1870	1564	1781	1777	1395	1728	1777	1749
Q Serve(g_s), s	1.2	10.9	11.5	37.2	13.6	24.8	5.9	8.9	14.3	11.6	7.7	8.0
Cycle Q Clear(g_c), s	1.2	10.9	11.5	37.2	13.6	24.8	5.9	8.9	14.3	11.6	7.7	8.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	223	222	206	1441	780	848	115	569	1610	427	372	367
V/C Ratio(X)	0.09	0.76	0.81	0.84	0.40	0.58	0.79	0.52	0.39	0.82	0.37	0.38
Avail Cap(c_a), veh/h	309	308	286	1812	980	1016	185	702	1714	715	534	525
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	45.5	49.7	50.0	30.8	23.9	18.1	54.2	45.2	13.5	50.2	39.8	39.9
Incr Delay (d2), s/veh	0.2	7.3	11.0	3.1	0.3	0.6	11.6	0.7	0.2	3.9	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.3	5.4	15.4	5.9	8.5	3.0	3.9	9.1	5.2	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	57.0	61.1	34.0	24.3	18.7	65.7	45.9	13.7	54.1	40.4	40.5
LnGrp LOS	D	E	E	C	C	B	E	D	B	D	D	D
Approach Vol, veh/h		356			2019			1006			625	
Approach Delay, s/veh		58.3			28.8			27.8			48.1	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.2	24.6		19.3	13.4	30.4		54.4				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 24	23.2		20.4	12.2	* 35		61.6				
Max Q Clear Time (g_c+I1), s	13.6	16.3		13.5	7.9	10.0		39.2				
Green Ext Time (p_c), s	0.9	2.5		1.2	0.1	1.6		9.8				

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	705	298	130	1427	700	407	317	454
v/c Ratio	0.56	0.57	0.40	0.68	1.04	0.93	0.66	0.86	0.75
Control Delay	63.4	32.9	5.0	67.1	68.3	63.0	47.4	66.1	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	32.9	5.0	67.1	68.3	63.0	47.4	66.1	45.0
Queue Length 50th (ft)	40	220	0	90	~578	254	143	217	138
Queue Length 95th (ft)	74	306	63	#174	#783	#401	196	#385	194
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	200	1230	745	214	1373	754	816	400	871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.57	0.40	0.61	1.04	0.93	0.50	0.79	0.52

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)	102	649	274	120	1020	293	644	321	53	292	273	144
Future Volume (vph)	102	649	274	120	1020	293	644	321	53	292	273	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3402		3433	3454		1770	3356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3402		3433	3454		1770	3356	
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)	111	705	298	130	1109	318	700	349	58	317	297	157
RTOR Reduction (vph)	0	0	194	0	21	0	0	12	0	0	62	0
Lane Group Flow (vph)	111	705	104	130	1406	0	700	395	0	317	392	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	6.5	38.9	38.9	12.0	44.4		24.6	19.6		23.2	18.2	
Effective Green, g (s)	6.5	38.9	38.9	12.0	44.4		24.6	19.6		23.2	18.2	
Actuated g/C Ratio	0.06	0.35	0.35	0.11	0.40		0.22	0.18		0.21	0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	1232	551	190	1352		756	606		367	546	
v/s Ratio Prot	0.03	0.20		c0.07	c0.41		c0.20	0.11		c0.18	0.12	
v/s Ratio Perm			0.07									
v/c Ratio	0.56	0.57	0.19	0.68	1.04		0.93	0.65		0.86	0.72	
Uniform Delay, d1	51.2	29.6	25.4	48.0	33.6		42.7	42.9		42.7	44.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.6	0.2	9.8	35.5		17.1	2.5		18.5	4.5	
Delay (s)	54.6	30.3	25.6	57.8	69.1		59.8	45.4		61.3	48.8	
Level of Service	D	C	C	E	E		E	D		E	D	
Approach Delay (s)		31.4			68.2			54.5			53.9	
Approach LOS		C			E			D			D	

Intersection Summary					
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.99				
Actuated Cycle Length (s)	111.7	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	87.5%	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)	102	649	274	120	1020	293	644	321	53	292	273	144
Future Volume (veh/h)	102	649	274	120	1020	293	644	321	53	292	273	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	705	298	130	1109	318	700	349	58	317	297	157
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	167	1281	571	158	1094	310	751	586	96	348	386	199
Arrive On Green	0.05	0.36	0.36	0.09	0.40	0.40	0.22	0.19	0.19	0.20	0.17	0.17
Sat Flow, veh/h	3456	3554	1585	1781	2728	773	3456	3050	502	1781	2268	1169
Grp Volume(v), veh/h	111	705	298	130	718	709	700	202	205	317	231	223
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1724	1728	1777	1775	1781	1777	1660
Q Serve(g_s), s	3.5	17.5	8.7	7.9	44.3	44.3	22.0	11.4	11.7	19.2	13.7	14.2
Cycle Q Clear(g_c), s	3.5	17.5	8.7	7.9	44.3	44.3	22.0	11.4	11.7	19.2	13.7	14.2
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.28	1.00		0.70
Lane Grp Cap(c), veh/h	167	1281	571	158	713	692	751	341	341	348	302	282
V/C Ratio(X)	0.67	0.55	0.52	0.82	1.01	1.02	0.93	0.59	0.60	0.91	0.76	0.79
Avail Cap(c_a), veh/h	203	1281	571	218	713	692	754	418	418	407	436	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	28.2	7.9	49.4	33.1	33.1	42.4	40.7	40.8	43.5	43.7	43.9
Incr Delay (d2), s/veh	5.9	0.5	0.9	15.9	35.5	40.7	18.2	1.6	1.7	22.1	4.8	6.5
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	1.6	7.2	5.5	4.1	24.9	25.2	11.0	5.0	5.1	10.4	6.3	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	28.7	8.7	65.4	68.6	73.7	60.6	42.3	42.5	65.6	48.6	50.4
LnGrp LOS	E	C	A	E	F	F	E	D	D	E	D	D
Approach Vol, veh/h		1114			1557			1107			771	
Approach Delay, s/veh		26.2			70.7			53.9			56.1	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	44.3	28.5	23.3	9.8	48.8	26.1	25.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	37.3	24.1	27.1	6.5	44.3	25.2	26.0
Max Q Clear Time (g_c+I1), s	9.9	19.5	24.0	16.2	5.5	46.3	21.2	13.7
Green Ext Time (p_c), s	0.1	5.3	0.1	1.9	0.0	0.0	0.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	489	166	14	889	212	9
v/c Ratio	0.58	0.21	0.04	0.56	0.44	0.02
Control Delay	13.3	2.9	9.0	11.0	15.5	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	2.9	9.0	11.0	15.5	7.2
Queue Length 50th (ft)	64	0	1	60	31	0
Queue Length 95th (ft)	237	29	13	191	105	8
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1549	1309	632	2942	1286	1153
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	0.32	0.13	0.02	0.30	0.16	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	450	153	13	818	195	8
Future Volume (vph)	450	153	13	818	195	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1750	3505	1752	1568
Flt Permitted	1.00	1.00	0.41	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	753	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	166	14	889	212	9
RTOR Reduction (vph)	0	89	0	0	0	6
Lane Group Flow (vph)	489	77	14	889	212	3
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	19.7	19.7	19.7	19.7	12.0	12.0
Effective Green, g (s)	19.7	19.7	19.7	19.7	12.0	12.0
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.28	0.28
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	855	710	349	1624	494	442
v/s Ratio Prot	c0.27			0.25		0.00
v/s Ratio Perm		0.05	0.02		c0.12	
v/c Ratio	0.57	0.11	0.04	0.55	0.43	0.01
Uniform Delay, d1	8.3	6.4	6.2	8.2	12.5	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	0.0	0.2	0.2	0.0
Delay (s)	8.9	6.5	6.2	8.4	12.7	11.0
Level of Service	A	A	A	A	B	B
Approach Delay (s)	8.3			8.4	12.6	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	10.8
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	450	153	13	818	195	8
Future Volume (veh/h)	450	153	13	818	195	8
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	489	166	14	889	212	9
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	785	662	404	1492	393	349
Arrive On Green	0.42	0.42	0.42	0.42	0.22	0.22
Sat Flow, veh/h	1856	1565	771	3618	1767	1572
Grp Volume(v), veh/h	489	166	14	889	212	9
Grp Sat Flow(s),veh/h/ln	1856	1565	771	1763	1767	1572
Q Serve(g_s), s	6.3	2.1	0.4	5.9	3.2	0.1
Cycle Q Clear(g_c), s	6.3	2.1	6.7	5.9	3.2	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	785	662	404	1492	393	349
V/C Ratio(X)	0.62	0.25	0.03	0.60	0.54	0.03
Avail Cap(c_a), veh/h	2108	1778	953	4005	1717	1528
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	6.9	5.7	9.5	6.8	10.5	9.3
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.3	0.0	0.9	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.2	5.7	9.5	6.9	10.9	9.3
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	655			903	221	
Approach Delay, s/veh	6.8			7.0	10.8	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	18.3	18.3	12.2
Change Period (Y+Rc), s	5.4	5.4	5.4
Max Green Setting (Gmax), s	34.6	34.6	29.6
Max Q Clear Time (g_c+I1), s	8.3	8.7	5.2
Green Ext Time (p_c), s	2.1	4.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	367	91	5	771	0	61	0	5	0	0	0
Future Volume (Veh/h)	0	367	91	5	771	0	61	0	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	399	99	5	838	0	66	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.80			0.80	0.80	0.80	0.80	0.80	
vC, conflicting volume	838			498			878	1296	448	1299	1346	419
vC1, stage 1 conf vol							448	448		848	848	
vC2, stage 2 conf vol							429	848		451	498	
vCu, unblocked vol	838			249			723	1246	187	1249	1308	419
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			86	100	99	100	100	100
cM capacity (veh/h)	792			1052			472	331	659	290	323	583

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	498	424	419	71	0
Volume Left	0	5	0	66	0
Volume Right	99	0	0	5	0
cSH	792	1052	1700	508	1700
Volume to Capacity	0.00	0.00	0.25	0.14	0.00
Queue Length 95th (ft)	0	0	0	12	0
Control Delay (s)	0.0	0.2	0.0	13.6	0.0
Lane LOS		A		B	A
Approach Delay (s)	0.0	0.1		13.6	0.0
Approach LOS				B	A

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	34.9%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	367	91	5	771	0	61	0	5	0	0	0
Future Vol, veh/h	0	367	91	5	771	0	61	0	5	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	399	99	5	838	0	66	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	838	0	0	498	0	0	878	1297	449	1299	1346	419
Stage 1	-	-	-	-	-	-	449	449	-	848	848	-
Stage 2	-	-	-	-	-	-	429	848	-	451	498	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	794	-	-	1064	-	-	255	161	609	128	151	584
Stage 1	-	-	-	-	-	-	588	571	-	323	377	-
Stage 2	-	-	-	-	-	-	575	377	-	587	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	794	-	-	1064	-	-	253	160	609	126	150	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	324	-	285	318	-
Stage 1	-	-	-	-	-	-	588	571	-	323	374	-
Stage 2	-	-	-	-	-	-	570	374	-	582	543	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	609	794	-	-	1064	-	-	-
HCM Lane V/C Ratio	0.149	0.009	-	-	-	0.005	-	-	-
HCM Control Delay (s)	14.5	11	0	-	-	8.4	0	-	0
HCM Lane LOS	B	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	0	-	-	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	44	169	104	25	308	4	254	12	35	8	12	89
Future Volume (veh/h)	44	169	104	25	308	4	254	12	35	8	12	89
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
Hourly flow rate (vph)	48	184	113	27	335	4	276	13	38	9	13	97
Approach Volume (veh/h)		345			366			327			119	
Crossing Volume (veh/h)		49			337			241			638	
High Capacity (veh/h)		1333			1063			1147			836	
High v/c (veh/h)		0.26			0.34			0.29			0.14	
Low Capacity (veh/h)		1114			870			945			668	
Low v/c (veh/h)		0.31			0.42			0.35			0.18	

Intersection Summary				
Maximum v/c High		0.34		
Maximum v/c Low		0.42		
Intersection Capacity Utilization		58.6%	ICU Level of Service	B

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	345	366	327	119
Demand Flow Rate, veh/h	352	374	334	121
Vehicles Circulating, veh/h	50	344	246	652
Vehicles Exiting, veh/h	723	236	156	66
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.2	8.1	6.5	7.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	352	374	334	121
Cap Entry Lane, veh/h	1311	972	1074	710
Entry HV Adj Factor	0.981	0.979	0.978	0.981
Flow Entry, veh/h	345	366	327	119
Cap Entry, veh/h	1286	952	1050	696
V/C Ratio	0.268	0.385	0.311	0.171
Control Delay, s/veh	5.2	8.1	6.5	7.1
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	13	24	1	28	16	40	173	1	12	103	26
Future Volume (vph)	19	13	24	1	28	16	40	173	1	12	103	26
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
Hourly flow rate (vph)	21	14	26	1	30	17	43	188	1	13	112	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	61	48	232	153
Volume Left (vph)	21	1	43	13
Volume Right (vph)	26	17	1	28
Hadj (s)	-0.05	-0.07	0.17	0.04
Departure Headway (s)	4.8	4.8	4.5	4.5
Degree Utilization, x	0.08	0.06	0.29	0.19
Capacity (veh/h)	683	681	772	768
Control Delay (s)	8.2	8.1	9.4	8.5
Approach Delay (s)	8.2	8.1	9.4	8.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	13	24	1	28	16	40	173	1	12	103	26
Future Vol, veh/h	19	13	24	1	28	16	40	173	1	12	103	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	21	14	26	1	30	17	43	188	1	13	112	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.2	9.4	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	34%	2%	9%
Vol Thru, %	81%	23%	62%	73%
Vol Right, %	0%	43%	36%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	56	45	141
LT Vol	40	19	1	12
Through Vol	173	13	28	103
RT Vol	1	24	16	26
Lane Flow Rate	233	61	49	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.291	0.081	0.065	0.19
Departure Headway (Hd)	4.506	4.793	4.789	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	800	747	747	805
Service Time	2.525	2.822	2.82	2.487
HCM Lane V/C Ratio	0.291	0.082	0.066	0.19
HCM Control Delay	9.4	8.2	8.2	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.3	0.2	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	83	20	0	155	18	40	69	0	7	46	92
Future Volume (Veh/h)	45	83	20	0	155	18	40	69	0	7	46	92
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	90	22	0	168	20	43	75	0	8	50	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	188			112			502	387	101	414	388	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	188			112			502	387	101	414	388	178
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			89	86	100	98	90	88
cM capacity (veh/h)	1374			1465			380	525	949	472	524	860

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	161	188	118	8	150
Volume Left	49	0	43	8	0
Volume Right	22	20	0	0	100
cSH	1374	1465	461	472	709
Volume to Capacity	0.04	0.00	0.26	0.02	0.21
Queue Length 95th (ft)	3	0	25	1	20
Control Delay (s)	2.6	0.0	15.5	12.8	11.4
Lane LOS	A		C	B	B
Approach Delay (s)	2.6	0.0	15.5	11.5	
Approach LOS			C	B	

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	44.6%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	45	83	20	0	155	18	40	69	0	7	46	92
Future Vol, veh/h	45	83	20	0	155	18	40	69	0	7	46	92
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	49	90	22	0	168	20	43	75	0	8	50	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	112	0	0	452	387	101	415	388	178
Stage 1	-	-	-	-	-	-	199	199	-	178	178	-
Stage 2	-	-	-	-	-	-	253	188	-	237	210	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1374	-	-	1465	-	-	514	544	949	544	544	860
Stage 1	-	-	-	-	-	-	798	733	-	819	748	-
Stage 2	-	-	-	-	-	-	747	741	-	762	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1374	-	-	1465	-	-	409	523	949	471	523	860
Mov Cap-2 Maneuver	-	-	-	-	-	-	409	523	-	471	523	-
Stage 1	-	-	-	-	-	-	768	705	-	788	748	-
Stage 2	-	-	-	-	-	-	616	741	-	655	697	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	15.1	11.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	474	1374	-	-	1465	-	-	471	708
HCM Lane V/C Ratio	0.25	0.036	-	-	-	-	-	0.016	0.212
HCM Control Delay (s)	15.1	7.7	0	-	0	-	-	12.8	11.4
HCM Lane LOS	C	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	0	0.8



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	4	156	132	8	125	76
Future Volume (veh/h)	4	156	132	8	125	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	170	143	9	136	83
Approach Volume (veh/h)	174		152			219
Crossing Volume (veh/h)	143		136			4
High Capacity (veh/h)	1238		1245			1380
High v/c (veh/h)	0.14		0.12			0.16
Low Capacity (veh/h)	1028		1034			1157
Low v/c (veh/h)	0.17		0.15			0.19

Intersection Summary			
Maximum v/c High	0.16		
Maximum v/c Low	0.19		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	174	152	219
Demand Flow Rate, veh/h	177	155	224
Vehicles Circulating, veh/h	146	139	4
Vehicles Exiting, veh/h	148	89	319
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.2	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	177	155	224
Cap Entry Lane, veh/h	1189	1197	1374
Entry HV Adj Factor	0.983	0.982	0.979
Flow Entry, veh/h	174	152	219
Cap Entry, veh/h	1169	1175	1346
V/C Ratio	0.149	0.129	0.163
Control Delay, s/veh	4.4	4.2	4.0
LOS	A	A	A
95th %tile Queue, veh	1	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	71	87	5	1	6
Future Volume (Veh/h)	3	71	87	5	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	77	95	5	1	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100				180	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100				180	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1486				805	956

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	80	100	8
Volume Left	3	0	1
Volume Right	0	5	7
cSH	1486	1700	934
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.3	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		16.2%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	71	87	5	1	6
Future Vol, veh/h	3	71	87	5	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	77	95	5	1	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	100	0	-	0	181	98
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1486	-	-	-	806	955
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1486	-	-	-	804	955
Mov Cap-2 Maneuver	-	-	-	-	804	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1486	-	-	-	930
HCM Lane V/C Ratio	0.002	-	-	-	0.008
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	257	1292	1300	119	126	231
v/c Ratio	0.68	0.39	0.82	0.15	0.53	0.36
Control Delay	49.8	0.3	29.0	3.6	54.3	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	0.3	29.0	3.6	54.3	20.2
Queue Length 50th (ft)	154	0	374	0	78	81
Queue Length 95th (ft)	312	0	571	32	170	182
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	503	3312	2843	1289	503	977
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	0.39	0.46	0.09	0.25	0.24

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	254	1279	1287	118	125	229
Future Volume (vph)	254	1279	1287	118	125	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	1.00	0.95	0.95	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)	1656	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1656	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	257	1292	1300	119	126	231
RTOR Reduction (vph)	0	0	0	62	0	26
Lane Group Flow (vph)	257	1292	1300	57	126	205
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	23.8	103.1	49.5	49.5	14.8	42.6
Effective Green, g (s)	23.8	103.1	49.5	49.5	14.8	42.6
Actuated g/C Ratio	0.23	1.00	0.48	0.48	0.14	0.41
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	382	3312	1590	711	237	612
v/s Ratio Prot	c0.16	0.39	c0.39		c0.08	0.14
v/s Ratio Perm				0.04		
v/c Ratio	0.67	0.39	0.82	0.08	0.53	0.34
Uniform Delay, d1	36.1	0.0	22.9	14.5	40.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.3	3.6	0.1	2.6	0.3
Delay (s)	40.7	0.3	26.5	14.6	43.5	20.9
Level of Service	D	A	C	B	D	C
Approach Delay (s)		7.0	25.5		28.9	
Approach LOS		A	C		C	

Intersection Summary				
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	69.5%	ICU Level of Service	C	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	196	971	281	52	887	127	251	285	193	337	312
v/c Ratio	0.53	0.76	0.38	0.20	0.80	0.22	0.59	0.33	0.53	0.77	0.56
Control Delay	58.8	38.4	5.0	58.5	43.2	6.4	58.0	35.9	58.8	56.2	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	38.4	5.0	58.5	43.2	6.4	58.0	35.9	58.8	56.2	14.4
Queue Length 50th (ft)	72	343	0	19	316	0	92	86	71	236	39
Queue Length 95th (ft)	139	536	63	48	495	46	171	156	138	424	149
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	526	2110	1027	526	2110	978	585	1219	585	650	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.46	0.27	0.10	0.42	0.13	0.43	0.23	0.33	0.52	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	942	273	50	860	123	243	230	47	187	327	303
Future Volume (vph)	190	942	273	50	860	123	243	230	47	187	327	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1475	3273	3374	1489	3273	3281		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1475	3273	3374	1489	3273	3281		3273	1776	1509
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)	196	971	281	52	887	127	251	237	48	193	337	312
RTOR Reduction (vph)	0	0	174	0	0	84	0	10	0	0	0	185
Lane Group Flow (vph)	196	971	107	52	887	43	251	275	0	193	337	127
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	13.2	44.7	44.7	8.2	39.7	39.7	15.1	30.9		13.1	28.9	28.9
Effective Green, g (s)	13.2	44.7	44.7	8.2	39.7	39.7	15.1	30.9		13.1	28.9	28.9
Actuated g/C Ratio	0.11	0.38	0.38	0.07	0.34	0.34	0.13	0.26		0.11	0.25	0.25
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	367	1283	561	228	1139	503	420	862		364	436	371
v/s Ratio Prot	0.06	c0.29		0.02	c0.26		c0.08	0.08		0.06	c0.19	
v/s Ratio Perm			0.07			0.03						0.08
v/c Ratio	0.53	0.76	0.19	0.23	0.78	0.09	0.60	0.32		0.53	0.77	0.34
Uniform Delay, d1	49.2	31.7	24.3	51.7	35.0	26.5	48.3	34.8		49.3	41.2	36.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	2.6	0.2	0.2	3.4	0.1	2.3	0.2		1.5	8.3	0.6
Delay (s)	50.7	34.3	24.5	51.8	38.4	26.6	50.6	35.1		50.8	49.5	37.0
Level of Service	D	C	C	D	D	C	D	D		D	D	D
Approach Delay (s)		34.6			37.6			42.3			45.2	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	70.7%	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)	190	942	273	50	860	123	243	230	47	187	327	303
Future Volume (veh/h)	190	942	273	50	860	123	243	230	47	187	327	303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	196	971	281	52	887	127	251	237	48	193	337	312
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	275	1244	554	105	1190	530	336	753	150	274	443	376
Arrive On Green	0.08	0.36	0.36	0.03	0.35	0.35	0.10	0.27	0.27	0.08	0.25	0.25
Sat Flow, veh/h	3319	3413	1520	3319	3413	1521	3319	2835	564	3319	1796	1522
Grp Volume(v), veh/h	196	971	281	52	887	127	251	141	144	193	337	312
Grp Sat Flow(s),veh/h/ln	1659	1706	1520	1659	1706	1521	1659	1706	1693	1659	1796	1522
Q Serve(g_s), s	5.4	23.6	8.8	1.4	21.4	5.6	6.9	6.2	6.4	5.3	16.3	18.2
Cycle Q Clear(g_c), s	5.4	23.6	8.8	1.4	21.4	5.6	6.9	6.2	6.4	5.3	16.3	18.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	275	1244	554	105	1190	530	336	453	450	274	443	376
V/C Ratio(X)	0.71	0.78	0.51	0.49	0.75	0.24	0.75	0.31	0.32	0.70	0.76	0.83
Avail Cap(c_a), veh/h	639	2554	1138	639	2554	1138	710	748	742	710	787	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	26.4	9.8	44.5	26.8	21.6	40.9	27.5	27.6	41.8	32.7	33.4
Incr Delay (d2), s/veh	3.4	1.1	0.7	1.3	0.9	0.2	3.3	0.4	0.4	3.3	2.7	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.7	0.1	0.6	7.9	1.9	2.9	2.5	2.5	2.2	7.1	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	27.5	10.5	45.9	27.8	21.9	44.2	27.9	28.0	45.1	35.4	38.1
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1448			1066			536			842	
Approach Delay, s/veh		26.6			27.9			35.5			38.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	41.4	13.5	28.4	11.8	39.9	11.7	30.2
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	3.4	25.6	8.9	20.2	7.4	23.4	7.3	8.4
Green Ext Time (p_c), s	0.0	8.5	0.6	2.9	0.4	6.8	0.5	1.6

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

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1074	102	324	1015	0	18	0	390	0	0	0
Future Volume (Veh/h)	0	1074	102	324	1015	0	18	0	390	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1107	105	334	1046	0	19	0	402	0	0	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1047			1212			2350	2874	606	2268	2927	524
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047			1212			2350	2874	606	2268	2927	524
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			39			0	100	6	100	100	100
cM capacity (veh/h)	631			544			9	6	428	1	5	485

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	738	474	334	697	349	421	0
Volume Left	0	0	0	334	0	0	19	0
Volume Right	0	0	105	0	0	0	402	0
cSH	1700	1700	1700	544	1700	1700	146	1700
Volume to Capacity	0.00	0.43	0.28	0.61	0.41	0.21	2.88	0.00
Queue Length 95th (ft)	0	0	0	103	0	0	961	0
Control Delay (s)	0.0	0.0	0.0	21.6	0.0	0.0	911.4	0.0
Lane LOS				C			F	A
Approach Delay (s)	0.0			5.2			911.4	0.0
Approach LOS							F	A

Intersection Summary				
Average Delay		129.7		
Intersection Capacity Utilization		64.2%	ICU Level of Service	C
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	18.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1074	102	324	1015	0	18	0	390	0	0	0
Future Vol, veh/h	0	1074	102	324	1015	0	18	0	390	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	25	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	1107	105	334	1046	0	19	0	402	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1047	0	0	1212	0	0	2351	2875	606	2269	2927	524
Stage 1	-	-	-	-	-	-	1160	1160	-	1715	1715	-
Stage 2	-	-	-	-	-	-	1191	1715	-	554	1212	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	6.64	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	4.07	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	631	-	-	544	-	-	~ 18	15	428	21	14	485
Stage 1	-	-	-	-	-	-	200	258	-	89	136	-
Stage 2	-	-	-	-	-	-	191	136	-	472	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	630	-	-	544	-	-	~ 9	6	428	1	5	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	6	-	1	5	-
Stage 1	-	-	-	-	-	-	200	258	-	89	52	-
Stage 2	-	-	-	-	-	-	74	52	-	29	243	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.2	115.5	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	9	428	630	-	-	544	-	-	-	-
HCM Lane V/C Ratio	2.062	0.939	-	-	-	0.614	-	-	-	-
HCM Control Delay (s)	$ 1298.3	60.9	0	-	-	21.6	-	-	0	0
HCM Lane LOS	F	F	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	3.3	10.8	0	-	-	4.1	-	-	-	-

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	284	1180	978	13	11	363
Future Volume (Veh/h)	284	1180	978	13	11	363
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	302	1255	1040	14	12	386
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1054				2272	520
vC1, stage 1 conf vol					1040	
vC2, stage 2 conf vol					1232	
vCu, unblocked vol	1054				2272	520
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	51				88	20
cM capacity (veh/h)	611				102	481

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	302	628	628	520	520	14	398
Volume Left	302	0	0	0	0	0	12
Volume Right	0	0	0	0	0	14	386
cSH	611	1700	1700	1700	1700	1700	495
Volume to Capacity	0.49	0.37	0.37	0.31	0.31	0.01	0.80
Queue Length 95th (ft)	68	0	0	0	0	0	189
Control Delay (s)	16.5	0.0	0.0	0.0	0.0	0.0	36.8
Lane LOS	C						E
Approach Delay (s)	3.2			0.0			36.8
Approach LOS							E

Intersection Summary			
Average Delay		6.5	
Intersection Capacity Utilization		56.2%	ICU Level of Service
Analysis Period (min)		15	

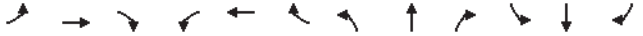
Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	284	1180	978	13	11	363
Future Vol, veh/h	284	1180	978	13	11	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	0	25
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	302	1255	1040	14	12	386

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1054	0	-	0	2272	520
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	1232	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	611	-	-	-	31	481
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	223	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	611	-	-	-	16	481
Mov Cap-2 Maneuver	-	-	-	-	113	-
Stage 1	-	-	-	-	144	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	36.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	611	-	-	-	113	481
HCM Lane V/C Ratio	0.494	-	-	-	0.104	0.803
HCM Control Delay (s)	16.5	-	-	-	40.5	36.5
HCM Lane LOS	C	-	-	-	E	E
HCM 95th %tile Q(veh)	2.7	-	-	-	0.3	7.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1180	11	1	975	0	17	0	4	0	0	1
Future Volume (Veh/h)	0	1180	11	1	975	0	17	0	4	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1216	11	1	1005	0	18	0	4	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1005			1227			1722	2223	608	1617	2234	502
vC1, stage 1 conf vol							1216	1216		1007	1007	
vC2, stage 2 conf vol							506	1007		610	1227	
vCu, unblocked vol	1005			1227			1722	2223	608	1617	2234	502
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			89	100	99	100	100	100
cM capacity (veh/h)	628			512			165	180	415	209	178	489

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	608	608	11	1	670	335	22	1
Volume Left	0	0	0	0	1	0	0	18	0
Volume Right	0	0	0	11	0	0	0	4	1
cSH	1700	1700	1700	1700	512	1700	1700	202	489
Volume to Capacity	0.00	0.36	0.36	0.01	0.00	0.39	0.20	0.11	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	9	0
Control Delay (s)	0.0	0.0	0.0	0.0	12.1	0.0	0.0	26.6	12.4
Lane LOS					B			D	B
Approach Delay (s)	0.0				0.0			26.6	12.4
Approach LOS								D	B

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		49.3%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1180	11	1	975	0	17	0	4	0	0	1
Future Vol, veh/h	0	1180	11	1	975	0	17	0	4	0	0	1
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1216	11	1	1005	0	18	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1005	0	0	1227	0	0	1721	2223	608	1615	2234	503
Stage 1	-	-	-	-	-	-	1216	1216	-	1007	1007	-
Stage 2	-	-	-	-	-	-	505	1007	-	608	1227	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	628	-	-	512	-	-	52	38	415	62	37	488
Stage 1	-	-	-	-	-	-	177	233	-	240	296	-
Stage 2	-	-	-	-	-	-	493	296	-	426	230	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	628	-	-	512	-	-	52	38	415	61	37	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	175	-	204	173	-
Stage 1	-	-	-	-	-	-	177	233	-	240	295	-
Stage 2	-	-	-	-	-	-	491	295	-	422	230	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	27	12.4
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	161	415	628	-	-	512	-	-	488
HCM Lane V/C Ratio	0.109	0.01	-	-	-	0.002	-	-	0.002
HCM Control Delay (s)	30.1	13.8	0	-	-	12	-	-	12.4
HCM Lane LOS	D	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.4	0	0	-	-	0	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	69	235	64	314	204	109	49	299	294	34	480	95
Future Volume (veh/h)	69	235	64	314	204	109	49	299	294	34	480	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	74	253	69	338	219	117	53	322	316	37	516	102
Approach Volume (veh/h)		396			674			691			655	
Crossing Volume (veh/h)		891			449			364			610	
High Capacity (veh/h)		681			972			1040			855	
High v/c (veh/h)		0.58			0.69			0.66			0.77	
Low Capacity (veh/h)		533			789			850			685	
Low v/c (veh/h)		0.74			0.85			0.81			0.96	

Intersection Summary					
Maximum v/c High		0.77			
Maximum v/c Low		0.96			
Intersection Capacity Utilization		115.5%	ICU Level of Service		H

Intersection	
Intersection Delay, s/veh	25.1
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	396	674	691	655
Demand Flow Rate, veh/h	401	680	698	661
Vehicles Circulating, veh/h	899	454	368	616
Vehicles Exiting, veh/h	378	612	932	518
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	25.8	21.4	17.4	36.7
Approach LOS	D	C	C	E

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	401	680	698	661
Cap Entry Lane, veh/h	552	868	948	736
Entry HV Adj Factor	0.989	0.991	0.990	0.991
Flow Entry, veh/h	396	674	691	655
Cap Entry, veh/h	545	860	938	729
V/C Ratio	0.727	0.783	0.736	0.898
Control Delay, s/veh	25.8	21.4	17.4	36.7
LOS	D	C	C	E
95th %tile Queue, veh	6	8	7	12



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Future Volume (Veh/h)	1	80	10	2	60	0	10	1	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	87	11	2	65	0	11	1	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	65			98			164	164	92	165	169	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			98			164	164	92	165	169	65
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1524			1483			796	724	959	792	719	993

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	67	13	0
Volume Left	1	2	11	0
Volume Right	11	0	1	0
cSH	1524	1483	800	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.2	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.2	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			15.2%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	80	10	2	60	0	10	1	1	0	0	0
Future Vol, veh/h	1	80	10	2	60	0	10	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	87	11	2	65	0	11	1	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	98	0	0	164	164	93	165	169	65
Stage 1	-	-	-	-	-	-	95	95	-	69	69	-
Stage 2	-	-	-	-	-	-	69	69	-	96	100	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1524	-	-	1483	-	-	796	725	959	795	720	993
Stage 1	-	-	-	-	-	-	907	812	-	936	834	-
Stage 2	-	-	-	-	-	-	936	834	-	906	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1483	-	-	794	724	959	792	719	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	724	-	792	719	-
Stage 1	-	-	-	-	-	-	906	811	-	935	833	-
Stage 2	-	-	-	-	-	-	935	833	-	903	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1524	-	-	1483	-	-	-
HCM Lane V/C Ratio	0.016	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	522	255	464	652	6	47	281	358	359	110
v/c Ratio	0.19	0.69	0.70	0.57	0.62	0.03	0.26	0.69	0.76	0.75	0.21
Control Delay	54.3	40.3	47.8	25.6	4.9	44.2	47.2	15.1	43.7	43.0	4.2
Queue Delay	0.0	0.0	0.0	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	40.3	47.8	26.7	5.4	44.2	47.2	15.1	43.7	43.0	4.2
Queue Length 50th (ft)	12	148	141	184	0	3	27	0	198	198	0
Queue Length 95th (ft)	44	255	268	401	81	17	69	80	#407	#390	28
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	108	995	542	984	1125	378	398	560	631	641	665
Starvation Cap Reductn	0	0	9	298	143	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.52	0.48	0.68	0.66	0.02	0.12	0.50	0.57	0.56	0.17

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)	20	460	31	240	436	613	6	44	264	590	84	103
Future Volume (vph)	20	460	31	240	436	613	6	44	264	590	84	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3534		1787	1881	1558	1787	1881	1599	1698	1722	1560
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3534		1787	1881	1558	1787	1881	1599	1698	1722	1560
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)	21	489	33	255	464	652	6	47	281	628	89	110
RTOR Reduction (vph)	0	4	0	0	0	375	0	0	254	0	0	80
Lane Group Flow (vph)	21	518	0	255	464	277	6	47	27	358	359	30
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	22.9		18.8	40.0	40.0	8.9	8.9	8.9	25.7	25.7	25.7
Effective Green, g (s)	1.7	22.9		18.8	40.0	40.0	8.9	8.9	8.9	25.7	25.7	25.7
Actuated g/C Ratio	0.02	0.24		0.20	0.42	0.42	0.09	0.09	0.09	0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	32	858		356	797	660	168	177	150	462	469	425
v/s Ratio Prot	0.01	0.15		c0.14	c0.25		0.00	c0.02		c0.21	0.21	
v/s Ratio Perm						0.18			0.02			0.02
v/c Ratio	0.66	0.60		0.72	0.58	0.42	0.04	0.27	0.18	0.77	0.77	0.07
Uniform Delay, d1	46.0	31.7		35.3	20.8	19.0	38.8	39.7	39.3	31.6	31.5	25.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.4	1.2		6.7	1.1	0.4	0.1	0.8	0.6	7.9	7.3	0.1
Delay (s)	85.4	32.9		42.0	21.8	19.4	38.9	40.5	39.9	39.6	38.8	25.5
Level of Service	F	C		D	C	B	D	D	D	D	D	C
Approach Delay (s)		34.9			24.4			40.0			37.4	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	460	31	240	436	613	6	44	264	590	84	103
Future Volume (veh/h)	20	460	31	240	436	613	6	44	264	590	84	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	489	33	255	464	652	6	47	281	692	0	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	949	64	290	790	653	305	320	271	807	0	358
Arrive On Green	0.02	0.28	0.28	0.16	0.42	0.42	0.17	0.17	0.17	0.22	0.00	0.22
Sat Flow, veh/h	1795	3404	229	1795	1885	1559	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	257	265	255	464	652	6	47	281	692	0	110
Grp Sat Flow(s),veh/h/ln	1795	1791	1842	1795	1885	1559	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.3	13.2	13.2	15.1	20.7	45.5	0.3	2.3	18.5	20.2	0.0	6.3
Cycle Q Clear(g_c), s	1.3	13.2	13.2	15.1	20.7	45.5	0.3	2.3	18.5	20.2	0.0	6.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	499	514	290	790	653	305	320	271	807	0	358
V/C Ratio(X)	0.54	0.51	0.52	0.88	0.59	1.00	0.02	0.15	1.04	0.86	0.00	0.31
Avail Cap(c_a), veh/h	87	499	514	436	790	653	305	320	271	1070	0	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	33.1	33.1	44.7	24.4	31.6	37.7	38.6	45.3	40.6	0.0	35.2
Incr Delay (d2), s/veh	11.3	0.9	0.9	12.7	1.1	34.7	0.0	0.2	64.6	5.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.9	6.1	7.7	9.3	22.8	0.1	1.1	12.1	9.4	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	34.0	34.0	57.4	25.6	66.3	37.8	38.8	109.9	46.1	0.0	35.7
LnGrp LOS	E	C	C	E	C	E	D	D	F	D	A	D
Approach Vol, veh/h		543			1371			334			802	
Approach Delay, s/veh		35.2			50.9			98.6			44.7	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	34.9		29.0	6.9	50.2		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	24.5		32.5	5.3	45.7		18.5				
Max Q Clear Time (g_c+I1), s	17.1	15.2		22.2	3.3	47.5		20.5				
Green Ext Time (p_c), s	0.5	2.2		2.3	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			51.7
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	1323	20	1083	266	276	30	447	8	27
v/c Ratio	0.42	0.70	0.15	0.69	0.34	0.66	0.05	0.77	0.02	0.04
Control Delay	45.5	18.6	47.5	23.8	8.2	34.7	22.6	28.1	22.4	0.1
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	19.4	47.5	23.8	8.2	34.7	22.6	28.1	22.4	0.1
Queue Length 50th (ft)	47	218	10	243	27	131	12	153	3	0
Queue Length 95th (ft)	109	482	38	409	96	233	33	290	14	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	311	2306	137	2066	980	727	983	903	725	931
Starvation Cap Reductn	0	624	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	0.29	0.79	0.15	0.52	0.27	0.38	0.03	0.50	0.01	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1200	31	19	1007	247	257	28	416	7	0	25
Future Volume (vph)	85	1200	31	19	1007	247	257	28	416	7	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3558		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3558		1787	3574	1564	1391	1881	1599	1388	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	91	1290	33	20	1083	266	276	30	447	8	0	27
RTOR Reduction (vph)	0	1	0	0	0	99	0	0	100	0	19	0
Lane Group Flow (vph)	91	1322	0	20	1083	167	276	30	347	8	8	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	7.5	42.8		1.7	37.0	37.0	24.4	24.4	24.4	24.4	24.4	
Effective Green, g (s)	7.5	42.8		1.7	37.0	37.0	24.4	24.4	24.4	24.4	24.4	
Actuated g/C Ratio	0.09	0.52		0.02	0.45	0.45	0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	1848		36	1604	702	411	556	473	411	473	
v/s Ratio Prot	c0.05	c0.37		0.01	0.30			0.02			0.01	
v/s Ratio Perm						0.11	0.20		c0.22	0.01		
v/c Ratio	0.56	0.72		0.56	0.68	0.24	0.67	0.05	0.73	0.02	0.02	
Uniform Delay, d1	35.9	15.1		40.0	17.9	14.0	25.5	20.7	26.1	20.5	20.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	1.3		17.3	1.1	0.2	4.3	0.0	5.8	0.0	0.0	
Delay (s)	40.3	16.5		57.2	19.1	14.2	29.8	20.8	31.9	20.6	20.5	
Level of Service	D	B		E	B	B	C	C	C	C	C	
Approach Delay (s)		18.0			18.7			30.7			20.5	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	75.3%	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)	85	1200	31	19	1007	247	257	28	416	7	0	25
Future Volume (veh/h)	85	1200	31	19	1007	247	257	28	416	7	0	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	91	1290	33	20	1083	0	276	30	447	8	0	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	119	1676	43	41	1529		533	610	517	387	0	517
Arrive On Green	0.07	0.47	0.47	0.02	0.43	0.00	0.32	0.32	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1795	3566	91	1795	3582	1598	1394	1885	1598	925	0	1598
Grp Volume(v), veh/h	91	647	676	20	1083	0	276	30	447	8	0	27
Grp Sat Flow(s),veh/h/ln	1795	1791	1866	1795	1791	1598	1394	1885	1598	925	0	1598
Q Serve(g_s), s	3.7	22.1	22.1	0.8	18.3	0.0	12.5	0.8	19.3	0.4	0.0	0.9
Cycle Q Clear(g_c), s	3.7	22.1	22.1	0.8	18.3	0.0	13.3	0.8	19.3	1.2	0.0	0.9
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	842	877	41	1529		533	610	517	387	0	517
V/C Ratio(X)	0.77	0.77	0.77	0.49	0.71		0.52	0.05	0.87	0.02	0.00	0.05
Avail Cap(c_a), veh/h	305	1182	1231	134	2023		793	962	815	560	0	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	16.2	16.2	35.5	17.3	0.0	21.7	17.1	23.4	17.5	0.0	17.1
Incr Delay (d2), s/veh	9.8	2.0	2.0	8.7	0.8	0.0	0.8	0.0	5.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.5	8.9	0.4	7.0	0.0	3.9	0.3	7.5	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	18.2	18.1	44.2	18.1	0.0	22.5	17.1	29.3	17.5	0.0	17.2
LnGrp LOS	D	B	B	D	B		C	B	C	B	A	B
Approach Vol, veh/h		1414			1103	A		753			35	
Approach Delay, s/veh		19.8			18.6			26.3			17.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	39.0		28.3	9.4	35.9		28.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	48.5		37.5	12.5	41.5		37.5				
Max Q Clear Time (g_c+I1), s	2.8	24.1		3.2	5.7	20.3		21.3				
Green Ext Time (p_c), s	0.0	10.4		0.1	0.1	8.3		2.5				

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

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	415	1293	63	770	308	232	67	73	577
v/c Ratio	0.69	0.80	0.41	0.63	0.67	0.27	0.14	0.47	0.76
Control Delay	48.0	27.8	57.5	30.4	52.8	36.1	0.6	60.3	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	27.8	57.5	30.4	52.8	36.1	0.6	60.3	28.9
Queue Length 50th (ft)	141	378	42	221	106	72	0	49	105
Queue Length 95th (ft)	211	528	94	320	#170	114	0	106	177
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	783	1940	197	1577	527	1062	570	182	1006
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.67	0.32	0.49	0.58	0.22	0.12	0.40	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)	394	836	392	60	654	78	293	220	64	69	222	326
Future Volume (vph)	394	836	392	60	654	78	293	220	64	69	222	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3388		1787	3512		3467	3574	1599	1787	3230	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3388		1787	3512		3467	3574	1599	1787	3230	
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)	415	880	413	63	688	82	308	232	67	73	234	343
RTOR Reduction (vph)	0	45	0	0	8	0	0	0	51	0	230	0
Lane Group Flow (vph)	415	1248	0	63	762	0	308	232	16	73	347	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	17.4	46.4		6.9	35.9		13.3	24.1	24.1	6.8	17.6	
Effective Green, g (s)	17.4	46.4		6.9	35.9		13.3	24.1	24.1	6.8	17.6	
Actuated g/C Ratio	0.17	0.45		0.07	0.35		0.13	0.24	0.24	0.07	0.17	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	590	1538		120	1233		451	842	377	118	556	
v/s Ratio Prot	c0.12	c0.37		0.04	0.22		c0.09	0.06		0.04	c0.11	
v/s Ratio Perm									0.01			
v/c Ratio	0.70	0.81		0.53	0.62		0.68	0.28	0.04	0.62	0.62	
Uniform Delay, d1	40.0	24.1		46.1	27.5		42.4	31.9	30.1	46.4	39.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	3.4		4.1	0.9		4.2	0.2	0.0	9.3	2.2	
Delay (s)	43.8	27.5		50.2	28.4		46.7	32.1	30.2	55.7	41.4	
Level of Service	D	C		D	C		D	C	C	E	D	
Approach Delay (s)		31.4			30.0			39.3			43.0	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.0%	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)	394	836	392	60	654	78	293	220	64	69	222	326
Future Volume (veh/h)	394	836	392	60	654	78	293	220	64	69	222	326
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	415	880	0	63	688	82	308	232	67	73	234	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	574	1494		96	984	117	439	656	292	103	410	
Arrive On Green	0.16	0.42	0.00	0.05	0.31	0.31	0.13	0.18	0.18	0.06	0.11	0.00
Sat Flow, veh/h	3483	3676	0	1795	3218	383	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	415	880	0	63	383	387	308	232	67	73	234	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1810	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	7.0	11.8	0.0	2.1	11.7	11.8	5.3	3.5	2.2	2.5	3.9	0.0
Cycle Q Clear(g_c), s	7.0	11.8	0.0	2.1	11.7	11.8	5.3	3.5	2.2	2.5	3.9	0.0
Prop In Lane	1.00		0.00	1.00		0.21	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	574	1494		96	548	553	439	656	292	103	410	
V/C Ratio(X)	0.72	0.59		0.66	0.70	0.70	0.70	0.35	0.23	0.71	0.57	
Avail Cap(c_a), veh/h	1202	3077		303	1222	1235	811	1628	726	280	1352	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.7	14.0	0.0	28.9	19.1	19.1	26.1	22.2	21.7	28.8	26.1	0.0
Incr Delay (d2), s/veh	1.7	0.4	0.0	7.5	1.6	1.6	2.0	0.3	0.4	8.5	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.3	0.0	1.1	4.6	4.6	2.1	1.4	0.8	1.2	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	14.4	0.0	36.4	20.7	20.7	28.1	22.5	22.1	37.3	27.4	0.0
LnGrp LOS	C	B		D	C	C	C	C	C	D	C	
Approach Vol, veh/h		1295	A		833			607			307	A
Approach Delay, s/veh		18.3			21.9			25.3			29.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	30.5	12.4	11.6	14.8	23.5	8.1	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	53.5	14.5	23.5	21.5	42.5	9.7	28.3
Max Q Clear Time (g_c+I1), s	4.1	13.8	7.3	5.9	9.0	13.8	4.5	5.5
Green Ext Time (p_c), s	0.0	7.6	0.6	1.1	1.2	5.1	0.1	1.5

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

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	58	510	1031	674	73
v/c Ratio	0.29	0.28	0.74	0.65	0.14
Control Delay	43.4	12.3	22.0	30.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	12.3	22.0	30.6	8.9
Queue Length 50th (ft)	24	56	161	131	0
Queue Length 95th (ft)	88	171	407	#372	40
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	268	2646	2044	1340	654
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	0.22	0.19	0.50	0.50	0.11

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)	56	495	511	489	654	71
Future Volume (vph)	56	495	511	489	654	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3285		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3285		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	510	527	504	674	73
RTOR Reduction (vph)	0	0	137	0	0	52
Lane Group Flow (vph)	58	510	894	0	674	21
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	6.3	39.5	28.7		22.6	22.6
Effective Green, g (s)	6.3	39.5	28.7		22.6	22.6
Actuated g/C Ratio	0.08	0.50	0.36		0.29	0.29
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	142	1787	1193		991	451
v/s Ratio Prot	c0.03	0.14	c0.27			
v/s Ratio Perm					c0.19	0.01
v/c Ratio	0.41	0.29	0.75		0.68	0.05
Uniform Delay, d1	34.6	11.5	22.0		25.0	20.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.1	2.6		1.9	0.0
Delay (s)	36.5	11.6	24.6		26.9	20.4
Level of Service	D	B	C		C	C
Approach Delay (s)		14.1	24.6		26.3	
Approach LOS		B	C		C	

Intersection Summary				
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	64.1%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	199	589	369	110	486	396	237	575	378	738
v/c Ratio	0.73	1.08	0.51	0.56	0.63	0.61	0.82	0.73	1.08	0.81
Control Delay	52.2	94.8	5.9	49.3	35.0	7.8	59.7	36.0	107.5	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	94.8	5.9	49.3	35.0	7.8	59.7	36.0	107.5	37.3
Queue Length 50th (ft)	108	~404	0	60	131	0	132	152	~256	198
Queue Length 95th (ft)	#200	#605	66	113	183	75	#255	210	#428	#273
Internal Link Dist (ft)		1092			186			1440		2310
Turn Bay Length (ft)	150			170		140	230		245	
Base Capacity (vph)	308	546	717	223	850	677	308	888	350	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	1.08	0.51	0.49	0.57	0.58	0.77	0.65	1.08	0.76

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	554	347	103	457	372	223	463	77	355	548	146
Future Volume (vph)	187	554	347	103	457	372	223	463	77	355	548	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1571	1787	3574	1578	1787	3498		1787	3443	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1881	1571	1787	3574	1578	1787	3498		1787	3443	
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)	199	589	369	110	486	396	237	493	82	378	583	155
RTOR Reduction (vph)	0	0	263	0	0	307	0	15	0	0	27	0
Lane Group Flow (vph)	199	589	106	110	486	89	237	560	0	378	711	0
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	13.0	24.7	24.7	7.7	19.4	19.4	13.8	18.9		16.7	21.8	
Effective Green, g (s)	13.0	24.7	24.7	7.7	19.4	19.4	13.8	18.9		16.7	21.8	
Actuated g/C Ratio	0.15	0.29	0.29	0.09	0.23	0.23	0.16	0.22		0.19	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	270	540	451	159	806	355	286	768		347	872	
v/s Ratio Prot	c0.11	c0.31		0.06	0.14		0.13	0.16		c0.21	c0.21	
v/s Ratio Perm			0.07			0.06						
v/c Ratio	0.74	1.09	0.23	0.69	0.60	0.25	0.83	0.73		1.09	0.82	
Uniform Delay, d1	34.9	30.6	23.4	38.0	29.8	27.3	35.0	31.2		34.6	30.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.0	65.7	0.3	12.2	1.3	0.4	17.6	3.5		74.4	5.9	
Delay (s)	44.9	96.4	23.7	50.2	31.1	27.7	52.6	34.7		109.0	36.1	
Level of Service	D	F	C	D	C	C	D	C		F	D	
Approach Delay (s)		64.3			31.9			39.9			60.8	
Approach LOS		E			C			D			E	

Intersection Summary				
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	84.8%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	554	347	103	457	372	223	463	77	355	548	146
Future Volume (veh/h)	187	554	347	103	457	372	223	463	77	355	548	146
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	199	589	369	110	486	396	237	493	82	378	583	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	239	562	475	141	873	389	276	624	103	361	698	185
Arrive On Green	0.13	0.30	0.30	0.08	0.24	0.24	0.15	0.20	0.20	0.20	0.25	0.25
Sat Flow, veh/h	1795	1885	1591	1795	3582	1596	1795	3075	509	1795	2792	740
Grp Volume(v), veh/h	199	589	369	110	486	396	237	286	289	378	373	365
Grp Sat Flow(s),veh/h/ln	1795	1885	1591	1795	1791	1596	1795	1791	1794	1795	1791	1741
Q Serve(g_s), s	8.9	24.5	17.4	4.9	9.7	20.0	10.6	12.4	12.6	16.5	16.2	16.3
Cycle Q Clear(g_c), s	8.9	24.5	17.4	4.9	9.7	20.0	10.6	12.4	12.6	16.5	16.2	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.43
Lane Grp Cap(c), veh/h	239	562	475	141	873	389	276	364	364	361	448	435
V/C Ratio(X)	0.83	1.05	0.78	0.78	0.56	1.02	0.86	0.79	0.79	1.05	0.83	0.84
Avail Cap(c_a), veh/h	317	562	475	230	873	389	317	458	459	361	502	488
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	34.7	28.8	26.3	37.1	27.2	31.0	33.8	31.0	31.1	32.8	29.2	29.2
Incr Delay (d2), s/veh	13.3	50.9	8.0	9.0	0.8	50.5	18.4	7.0	7.4	60.3	10.6	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	18.1	7.1	2.4	4.0	12.6	5.8	5.8	5.9	12.9	7.9	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	79.7	34.3	46.2	28.0	81.5	52.2	38.0	38.5	93.1	39.7	40.4
LnGrp LOS	D	F	C	D	C	F	D	D	D	F	D	D
Approach Vol, veh/h		1157			992			812			1116	
Approach Delay, s/veh		59.8			51.4			42.3			58.0	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	21.2	10.9	29.0	17.1	25.0	15.4	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	21.0	10.5	24.0	14.5	23.0	14.5	20.0
Max Q Clear Time (g_c+I1), s	18.5	14.6	6.9	26.5	12.6	18.3	10.9	22.0
Green Ext Time (p_c), s	0.0	1.8	0.1	0.0	0.1	1.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	66	620	47	100	808
Future Volume (Veh/h)	54	66	620	47	100	808
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	58	71	667	51	108	869
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1780	694			720	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1780	694			720	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	27	84			88	
cM capacity (veh/h)	80	443			885	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	129	718	108	869
Volume Left	58	0	108	0
Volume Right	71	51	0	0
cSH	145	1700	885	1700
Volume to Capacity	0.89	0.42	0.12	0.51
Queue Length 95th (ft)	150	0	10	0
Control Delay (s)	107.3	0.0	9.6	0.0
Lane LOS	F		A	
Approach Delay (s)	107.3	0.0	1.1	
Approach LOS	F			

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	8.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	66	620	47	100	808
Future Vol, veh/h	54	66	620	47	100	808
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	58	71	667	51	108	869

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1780	695	0	0	720	0
Stage 1	695	-	-	-	-	-
Stage 2	1085	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	91	444	-	-	886	-
Stage 1	497	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	443	-	-	884	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	105.9	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	146	884	-
HCM Lane V/C Ratio	-	-	0.884	0.122	-
HCM Control Delay (s)	-	-	105.9	9.6	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	6	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	4	14	4	1	38	22	429	10	48	560	134
Future Volume (Veh/h)	113	4	14	4	1	38	22	429	10	48	560	134
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	114	4	14	4	1	38	22	433	10	48	566	135
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1186	1154	571	1160	1284	442	706			443		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1186	1154	571	1160	1284	442	706			443		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	22	98	97	97	99	94	98			96		
cM capacity (veh/h)	146	184	520	157	154	615	893			1122		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	132	43	22	443	48	566	135
Volume Left	114	4	22	0	48	0	0
Volume Right	14	38	0	10	0	0	135
cSH	159	459	893	1700	1122	1700	1700
Volume to Capacity	0.83	0.09	0.02	0.26	0.04	0.33	0.08
Queue Length 95th (ft)	139	8	2	0	3	0	0
Control Delay (s)	89.5	13.7	9.1	0.0	8.4	0.0	0.0
Lane LOS	F	B	A		A		
Approach Delay (s)	89.5	13.7	0.4		0.5		
Approach LOS	F	B					

Intersection Summary				
Average Delay	9.4			
Intersection Capacity Utilization	56.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	113	4	14	4	1	38	22	429	10	48	560	134
Future Vol, veh/h	113	4	14	4	1	38	22	429	10	48	560	134
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	114	4	14	4	1	38	22	433	10	48	566	135

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1173	1154	571	1221	1284	442	706	0	0	443	0	0
Stage 1	667	667	-	482	482	-	-	-	-	-	-	-
Stage 2	506	487	-	739	802	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	170	198	522	157	166	618	897	-	-	1122	-	-
Stage 1	450	458	-	567	555	-	-	-	-	-	-	-
Stage 2	551	552	-	411	398	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	149	184	520	143	154	616	893	-	-	1122	-	-
Mov Cap-2 Maneuver	149	184	-	143	154	-	-	-	-	-	-	-
Stage 1	437	436	-	553	541	-	-	-	-	-	-	-
Stage 2	501	538	-	379	379	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	13.9	0.4	0.5
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	893	-	-	162	447	1122	-	-
HCM Lane V/C Ratio	0.025	-	-	0.817	0.097	0.043	-	-
HCM Control Delay (s)	9.1	-	-	85.3	13.9	8.4	-	-
HCM Lane LOS	A	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.4	0.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	2	9	184	3	204	11	248	286	320	246	12
Future Volume (vph)	8	2	9	184	3	204	11	248	286	320	246	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	10	198	3	219	12	267	308	344	265	13

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	21	420	279	308	477	146
Volume Left (vph)	9	198	12	0	344	0
Volume Right (vph)	10	219	0	308	0	13
Hadj (s)	-0.18	-0.20	0.04	-0.68	0.38	-0.05
Departure Headway (s)	8.4	6.6	7.4	6.6	7.5	7.1
Degree Utilization, x	0.05	0.77	0.57	0.57	1.00	0.29
Capacity (veh/h)	393	535	478	541	474	499
Control Delay (s)	11.8	28.8	18.6	16.8	66.8	11.7
Approach Delay (s)	11.8	28.8	17.6		54.0	
Approach LOS	B	D	C		F	

Intersection Summary				
Delay	34.1			
Level of Service	D			
Intersection Capacity Utilization	71.1%	ICU Level of Service		C
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	35.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	2	9	184	3	204	0	11	248	286	320	246
Future Vol, veh/h	8	2	9	184	3	204	0	11	248	286	320	246
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	9	2	10	198	3	219	0	12	267	308	344	265
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12	30.5	18.7	55.5
HCM LOS	B	D	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	42%	47%	72%	0%
Vol Thru, %	96%	0%	11%	1%	28%	91%
Vol Right, %	0%	100%	47%	52%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	259	286	19	391	443	135
LT Vol	11	0	8	184	320	0
Through Vol	248	0	2	3	123	123
RT Vol	0	286	9	204	0	12
Lane Flow Rate	278	308	20	420	476	145
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.572	0.568	0.048	0.788	0.999	0.287
Departure Headway (Hd)	7.395	6.652	8.513	6.744	7.55	7.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	541	419	538	481	505
Service Time	5.149	4.405	6.6	4.78	5.299	4.864
HCM Lane V/C Ratio	0.571	0.569	0.048	0.781	0.99	0.287
HCM Control Delay	19.6	17.9	12	30.5	68.5	12.7
HCM Lane LOS	C	C	B	D	F	B
HCM 95th-tile Q	3.5	3.5	0.2	7.3	13.3	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	12
Future Vol, veh/h	12
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	13
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	345	247	148	200	198	241
Future Volume (Veh/h)	345	247	148	200	198	241
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	356	255	153	206	204	248
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	613	204	452			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	613	204	452			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	3	68	86			
cM capacity (veh/h)	368	806	1112			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	611	153	103	103	204	248
Volume Left	356	153	0	0	0	0
Volume Right	255	0	0	0	0	248
cSH	592	1112	1700	1700	1700	1700
Volume to Capacity	1.03	0.14	0.06	0.06	0.12	0.15
Queue Length 95th (ft)	408	12	0	0	0	0
Control Delay (s)	71.7	8.8	0.0	0.0	0.0	0.0
Lane LOS	F	A				
Approach Delay (s)	71.7	3.7			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay		31.7	
Intersection Capacity Utilization		47.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	19

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	345	247	148	200	198	241
Future Vol, veh/h	345	247	148	200	198	241
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	356	255	153	206	204	248

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	613	204	452	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	442	839	1113	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	381	839	1113	-	-	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.1	3.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1113	-	381	839	-	-
HCM Lane V/C Ratio	0.137	-	0.934	0.304	-	-
HCM Control Delay (s)	8.7	-	64.2	11.2	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	10.1	1.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	109	0	183	14	0	0	0	0	283	34
Future Volume (Veh/h)	27	0	109	0	183	14	0	0	0	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	118	0	199	15	0	0	0	0	308	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434	326	326	444	345	0	345			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434	326	326	444	345	0	345			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	84	100	66	99	100			100		
cM capacity (veh/h)	386	593	717	439	580	1088	1220			1630		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	147	214	345
Volume Left	29	0	0
Volume Right	118	15	37
cSH	614	611	1700
Volume to Capacity	0.24	0.35	0.20
Queue Length 95th (ft)	23	39	0
Control Delay (s)	12.7	14.0	0.0
Lane LOS	B	B	
Approach Delay (s)	12.7	14.0	0.0
Approach LOS	B	B	

Intersection Summary					
Average Delay		6.9			
Intersection Capacity Utilization		44.8%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	109	0	183	14	0	0	0	0	283	34
Future Vol, veh/h	27	0	109	0	183	14	0	0	0	0	283	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	29	0	118	0	199	15	0	0	0	0	308	37

Major/Minor	Minor2			Minor1					Major2		
Conflicting Flow All	434	327	327	386	345	0			-	-	0
Stage 1	327	327	-	0	0	-			-	-	-
Stage 2	107	0	-	386	345	-			-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21			-	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	6.11	5.51	-			-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309			-	-	-
Pot Cap-1 Maneuver	534	593	717	574	580	-			0	-	-
Stage 1	688	650	-	-	-	-			0	-	-
Stage 2	-	-	-	639	638	-			0	-	-
Platoon blocked, %										-	-
Mov Cap-1 Maneuver	-	593	717	479	580	-			-	-	-
Mov Cap-2 Maneuver	-	593	-	479	580	-			-	-	-
Stage 1	688	650	-	-	-	-			-	-	-
Stage 2	-	-	-	533	638	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s			0
HCM LOS	-	-	

Minor Lane/Major Mvmt	EBLn1	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	-	580	-	-	-
HCM Lane V/C Ratio	-	0.343	-	-	-
HCM Control Delay (s)	-	14.4	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	1.5	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	444	769	209	442	99	368	1204	634	324
v/c Ratio	0.18	0.78	0.71	0.36	0.43	0.59	0.71	0.90	0.81	0.33
Control Delay	52.5	62.2	46.2	39.8	4.0	74.4	63.0	30.7	57.8	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	62.2	46.2	39.8	4.0	74.4	63.0	30.7	57.8	37.1
Queue Length 50th (ft)	40	188	314	145	23	86	166	306	274	112
Queue Length 95th (ft)	86	268	429	240	83	154	230	#413	364	162
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	334	662	1107	600	1089	222	774	1361	939	1274
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	0.16	0.67	0.69	0.35	0.41	0.45	0.48	0.88	0.68	0.25

Intersection Summary

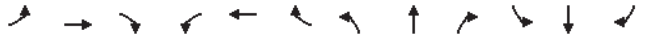
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	329	102	746	203	429	96	357	1168	615	256	58
Future Volume (vph)	50	329	102	746	203	429	96	357	1168	615	256	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3435		3467	1881	1585	1787	3574	2814	3467	3475	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3435		3467	1881	1585	1787	3574	2814	3467	3475	
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)	52	339	105	769	209	442	99	368	1204	634	264	60
RTOR Reduction (vph)	0	19	0	0	0	175	0	0	48	0	14	0
Lane Group Flow (vph)	52	425	0	769	209	267	99	368	1156	634	310	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	21.0	21.0		41.2	41.2	71.1	12.4	19.1	60.3	29.9	36.6	
Effective Green, g (s)	21.0	21.0		41.2	41.2	71.1	12.4	19.1	60.3	29.9	36.6	
Actuated g/C Ratio	0.16	0.16		0.31	0.31	0.54	0.09	0.15	0.46	0.23	0.28	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	284	547		1084	588	855	168	518	1288	787	965	
v/s Ratio Prot	0.03	c0.12		0.22	0.11	0.07	0.06	0.10	c0.28	c0.18	0.09	
v/s Ratio Perm						0.10			0.13			
v/c Ratio	0.18	0.78		0.71	0.36	0.31	0.59	0.71	0.90	0.81	0.32	
Uniform Delay, d1	47.9	53.1		40.0	35.0	16.8	57.2	53.7	32.9	48.2	37.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	6.8		2.2	0.4	0.2	5.2	4.6	8.5	6.0	0.2	
Delay (s)	48.2	59.9		42.1	35.4	17.0	62.4	58.2	41.4	54.2	37.9	
Level of Service	D	E		D	D	B	E	E	D	D	D	
Approach Delay (s)		58.7			33.3			46.3			48.7	
Approach LOS		E			C			D			D	

Intersection Summary

HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	131.7	Sum of lost time (s)	20.5
Intersection Capacity Utilization	83.0%	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)	50	329	102	746	203	429	96	357	1168	615	256	58
Future Volume (veh/h)	50	329	102	746	203	429	96	357	1168	615	256	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	52	339	105	769	209	442	99	368	1204	634	264	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	273	410	125	914	495	749	123	785	1355	720	1014	227
Arrive On Green	0.15	0.15	0.15	0.26	0.26	0.26	0.07	0.22	0.22	0.21	0.35	0.35
Sat Flow, veh/h	1795	2694	820	3483	1885	1594	1795	3582	2812	3483	2909	650
Grp Volume(v), veh/h	52	223	221	769	209	442	99	368	1204	634	161	163
Grp Sat Flow(s),veh/h/ln	1795	1791	1723	1742	1885	1594	1795	1791	1406	1742	1791	1768
Q Serve(g_s), s	3.3	15.5	16.0	26.9	11.8	26.2	7.0	11.5	28.2	22.7	8.3	8.5
Cycle Q Clear(g_c), s	3.3	15.5	16.0	26.9	11.8	26.2	7.0	11.5	28.2	22.7	8.3	8.5
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	273	273	262	914	495	749	123	785	1355	720	624	616
V/C Ratio(X)	0.19	0.82	0.84	0.84	0.42	0.59	0.80	0.47	0.89	0.88	0.26	0.26
Avail Cap(c_a), veh/h	340	340	327	1126	610	846	226	785	1355	956	658	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	52.8	53.0	44.9	39.3	25.1	59.1	43.7	24.6	49.5	30.0	30.1
Incr Delay (d2), s/veh	0.3	12.1	14.7	4.9	0.6	0.9	11.4	0.4	7.6	7.6	0.2	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	1.5	8.0	8.1	12.0	5.5	9.7	3.5	5.0	20.8	10.6	3.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	64.9	67.8	49.8	39.9	25.9	70.5	44.1	32.2	57.1	30.2	30.3
LnGrp LOS	D	E	E	D	D	C	E	D	C	E	C	C
Approach Vol, veh/h		496			1420			1671			958	
Approach Delay, s/veh		64.4			40.9			37.1			48.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.3	34.0		24.2	14.6	50.7		39.2				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 35	28.2		24.4	16.2	* 47		41.6				
Max Q Clear Time (g_c+I1), s	24.7	30.2		18.0	9.0	10.5		28.9				
Green Ext Time (p_c), s	1.9	0.0		1.6	0.1	2.1		4.9				

Intersection Summary												
HCM 6th Ctrl Delay			43.6									
HCM 6th LOS			D									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	269	1069	667	121	942	451	372	219	559
v/c Ratio	0.64	0.84	0.76	0.62	0.78	0.79	0.50	0.78	0.77
Control Delay	54.6	40.8	15.3	63.0	37.9	56.3	37.9	65.2	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	40.8	15.3	63.0	37.9	56.3	37.9	65.2	47.0
Queue Length 50th (ft)	98	380	114	86	318	165	117	154	194
Queue Length 95th (ft)	148	#530	297	154	427	#246	168	#277	261
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	499	1346	904	240	1289	628	906	324	902
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.79	0.74	0.50	0.73	0.72	0.41	0.68	0.62

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)	258	1026	640	116	745	159	433	273	84	210	408	129
Future Volume (vph)	258	1026	640	116	745	159	433	273	84	210	408	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3471		3467	3447		1787	3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3471		3467	3447		1787	3433	
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)	269	1069	667	121	776	166	451	284	88	219	425	134
RTOR Reduction (vph)	0	0	312	0	14	0	0	25	0	0	26	0
Lane Group Flow (vph)	269	1069	355	121	928	0	451	347	0	219	533	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	13.3	38.8	38.8	11.9	37.4		17.9	23.0		17.2	22.3	
Effective Green, g (s)	13.3	38.8	38.8	11.9	37.4		17.9	23.0		17.2	22.3	
Actuated g/C Ratio	0.12	0.36	0.36	0.11	0.34		0.16	0.21		0.16	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	423	1273	569	195	1192		569	728		282	702	
v/s Ratio Prot	c0.08	c0.30		0.07	0.27		c0.13	0.10		0.12	c0.16	
v/s Ratio Perm			0.22									
v/c Ratio	0.64	0.84	0.62	0.62	0.78		0.79	0.48		0.78	0.76	
Uniform Delay, d1	45.5	32.2	29.0	46.3	32.0		43.7	37.7		44.0	40.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	5.0	2.1	6.0	3.3		7.5	0.5		12.6	4.7	
Delay (s)	48.6	37.2	31.2	52.3	35.3		51.2	38.2		56.6	45.5	
Level of Service	D	D	C	D	D		D	D		E	D	
Approach Delay (s)		36.7			37.2			45.3			48.6	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	78.3%	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)	258	1026	640	116	745	159	433	273	84	210	408	129
Future Volume (veh/h)	258	1026	640	116	745	159	433	273	84	210	408	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	269	1069	667	121	776	166	451	284	88	219	425	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	352	1327	592	152	1039	222	541	579	176	256	541	169
Arrive On Green	0.10	0.37	0.37	0.08	0.35	0.35	0.16	0.21	0.21	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	2934	628	3483	2706	822	1795	2683	838
Grp Volume(v), veh/h	269	1069	667	121	474	468	451	186	186	219	282	277
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1771	1742	1791	1737	1795	1791	1730
Q Serve(g_s), s	7.2	25.6	21.4	6.3	22.2	22.2	12.0	8.7	9.0	11.4	14.3	14.5
Cycle Q Clear(g_c), s	7.2	25.6	21.4	6.3	22.2	22.2	12.0	8.7	9.0	11.4	14.3	14.5
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.47	1.00		0.48
Lane Grp Cap(c), veh/h	352	1327	592	152	634	627	541	383	372	256	361	348
V/C Ratio(X)	0.76	0.81	1.13	0.79	0.75	0.75	0.83	0.49	0.50	0.85	0.78	0.79
Avail Cap(c_a), veh/h	564	1517	676	272	740	731	710	515	499	366	515	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	27.0	11.0	43.0	27.1	27.1	39.2	33.0	33.1	40.0	36.2	36.3
Incr Delay (d2), s/veh	3.5	2.9	76.9	9.0	3.5	3.6	6.6	1.0	1.0	12.8	5.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	10.7	19.0	3.1	9.5	9.4	5.4	3.7	3.8	5.8	6.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	30.0	87.9	51.9	30.7	30.7	45.8	33.9	34.1	52.8	41.2	42.0
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		2005			1063			823			778	
Approach Delay, s/veh		51.3			33.1			40.5			44.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	39.9	19.3	23.8	14.2	38.4	18.2	25.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	40.5	19.5	27.5	15.5	39.5	19.5	27.5
Max Q Clear Time (g_c+I1), s	8.3	27.6	14.0	16.5	9.2	24.2	13.4	11.0
Green Ext Time (p_c), s	0.1	7.8	0.8	2.4	0.5	5.1	0.3	1.8

Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	870	213	23	648	248	20
v/c Ratio	0.80	0.22	0.12	0.31	0.62	0.05
Control Delay	20.0	2.2	10.4	8.0	27.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	2.2	10.4	8.0	27.5	8.2
Queue Length 50th (ft)	200	0	3	50	79	0
Queue Length 95th (ft)	#622	32	20	131	137	13
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1084	987	188	2060	835	759
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	0.80	0.22	0.12	0.31	0.30	0.03

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)	800	196	21	596	228	18
Future Volume (vph)	800	196	21	596	228	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1518	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.17	1.00	0.95	1.00
Satd. Flow (perm)	1827	1518	317	3471	1732	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	870	213	23	648	248	20
RTOR Reduction (vph)	0	86	0	0	0	15
Lane Group Flow (vph)	870	127	23	648	248	5
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	36.7	36.7	36.7	36.7	14.2	14.2
Effective Green, g (s)	36.7	36.7	36.7	36.7	14.2	14.2
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.23	0.23
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1086	902	188	2064	398	357
v/s Ratio Prot	c0.48			0.19		0.00
v/s Ratio Perm		0.08	0.07		c0.14	
v/c Ratio	0.80	0.14	0.12	0.31	0.62	0.02
Uniform Delay, d1	9.7	5.5	5.5	6.2	21.3	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.0	0.1	0.0	2.2	0.0
Delay (s)	13.8	5.6	5.6	6.3	23.5	18.4
Level of Service	B	A	A	A	C	B
Approach Delay (s)	12.1			6.2	23.1	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	10.8	
Intersection Capacity Utilization	63.7%	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)	800	196	21	596	228	18	
Future Volume (veh/h)	800	196	21	596	228	18	
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	1841	1841	1841	1841	1841	1841	
Adj Flow Rate, veh/h	870	213	23	648	248	20	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	4	4	4	4	4	4	
Cap, veh/h	1017	860	253	1933	325	289	
Arrive On Green	0.55	0.55	0.55	0.55	0.19	0.19	
Sat Flow, veh/h	1841	1557	512	3589	1753	1560	
Grp Volume(v), veh/h	870	213	23	648	248	20	
Grp Sat Flow(s),veh/h/ln	1841	1557	512	1749	1753	1560	
Q Serve(g_s), s	16.5	2.9	1.6	4.2	5.5	0.4	
Cycle Q Clear(g_c), s	16.5	2.9	18.2	4.2	5.5	0.4	
Prop In Lane		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1017	860	253	1933	325	289	
V/C Ratio(X)	0.86	0.25	0.09	0.34	0.76	0.07	
Avail Cap(c_a), veh/h	1546	1308	400	2938	1260	1121	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	7.8	4.8	15.5	5.1	15.9	13.8	
Incr Delay (d2), s/veh	2.0	0.1	0.1	0.0	1.4	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.5	0.5	0.2	0.7	1.9	0.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	9.8	4.8	15.6	5.1	17.3	13.9	
LnGrp LOS	A	A	B	A	B	B	
Approach Vol, veh/h	1083			671	268		
Approach Delay, s/veh	8.8			5.5	17.1		
Approach LOS	A			A	B		

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		28.2				28.2	13.0
Change Period (Y+Rc), s		5.4				5.4	5.4
Max Green Setting (Gmax), s		34.6				34.6	29.6
Max Q Clear Time (g_c+I1), s		18.5				20.2	7.5
Green Ext Time (p_c), s		4.0				2.6	0.3

Intersection Summary		
HCM 6th Ctrl Delay		8.8
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	754	64	11	507	0	110	0	11	0	0	0
Future Volume (Veh/h)	0	754	64	11	507	0	110	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	820	70	12	551	0	120	0	12	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.57			0.57	0.57	0.57	0.57	0.57	
vC, conflicting volume	551			890			1154	1430	855	1436	1465	276
vC1, stage 1 conf vol							855	855		575	575	
vC2, stage 2 conf vol							300	575		861	890	
vCu, unblocked vol	551			423			890	1376	361	1387	1438	276
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			63	100	97	100	100	100
cM capacity (veh/h)	1015			642			324	289	360	264	269	722

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	890	288	276	132	0
Volume Left	0	12	0	120	0
Volume Right	70	0	0	12	0
cSH	1015	642	1700	357	1700
Volume to Capacity	0.00	0.02	0.16	0.37	0.00
Queue Length 95th (ft)	0	1	0	42	0
Control Delay (s)	0.0	0.7	0.0	21.8	0.0
Lane LOS		A		C	A
Approach Delay (s)	0.0	0.3		21.8	0.0
Approach LOS				C	A

Intersection Summary					
Average Delay		1.9			
Intersection Capacity Utilization		56.3%	ICU Level of Service		B
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	0	754	64	11	507	0	110	0	11	0	0	0
Future Vol, veh/h	0	754	64	11	507	0	110	0	11	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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	820	70	12	551	0	120	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	551	0	0	890	0	0	1155	1430	855	1436	1465	276
Stage 1	-	-	-	-	-	-	855	855	-	575	575	-
Stage 2	-	-	-	-	-	-	300	575	-	861	890	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1017	-	-	759	-	-	163	134	357	102	128	722
Stage 1	-	-	-	-	-	-	352	374	-	471	502	-
Stage 2	-	-	-	-	-	-	685	502	-	349	360	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1017	-	-	759	-	-	160	131	357	97	125	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	305	-	268	290	-
Stage 1	-	-	-	-	-	-	352	374	-	471	490	-
Stage 2	-	-	-	-	-	-	669	490	-	337	360	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	22.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	317	357	1017	-	-	759	-	-	-
HCM Lane V/C Ratio	0.377	0.033	-	-	-	0.016	-	-	-
HCM Control Delay (s)	23.1	15.4	0	-	-	9.8	0.1	-	0
HCM Lane LOS	C	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.7	0.1	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	83	311	255	44	189	9	159	12	34	6	12	52
Future Volume (veh/h)	83	311	255	44	189	9	159	12	34	6	12	52
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
Hourly flow rate (vph)	90	338	277	48	205	10	173	13	37	7	13	57
Approach Volume (veh/h)		705			263			223			77	
Crossing Volume (veh/h)		68			276			435			426	
High Capacity (veh/h)		1313			1115			983			990	
High v/c (veh/h)		0.54			0.24			0.23			0.08	
Low Capacity (veh/h)		1096			917			799			805	
Low v/c (veh/h)		0.64			0.29			0.28			0.10	

Intersection Summary				
Maximum v/c High	0.54			
Maximum v/c Low	0.64			
Intersection Capacity Utilization	69.4%	ICU Level of Service		C

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	705	263	223	77
Demand Flow Rate, veh/h	720	268	227	78
Vehicles Circulating, veh/h	69	281	444	434
Vehicles Exiting, veh/h	443	390	345	115
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.2	6.1	6.9	5.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	720	268	227	78
Cap Entry Lane, veh/h	1286	1036	877	886
Entry HV Adj Factor	0.979	0.981	0.981	0.984
Flow Entry, veh/h	705	263	223	77
Cap Entry, veh/h	1260	1016	861	872
V/C Ratio	0.560	0.259	0.259	0.088
Control Delay, s/veh	9.2	6.1	6.9	5.0
LOS	A	A	A	A
95th %tile Queue, veh	4	1	1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	24	26	51	1	19	20	32	140	3	25	195	14
Future Volume (vph)	24	26	51	1	19	20	32	140	3	25	195	14
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
Hourly flow rate (vph)	26	28	55	1	21	22	35	152	3	27	212	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	44	190	254
Volume Left (vph)	26	1	35	27
Volume Right (vph)	55	22	3	15
Hadj (s)	-0.24	-0.28	0.04	0.00
Departure Headway (s)	4.8	4.8	4.6	4.5
Degree Utilization, x	0.14	0.06	0.24	0.32
Capacity (veh/h)	686	665	744	763
Control Delay (s)	8.6	8.1	9.1	9.6
Approach Delay (s)	8.6	8.1	9.1	9.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	26	51	1	19	20	32	140	3	25	195	14
Future Vol, veh/h	24	26	51	1	19	20	32	140	3	25	195	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	26	28	55	1	21	22	35	152	3	27	212	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8.1	9.1	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	24%	3%	11%
Vol Thru, %	80%	26%	47%	83%
Vol Right, %	2%	50%	50%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	101	40	234
LT Vol	32	24	1	25
Through Vol	140	26	19	195
RT Vol	3	51	20	14
Lane Flow Rate	190	110	43	254
Geometry Grp	1	1	1	1
Degree of Util (X)	0.243	0.144	0.058	0.317
Departure Headway (Hd)	4.592	4.726	4.779	4.485
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	780	756	746	801
Service Time	2.628	2.77	2.829	2.518
HCM Lane V/C Ratio	0.244	0.146	0.058	0.317
HCM Control Delay	9.1	8.6	8.1	9.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.5	0.2	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	151	46	1	97	14	31	61	1	17	79	64
Future Volume (Veh/h)	82	151	46	1	97	14	31	61	1	17	79	64
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	164	50	1	105	15	34	66	1	18	86	70
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	120			220			600	495	195	516	512	112
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	120			220			600	495	195	516	512	112
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			89	85	100	95	80	93
cM capacity (veh/h)	1474			1347			307	446	844	397	435	943

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	303	121	101	18	156
Volume Left	89	1	34	18	0
Volume Right	50	15	1	0	70
cSH	1474	1347	389	397	574
Volume to Capacity	0.06	0.00	0.26	0.05	0.27
Queue Length 95th (ft)	5	0	26	4	27
Control Delay (s)	2.6	0.1	17.5	14.5	13.6
Lane LOS	A	A	C	B	B
Approach Delay (s)	2.6	0.1	17.5	13.7	
Approach LOS			C	B	

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	45.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	82	151	46	1	97	14	31	61	1	17	79	64
Future Vol, veh/h	82	151	46	1	97	14	31	61	1	17	79	64
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	89	164	50	1	105	15	34	66	1	18	86	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	220	0	0	566	495	195	516	513	113
Stage 1	-	-	-	-	-	-	373	373	-	115	115	-
Stage 2	-	-	-	-	-	-	193	122	-	401	398	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1474	-	-	1355	-	-	436	477	849	471	466	943
Stage 1	-	-	-	-	-	-	650	620	-	892	802	-
Stage 2	-	-	-	-	-	-	811	797	-	628	605	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1347	-	-	323	441	844	394	431	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	441	-	394	431	-
Stage 1	-	-	-	-	-	-	602	574	-	830	801	-
Stage 2	-	-	-	-	-	-	670	796	-	516	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.1	17.2	13.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	395	1474	-	-	1347	-	-	394	569
HCM Lane V/C Ratio	0.256	0.06	-	-	0.001	-	-	0.047	0.273
HCM Control Delay (s)	17.2	7.6	0	-	7.7	0	-	14.6	13.7
HCM Lane LOS	C	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	0.1	1.1



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	9	127	96	6	167	140
Future Volume (veh/h)	9	127	96	6	167	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	138	104	7	182	152
Approach Volume (veh/h)	148		111			334
Crossing Volume (veh/h)	104		182			10
High Capacity (veh/h)	1277		1201			1374
High v/c (veh/h)	0.12		0.09			0.24
Low Capacity (veh/h)	1063		994			1151
Low v/c (veh/h)	0.14		0.11			0.29

Intersection Summary				
Maximum v/c High		0.24		
Maximum v/c Low		0.29		
Intersection Capacity Utilization		38.3%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	148	111	334
Demand Flow Rate, veh/h	151	113	341
Vehicles Circulating, veh/h	106	186	10
Vehicles Exiting, veh/h	193	165	247
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.1	4.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	151	113	341
Cap Entry Lane, veh/h	1238	1141	1366
Entry HV Adj Factor	0.980	0.982	0.979
Flow Entry, veh/h	148	111	334
Cap Entry, veh/h	1214	1120	1338
V/C Ratio	0.122	0.099	0.250
Control Delay, s/veh	4.0	4.1	4.8
LOS	A	A	A
95th %tile Queue, veh	0	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	86	102	5	3	6
Future Volume (Veh/h)	6	86	102	5	3	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	93	111	5	3	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116				220	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116				220	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1460				760	934

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	100	116	10
Volume Left	7	0	3
Volume Right	0	5	7
cSH	1460	1700	874
Volume to Capacity	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	86	102	5	3	6
Future Vol, veh/h	6	86	102	5	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	7	93	111	5	3	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	221	114
Stage 1	-	-	-	-	114	-
Stage 2	-	-	-	-	107	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1460	-	-	-	763	933
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1460	-	-	-	759	933
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1460	-	-	-	867
HCM Lane V/C Ratio	0.004	-	-	-	0.011
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Near Term Plus 1293-Unit and School Project (Mitigated)

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	839	46	284	1080	0	9	0	263	0	0	0
Future Vol, veh/h	1	839	46	284	1080	0	9	0	263	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	340	-	-	195	-	-	-	-	-	-	-	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, %	11	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	1	912	50	309	1174	0	10	0	286	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1174	0	0	962	0	0	2144	-	481	2250	2756	587
Stage 1	-	-	-	-	-	-	939	-	-	1792	1792	-
Stage 2	-	-	-	-	-	-	1205	-	-	458	964	-
Critical Hdwy	4.32	-	-	4.32	-	-	7.72	-	7.12	7.72	6.72	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	-	-	6.72	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	-	-	6.72	5.72	-
Follow-up Hdwy	2.31	-	-	2.31	-	-	3.61	-	3.41	3.61	4.11	3.41
Pot Cap-1 Maneuver	542	-	-	658	-	-	24	0	508	20	17	431
Stage 1	-	-	-	-	-	-	267	0	-	76	119	-
Stage 2	-	-	-	-	-	-	181	0	-	529	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	542	-	-	658	-	-	15	-	508	6	9	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	15	-	-	6	9	-
Stage 1	-	-	-	-	-	-	266	-	-	76	63	-
Stage 2	-	-	-	-	-	-	96	-	-	231	311	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	20.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	508	542	-	-	658	-	-	-	-
HCM Lane V/C Ratio	0.563	0.002	-	-	0.469	-	-	-	-
HCM Control Delay (s)	20.8	11.7	-	-	15.2	-	-	0	0
HCM Lane LOS	C	B	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	3.4	0	-	-	2.5	-	-	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	365	737	1177	19	5	186
Future Vol, veh/h	365	737	1177	19	5	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	397	801	1279	21	5	202

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1300	0	-	0	2474	640
Stage 1	-	-	-	-	1279	-
Stage 2	-	-	-	-	1195	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	488	-	-	-	22	399
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	234	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	488	-	-	-	~ 4	399
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	234	-

Approach	EB	WB	SB
HCM Control Delay, s	12.3	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	488	-	-	-	399
HCM Lane V/C Ratio	0.813	-	-	-	0.507
HCM Control Delay (s)	37.2	-	-	-	22.9
HCM Lane LOS	E	-	-	-	C
HCM 95th %tile Q(veh)	7.8	-	-	-	2.8

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	370	345	468	680	7	21	139	290	297	35
v/c Ratio	0.01	0.34	0.82	0.44	0.47	0.07	0.21	0.27	0.69	0.69	0.07
Control Delay	44.0	31.7	42.4	9.9	2.3	49.2	52.7	4.7	43.6	43.6	0.3
Queue Delay	0.0	0.0	1.1	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	31.8	43.5	10.2	2.6	49.2	52.7	4.7	43.6	43.6	0.3
Queue Length 50th (ft)	1	108	225	65	4	5	14	5	178	184	0
Queue Length 95th (ft)	6	161	321	123	60	19	40	26	278	285	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	109	1150	499	1074	1458	96	101	579	471	480	541
Starvation Cap Reductn	0	0	40	193	313	0	0	0	0	0	0
Spillback Cap Reductn	0	51	0	0	0	0	0	1	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.34	0.75	0.53	0.59	0.07	0.21	0.24	0.62	0.62	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	311	29	317	431	626	6	19	128	453	87	32
Future Volume (veh/h)	1	311	29	317	431	626	6	19	128	453	87	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1	338	32	345	468	680	7	21	139	560	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	331	467	44	792	751	934	84	88	778	669	0	294
Arrive On Green	0.19	0.14	0.14	0.75	0.68	0.68	0.05	0.05	0.05	0.19	0.00	0.19
Sat Flow, veh/h	1767	3248	305	1767	1856	1572	1767	1856	1563	3534	0	1552
Grp Volume(v), veh/h	1	182	188	345	468	680	7	21	139	560	0	35
Grp Sat Flow(s),veh/h/ln	1767	1763	1790	1767	1856	1572	1767	1856	1563	1767	0	1552
Q Serve(g_s), s	0.0	10.4	10.5	7.7	14.8	36.1	0.4	1.1	0.0	16.0	0.0	2.0
Cycle Q Clear(g_c), s	0.0	10.4	10.5	7.7	14.8	36.1	0.4	1.1	0.0	16.0	0.0	2.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	254	258	792	751	934	84	88	778	669	0	294
V/C Ratio(X)	0.00	0.72	0.73	0.44	0.62	0.73	0.08	0.24	0.18	0.84	0.00	0.12
Avail Cap(c_a), veh/h	331	403	409	792	857	1024	84	88	779	959	0	421
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	0.72	0.72	0.72	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	42.9	43.0	8.3	12.5	8.7	47.8	48.2	14.7	41.0	0.0	35.3
Incr Delay (d2), s/veh	0.0	16.1	16.5	0.3	0.8	1.7	0.4	1.4	0.1	4.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	5.9	2.3	4.5	11.8	0.2	0.6	1.8	7.3	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	59.0	59.5	8.5	13.4	10.4	48.3	49.6	14.8	45.5	0.0	35.5
LnGrp LOS	C	E	E	A	B	B	D	D	B	D	A	D
Approach Vol, veh/h		371			1493			167			595	
Approach Delay, s/veh		59.2			10.9			20.6			44.9	
Approach LOS		E			B			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	51.5	19.6		24.4	24.2	47.0		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	24.0		28.5	5.0	48.5		5.0				
Max Q Clear Time (g_c+I1), s	9.7	12.5		18.0	2.0	38.1		3.1				
Green Ext Time (p_c), s	1.0	1.7		1.7	0.0	4.4		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	901	49	1255	377	234	12	249	5	8
v/c Ratio	0.44	0.44	0.35	0.62	0.39	0.75	0.03	0.47	0.02	0.02
Control Delay	45.0	14.5	51.9	19.4	8.1	51.5	27.5	8.5	26.8	0.0
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	14.8	51.9	19.4	8.1	51.5	27.5	8.5	26.8	0.0
Queue Length 50th (ft)	41	202	32	288	50	148	6	13	3	0
Queue Length 95th (ft)	m64	248	67	481	151	207	19	68	11	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	176	2028	148	2014	970	545	725	753	543	726
Starvation Cap Reductn	0	536	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	37	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.60	0.33	0.63	0.39	0.43	0.02	0.33	0.01	0.01

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)	63	781	48	45	1155	347	215	11	229	5	0	7
Future Volume (veh/h)	63	781	48	45	1155	347	215	11	229	5	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	849	52	49	1255	0	234	12	249	5	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	2143	131	64	2194		342	371	314	285	0	314
Arrive On Green	0.10	1.00	1.00	0.04	0.62	0.00	0.20	0.20	0.20	0.20	0.00	0.20
Sat Flow, veh/h	1767	3373	207	1767	3526	1572	1396	1856	1572	1110	0	1572
Grp Volume(v), veh/h	68	444	457	49	1255	0	234	12	249	5	0	8
Grp Sat Flow(s),veh/h/ln	1767	1763	1817	1767	1763	1572	1396	1856	1572	1110	0	1572
Q Serve(g_s), s	3.9	0.0	0.0	2.9	21.9	0.0	17.0	0.5	15.8	0.4	0.0	0.4
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.9	21.9	0.0	17.4	0.5	15.8	0.9	0.0	0.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	1120	1154	64	2194		342	371	314	285	0	314
V/C Ratio(X)	0.78	0.40	0.40	0.77	0.57		0.68	0.03	0.79	0.02	0.00	0.03
Avail Cap(c_a), veh/h	163	1120	1154	126	2194		612	730	619	499	0	619
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.8	0.0	0.0	50.2	11.6	0.0	40.8	33.8	39.9	34.2	0.0	33.8
Incr Delay (d2), s/veh	12.7	0.9	0.9	17.1	1.1	0.0	2.4	0.0	4.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.3	0.3	1.6	8.2	0.0	6.0	0.2	6.4	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	0.9	0.9	67.2	12.7	0.0	43.2	33.9	44.4	34.2	0.0	33.8
LnGrp LOS	E	A	A	E	B		D	C	D	C	A	C
Approach Vol, veh/h		969			1304	A		495			13	
Approach Delay, s/veh		5.0			14.8			43.6			34.0	
Approach LOS		A			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	71.2		25.5	9.7	69.8		25.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	42.7		41.3	9.7	40.5		41.3				
Max Q Clear Time (g_c+I1), s	4.9	2.0		2.9	5.9	23.9		19.4				
Green Ext Time (p_c), s	0.0	7.0		0.0	0.0	8.6		1.6				

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

Notes

User approved changes to right turn type.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	128	338	173	60	614	470	324	694	284	373	341
v/c Ratio	0.82	0.33	0.30	0.37	0.66	0.74	0.82	0.64	0.70	0.53	0.77
Control Delay	80.4	27.6	6.3	47.1	32.7	18.3	51.3	28.1	49.5	34.0	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.4	27.6	6.3	47.1	32.7	18.3	51.3	28.1	49.5	34.0	29.6
Queue Length 50th (ft)	73	82	0	32	161	76	171	167	80	98	92
Queue Length 95th (ft)	#198	132	50	77	236	209	#347	238	#155	150	202
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150			170		140	230		245		25
Base Capacity (vph)	157	1103	599	199	1176	721	451	1464	419	1008	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.31	0.29	0.30	0.52	0.65	0.72	0.47	0.68	0.37	0.61

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 (veh/h)	118	311	159	55	565	432	298	588	51	261	343	314
Future Volume (veh/h)	118	311	159	55	565	432	298	588	51	261	343	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	338	173	60	614	470	324	639	55	284	373	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	1148	508	77	1027	454	358	1120	96	351	850	373
Arrive On Green	0.08	0.33	0.33	0.04	0.29	0.29	0.20	0.34	0.34	0.10	0.24	0.24
Sat Flow, veh/h	1767	3526	1559	1767	3526	1558	1767	3284	282	3428	3526	1549
Grp Volume(v), veh/h	128	338	173	60	614	470	324	343	351	284	373	341
Grp Sat Flow(s),veh/h/ln	1767	1763	1559	1767	1763	1558	1767	1763	1804	1714	1763	1549
Q Serve(g_s), s	6.9	6.9	8.1	3.2	14.4	28.0	17.2	15.3	15.3	7.8	8.6	20.6
Cycle Q Clear(g_c), s	6.9	6.9	8.1	3.2	14.4	28.0	17.2	15.3	15.3	7.8	8.6	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	138	1148	508	77	1027	454	358	601	615	351	850	373
V/C Ratio(X)	0.93	0.29	0.34	0.78	0.60	1.04	0.91	0.57	0.57	0.81	0.44	0.91
Avail Cap(c_a), veh/h	138	1148	508	175	1027	454	395	646	661	367	880	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	24.2	24.6	45.5	29.2	34.1	37.4	25.9	25.9	42.2	31.0	35.5
Incr Delay (d2), s/veh	55.2	0.1	0.4	15.2	1.0	51.7	22.6	1.0	1.0	12.2	0.4	25.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	2.8	2.9	1.7	5.9	16.5	9.5	6.3	6.5	3.8	3.6	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.3	24.3	25.0	60.7	30.2	85.8	60.1	27.0	27.0	54.4	31.3	60.7
LnGrp LOS	F	C	C	E	C	F	E	C	C	D	C	E
Approach Vol, veh/h		639			1144			1018			998	
Approach Delay, s/veh		39.5			54.6			37.5			47.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	37.3	8.7	35.8	24.0	27.7	12.0	32.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.3	35.2	9.5	26.0	21.5	24.0	7.5	28.0
Max Q Clear Time (g_c+I1), s	9.9	17.3	5.2	10.1	19.2	22.6	8.9	30.0
Green Ext Time (p_c), s	0.1	3.9	0.0	2.3	0.2	0.6	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	872	64	584
v/c Ratio	0.53	0.68	0.16	0.40
Control Delay	26.8	12.9	3.2	4.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.8	12.9	3.2	4.1
Queue Length 50th (ft)	27	260	5	72
Queue Length 95th (ft)	76	497	16	150
Internal Link Dist (ft)	2642	1057		1090
Turn Bay Length (ft)			60	
Base Capacity (vph)	641	1286	402	1477
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.68	0.16	0.40

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	46	63	750	52	59	537	
Future Volume (veh/h)	46	63	750	52	59	537	
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	1900	1900	1870	1870	1870	1870	
Adj Flow Rate, veh/h	50	68	815	57	64	584	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	2	2	2	2	
Cap, veh/h	63	86	1216	85	438	1493	
Arrive On Green	0.09	0.09	0.70	0.70	0.04	0.80	
Sat Flow, veh/h	699	951	1728	121	1781	1870	
Grp Volume(v), veh/h	119	0	0	872	64	584	
Grp Sat Flow(s),veh/h/ln	1664	0	0	1849	1781	1870	
Q Serve(g_s), s	6.3	0.0	0.0	23.8	0.8	8.2	
Cycle Q Clear(g_c), s	6.3	0.0	0.0	23.8	0.8	8.2	
Prop In Lane	0.42	0.57		0.07	1.00		
Lane Grp Cap(c), veh/h	151	0	0	1301	438	1493	
V/C Ratio(X)	0.79	0.00	0.00	0.67	0.15	0.39	
Avail Cap(c_a), veh/h	592	0	0	1301	460	1493	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	0.81	1.00	1.00	
Uniform Delay (d), s/veh	40.1	0.0	0.0	7.5	6.6	2.7	
Incr Delay (d2), s/veh	8.7	0.0	0.0	2.2	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	2.9	0.0	0.0	7.9	0.3	2.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	48.8	0.0	0.0	9.7	6.7	3.4	
LnGrp LOS	D	A	A	A	A	A	
Approach Vol, veh/h	119		872			648	
Approach Delay, s/veh	48.8		9.7			3.8	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	8.5	68.3				76.8	13.2
Change Period (Y+Rc), s	4.5	5.0				5.0	5.0
Max Green Setting (Gmax), s	5.1	38.4				48.0	32.0
Max Q Clear Time (g_c+I1), s	2.8	25.8				10.2	8.3
Green Ext Time (p_c), s	0.0	5.1				4.2	0.3

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	158	132	37	606	36	460	92
v/c Ratio	0.46	0.30	0.18	0.56	0.17	0.42	0.10
Control Delay	20.3	8.6	27.7	13.4	27.7	11.2	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	8.6	27.7	13.4	27.7	11.2	3.1
Queue Length 50th (ft)	28	5	9	90	9	62	0
Queue Length 95th (ft)	91	44	40	308	39	211	21
Internal Link Dist (ft)	560	1033		1337		1057	
Turn Bay Length (ft)			30		70		60
Base Capacity (vph)	891	1044	207	1242	207	1244	1057
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	0.18	0.13	0.18	0.49	0.17	0.37	0.09

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	6	40	8	15	98	34	555	3	33	423	85
Future Volume (veh/h)	99	6	40	8	15	98	34	555	3	33	423	85
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	7	43	9	16	107	37	603	3	36	460	92
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	315	22	67	109	40	207	76	786	4	74	789	664
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.42	0.42	0.04	0.42	0.42
Sat Flow, veh/h	998	142	426	56	251	1313	1781	1859	9	1781	1870	1574
Grp Volume(v), veh/h	158	0	0	132	0	0	37	0	606	36	460	92
Grp Sat Flow(s),veh/h/ln	1566	0	0	1620	0	0	1781	0	1869	1781	1870	1574
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	10.6	0.8	7.2	1.4
Cycle Q Clear(g_c), s	3.2	0.0	0.0	2.9	0.0	0.0	0.8	0.0	10.6	0.8	7.2	1.4
Prop In Lane	0.68		0.27	0.07		0.81	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	405	0	0	355	0	0	76	0	790	74	789	664
V/C Ratio(X)	0.39	0.00	0.00	0.37	0.00	0.00	0.49	0.00	0.77	0.49	0.58	0.14
Avail Cap(c_a), veh/h	1145	0	0	1225	0	0	232	0	1389	232	1390	1170
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	14.8	0.0	0.0	18.0	0.0	9.5	18.0	8.5	6.8
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.6	0.0	0.0	4.8	0.0	1.6	4.9	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.0	0.0	0.0	0.4	0.0	3.1	0.4	2.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	0.0	0.0	15.5	0.0	0.0	22.8	0.0	11.0	22.9	9.2	6.9
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	A
Approach Vol, veh/h		158			132			643			588	
Approach Delay, s/veh		15.5			15.5			11.7			9.7	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	21.2		10.5	6.6	21.2		10.5				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	5.0	28.5		27.0	5.0	28.5		27.0				
Max Q Clear Time (g_c+I1), s	2.8	12.6		5.2	2.8	9.2		4.9				
Green Ext Time (p_c), s	0.0	3.5		0.9	0.0	3.0		0.7				

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	321	358	10	264	162	285	227
v/c Ratio	0.29	0.67	0.54	0.07	0.64	0.32	0.72	0.13
Control Delay	38.1	32.3	6.3	38.9	35.3	4.6	42.6	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	32.3	6.3	38.9	35.3	4.6	42.6	12.9
Queue Length 50th (ft)	15	136	0	5	117	0	129	28
Queue Length 95th (ft)	50	243	63	22	209	32	#308	70
Internal Link Dist (ft)	284	314			712			1337
Turn Bay Length (ft)							120	
Base Capacity (vph)	139	722	813	160	646	675	427	1848
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.44	0.44	0.06	0.41	0.24	0.67	0.12

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 (veh/h)	20	9	7	291	5	329	9	243	149	262	199	10
Future Volume (veh/h)	20	9	7	291	5	329	9	243	149	262	199	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	10	8	316	5	358	10	264	162	285	216	11
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	36	16	13	538	9	463	22	371	309	332	1280	65
Arrive On Green	0.04	0.04	0.04	0.31	0.31	0.31	0.01	0.20	0.20	0.19	0.37	0.37
Sat Flow, veh/h	934	425	340	1755	28	1510	1781	1870	1557	1781	3440	174
Grp Volume(v), veh/h	40	0	0	321	0	358	10	264	162	285	111	116
Grp Sat Flow(s),veh/h/ln	1699	0	0	1783	0	1510	1781	1870	1557	1781	1777	1837
Q Serve(g_s), s	1.6	0.0	0.0	10.7	0.0	15.2	0.4	9.3	6.5	10.9	2.9	3.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	10.7	0.0	15.2	0.4	9.3	6.5	10.9	2.9	3.0
Prop In Lane	0.55		0.20	0.98		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	65	0	0	546	0	463	22	371	309	332	661	684
V/C Ratio(X)	0.61	0.00	0.00	0.59	0.00	0.77	0.44	0.71	0.52	0.86	0.17	0.17
Avail Cap(c_a), veh/h	121	0	0	684	0	580	152	612	509	405	834	862
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	0.0	0.0	20.6	0.0	22.2	34.5	26.3	25.2	27.7	14.8	14.8
Incr Delay (d2), s/veh	8.9	0.0	0.0	1.0	0.0	5.1	13.2	2.5	1.4	14.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	4.4	0.0	5.8	0.2	4.0	2.3	5.7	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	0.0	0.0	21.6	0.0	27.2	47.7	28.8	26.6	42.0	14.9	14.9
LnGrp LOS	D	A	A	C	A	C	D	C	C	D	B	B
Approach Vol, veh/h		40			679			436			512	
Approach Delay, s/veh		42.2			24.6			28.4			30.0	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.1	19.0		7.2	5.9	31.2		26.0				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	13.0	23.0		5.0	6.0	33.0		27.0				
Max Q Clear Time (g_c+I1), s	12.9	11.3		3.6	2.4	5.0		17.2				
Green Ext Time (p_c), s	0.3	1.5		0.0	0.0	1.2		2.6				

Intersection Summary

HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	193	136	229	208	125	373
Future Vol, veh/h	193	136	229	208	125	373
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	210	148	249	226	136	405
Number of Lanes	1	1	1	2	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	15.9	15.5	22.4
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	104	104	193	136	125	373
LT Vol	229	0	0	193	0	0	0
Through Vol	0	104	104	0	0	125	0
RT Vol	0	0	0	0	136	0	373
Lane Flow Rate	249	113	113	210	148	136	405
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.545	0.232	0.175	0.478	0.287	0.274	0.738
Departure Headway (Hd)	7.886	7.374	5.584	8.208	6.989	7.272	6.555
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	487	642	438	514	495	551
Service Time	5.628	5.116	3.326	5.951	4.732	5.009	4.293
HCM Lane V/C Ratio	0.544	0.232	0.176	0.479	0.288	0.275	0.735
HCM Control Delay	19.7	12.3	9.5	18.3	12.5	12.7	25.6
HCM Lane LOS	C	B	A	C	B	B	D
HCM 95th-tile Q	3.2	0.9	0.6	2.5	1.2	1.1	6.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	211	125	1217	423	379	91	293	622	349	276
v/c Ratio	0.07	0.71	0.33	0.99	0.68	0.41	0.84	0.59	0.40	0.87	0.40
Control Delay	33.8	50.6	6.0	54.3	31.7	3.0	98.7	42.5	4.1	63.9	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	50.6	6.0	54.3	31.7	3.0	98.7	42.5	4.1	63.9	31.0
Queue Length 50th (ft)	10	117	0	362	209	0	54	85	26	105	67
Queue Length 95th (ft)	31	201	32	#569	356	48	#154	131	48	#200	107
Internal Link Dist (ft)		521			1372			611			680
Turn Bay Length (ft)	115		115	515		115	165		290	305	
Base Capacity (vph)	346	364	432	1231	620	915	108	700	1560	401	888
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.58	0.29	0.99	0.68	0.41	0.84	0.42	0.40	0.87	0.31

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 (veh/h)	18	194	115	1120	285	453	84	270	572	321	205	49
Future Volume (veh/h)	18	194	115	1120	285	453	84	270	572	321	205	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	211	125	1217	446	401	91	293	622	349	223	53
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	249	262	222	1253	658	732	107	617	1466	397	619	144
Arrive On Green	0.14	0.14	0.14	0.35	0.35	0.35	0.06	0.17	0.17	0.11	0.22	0.22
Sat Flow, veh/h	1781	1870	1585	3563	1870	1564	1781	3554	2790	3456	2860	666
Grp Volume(v), veh/h	20	211	125	1217	446	401	91	293	622	349	137	139
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1564	1781	1777	1395	1728	1777	1749
Q Serve(g_s), s	0.9	10.2	6.9	31.4	18.9	17.1	4.7	6.9	12.7	9.3	6.1	6.3
Cycle Q Clear(g_c), s	0.9	10.2	6.9	31.4	18.9	17.1	4.7	6.9	12.7	9.3	6.1	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	249	262	222	1253	658	732	107	617	1466	397	385	379
V/C Ratio(X)	0.08	0.81	0.56	0.97	0.68	0.55	0.85	0.48	0.42	0.88	0.36	0.37
Avail Cap(c_a), veh/h	342	359	304	1253	658	732	107	690	1523	397	442	435
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	34.9	38.9	37.4	29.7	25.7	17.8	43.4	34.7	13.5	40.6	31.0	31.1
Incr Delay (d2), s/veh	0.1	9.1	2.2	18.8	2.8	0.9	44.2	0.6	0.2	19.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.3	2.7	15.7	8.4	5.8	3.3	2.9	7.0	5.0	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	48.0	39.7	48.5	28.5	18.7	87.6	35.3	13.7	60.4	31.6	31.7
LnGrp LOS	D	D	D	D	C	B	F	D	B	E	C	C
Approach Vol, veh/h		356			2064			1006			625	
Approach Delay, s/veh		44.4			38.4			26.7			47.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.4	22.0		17.6	11.4	26.0		38.2				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 11	18.1		17.9	5.6	* 23		32.8				
Max Q Clear Time (g_c+I1), s	11.3	14.7		12.2	6.7	8.3		33.4				
Green Ext Time (p_c), s	0.0	1.5		0.9	0.0	1.3		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	111	705	298	130	1109	318	700	407	317	297	157
v/c Ratio	0.58	0.66	0.18	0.74	0.91	0.33	0.79	0.61	0.84	0.59	0.43
Control Delay	56.4	32.6	0.9	67.3	42.3	5.0	38.6	36.1	56.2	42.1	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	32.6	0.9	67.3	42.3	5.0	38.6	36.1	56.2	42.1	14.4
Queue Length 50th (ft)	31	179	0	72	306	26	191	108	170	83	24
Queue Length 95th (ft)	#77	297	10	#195	#558	90	271	153	#381	138	58
Internal Link Dist (ft)		1510			1609			962		896	
Turn Bay Length (ft)	140			80			150		110		
Base Capacity (vph)	193	1062	1691	175	1214	960	891	1198	384	1191	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.66	0.18	0.74	0.91	0.33	0.79	0.34	0.83	0.25	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 (veh/h)	102	649	274	120	1020	293	644	321	53	292	273	144
Future Volume (veh/h)	102	649	274	120	1020	293	644	321	53	292	273	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	705	298	130	1109	318	700	349	58	317	297	157
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	192	1139	1531	162	1265	878	788	519	85	358	508	315
Arrive On Green	0.06	0.32	0.32	0.09	0.36	0.36	0.23	0.17	0.17	0.20	0.14	0.14
Sat Flow, veh/h	3456	3554	2790	1781	3554	1572	3456	3050	502	1781	3554	1585
Grp Volume(v), veh/h	111	705	298	130	1109	318	700	202	205	317	297	157
Grp Sat Flow(s),veh/h/ln	1728	1777	1395	1781	1777	1572	1728	1777	1775	1781	1777	1585
Q Serve(g_s), s	2.6	13.9	1.4	5.9	24.2	9.3	16.2	8.8	9.0	14.3	6.5	3.7
Cycle Q Clear(g_c), s	2.6	13.9	1.4	5.9	24.2	9.3	16.2	8.8	9.0	14.3	6.5	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	192	1139	1531	162	1265	878	788	302	302	358	508	315
V/C Ratio(X)	0.58	0.62	0.19	0.80	0.88	0.36	0.89	0.67	0.68	0.89	0.58	0.50
Avail Cap(c_a), veh/h	213	1166	1552	193	1334	908	846	667	666	423	1308	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	23.9	2.8	36.9	25.0	10.2	31.0	32.2	32.3	32.2	33.2	11.4
Incr Delay (d2), s/veh	3.1	1.0	0.1	17.9	6.6	0.3	10.8	2.5	2.7	17.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.6	0.4	3.3	10.4	2.8	7.5	3.8	3.9	7.6	2.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	24.8	2.8	54.9	31.6	10.4	41.8	34.7	34.9	49.8	34.3	12.6
LnGrp LOS	D	C	A	D	C	B	D	C	C	D	C	B
Approach Vol, veh/h		1114			1557			1107			771	
Approach Delay, s/veh		20.6			29.2			39.2			36.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	31.1	23.4	16.3	9.1	34.0	21.1	18.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.0	27.2	20.3	30.5	5.1	31.1	19.7	31.1
Max Q Clear Time (g_c+I1), s	7.9	15.9	18.2	8.5	4.6	26.2	16.3	11.0
Green Ext Time (p_c), s	0.0	4.4	0.6	2.2	0.0	3.3	0.3	2.1

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1074	102	324	1015	0	18	0	390	0	0	0
Future Vol, veh/h	0	1074	102	324	1015	0	18	0	390	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	340	-	-	195	-	-	-	-	-	-	-	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, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	0	1107	105	334	1046	0	19	0	402	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1047	0	0	1212	0	0	2351	-	606	2269	2927	524
Stage 1	-	-	-	-	-	-	1160	-	-	1715	1715	-
Stage 2	-	-	-	-	-	-	1191	-	-	554	1212	-
Critical Hdwy	4.24	-	-	4.24	-	-	7.64	-	7.04	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	-	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	-	-	6.64	5.64	-
Follow-up Hdwy	2.27	-	-	2.27	-	-	3.57	-	3.37	3.57	4.07	3.37
Pot Cap-1 Maneuver	631	-	-	544	-	-	~ 18	0	428	21	14	485
Stage 1	-	-	-	-	-	-	200	0	-	89	136	-
Stage 2	-	-	-	-	-	-	191	0	-	472	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	630	-	-	544	-	-	~ 9	-	428	1	5	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	-	-	1	5	-
Stage 1	-	-	-	-	-	-	200	-	-	89	52	-
Stage 2	-	-	-	-	-	-	74	-	-	29	243	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.2	60.9	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	428	630	-	-	544	-	-	-	-
HCM Lane V/C Ratio	0.939	-	-	-	0.614	-	-	-	-
HCM Control Delay (s)	60.9	0	-	-	21.6	-	-	0	0
HCM Lane LOS	F	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	10.8	0	-	-	4.1	-	-	-	-

Notes

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

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	284	1180	978	13	11	363
Future Vol, veh/h	284	1180	978	13	11	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	580	-	-	165	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	302	1255	1040	14	12	386

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1054	0	-	0	2272	520
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	1232	-
Critical Hdwy	4.3	-	-	-	7	7.1
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.3	-	-	-	3.6	3.4
Pot Cap-1 Maneuver	611	-	-	-	31	481
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	223	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	611	-	-	-	16	481
Mov Cap-2 Maneuver	-	-	-	-	113	-
Stage 1	-	-	-	-	144	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	36.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	611	-	-	-	481
HCM Lane V/C Ratio	0.494	-	-	-	0.803
HCM Control Delay (s)	16.5	-	-	-	36.5
HCM Lane LOS	C	-	-	-	E
HCM 95th %tile Q(veh)	2.7	-	-	-	7.5

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	522	255	464	652	6	47	281	358	359	110
v/c Ratio	0.20	0.46	0.77	0.48	0.48	0.06	0.42	0.63	0.76	0.75	0.19
Control Delay	44.8	27.9	39.8	10.7	2.5	41.5	52.6	17.5	40.8	40.1	1.3
Queue Delay	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.5	0.1	0.1	0.0
Total Delay	44.8	27.9	39.8	10.9	2.6	41.5	52.6	18.0	40.9	40.2	1.3
Queue Length 50th (ft)	12	143	141	67	16	3	26	39	180	180	0
Queue Length 95th (ft)	35	187	#235	161	0	16	#63	97	#326	#311	6
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	107	1180	372	965	1368	107	113	482	499	506	586
Starvation Cap Reductn	0	0	0	120	133	0	0	0	0	0	0
Spillback Cap Reductn	0	20	0	0	0	0	0	34	3	3	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.69	0.55	0.53	0.06	0.42	0.63	0.72	0.71	0.19

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 (veh/h)	20	460	31	240	436	613	6	44	264	590	84	103
Future Volume (veh/h)	20	460	31	240	436	613	6	44	264	590	84	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	489	33	255	464	652	6	47	281	692	0	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	41	638	43	591	931	1135	100	105	615	818	0	362
Arrive On Green	0.02	0.19	0.19	0.11	0.16	0.16	0.06	0.06	0.06	0.23	0.00	0.23
Sat Flow, veh/h	1795	3403	229	1795	1885	1560	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	257	265	255	464	652	6	47	281	692	0	110
Grp Sat Flow(s),veh/h/ln	1795	1791	1841	1795	1885	1560	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.0	12.2	12.3	12.0	20.2	20.1	0.3	2.2	0.0	16.6	0.0	5.2
Cycle Q Clear(g_c), s	1.0	12.2	12.3	12.0	20.2	20.1	0.3	2.2	0.0	16.6	0.0	5.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	41	336	345	591	931	1135	100	105	615	818	0	362
V/C Ratio(X)	0.52	0.77	0.77	0.43	0.50	0.57	0.06	0.45	0.46	0.85	0.00	0.30
Avail Cap(c_a), veh/h	106	458	470	591	931	1135	100	105	615	1017	0	451
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	34.7	34.7	32.2	27.5	10.4	40.3	41.2	20.7	33.2	0.0	28.8
Incr Delay (d2), s/veh	9.7	15.3	15.2	0.4	0.3	0.5	0.2	3.0	0.5	5.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.7	6.9	5.8	10.2	15.3	0.1	1.1	4.3	7.6	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	50.0	49.9	32.6	27.8	10.9	40.5	44.2	21.2	38.8	0.0	29.3
LnGrp LOS	D	D	D	C	C	B	D	D	C	D	A	C
Approach Vol, veh/h		543			1371			334			802	
Approach Delay, s/veh		50.0			20.7			24.8			37.5	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	21.4		25.0	6.5	49.0		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	23.0		25.5	5.3	36.2		5.0				
Max Q Clear Time (g_c+I1), s	4.0	14.3		18.6	3.0	22.2		4.2				
Green Ext Time (p_c), s	0.3	2.1		1.9	0.0	5.0		0.1				

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

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	1323	20	1083	266	276	30	447	8	27
v/c Ratio	0.56	0.62	0.18	0.58	0.29	0.76	0.06	0.85	0.02	0.05
Control Delay	45.9	11.0	44.3	18.5	4.4	44.3	22.8	35.6	21.9	0.2
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	11.6	44.3	18.5	4.4	44.3	22.8	35.6	21.9	0.2
Queue Length 50th (ft)	49	215	11	241	12	141	12	159	3	0
Queue Length 95th (ft)	m79	326	34	325	57	220	31	266	13	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	174	2127	110	1865	924	440	595	610	439	673
Starvation Cap Reductn	0	371	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	29	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.75	0.18	0.59	0.29	0.63	0.05	0.73	0.02	0.04

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)	85	1200	31	19	1007	247	257	28	416	7	0	25
Future Volume (veh/h)	85	1200	31	19	1007	247	257	28	416	7	0	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	91	1290	33	20	1083	0	276	30	447	8	0	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	117	1510	39	225	1733		483	568	481	348	0	481
Arrive On Green	0.07	0.42	0.42	0.13	0.48	0.00	0.30	0.30	0.30	0.30	0.00	0.30
Sat Flow, veh/h	1795	3566	91	1795	3582	1598	1394	1885	1598	925	0	1598
Grp Volume(v), veh/h	91	648	675	20	1083	0	276	30	447	8	0	27
Grp Sat Flow(s),veh/h/ln	1795	1791	1866	1795	1791	1598	1394	1885	1598	925	0	1598
Q Serve(g_s), s	4.5	29.4	29.4	0.9	20.1	0.0	15.8	1.0	24.4	0.6	0.0	1.1
Cycle Q Clear(g_c), s	4.5	29.4	29.4	0.9	20.1	0.0	16.9	1.0	24.4	1.6	0.0	1.1
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	117	758	790	225	1733		483	568	481	348	0	481
V/C Ratio(X)	0.78	0.85	0.85	0.09	0.63		0.57	0.05	0.93	0.02	0.00	0.06
Avail Cap(c_a), veh/h	170	854	889	225	1733		505	597	506	362	0	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	23.4	23.4	34.8	17.2	0.0	28.3	22.3	30.5	22.9	0.0	22.4
Incr Delay (d2), s/veh	10.5	9.5	9.2	0.2	1.7	0.0	1.4	0.0	23.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	13.7	14.2	0.4	8.2	0.0	5.2	0.4	12.0	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	32.9	32.6	35.0	18.9	0.0	29.8	22.4	53.7	22.9	0.0	22.4
LnGrp LOS	D	C	C	C	B		C	C	D	C	A	C
Approach Vol, veh/h		1414			1103	A		753			35	
Approach Delay, s/veh		34.0			19.2			43.7			22.5	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.8	42.6		31.6	10.4	48.0		31.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	42.9		28.5	8.5	39.5		28.5				
Max Q Clear Time (g_c+I1), s	2.9	31.4		3.6	6.5	22.1		26.4				
Green Ext Time (p_c), s	0.0	6.7		0.1	0.0	7.5		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	199	589	369	110	486	396	237	575	378	583	155
v/c Ratio	0.75	0.58	0.46	0.52	0.62	0.60	0.75	0.63	0.73	0.71	0.24
Control Delay	55.3	30.2	11.0	46.0	33.0	16.7	51.0	30.0	45.4	35.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	30.2	11.0	46.0	33.0	16.7	51.0	30.0	45.4	35.2	10.6
Queue Length 50th (ft)	102	148	70	55	122	102	118	133	99	147	27
Queue Length 95th (ft)	#251	223	156	121	183	200	#274	210	#197	229	73
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150			170		140	230		245		25
Base Capacity (vph)	277	1219	828	265	1197	670	343	1228	537	1108	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.48	0.45	0.42	0.41	0.59	0.69	0.47	0.70	0.53	0.24

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 (veh/h)	187	554	347	103	457	372	223	463	77	355	548	146
Future Volume (veh/h)	187	554	347	103	457	372	223	463	77	355	548	146
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	199	589	369	110	486	396	237	493	82	378	583	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	238	1143	756	141	950	637	278	753	125	467	801	564
Arrive On Green	0.13	0.32	0.32	0.08	0.27	0.27	0.16	0.24	0.24	0.13	0.22	0.22
Sat Flow, veh/h	1795	3582	1592	1795	3582	1596	1795	3075	509	3483	3582	1576
Grp Volume(v), veh/h	199	589	369	110	486	396	237	286	289	378	583	155
Grp Sat Flow(s),veh/h/ln	1795	1791	1592	1795	1791	1596	1795	1791	1794	1742	1791	1576
Q Serve(g_s), s	8.7	10.8	12.8	4.8	9.3	16.0	10.3	11.6	11.7	8.5	12.2	5.7
Cycle Q Clear(g_c), s	8.7	10.8	12.8	4.8	9.3	16.0	10.3	11.6	11.7	8.5	12.2	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	238	1143	756	141	950	637	278	438	439	467	801	564
V/C Ratio(X)	0.84	0.52	0.49	0.78	0.51	0.62	0.85	0.65	0.66	0.81	0.73	0.27
Avail Cap(c_a), veh/h	279	1223	791	267	1201	749	346	623	624	541	1112	701
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	34.1	22.4	14.5	36.4	25.2	19.3	33.1	27.3	27.4	33.9	29.0	18.5
Incr Delay (d2), s/veh	17.3	0.4	0.5	8.8	0.4	1.2	15.3	1.7	1.7	8.0	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.2	4.1	2.4	3.7	5.5	5.5	4.9	5.0	4.0	5.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	22.7	15.0	45.2	25.6	20.5	48.4	29.0	29.1	41.8	30.5	18.8
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h		1157			992			812			1116	
Approach Delay, s/veh		25.2			25.7			34.7			32.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	24.2	10.8	30.2	17.0	22.5	15.2	25.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	28.0	12.0	27.5	15.5	25.0	12.5	27.0
Max Q Clear Time (g_c+I1), s	10.5	13.7	6.8	14.8	12.3	14.2	10.7	18.0
Green Ext Time (p_c), s	0.3	2.9	0.1	4.2	0.2	3.3	0.1	3.1

Intersection Summary

HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	718	108	869
v/c Ratio	0.55	0.57	0.21	0.58
Control Delay	27.7	11.3	3.4	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.7	11.3	3.4	6.1
Queue Length 50th (ft)	32	192	10	142
Queue Length 95th (ft)	82	385	26	298
Internal Link Dist (ft)	2642	1037		1110
Turn Bay Length (ft)			60	
Base Capacity (vph)	648	1270	516	1486
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.57	0.21	0.58

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	54	66	620	47	100	808	
Future Volume (veh/h)	54	66	620	47	100	808	
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	1900	1900	1885	1885	1885	1885	
Adj Flow Rate, veh/h	58	71	667	51	108	869	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	0	0	1	1	1	1	
Cap, veh/h	73	90	1192	91	539	1492	
Arrive On Green	0.10	0.10	0.69	0.69	0.05	0.79	
Sat Flow, veh/h	751	919	1729	132	1795	1885	
Grp Volume(v), veh/h	130	0	0	718	108	869	
Grp Sat Flow(s),veh/h/ln	1682	0	0	1861	1795	1885	
Q Serve(g_s), s	6.8	0.0	0.0	17.6	1.4	16.1	
Cycle Q Clear(g_c), s	6.8	0.0	0.0	17.6	1.4	16.1	
Prop In Lane	0.45	0.55		0.07	1.00		
Lane Grp Cap(c), veh/h	164	0	0	1283	539	1492	
V/C Ratio(X)	0.79	0.00	0.00	0.56	0.20	0.58	
Avail Cap(c_a), veh/h	598	0	0	1283	555	1492	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	0.92	1.00	1.00	
Uniform Delay (d), s/veh	39.7	0.0	0.0	7.1	5.2	3.6	
Incr Delay (d2), s/veh	8.3	0.0	0.0	1.6	0.2	1.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	6.0	0.3	4.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	48.0	0.0	0.0	8.7	5.3	5.3	
LnGrp LOS	D	A	A	A	A	A	
Approach Vol, veh/h	130		718			977	
Approach Delay, s/veh	48.0		8.7			5.3	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.2	67.0				76.2	13.8
Change Period (Y+Rc), s	4.5	5.0				5.0	5.0
Max Green Setting (Gmax), s	5.5	38.5				48.5	32.0
Max Q Clear Time (g_c+I1), s	3.4	19.6				18.1	8.8
Green Ext Time (p_c), s	0.0	4.8				7.4	0.3

Intersection Summary			
HCM 6th Ctrl Delay		9.7	
HCM 6th LOS		A	

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	132	43	22	443	48	566	135
v/c Ratio	0.43	0.11	0.10	0.41	0.23	0.49	0.14
Control Delay	20.1	8.1	23.1	11.1	24.4	10.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	8.1	23.1	11.1	24.4	10.9	3.8
Queue Length 50th (ft)	22	1	4	53	10	74	3
Queue Length 95th (ft)	77	21	25	192	43	#278	34
Internal Link Dist (ft)	560	1033		1337		1037	
Turn Bay Length (ft)			30		70		60
Base Capacity (vph)	867	1024	213	1145	213	1192	1022
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	0.15	0.04	0.10	0.39	0.23	0.47	0.13

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 (veh/h)	113	4	14	4	1	38	22	429	10	48	560	134
Future Volume (veh/h)	113	4	14	4	1	38	22	429	10	48	560	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.99	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	114	4	14	4	1	38	22	433	10	48	566	135
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	374	14	24	121	18	215	49	709	16	95	776	654
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.03	0.39	0.39	0.05	0.41	0.41
Sat Flow, veh/h	1211	91	154	69	116	1403	1795	1835	42	1795	1885	1588
Grp Volume(v), veh/h	132	0	0	43	0	0	22	0	443	48	566	135
Grp Sat Flow(s),veh/h/ln	1456	0	0	1587	0	0	1795	0	1877	1795	1885	1588
Q Serve(g_s), s	2.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	6.7	0.9	9.0	1.9
Cycle Q Clear(g_c), s	2.9	0.0	0.0	0.8	0.0	0.0	0.4	0.0	6.7	0.9	9.0	1.9
Prop In Lane	0.86		0.11	0.09		0.88	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	412	0	0	354	0	0	49	0	725	95	776	654
V/C Ratio(X)	0.32	0.00	0.00	0.12	0.00	0.00	0.45	0.00	0.61	0.50	0.73	0.21
Avail Cap(c_a), veh/h	1255	0	0	1301	0	0	252	0	1239	252	1245	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.9	0.0	0.0	13.1	0.0	0.0	17.0	0.0	8.8	16.4	8.8	6.7
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.2	0.0	0.0	6.2	0.0	0.8	4.1	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.3	0.0	0.0	0.2	0.0	1.9	0.4	2.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	0.0	13.3	0.0	0.0	23.2	0.0	9.6	20.5	10.1	6.9
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	B	A
Approach Vol, veh/h		132			43			465			749	
Approach Delay, s/veh		14.3			13.3			10.3			10.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	18.7		10.0	6.0	19.7		10.0				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	5.0	23.5		27.0	5.0	23.5		27.0				
Max Q Clear Time (g_c+I1), s	2.9	8.7		4.9	2.4	11.0		2.8				
Green Ext Time (p_c), s	0.0	2.3		0.7	0.0	3.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	201	219	12	267	308	344	278
v/c Ratio	0.13	0.54	0.44	0.08	0.61	0.51	0.72	0.14
Control Delay	27.1	29.7	7.1	35.5	29.8	6.5	36.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	29.7	7.1	35.5	29.8	6.5	36.9	9.6
Queue Length 50th (ft)	4	61	0	4	79	0	102	16
Queue Length 95th (ft)	28	152	52	23	197	59	#355	75
Internal Link Dist (ft)	284	314			712			1337
Turn Bay Length (ft)							120	
Base Capacity (vph)	166	823	834	149	691	782	477	2046
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.24	0.26	0.08	0.39	0.39	0.72	0.14

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 (veh/h)	8	2	9	184	3	204	11	248	286	320	246	12
Future Volume (veh/h)	8	2	9	184	3	204	11	248	286	320	246	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	9	2	10	198	3	219	12	267	308	344	265	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	18	4	20	350	5	314	27	466	393	397	1574	77
Arrive On Green	0.02	0.02	0.02	0.20	0.20	0.20	0.02	0.25	0.25	0.22	0.45	0.45
Sat Flow, veh/h	726	161	806	1770	27	1585	1795	1885	1588	1795	3471	169
Grp Volume(v), veh/h	21	0	0	201	0	219	12	267	308	344	136	142
Grp Sat Flow(s),veh/h/ln	1693	0	0	1797	0	1585	1795	1885	1588	1795	1791	1850
Q Serve(g_s), s	0.8	0.0	0.0	6.2	0.0	7.9	0.4	7.6	11.1	11.3	2.8	2.8
Cycle Q Clear(g_c), s	0.8	0.0	0.0	6.2	0.0	7.9	0.4	7.6	11.1	11.3	2.8	2.8
Prop In Lane	0.43		0.48	0.99		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	41	0	0	355	0	314	27	466	393	397	812	839
V/C Ratio(X)	0.51	0.00	0.00	0.57	0.00	0.70	0.44	0.57	0.78	0.87	0.17	0.17
Avail Cap(c_a), veh/h	151	0	0	804	0	709	146	675	568	467	961	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	0.0	22.3	0.0	23.0	30.0	20.3	21.6	23.1	9.9	9.9
Incr Delay (d2), s/veh	9.2	0.0	0.0	1.4	0.0	2.8	11.0	1.1	4.5	13.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.6	0.0	3.0	0.2	3.0	4.0	5.9	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	0.0	0.0	23.7	0.0	25.8	41.0	21.4	26.1	37.0	10.0	10.0
LnGrp LOS	D	A	A	C	A	C	D	C	C	D	B	B
Approach Vol, veh/h		21			420			587			622	
Approach Delay, s/veh		38.8			24.8			24.3			24.9	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.6	20.2		6.0	5.9	32.9		16.7				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	16.0	22.0		5.5	5.0	33.0		27.5				
Max Q Clear Time (g_c+I1), s	13.3	13.1		2.8	2.4	4.8		9.9				
Green Ext Time (p_c), s	0.3	1.7		0.0	0.0	1.5		1.9				

Intersection Summary

HCM 6th Ctrl Delay		24.8	
HCM 6th LOS		C	

Intersection	
Intersection Delay, s/veh	19
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	345	247	148	200	198	241
Future Vol, veh/h	345	247	148	200	198	241
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	356	255	153	206	204	248
Number of Lanes	1	1	1	2	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	24.4	13.3	16.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	148	100	100	345	247	198	241
LT Vol	148	0	0	345	0	0	0
Through Vol	0	100	100	0	0	198	0
RT Vol	0	0	0	0	247	0	241
Lane Flow Rate	153	103	103	356	255	204	248
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.355	0.225	0.175	0.763	0.461	0.436	0.481
Departure Headway (Hd)	8.381	7.867	6.103	7.727	6.514	7.689	6.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	430	457	588	469	553	469	517
Service Time	6.125	5.611	3.846	5.467	4.253	5.432	4.711
HCM Lane V/C Ratio	0.356	0.225	0.175	0.759	0.461	0.435	0.48
HCM Control Delay	15.7	12.9	10.1	31.4	14.7	16.3	16
HCM Lane LOS	C	B	B	D	B	C	C
HCM 95th-tile Q	1.6	0.9	0.6	6.5	2.4	2.2	2.6

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	444	769	209	442	99	368	1204	634	324
v/c Ratio	0.16	0.66	0.76	0.38	0.50	0.88	0.61	0.86	1.98	0.46
Control Delay	28.7	32.5	32.5	26.3	4.1	99.3	35.4	16.7	473.4	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	32.5	32.5	26.3	4.1	99.3	35.4	16.7	473.4	27.8
Queue Length 50th (ft)	22	97	179	83	2	50	90	134	~258	68
Queue Length 95th (ft)	54	154	#292	158	58	#153	137	211	#392	110
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	406	813	1013	549	885	113	967	1396	321	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.55	0.76	0.38	0.50	0.88	0.38	0.86	1.98	0.31

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 (veh/h)	50	329	102	746	203	429	96	357	1168	615	256	58
Future Volume (veh/h)	50	329	102	746	203	429	96	357	1168	615	256	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	52	339	105	769	209	442	99	368	1204	634	264	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	291	437	133	931	504	562	104	887	1447	295	761	170
Arrive On Green	0.16	0.16	0.16	0.27	0.27	0.27	0.06	0.25	0.25	0.08	0.26	0.26
Sat Flow, veh/h	1795	2694	820	3483	1885	1594	1795	3582	2812	3483	2909	650
Grp Volume(v), veh/h	52	223	221	769	209	442	99	368	1204	634	161	163
Grp Sat Flow(s),veh/h/ln	1795	1791	1723	1742	1885	1594	1795	1791	1406	1742	1791	1768
Q Serve(g_s), s	2.2	10.3	10.6	17.9	7.9	21.4	4.7	7.4	21.3	7.3	6.3	6.5
Cycle Q Clear(g_c), s	2.2	10.3	10.6	17.9	7.9	21.4	4.7	7.4	21.3	7.3	6.3	6.5
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	291	291	280	931	504	562	104	887	1447	295	468	462
V/C Ratio(X)	0.18	0.77	0.79	0.83	0.41	0.79	0.95	0.42	0.83	2.15	0.34	0.35
Avail Cap(c_a), veh/h	373	372	358	931	504	562	104	887	1447	295	491	485
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	31.1	34.5	34.6	29.6	26.0	25.0	40.4	27.2	15.3	39.4	25.8	25.9
Incr Delay (d2), s/veh	0.3	7.2	8.8	6.2	0.5	7.3	71.7	0.3	4.3	526.8	0.4	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	1.0	5.0	5.1	7.8	3.4	8.6	4.1	3.0	13.1	24.7	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	41.7	43.4	35.8	26.5	32.3	112.1	27.5	19.6	566.2	26.2	26.3
LnGrp LOS	C	D	D	D	C	C	F	C	B	F	C	C
Approach Vol, veh/h		496			1420			1671			958	
Approach Delay, s/veh		41.4			33.4			26.8			383.6	
Approach LOS		D			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	27.1		18.6	10.8	28.3		28.4				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	7.3	21.3		17.9	5.0	* 24		23.0				
Max Q Clear Time (g_c+I1), s	9.3	23.3		12.6	6.7	8.5		23.4				
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	1.6		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	105.7
HCM 6th LOS	F

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	269	1069	667	121	776	166	451	372	219	425	134
v/c Ratio	0.75	0.88	0.43	0.81	0.68	0.27	0.87	0.51	0.82	0.59	0.25
Control Delay	51.2	36.3	5.2	77.1	28.6	5.1	54.1	27.1	60.7	32.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	36.3	5.2	77.1	28.6	5.1	54.1	27.1	60.7	32.3	6.7
Queue Length 50th (ft)	67	253	28	60	170	0	112	77	106	103	14
Queue Length 95th (ft)	#155	#493	89	#183	298	44	#246	115	#276	145	35
Internal Link Dist (ft)		1510			1609			962		896	
Turn Bay Length (ft)	140			80			150		110		
Base Capacity (vph)	359	1218	1535	149	1148	623	518	1328	267	1347	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.88	0.43	0.81	0.68	0.27	0.87	0.28	0.82	0.32	0.25

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 (veh/h)	258	1026	640	116	745	159	433	273	84	210	408	129
Future Volume (veh/h)	258	1026	640	116	745	159	433	273	84	210	408	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	269	1069	667	121	776	166	451	284	88	219	425	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	354	1239	1403	153	1180	525	533	515	156	259	651	451
Arrive On Green	0.10	0.35	0.35	0.09	0.33	0.33	0.15	0.19	0.19	0.14	0.18	0.18
Sat Flow, veh/h	3483	3582	2812	1795	3582	1595	3483	2706	822	1795	3582	1590
Grp Volume(v), veh/h	269	1069	667	121	776	166	451	186	186	219	425	134
Grp Sat Flow(s),veh/h/ln	1742	1791	1406	1795	1791	1595	1742	1791	1737	1795	1791	1590
Q Serve(g_s), s	5.8	21.4	3.4	5.1	14.3	6.0	9.7	7.2	7.5	9.1	8.5	2.7
Cycle Q Clear(g_c), s	5.8	21.4	3.4	5.1	14.3	6.0	9.7	7.2	7.5	9.1	8.5	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	354	1239	1403	153	1180	525	533	341	331	259	651	451
V/C Ratio(X)	0.76	0.86	0.48	0.79	0.66	0.32	0.85	0.55	0.56	0.85	0.65	0.30
Avail Cap(c_a), veh/h	381	1286	1440	159	1212	540	548	711	689	283	1422	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	23.4	3.9	34.5	22.1	19.3	31.7	28.1	28.2	32.0	29.2	8.2
Incr Delay (d2), s/veh	8.1	6.1	0.3	22.5	1.3	0.3	11.5	1.4	1.5	19.2	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	9.1	0.8	3.1	5.6	2.1	4.7	3.0	3.0	5.1	3.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	29.6	4.2	57.0	23.3	19.6	43.1	29.5	29.7	51.3	30.3	8.6
LnGrp LOS	D	C	A	E	C	B	D	C	C	D	C	A
Approach Vol, veh/h		2005			1063			823			778	
Approach Delay, s/veh		22.7			26.6			37.0			32.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	31.1	16.3	18.5	12.3	29.8	15.6	19.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	27.6	12.1	30.5	8.4	26.0	12.1	30.5
Max Q Clear Time (g_c+I1), s	7.7	23.4	11.7	10.5	7.8	16.3	11.1	9.5
Green Ext Time (p_c), s	0.0	3.2	0.1	2.9	0.1	3.9	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Cumulative



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	435	1747	1680	212	202	342
v/c Ratio	0.80	0.54	0.94	0.24	0.77	0.63
Control Delay	71.2	0.7	42.2	5.5	80.0	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	0.7	42.2	5.5	80.0	43.3
Queue Length 50th (ft)	224	0	786	22	202	281
Queue Length 95th (ft)	298	0	#1079	69	304	396
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	662	3223	2047	975	341	660
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	0.66	0.54	0.82	0.22	0.59	0.52

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)	400	1607	1546	195	186	315
Future Volume (vph)	400	1607	1546	195	186	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3127	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3127	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	1747	1680	212	202	342
RTOR Reduction (vph)	0	0	0	72	0	10
Lane Group Flow (vph)	435	1747	1680	140	202	332
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	25.6	145.4	80.9	80.9	23.9	53.5
Effective Green, g (s)	25.6	145.4	80.9	80.9	23.9	53.5
Actuated g/C Ratio	0.18	1.00	0.56	0.56	0.16	0.37
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	550	3223	1793	802	264	530
v/s Ratio Prot	c0.14	0.54	c0.52		c0.13	0.23
v/s Ratio Perm				0.10		
v/c Ratio	0.79	0.54	0.94	0.17	0.77	0.63
Uniform Delay, d1	57.3	0.0	29.9	15.8	58.1	37.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.7	10.0	0.1	12.8	2.3
Delay (s)	65.0	0.7	39.9	16.0	70.8	40.1
Level of Service	E	A	D	B	E	D
Approach Delay (s)		13.5	37.2		51.5	
Approach LOS		B	D		D	

Intersection Summary

HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	435	1132	383	439	1176	326	412	630	251	245	304
v/c Ratio	1.13	0.89	0.48	1.08	0.91	0.43	0.96	0.86	0.71	0.70	0.65
Control Delay	141.8	53.2	4.8	128.3	54.9	6.0	98.4	67.8	78.0	67.0	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	141.8	53.2	4.8	128.3	54.9	6.0	98.4	67.8	78.0	67.0	24.1
Queue Length 50th (ft)	~270	556	0	~260	581	12	~220	317	127	228	83
Queue Length 95th (ft)	#434	693	68	#439	733	83	#382	424	192	345	199
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	386	1550	894	405	1550	853	430	894	430	477	558
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.73	0.43	1.08	0.76	0.38	0.96	0.70	0.58	0.51	0.54

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)	400	1041	352	404	1082	300	379	495	85	231	225	280
Future Volume (vph)	400	1041	352	404	1082	300	379	495	85	231	225	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3175		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3175		3155	1712	1455
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)	435	1132	383	439	1176	326	412	538	92	251	245	304
RTOR Reduction (vph)	0	0	233	0	0	185	0	8	0	0	0	168
Lane Group Flow (vph)	435	1132	150	439	1176	141	412	622	0	251	245	136
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.4	58.3	58.3	19.3	59.2	59.2	20.4	34.3		16.8	30.7	30.7
Effective Green, g (s)	18.4	58.3	58.3	19.3	59.2	59.2	20.4	34.3		16.8	30.7	30.7
Actuated g/C Ratio	0.12	0.39	0.39	0.13	0.40	0.40	0.14	0.23		0.11	0.21	0.21
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	388	1269	568	407	1289	576	431	729		355	352	299
v/s Ratio Prot	c0.14	0.35		c0.14	c0.36		c0.13	c0.20		0.08	0.14	
v/s Ratio Perm			0.10			0.10						0.09
v/c Ratio	1.12	0.89	0.26	1.08	0.91	0.25	0.96	0.85		0.71	0.70	0.46
Uniform Delay, d1	65.5	42.6	30.9	65.0	42.6	30.1	64.0	55.1		63.9	55.0	52.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	82.8	8.3	0.2	67.3	9.9	0.2	31.9	9.5		6.3	5.9	1.1
Delay (s)	148.2	50.8	31.2	132.3	52.5	30.3	95.9	64.6		70.2	60.9	53.1
Level of Service	F	D	C	F	D	C	F	E		E	E	D
Approach Delay (s)		68.7			66.8			77.0			60.8	
Approach LOS		E			E			E			E	

Intersection Summary				
HCM 2000 Control Delay	68.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	149.3	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	81.5%	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)	400	1041	352	404	1082	300	379	495	85	231	225	280
Future Volume (veh/h)	400	1041	352	404	1082	300	379	495	85	231	225	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	435	1132	383	439	1176	326	412	538	92	251	245	304
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	365	1270	566	365	1339	597	406	726	124	296	389	329
Arrive On Green	0.11	0.38	0.38	0.11	0.41	0.41	0.13	0.26	0.26	0.09	0.22	0.22
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	2814	479	3209	1737	1472
Grp Volume(v), veh/h	435	1132	383	439	1176	326	412	315	315	251	245	304
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1643	1605	1737	1472
Q Serve(g_s), s	18.0	50.8	23.2	18.0	52.0	26.7	20.0	27.6	27.9	12.2	20.2	31.9
Cycle Q Clear(g_c), s	18.0	50.8	23.2	18.0	52.0	26.7	20.0	27.6	27.9	12.2	20.2	31.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	365	1270	566	365	1339	597	406	426	424	296	389	329
V/C Ratio(X)	1.19	0.89	0.68	1.20	0.88	0.55	1.02	0.74	0.74	0.85	0.63	0.92
Avail Cap(c_a), veh/h	365	1461	652	365	1461	652	406	428	426	406	450	382
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	70.1	45.6	18.6	70.1	43.4	35.9	69.1	53.8	53.9	70.7	55.5	60.0
Incr Delay (d2), s/veh	109.9	6.6	2.3	114.2	6.1	0.8	48.6	6.6	6.9	11.6	2.2	25.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	21.0	8.1	13.0	21.3	9.7	10.9	12.2	12.2	5.4	9.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	180.0	52.2	20.9	184.3	49.5	36.7	117.6	60.4	60.8	82.3	57.7	85.6
LnGrp LOS	F	D	C	F	D	D	F	E	E	F	E	F
Approach Vol, veh/h		1950			1941			1042			800	
Approach Delay, s/veh		74.6			77.8			83.1			76.0	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.3	68.2	24.0	40.7	22.0	71.5	18.6	46.1
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	20.0	52.8	22.0	33.9	20.0	54.0	14.2	29.9
Green Ext Time (p_c), s	0.0	8.1	0.0	1.4	0.0	7.8	0.4	2.8

Intersection Summary	
HCM 6th Ctrl Delay	77.4
HCM 6th LOS	E

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	1281	1686	30	0	100
Future Volume (Veh/h)	0	1281	1686	30	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1392	1833	33	0	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1866				2529	916
vC1, stage 1 conf vol					1833	
vC2, stage 2 conf vol					696	
vCu, unblocked vol	1866				2529	916
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	58
cM capacity (veh/h)	288				98	260

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	696	696	916	916	33	109
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	33	109
cSH	1700	1700	1700	1700	1700	260
Volume to Capacity	0.41	0.41	0.54	0.54	0.02	0.42
Queue Length 95th (ft)	0	0	0	0	0	49
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	28.5
Lane LOS						D
Approach Delay (s)	0.0		0.0			28.5
Approach LOS						D

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		59.5%	ICU Level of Service	B
Analysis Period (min)		15		

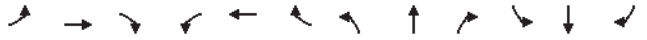
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1281	1686	30	0	100
Future Vol, veh/h	0	1281	1686	30	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1392	1833	33	0	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	917
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	259
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	259
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	28.6
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	259
HCM Lane V/C Ratio	-	-	-	0.42
HCM Control Delay (s)	-	-	-	28.6
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1225	56	3	1690	0	26	0	10	0	0	0
Future Volume (Veh/h)	0	1225	56	3	1690	0	26	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1332	61	3	1837	0	28	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1837			1393			2256	3175	666	2514	3236	918
vC1, stage 1 conf vol							1332	1332		1843	1843	
vC2, stage 2 conf vol							924	1843		672	1393	
vCu, unblocked vol	1837			1393			2256	3175	666	2514	3236	918
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			78	100	97	100	100	100
cM capacity (veh/h)	286			434			125	92	377	65	89	253

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	666	666	61	3	1225	612	39	0
Volume Left	0	0	0	0	3	0	0	28	0
Volume Right	0	0	0	61	0	0	0	11	0
cSH	1700	1700	1700	1700	434	1700	1700	175	1700
Volume to Capacity	0.00	0.39	0.39	0.04	0.01	0.72	0.36	0.22	0.00
Queue Length 95th (ft)	0	0	0	0	1	0	0	21	0
Control Delay (s)	0.0	0.0	0.0	0.0	13.4	0.0	0.0	34.2	0.0
Lane LOS					B			D	A
Approach Delay (s)	0.0				0.0			34.2	0.0
Approach LOS								D	A

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		56.7%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1225	56	3	1690	0	26	0	10	0	0	0
Future Vol, veh/h	0	1225	56	3	1690	0	26	0	10	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	1332	61	3	1837	0	28	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1837	0	0	1393	0	0	2257	3175	666	2509	3236	919
Stage 1	-	-	-	-	-	-	1332	1332	-	1843	1843	-
Stage 2	-	-	-	-	-	-	925	1843	-	666	1393	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	286	-	-	434	-	-	~ 19	8	377	12	8	253
Stage 1	-	-	-	-	-	-	148	202	-	69	110	-
Stage 2	-	-	-	-	-	-	269	110	-	390	188	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	286	-	-	434	-	-	~ 19	8	377	12	8	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	89	-	64	87	-
Stage 1	-	-	-	-	-	-	148	202	-	69	109	-
Stage 2	-	-	-	-	-	-	267	109	-	379	188	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	35.3	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	122	377	286	-	-	434	-	-	-
HCM Lane V/C Ratio	0.232	0.029	-	-	-	0.008	-	-	-
HCM Control Delay (s)	43.2	14.8	0	-	-	13.4	-	-	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A
HCM 95th %tile Q(veh)	0.8	0.1	0	-	-	0	-	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	204	222	150	314	200	156	63	569	285	100	535	250
Future Volume (veh/h)	204	222	150	314	200	156	63	569	285	100	535	250
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
Hourly flow rate (vph)	222	241	163	341	217	170	68	618	310	109	582	272
Approach Volume (veh/h)		463			728			996			963	
Crossing Volume (veh/h)		1032			908			572			626	
High Capacity (veh/h)		606			671			881			844	
High v/c (veh/h)		0.76			1.08			1.13			1.14	
Low Capacity (veh/h)		469			525			708			675	
Low v/c (veh/h)		0.99			1.39			1.41			1.43	

Intersection Summary												
Maximum v/c High			1.14									
Maximum v/c Low			1.43									
Intersection Capacity Utilization			112.7%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	626	728	996	963
Demand Flow Rate, veh/h	645	750	1026	991
Vehicles Circulating, veh/h	1062	936	589	645
Vehicles Exiting, veh/h	574	679	950	1041
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	0.998	1.000
Approach Delay, s/veh	10.7	18.6	27.7	35.8
Approach LOS	B	C	D	E

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.468	0.532	0.689	0.311	0.717	0.283
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	168	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	224	253	1957	351	399	707	319	711	280
Cap Entry Lane, veh/h	540	540	0.971	571	641	785	861	746	821
Entry HV Adj Factor	0.971	0.969	163	0.972	0.971	0.971	0.972	0.971	0.971
Flow Entry, veh/h	218	245	1900	341	387	686	310	691	272
Cap Entry, veh/h	525	524	0.086	554	622	761	835	724	797
V/C Ratio	0.415	0.468	0.0	0.615	0.623	0.902	0.371	0.953	0.341
Control Delay, s/veh	13.7	15.1	A	19.4	18.0	36.2	8.7	46.6	8.5
LOS	B	C	0	C	C	E	A	E	A
95th %tile Queue, veh	2	2		4	4	12	2	14	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	5	35	5	5	87	0	20	5	2	0	0	0
Future Volume (Veh/h)	5	35	5	5	87	0	20	5	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	38	5	5	95	0	22	5	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	95			43			156	156	40	160	158	95
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			43			156	156	40	160	158	95
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			97	99	100	100	100	100
cM capacity (veh/h)	1462			1528			794	721	1014	782	718	945

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	100	29	0
Volume Left	5	5	22	0
Volume Right	5	0	2	0
cSH	1462	1528	792	1700
Volume to Capacity	0.00	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	3	0
Control Delay (s)	0.8	0.4	9.7	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.8	0.4	9.7	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			2.0	
Intersection Capacity Utilization			15.6%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	5	35	5	5	87	0	20	5	2	0	0	0
Future Vol, veh/h	5	35	5	5	87	0	20	5	2	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	5	38	5	5	95	0	22	5	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	95	0	0	43	0	0	156	156	41	159	158	95
Stage 1	-	-	-	-	-	-	51	51	-	105	105	-
Stage 2	-	-	-	-	-	-	105	105	-	54	53	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1462	-	-	1528	-	-	797	725	1013	793	723	945
Stage 1	-	-	-	-	-	-	947	841	-	886	797	-
Stage 2	-	-	-	-	-	-	886	797	-	943	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1462	-	-	1528	-	-	793	720	1013	783	718	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	793	720	-	783	718	-
Stage 1	-	-	-	-	-	-	943	838	-	882	795	-
Stage 2	-	-	-	-	-	-	883	795	-	931	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	9.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1462	-	-	1528	-	-	-
HCM Lane V/C Ratio	0.037	0.004	-	-	0.004	-	-	-
HCM Control Delay (s)	9.7	7.5	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	419	388	478	734	11	22	166	339	344	43
v/c Ratio	0.11	0.66	0.80	0.53	0.64	0.08	0.15	0.60	0.77	0.77	0.09
Control Delay	53.3	42.6	47.5	20.8	4.4	46.9	47.8	17.1	47.4	47.1	0.3
Queue Delay	0.0	0.0	0.8	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	42.6	48.3	22.1	5.0	46.9	47.8	17.1	47.4	47.1	0.3
Queue Length 50th (ft)	7	130	224	192	0	7	13	0	201	204	0
Queue Length 95th (ft)	28	201	#419	376	74	26	41	65	#394	#398	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	96	873	604	1029	1199	345	363	438	538	547	581
Starvation Cap Reductn	0	0	59	340	169	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.48	0.71	0.69	0.71	0.03	0.06	0.38	0.63	0.63	0.07

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)	10	353	32	357	440	675	10	20	153	537	91	40
Future Volume (vph)	10	353	32	357	440	675	10	20	153	537	91	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3450		1752	1845	1568	1752	1845	1543	1665	1692	1519
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3450		1752	1845	1568	1752	1845	1543	1665	1692	1519
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)	11	384	35	388	478	734	11	22	166	584	99	43
RTOR Reduction (vph)	0	5	0	0	0	386	0	0	153	0	0	32
Lane Group Flow (vph)	11	414	0	388	478	348	11	22	13	339	344	11
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	21.2		26.1	46.5	46.5	7.7	7.7	7.7	25.0	25.0	25.0
Effective Green, g (s)	0.8	21.2		26.1	46.5	46.5	7.7	7.7	7.7	25.0	25.0	25.0
Actuated g/C Ratio	0.01	0.22		0.27	0.47	0.47	0.08	0.08	0.08	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	746		466	875	744	137	144	121	424	431	387
v/s Ratio Prot	0.01	0.12		c0.22	c0.26		0.01	c0.01		c0.20	0.20	
v/s Ratio Perm						0.22			0.01			0.01
v/c Ratio	0.79	0.55		0.83	0.55	0.47	0.08	0.15	0.11	0.80	0.80	0.03
Uniform Delay, d1	48.5	34.2		33.9	18.3	17.4	41.9	42.1	42.0	34.2	34.1	27.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	130.6	0.9		12.1	0.7	0.5	0.3	0.5	0.4	10.1	9.9	0.0
Delay (s)	179.1	35.1		45.9	19.0	17.9	42.1	42.6	42.4	44.3	44.1	27.4
Level of Service	F	D		D	B	B	D	D	D	D	D	C
Approach Delay (s)		38.8			25.0			42.4			43.2	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	353	32	357	440	675	10	20	153	537	91	40
Future Volume (veh/h)	10	353	32	357	440	675	10	20	153	537	91	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	384	35	388	478	734	11	22	166	655	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	806	73	424	880	745	221	232	196	762	0	335
Arrive On Green	0.01	0.25	0.25	0.24	0.47	0.47	0.12	0.12	0.12	0.22	0.00	0.22
Sat Flow, veh/h	1767	3264	296	1767	1856	1572	1767	1856	1569	3534	0	1554
Grp Volume(v), veh/h	11	206	213	388	478	734	11	22	166	655	0	43
Grp Sat Flow(s),veh/h/ln	1767	1763	1797	1767	1856	1572	1767	1856	1569	1767	0	1554
Q Serve(g_s), s	0.6	10.4	10.6	22.3	19.1	48.1	0.6	1.1	10.8	18.6	0.0	2.3
Cycle Q Clear(g_c), s	0.6	10.4	10.6	22.3	19.1	48.1	0.6	1.1	10.8	18.6	0.0	2.3
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	435	444	424	880	745	221	232	196	762	0	335
V/C Ratio(X)	0.48	0.47	0.48	0.91	0.54	0.98	0.05	0.09	0.85	0.86	0.00	0.13
Avail Cap(c_a), veh/h	85	435	444	533	880	745	305	320	270	998	0	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	33.5	33.6	38.6	19.5	27.1	40.2	40.5	44.7	39.4	0.0	33.0
Incr Delay (d2), s/veh	14.4	0.8	0.8	17.8	0.7	29.1	0.1	0.2	16.2	6.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.6	4.7	11.6	8.1	23.1	0.3	0.5	5.0	8.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	34.3	34.4	56.4	20.1	56.2	40.3	40.6	60.9	45.5	0.0	33.2
LnGrp LOS	E	C	C	E	C	E	D	D	E	D	A	C
Approach Vol, veh/h		430			1600			199			698	
Approach Delay, s/veh		35.2			45.5			57.5			44.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	30.3		27.0	5.9	54.0		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	31.5	23.0		29.5	5.0	49.5		18.0				
Max Q Clear Time (g_c+I1), s	24.3	12.6		20.6	2.6	50.1		12.8				
Green Ext Time (p_c), s	0.8	1.9		1.9	0.0	0.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			44.6
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	1057	57	1354	424	235	22	272	11	11
v/c Ratio	0.43	0.56	0.35	0.72	0.44	0.72	0.05	0.50	0.03	0.02
Control Delay	51.9	15.7	50.2	19.4	6.3	47.2	29.6	11.0	29.6	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	16.2	50.2	19.4	6.3	47.2	29.6	11.0	29.6	0.1
Queue Length 50th (ft)	47	214	35	321	41	141	11	24	6	0
Queue Length 95th (ft)	98	305	78	445	114	228	31	95	20	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	212	2281	201	2284	1097	485	647	697	481	669
Starvation Cap Reductn	0	696	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	0.36	0.67	0.28	0.59	0.39	0.48	0.03	0.39	0.02	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	922	51	52	1246	390	216	20	250	10	0	10
Future Volume (vph)	70	922	51	52	1246	390	216	20	250	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3471		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1752	3471		1752	3505	1530	1384	1845	1568	1371	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)	76	1002	55	57	1354	424	235	22	272	11	0	11
RTOR Reduction (vph)	0	4	0	0	0	134	0	0	173	0	8	0
Lane Group Flow (vph)	76	1053	0	57	1354	290	235	22	99	11	3	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.5	47.2		6.0	46.7	46.7	20.6	20.6	20.6	20.6	20.6	
Effective Green, g (s)	6.5	47.2		6.0	46.7	46.7	20.6	20.6	20.6	20.6	20.6	
Actuated g/C Ratio	0.07	0.54		0.07	0.53	0.53	0.24	0.24	0.24	0.24	0.24	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	130	1876		120	1874	818	326	435	369	323	369	
v/s Ratio Prot	c0.04	0.30		0.03	c0.39			0.01			0.00	
v/s Ratio Perm						0.19	c0.17		0.06	0.01		
v/c Ratio	0.58	0.56		0.47	0.72	0.35	0.72	0.05	0.27	0.03	0.01	
Uniform Delay, d1	39.1	13.2		39.1	15.4	11.7	30.7	25.8	27.2	25.7	25.5	
Progression Factor	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	0.4		2.9	1.4	0.3	7.6	0.0	0.4	0.0	0.0	
Delay (s)	45.6	13.6		42.1	16.8	11.9	38.3	25.8	27.6	25.7	25.5	
Level of Service	D	B		D	B	B	D	C	C	C	C	
Approach Delay (s)		15.8			16.5			32.3			25.6	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	68.5%	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)	70	922	51	52	1246	390	216	20	250	10	0	10
Future Volume (veh/h)	70	922	51	52	1246	390	216	20	250	10	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	1002	55	57	1354	0	235	22	272	11	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	1807	99	86	1848		403	405	343	332	0	343
Arrive On Green	0.06	0.53	0.53	0.05	0.52	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3397	186	1767	3526	1572	1392	1856	1572	1077	0	1572
Grp Volume(v), veh/h	76	520	537	57	1354	0	235	22	272	11	0	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1821	1767	1763	1572	1392	1856	1572	1077	0	1572
Q Serve(g_s), s	2.8	13.1	13.1	2.1	19.9	0.0	10.7	0.6	11.0	0.5	0.0	0.4
Cycle Q Clear(g_c), s	2.8	13.1	13.1	2.1	19.9	0.0	11.1	0.6	11.0	1.2	0.0	0.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	938	969	86	1848		403	405	343	332	0	343
V/C Ratio(X)	0.76	0.55	0.55	0.66	0.73		0.58	0.05	0.79	0.03	0.00	0.03
Avail Cap(c_a), veh/h	250	1444	1492	237	2862		670	760	644	538	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	10.4	10.4	31.4	12.3	0.0	25.0	20.8	24.8	21.2	0.0	20.7
Incr Delay (d2), s/veh	11.3	0.5	0.5	8.4	0.6	0.0	1.3	0.1	4.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.5	4.6	1.1	6.7	0.0	3.4	0.3	4.2	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	10.9	10.9	39.8	12.9	0.0	26.4	20.8	29.0	21.3	0.0	20.7
LnGrp LOS	D	B	B	D	B		C	C	C	C	A	C
Approach Vol, veh/h		1133			1411	A		529			22	
Approach Delay, s/veh		13.1			14.0			27.5			21.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	40.2		19.1	8.3	39.7		19.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.0	55.0		27.5	9.5	54.5		27.5				
Max Q Clear Time (g_c+I1), s	4.1	15.1		3.2	4.8	21.9		13.1				
Green Ext Time (p_c), s	0.0	8.8		0.0	0.1	13.3		1.5				

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

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	342	942	65	1143	391	203	54	165	698
v/c Ratio	0.83	0.61	0.48	0.86	0.81	0.27	0.13	0.75	1.07dr
Control Delay	68.1	24.2	64.6	39.3	62.6	39.7	2.2	70.5	49.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	24.2	64.6	39.3	62.6	39.7	2.2	70.5	49.8
Queue Length 50th (ft)	134	263	48	401	151	69	0	122	210
Queue Length 95th (ft)	#217	334	96	493	#229	106	8	#222	#326
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	420	1608	156	1500	506	783	424	246	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.59	0.42	0.76	0.77	0.26	0.13	0.67	0.86

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	575	292	60	878	174	360	187	50	152	192	450
Future Volume (vph)	315	575	292	60	878	174	360	187	50	152	192	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3343		1770	3444		3433	3539	1583	1770	3167	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3343		1770	3444		3433	3539	1583	1770	3167	
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)	342	625	317	65	954	189	391	203	54	165	209	489
RTOR Reduction (vph)	0	52	0	0	14	0	0	0	43	0	146	0
Lane Group Flow (vph)	342	890	0	65	1129	0	391	203	11	165	552	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.5	50.5		7.2	44.2		15.8	24.1	24.1	14.0	22.3	
Effective Green, g (s)	13.5	50.5		7.2	44.2		15.8	24.1	24.1	14.0	22.3	
Actuated g/C Ratio	0.12	0.44		0.06	0.39		0.14	0.21	0.21	0.12	0.20	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	407	1483		111	1337		476	749	335	217	620	
v/s Ratio Prot	c0.10	0.27		0.04	c0.33		c0.11	0.06		0.09	c0.17	
v/s Ratio Perm									0.01			
v/c Ratio	0.84	0.60		0.59	0.84		0.82	0.27	0.03	0.76	1.07dr	
Uniform Delay, d1	49.1	24.0		51.8	31.7		47.6	37.5	35.6	48.3	44.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.4	0.7		7.7	5.1		10.9	0.2	0.0	14.5	15.0	
Delay (s)	63.5	24.7		59.5	36.7		58.5	37.7	35.7	62.8	59.6	
Level of Service	E	C		E	D		E	D	D	E	E	
Approach Delay (s)		35.0			38.0			50.1			60.2	
Approach LOS		D			D			D			E	

Intersection Summary				
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	113.8	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	83.9%	ICU Level of Service	E	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	575	292	60	878	174	360	187	50	152	192	450
Future Volume (veh/h)	315	575	292	60	878	174	360	187	50	152	192	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	625	0	65	954	189	391	203	54	165	209	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1740		85	1211	240	495	435	194	205	334	
Arrive On Green	0.13	0.49	0.00	0.05	0.41	0.41	0.14	0.12	0.12	0.11	0.09	0.00
Sat Flow, veh/h	3456	3647	0	1781	2950	584	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	342	625	0	65	574	569	391	203	54	165	209	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1757	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	7.7	8.7	0.0	2.9	22.5	22.5	8.7	4.2	2.5	7.2	4.5	0.0
Cycle Q Clear(g_c), s	7.7	8.7	0.0	2.9	22.5	22.5	8.7	4.2	2.5	7.2	4.5	0.0
Prop In Lane	1.00		0.00	1.00		0.33	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	438	1740		85	729	721	495	435	194	205	334	
V/C Ratio(X)	0.78	0.36		0.76	0.79	0.79	0.79	0.47	0.28	0.81	0.63	
Avail Cap(c_a), veh/h	593	2318		221	1075	1062	714	1086	484	348	1046	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.8	12.6	0.0	37.6	20.5	20.5	33.1	32.6	31.8	34.5	34.8	0.0
Incr Delay (d2), s/veh	4.7	0.1	0.0	13.1	2.4	2.5	3.8	0.8	0.8	7.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.2	0.0	1.5	8.9	8.9	3.7	1.8	0.9	3.3	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	12.7	0.0	50.7	22.9	23.0	36.9	33.4	32.6	41.8	36.8	0.0
LnGrp LOS	D	B		D	C	C	D	C	C	D	D	
Approach Vol, veh/h		967	A		1208			648			374	A
Approach Delay, s/veh		21.8			24.4			35.4			39.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	43.6	15.9	12.0	14.6	37.3	13.7	14.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.9	52.1	16.5	23.5	13.7	48.3	15.6	24.4
Max Q Clear Time (g_c+I1), s	4.9	10.7	10.7	6.5	9.7	24.5	9.2	6.2
Green Ext Time (p_c), s	0.0	4.9	0.7	1.0	0.5	8.2	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	96	453	1313	620	143
v/c Ratio	0.67	0.22	0.81	0.73	0.29
Control Delay	67.3	10.2	23.4	39.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	10.2	23.4	39.5	8.2
Queue Length 50th (ft)	51	47	238	157	0
Queue Length 95th (ft)	#183	143	#612	#374	56
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	143	2307	1799	845	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	0.67	0.20	0.73	0.73	0.29

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)	88	417	641	567	570	132
Future Volume (vph)	88	417	641	567	570	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3235		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3235		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	453	697	616	620	143
RTOR Reduction (vph)	0	0	120	0	0	109
Lane Group Flow (vph)	96	453	1193	0	620	34
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.4	53.6	41.7		22.4	22.4
Effective Green, g (s)	7.4	53.6	41.7		22.4	22.4
Actuated g/C Ratio	0.08	0.57	0.45		0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	138	2009	1442		814	375
v/s Ratio Prot	c0.05	0.13	c0.37			
v/s Ratio Perm					c0.18	0.02
v/c Ratio	0.70	0.23	0.83		0.76	0.09
Uniform Delay, d1	42.0	9.8	22.7		33.1	27.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	14.2	0.1	4.1		4.2	0.1
Delay (s)	56.1	9.8	26.8		37.3	27.7
Level of Service	E	A	C		D	C
Approach Delay (s)		17.9	26.8		35.5	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	142	290	149	80	580	525	235	607	248	317	311
v/c Ratio	0.60	0.24	0.24	0.43	0.59	0.75	0.70	0.72	0.56	0.50	0.59
Control Delay	52.4	24.2	5.4	50.3	31.1	16.8	49.1	37.9	45.4	38.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	24.2	5.4	50.3	31.1	16.8	49.1	37.9	45.4	38.7	9.7
Queue Length 50th (ft)	76	64	0	43	151	74	124	164	68	86	0
Queue Length 95th (ft)	#190	116	44	110	235	224	#277	286	139	163	81
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	295	1766	841	276	1729	940	457	1246	556	915	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.16	0.18	0.29	0.34	0.56	0.51	0.49	0.45	0.35	0.50

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)	131	267	137	74	534	483	216	516	42	228	292	286
Future Volume (vph)	131	267	137	74	534	483	216	516	42	228	292	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1529	1752	3505	1530	1752	3460		3400	3505	1523
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1529	1752	3505	1530	1752	3460		3400	3505	1523
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)	142	290	149	80	580	525	235	561	46	248	317	311
RTOR Reduction (vph)	0	0	98	0	0	262	0	5	0	0	0	254
Lane Group Flow (vph)	142	290	51	80	580	263	235	602	0	248	317	57
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	12.3	31.1	31.1	7.9	26.7	26.7	17.3	21.9		11.9	16.5	16.5
Effective Green, g (s)	12.3	31.1	31.1	7.9	26.7	26.7	17.3	21.9		11.9	16.5	16.5
Actuated g/C Ratio	0.14	0.34	0.34	0.09	0.29	0.29	0.19	0.24		0.13	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	237	1200	523	152	1030	449	333	834		445	636	276
v/s Ratio Prot	c0.08	c0.08		0.05	0.17		c0.13	c0.17		0.07	0.09	
v/s Ratio Perm			0.03			c0.17						0.04
v/c Ratio	0.60	0.24	0.10	0.53	0.56	0.59	0.71	0.72		0.56	0.50	0.20
Uniform Delay, d1	36.9	21.4	20.3	39.7	27.1	27.3	34.4	31.6		37.0	33.4	31.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	0.1	3.3	0.7	2.0	6.7	3.1		1.5	0.6	0.4
Delay (s)	41.0	21.5	20.4	42.9	27.8	29.3	41.0	34.7		38.5	34.0	31.9
Level of Service	D	C	C	D	C	C	D	C		D	C	C
Approach Delay (s)		26.0			29.5			36.5			34.6	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	65.0%	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)	131	267	137	74	534	483	216	516	42	228	292	286
Future Volume (veh/h)	131	267	137	74	534	483	216	516	42	228	292	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	142	290	149	80	580	525	235	561	46	248	317	311
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	172	1437	637	103	1298	575	269	896	73	318	749	328
Arrive On Green	0.10	0.41	0.41	0.06	0.37	0.37	0.15	0.27	0.27	0.09	0.21	0.21
Sat Flow, veh/h	1767	3526	1562	1767	3526	1561	1767	3298	270	3428	3526	1546
Grp Volume(v), veh/h	142	290	149	80	580	525	235	299	308	248	317	311
Grp Sat Flow(s),veh/h/ln	1767	1763	1562	1767	1763	1561	1767	1763	1806	1714	1763	1546
Q Serve(g_s), s	8.4	5.6	6.6	4.7	13.2	33.9	13.8	15.8	15.9	7.5	8.2	21.0
Cycle Q Clear(g_c), s	8.4	5.6	6.6	4.7	13.2	33.9	13.8	15.8	15.9	7.5	8.2	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	172	1437	637	103	1298	575	269	479	491	318	749	328
V/C Ratio(X)	0.83	0.20	0.23	0.78	0.45	0.91	0.87	0.62	0.63	0.78	0.42	0.95
Avail Cap(c_a), veh/h	242	1444	640	227	1414	626	375	514	526	456	749	328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	20.3	20.6	49.2	25.3	31.9	43.9	33.8	33.9	47.0	36.1	41.2
Incr Delay (d2), s/veh	14.7	0.1	0.2	11.9	0.2	17.1	15.2	2.1	2.1	5.4	0.4	36.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	2.2	2.4	2.4	5.3	14.8	7.1	6.9	7.1	3.4	3.5	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	20.3	20.7	61.1	25.5	49.0	59.1	36.0	36.0	52.4	36.5	77.2
LnGrp LOS	E	C	C	E	C	D	E	D	D	D	D	E
Approach Vol, veh/h		581			1185			842			876	
Approach Delay, s/veh		30.5			38.3			42.4			55.4	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	33.3	10.7	47.7	20.6	27.0	14.8	43.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.1	30.9	13.6	43.4	22.5	22.5	14.5	42.5
Max Q Clear Time (g_c+I1), s	9.5	17.9	6.7	8.6	15.8	23.0	10.4	35.9
Green Ext Time (p_c), s	0.3	2.9	0.1	2.3	0.4	0.0	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	47	720	54	54	500
Future Volume (Veh/h)	40	47	720	54	54	500
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	51	783	59	59	543
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1474	812			842	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1474	812			842	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	87			93	
cM capacity (veh/h)	129	379			794	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	94	842	59	543
Volume Left	43	0	59	0
Volume Right	51	59	0	0
cSH	201	1700	794	1700
Volume to Capacity	0.47	0.50	0.07	0.32
Queue Length 95th (ft)	56	0	6	0
Control Delay (s)	37.7	0.0	9.9	0.0
Lane LOS	E		A	
Approach Delay (s)	37.7	0.0	1.0	
Approach LOS	E			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	47	720	54	54	500
Future Vol, veh/h	40	47	720	54	54	500
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	-	-	-	60	-
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	43	51	783	59	59	543

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1474	813	0	0	842	0
Stage 1	813	-	-	-	-	-
Stage 2	661	-	-	-	-	-
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	139	378	-	-	794	-
Stage 1	436	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	129	378	-	-	794	-
Mov Cap-2 Maneuver	129	-	-	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.2	0	1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	200	794	-
HCM Lane V/C Ratio	-	-	0.473	0.074	-
HCM Control Delay (s)	-	-	38.2	9.9	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	10	42	10	20	104	35	482	10	35	391	93
Future Volume (Veh/h)	137	10	42	10	20	104	35	482	10	35	391	93
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	149	11	46	11	22	113	38	524	11	38	425	101
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1232	1120	431	1160	1216	532	532			537		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1232	1120	431	1160	1216	532	532			537		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	93	92	87	79	96			96		
cM capacity (veh/h)	102	190	621	143	167	546	1030			1029		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	206	146	38	535	38	425	101
Volume Left	149	11	38	0	38	0	0
Volume Right	46	113	0	11	0	0	101
cSH	130	351	1030	1700	1029	1700	1700
Volume to Capacity	1.59	0.42	0.04	0.31	0.04	0.25	0.06
Queue Length 95th (ft)	369	50	3	0	3	0	0
Control Delay (s)	357.3	22.4	8.6	0.0	8.6	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	357.3	22.4	0.6		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	52.1			
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	43.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	10	42	10	20	104	35	482	10	35	391	93
Future Vol, veh/h	137	10	42	10	20	104	35	482	10	35	391	93
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	149	11	46	11	22	113	38	524	11	38	425	101

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1181	1120	431	1188	1216	533	532	0	0	537	0	0
Stage 1	507	507	-	608	608	-	-	-	-	-	-	-
Stage 2	674	613	-	580	608	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	167	206	624	165	181	547	1036	-	-	1031	-	-
Stage 1	548	539	-	483	486	-	-	-	-	-	-	-
Stage 2	444	483	-	500	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 112	190	620	138	167	545	1030	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 112	190	-	138	167	-	-	-	-	-	-	-
Stage 1	525	516	-	464	467	-	-	-	-	-	-	-
Stage 2	323	464	-	437	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	298.6	22.4	0.6	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1030	-	-	141	350	1029	-	-
HCM Lane V/C Ratio	0.037	-	-	1.457	0.416	0.037	-	-
HCM Control Delay (s)	8.6	-	-	298.6	22.4	8.6	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	13.7	2	0.1	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	12	221	10	261	15	250	120	245	199	10
Future Volume (vph)	20	10	12	221	10	261	15	250	120	245	199	10
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
Hourly flow rate (vph)	22	11	13	240	11	284	16	272	130	266	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	46	535	288	130	374	119
Volume Left (vph)	22	240	16	0	266	0
Volume Right (vph)	13	284	0	130	0	11
Hadj (s)	-0.04	-0.19	0.06	-0.67	0.39	-0.03
Departure Headway (s)	8.4	6.5	7.8	7.0	7.9	7.5
Degree Utilization, x	0.11	0.96	0.62	0.25	0.82	0.25
Capacity (veh/h)	400	552	454	507	442	467
Control Delay (s)	12.4	53.9	21.7	11.2	37.2	11.7
Approach Delay (s)	12.4	53.9	18.4		31.1	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	35.1			
Level of Service	E			
Intersection Capacity Utilization	74.4%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	36.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	10	12	221	10	261	0	15	250	120	245	199
Future Vol, veh/h	20	10	12	221	10	261	0	15	250	120	245	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	13	240	11	284	0	16	272	130	266	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.6	56.6	19.4	31.9
HCM LOS	B	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	6%	0%	48%	45%	71%	0%
Vol Thru, %	94%	0%	24%	2%	29%	91%
Vol Right, %	0%	100%	29%	53%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	120	42	492	345	110
LT Vol	15	0	20	221	245	0
Through Vol	250	0	10	10	100	100
RT Vol	0	120	12	261	0	10
Lane Flow Rate	288	130	46	535	374	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.621	0.254	0.109	0.969	0.821	0.247
Departure Headway (Hd)	7.76	7.006	8.584	6.522	7.892	7.459
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	510	420	556	457	480
Service Time	5.548	4.793	6.584	4.581	5.676	5.242
HCM Lane V/C Ratio	0.621	0.255	0.11	0.962	0.818	0.248
HCM Control Delay	22.6	12.2	12.6	56.6	38	12.7
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	4.1	1	0.4	13.1	7.8	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	165	135	221	208	122	336
Future Volume (Veh/h)	165	135	221	208	122	336
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	179	147	240	226	133	365
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	133	498			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	133	498			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	83	77			
cM capacity (veh/h)	276	888	1055			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	326	240	113	113	133	365
Volume Left	179	240	0	0	0	0
Volume Right	147	0	0	0	0	365
cSH	503	1055	1700	1700	1700	1700
Volume to Capacity	0.65	0.23	0.07	0.07	0.08	0.21
Queue Length 95th (ft)	115	22	0	0	0	0
Control Delay (s)	26.0	9.4	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	26.0	4.8			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		8.3	
Intersection Capacity Utilization		39.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	165	135	221	208	122	336
Future Vol, veh/h	165	135	221	208	122	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	145	105	-	-	0
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	179	147	240	226	133	365

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	133	498	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	373	913	1058	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	913	1058	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.2	4.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1058	-	288	913	-	-
HCM Lane V/C Ratio	0.227	-	0.623	0.161	-	-
HCM Control Delay (s)	9.4	-	36.1	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	3.9	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	3	188	10	0	0	0	0	386	20
Future Volume (Veh/h)	0	0	0	3	188	10	0	0	0	0	386	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3	204	11	0	0	0	0	420	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	533	431	431	431	442	0	442			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	533	431	431	431	442	0	442			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	60	99	100			100		
cM capacity (veh/h)	312	517	624	535	510	1085	1118			1623		

Direction, Lane #	WB 1	SB 1
Volume Total	218	442
Volume Left	3	0
Volume Right	11	22
cSH	531	1700
Volume to Capacity	0.41	0.26
Queue Length 95th (ft)	50	0
Control Delay (s)	16.4	0.0
Lane LOS	C	
Approach Delay (s)	16.4	0.0
Approach LOS	C	

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	188	10	0	0	0	0	386	20
Future Vol, veh/h	0	0	0	3	188	10	0	0	0	0	386	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	204	11	0	0	0	0	420	22

Major/Minor	Minor1			Major2		
Conflicting Flow All	431	442	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	431	442	-	-	-	-
Critical Hdwy	6.42	6.52	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-	-	-
Pot Cap-1 Maneuver	581	510	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	655	576	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	581	0	-	-	-	-
Mov Cap-2 Maneuver	581	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	655	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	14.6	0
HCM LOS	B	

Minor Lane/Major Mvmt	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	581	-	-	-
HCM Lane V/C Ratio	0.357	-	-	-
HCM Control Delay (s)	14.6	0	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	1.6	-	-	-

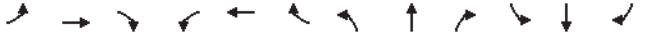
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	359	1072	413	551	126	315	540	408	329
v/c Ratio	0.11	0.75	0.75	0.53	0.50	0.65	0.68	0.34	0.73	0.51
Control Delay	57.4	58.5	36.7	32.4	4.5	74.9	64.2	6.6	62.6	46.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	58.5	36.7	32.4	4.5	74.9	64.2	6.6	62.6	46.7
Queue Length 50th (ft)	21	142	410	271	41	114	149	51	187	127
Queue Length 95th (ft)	53	209	539	407	112	189	207	75	256	185
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	270	564	1695	920	1141	262	619	1789	685	791
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	0.09	0.64	0.63	0.45	0.48	0.48	0.51	0.30	0.60	0.42

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	211	120	986	380	507	116	290	497	375	210	93
Future Volume (vph)	23	211	120	986	380	507	116	290	497	375	210	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3347		3433	1863	1569	1770	3539	2787	3433	3353	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3347		3433	1863	1569	1770	3539	2787	3433	3353	
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)	25	229	130	1072	413	551	126	315	540	408	228	101
RTOR Reduction (vph)	0	53	0	0	0	180	0	0	58	0	34	0
Lane Group Flow (vph)	25	306	0	1072	413	371	126	315	482	408	295	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	16.5	16.5		54.7	54.7	75.9	14.5	17.2	71.9	21.2	23.9	
Effective Green, g (s)	16.5	16.5		54.7	54.7	75.9	14.5	17.2	71.9	21.2	23.9	
Actuated g/C Ratio	0.13	0.13		0.42	0.42	0.58	0.11	0.13	0.55	0.16	0.18	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	224	424		1443	783	915	197	467	1540	559	615	
v/s Ratio Prot	0.01	c0.09		c0.31	0.22	0.07	0.07	c0.09	0.13	c0.12	0.09	
v/s Ratio Perm						0.17			0.04			
v/c Ratio	0.11	0.72		0.74	0.53	0.41	0.64	0.67	0.31	0.73	0.48	
Uniform Delay, d1	50.3	54.6		31.8	28.1	14.8	55.3	53.8	15.7	51.7	47.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	6.0		2.1	0.6	0.3	6.7	3.8	0.1	4.8	0.6	
Delay (s)	50.5	60.5		33.9	28.7	15.1	62.0	57.6	15.9	56.5	48.1	
Level of Service	D	E		C	C	B	E	E	B	E	D	
Approach Delay (s)		59.9			27.7			35.2			52.8	
Approach LOS		E			C			D			D	

Intersection Summary					
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.73				
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	20.5		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D		
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	211	120	986	380	507	116	290	497	375	210	93
Future Volume (veh/h)	23	211	120	986	380	507	116	290	497	375	210	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	229	130	1072	413	551	126	315	540	408	228	101
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	235	293	160	1354	733	839	155	536	1514	493	475	204
Arrive On Green	0.13	0.13	0.13	0.39	0.39	0.39	0.09	0.15	0.15	0.14	0.20	0.20
Sat Flow, veh/h	1781	2217	1212	3456	1870	1564	1781	3554	2790	3456	2420	1037
Grp Volume(v), veh/h	25	182	177	1072	413	551	126	315	540	408	165	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1652	1728	1870	1564	1781	1777	1395	1728	1777	1681
Q Serve(g_s), s	1.4	11.1	11.7	30.7	19.3	28.4	7.8	9.3	12.3	12.9	9.2	9.7
Cycle Q Clear(g_c), s	1.4	11.1	11.7	30.7	19.3	28.4	7.8	9.3	12.3	12.9	9.2	9.7
Prop In Lane	1.00		0.73	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	235	235	218	1354	733	839	155	536	1514	493	349	330
V/C Ratio(X)	0.11	0.77	0.81	0.79	0.56	0.66	0.81	0.59	0.36	0.83	0.47	0.50
Avail Cap(c_a), veh/h	308	307	286	1929	1044	1099	299	703	1645	780	455	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	47.1	47.3	30.1	26.6	18.8	50.3	44.4	14.5	46.7	39.9	40.1
Incr Delay (d2), s/veh	0.2	8.7	12.6	1.5	0.7	0.9	9.7	1.0	0.1	4.2	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.5	5.6	12.4	8.4	9.7	3.8	4.0	7.5	5.8	4.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	55.8	59.9	31.6	27.3	19.7	60.0	45.4	14.7	51.0	40.9	41.3
LnGrp LOS	D	E	E	C	C	B	E	D	B	D	D	D
Approach Vol, veh/h		384			2036			981			737	
Approach Delay, s/veh		56.9			27.5			30.4			46.6	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.7	22.7		19.4	15.6	27.8		49.3				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 25	22.2		19.4	18.8	* 29		62.6				
Max Q Clear Time (g_c+I1), s	14.9	14.3		13.7	9.8	11.7		32.7				
Green Ext Time (p_c), s	1.1	2.6		1.1	0.2	1.7		11.3				

Intersection Summary												
HCM 6th Ctrl Delay			34.3									
HCM 6th LOS			C									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	728	282	110	1288	648	372	288	505
v/c Ratio	0.76	0.57	0.38	0.62	0.90	0.96	0.58	0.85	0.76
Control Delay	83.6	31.2	4.8	64.6	39.0	71.1	44.3	67.5	42.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.6	31.2	4.8	64.6	39.0	71.1	44.3	67.5	42.2
Queue Length 50th (ft)	44	217	0	77	424	242	129	200	149
Queue Length 95th (ft)	#104	310	59	145	#626	#398	178	#373	208
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	157	1320	767	209	1535	676	840	361	895
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.55	0.37	0.53	0.84	0.96	0.44	0.80	0.56

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)	110	670	259	101	945	240	596	300	42	265	265	200
Future Volume (vph)	110	670	259	101	945	240	596	300	42	265	265	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3414		3433	3466		1770	3311	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3414		3433	3466		1770	3311	
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)	120	728	282	110	1027	261	648	326	46	288	288	217
RTOR Reduction (vph)	0	0	180	0	19	0	0	10	0	0	82	0
Lane Group Flow (vph)	120	728	102	110	1269	0	648	362	0	288	423	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	5.0	39.6	39.6	11.0	45.6		21.7	20.1		21.0	19.4	
Effective Green, g (s)	5.0	39.6	39.6	11.0	45.6		21.7	20.1		21.0	19.4	
Actuated g/C Ratio	0.05	0.36	0.36	0.10	0.42		0.20	0.18		0.19	0.18	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	1277	571	177	1419		679	635		338	585	
v/s Ratio Prot	0.03	0.21		c0.06	c0.37		c0.19	0.10		c0.16	0.13	
v/s Ratio Perm			0.06									
v/c Ratio	0.77	0.57	0.18	0.62	0.89		0.95	0.57		0.85	0.72	
Uniform Delay, d1	51.8	28.2	23.9	47.4	29.8		43.5	40.9		42.8	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.1	0.6	0.2	6.6	7.6		23.7	1.2		18.3	4.4	
Delay (s)	71.9	28.8	24.1	54.0	37.4		67.2	42.1		61.1	47.0	
Level of Service	E	C	C	D	D		E	D		E	D	
Approach Delay (s)		32.2			38.7			58.0			52.1	
Approach LOS		C			D			E			D	

Intersection Summary					
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.91				
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	83.9%	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)	110	670	259	101	945	240	596	300	42	265	265	200
Future Volume (veh/h)	110	670	259	101	945	240	596	300	42	265	265	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	728	282	110	1027	261	648	326	46	288	288	217
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	157	1341	598	137	1146	290	676	635	89	319	364	267
Arrive On Green	0.05	0.38	0.38	0.08	0.41	0.41	0.20	0.20	0.20	0.18	0.19	0.19
Sat Flow, veh/h	3456	3554	1585	1781	2804	709	3456	3128	437	1781	1957	1432
Grp Volume(v), veh/h	120	728	282	110	649	639	648	184	188	288	261	244
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1737	1728	1777	1788	1781	1777	1613
Q Serve(g_s), s	3.8	17.6	8.2	6.7	37.4	37.8	20.4	10.1	10.3	17.4	15.4	16.0
Cycle Q Clear(g_c), s	3.8	17.6	8.2	6.7	37.4	37.8	20.4	10.1	10.3	17.4	15.4	16.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.24	1.00		0.89
Lane Grp Cap(c), veh/h	157	1341	598	137	726	710	676	361	363	319	331	300
V/C Ratio(X)	0.76	0.54	0.47	0.80	0.89	0.90	0.96	0.51	0.52	0.90	0.79	0.81
Avail Cap(c_a), veh/h	157	1341	598	209	784	767	676	424	426	362	437	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	26.8	8.0	49.9	30.2	30.4	43.7	38.9	39.0	44.2	42.6	42.9
Incr Delay (d2), s/veh	19.6	0.5	0.6	12.1	12.1	13.1	24.7	1.1	1.1	23.5	6.9	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	2.0	7.3	5.0	3.4	17.5	17.4	10.8	4.4	4.5	9.5	7.2	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	27.2	8.5	62.0	42.3	43.5	68.4	40.0	40.1	67.7	49.6	52.3
LnGrp LOS	E	C	A	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1130			1398			1020			793	
Approach Delay, s/veh		27.3			44.4			58.1			57.0	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	46.0	26.0	25.0	9.5	49.4	24.1	26.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	40.6	21.5	27.0	5.0	48.5	22.3	26.2
Max Q Clear Time (g_c+I1), s	8.7	19.6	22.4	18.0	5.8	39.8	19.4	12.3
Green Ext Time (p_c), s	0.1	5.8	0.0	2.0	0.0	5.1	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	45.5
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	270	236	5	557	413	4
v/c Ratio	0.44	0.36	0.01	0.48	0.65	0.01
Control Delay	13.3	3.7	10.0	12.1	16.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	3.7	10.0	12.1	16.5	8.2
Queue Length 50th (ft)	38	0	1	42	58	0
Queue Length 95th (ft)	121	35	7	113	205	5
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1616	1367	954	3070	1459	1307
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	0.17	0.17	0.01	0.18	0.28	0.00

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	248	217	5	512	380	4
Future Volume (vph)	248	217	5	512	380	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.59	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	1092	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	270	236	5	557	413	4
RTOR Reduction (vph)	0	156	0	0	0	1
Lane Group Flow (vph)	270	80	5	557	413	3
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	12.9	12.9	12.9	12.9	14.2	14.2
Effective Green, g (s)	12.9	12.9	12.9	12.9	14.2	14.2
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.37	0.37
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	627	521	371	1192	656	587
v/s Ratio Prot	0.15			c0.16		0.00
v/s Ratio Perm		0.05	0.00		c0.24	
v/c Ratio	0.43	0.15	0.01	0.47	0.63	0.00
Uniform Delay, d1	9.7	8.7	8.3	9.8	9.7	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.1	1.4	0.0
Delay (s)	9.8	8.8	8.3	9.9	11.1	7.4
Level of Service	A	A	A	A	B	A
Approach Delay (s)	9.3			9.9	11.0	
Approach LOS	A			A	B	

Intersection Summary				
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	10.8
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	248	217	5	512	380	4
Future Volume (veh/h)	248	217	5	512	380	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	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	270	236	5	557	413	4
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	580	488	434	1102	522	465
Arrive On Green	0.31	0.31	0.31	0.31	0.30	0.30
Sat Flow, veh/h	1856	1562	884	3618	1767	1572
Grp Volume(v), veh/h	270	236	5	557	413	4
Grp Sat Flow(s),veh/h/ln	1856	1562	884	1763	1767	1572
Q Serve(g_s), s	3.2	3.4	0.1	3.6	5.9	0.0
Cycle Q Clear(g_c), s	3.2	3.4	3.4	3.6	5.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	580	488	434	1102	522	465
V/C Ratio(X)	0.47	0.48	0.01	0.51	0.79	0.01
Avail Cap(c_a), veh/h	2262	1905	1235	4298	1962	1746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.6	7.7	9.0	7.7	8.9	6.9
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.1	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.0	0.7	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.8	7.9	9.0	7.9	10.0	6.9
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	506			562	417	
Approach Delay, s/veh	7.9			7.9	9.9	
Approach LOS	A			A	A	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	14.0				14.0	13.5
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	33.6				33.6	30.6
Max Q Clear Time (g_c+I1), s	5.4				5.6	7.9
Green Ext Time (p_c), s	1.3				2.4	0.6

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	0	24	1	3	10	40	266	0	0	137	50
Future Volume (vph)	15	0	24	1	3	10	40	266	0	0	137	50
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
Hourly flow rate (vph)	16	0	26	1	3	11	43	289	0	0	149	54

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	42	15	332	203
Volume Left (vph)	16	1	43	0
Volume Right (vph)	26	11	0	54
Hadj (s)	-0.16	-0.29	0.16	-0.02
Departure Headway (s)	5.0	4.9	4.4	4.4
Degree Utilization, x	0.06	0.02	0.41	0.25
Capacity (veh/h)	648	651	797	794
Control Delay (s)	8.3	8.0	10.4	8.8
Approach Delay (s)	8.3	8.0	10.4	8.8
Approach LOS	A	A	B	A

Intersection Summary				
Delay		9.7		
Level of Service		A		
Intersection Capacity Utilization		43.6%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	24	1	3	10	40	266	0	0	137	50
Future Vol, veh/h	15	0	24	1	3	10	40	266	0	0	137	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	16	0	26	1	3	11	43	289	0	0	149	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8	10.5	8.8
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	38%	7%	0%
Vol Thru, %	87%	0%	21%	73%
Vol Right, %	0%	62%	71%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	39	14	187
LT Vol	40	15	1	0
Through Vol	266	0	3	137
RT Vol	0	24	10	50
Lane Flow Rate	333	42	15	203
Geometry Grp	1	1	1	1
Degree of Util (X)	0.409	0.058	0.021	0.246
Departure Headway (Hd)	4.43	4.949	4.869	4.365
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	723	735	823
Service Time	2.43	2.982	2.903	2.384
HCM Lane V/C Ratio	0.407	0.058	0.02	0.247
HCM Control Delay	10.5	8.3	8	8.8
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2	0.2	0.1	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	10	15	0	9	25	30	116	0	7	57	117
Future Volume (Veh/h)	85	10	15	0	9	25	30	116	0	7	57	117
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	11	16	0	10	27	33	126	0	8	62	127
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	37			27			384	240	19	290	234	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	37			27			384	240	19	290	234	24
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			93	80	100	98	90	88
cM capacity (veh/h)	1561			1574			442	619	1053	531	623	1047

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	119	37	159	8	189
Volume Left	92	0	33	8	0
Volume Right	16	27	0	0	127
cSH	1561	1574	572	531	856
Volume to Capacity	0.06	0.00	0.28	0.02	0.22
Queue Length 95th (ft)	5	0	28	1	21
Control Delay (s)	5.9	0.0	13.7	11.9	10.4
Lane LOS	A		B	B	B
Approach Delay (s)	5.9	0.0	13.7	10.5	
Approach LOS			B	B	

Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	40.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	10	15	0	9	25	30	116	0	7	57	117
Future Vol, veh/h	85	10	15	0	9	25	30	116	0	7	57	117
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	92	11	16	0	10	27	33	126	0	8	62	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	27	0	0	321	240	19	290	235	24
Stage 1	-	-	-	-	-	-	203	203	-	24	24	-
Stage 2	-	-	-	-	-	-	118	37	-	266	211	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1561	-	-	1574	-	-	628	658	1053	658	662	1047
Stage 1	-	-	-	-	-	-	794	730	-	989	871	-
Stage 2	-	-	-	-	-	-	882	860	-	735	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1561	-	-	1574	-	-	487	619	1053	530	622	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	487	619	-	530	622	-
Stage 1	-	-	-	-	-	-	746	686	-	930	871	-
Stage 2	-	-	-	-	-	-	720	860	-	564	681	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	13.4	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	586	1561	-	-	1574	-	-	530	856
HCM Lane V/C Ratio	0.271	0.059	-	-	-	-	-	0.014	0.221
HCM Control Delay (s)	13.4	7.5	0	-	0	-	-	11.9	10.4
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0	-	-	0	0.8



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	45	80	10	5	10
Future Volume (Veh/h)	5	45	80	10	5	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	49	87	11	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98				152	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98				152	92
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1489				835	962

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	54	98	16
Volume Left	5	0	5
Volume Right	0	11	11
cSH	1489	1700	918
Volume to Capacity	0.00	0.06	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.7	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	9.0
Approach LOS			A

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		16.5%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	45	80	10	5	10
Future Vol, veh/h	5	45	80	10	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	49	87	11	5	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	98	0	-	0	152	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1489	-	-	-	837	961
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1489	-	-	-	834	961
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	961	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1489	-	-	-	915
HCM Lane V/C Ratio	0.004	-	-	-	0.018
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	334	1599	1606	158	152	302
v/c Ratio	0.63	0.48	0.89	0.18	0.60	0.56
Control Delay	55.5	0.5	31.2	4.5	61.6	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	0.5	31.2	4.5	61.6	35.6
Queue Length 50th (ft)	122	0	530	10	108	170
Queue Length 95th (ft)	223	0	836	49	226	335
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	862	3312	2572	1179	444	857
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	0.39	0.48	0.62	0.13	0.34	0.35

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	331	1583	1590	156	150	299
Future Volume (vph)	331	1583	1590	156	150	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3213	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3213	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	334	1599	1606	158	152	302
RTOR Reduction (vph)	0	0	0	57	0	13
Lane Group Flow (vph)	334	1599	1606	101	152	289
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	19.7	118.1	65.1	65.1	18.3	42.0
Effective Green, g (s)	19.7	118.1	65.1	65.1	18.3	42.0
Actuated g/C Ratio	0.17	1.00	0.55	0.55	0.15	0.36
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	535	3312	1825	816	256	527
v/s Ratio Prot	c0.10	0.48	c0.48		0.09	c0.20
v/s Ratio Perm				0.07		
v/c Ratio	0.62	0.48	0.88	0.12	0.59	0.55
Uniform Delay, d1	45.8	0.0	23.1	12.8	46.4	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.5	5.5	0.1	3.9	1.2
Delay (s)	48.0	0.5	28.6	12.9	50.3	31.6
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.7	27.2		37.9	
Approach LOS		A	C		D	

Intersection Summary				
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	74.6%	ICU Level of Service	D	
Analysis Period (min)	15			

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	392	1028	367	398	1134	216	345	486	264	341	320
v/c Ratio	0.96	0.86	0.48	0.85	0.90	0.31	0.81	0.61	0.71	0.85	0.63
Control Delay	98.4	51.8	5.1	79.1	53.6	4.8	78.7	51.9	75.8	76.1	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.4	51.8	5.1	79.1	53.6	4.8	78.7	51.9	75.8	76.1	23.5
Queue Length 50th (ft)	199	487	0	197	543	0	170	211	129	319	89
Queue Length 95th (ft)	#372	603	68	#360	679	54	#289	308	200	#493	216
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	410	1646	913	471	1646	836	456	943	456	507	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.62	0.40	0.85	0.69	0.26	0.76	0.52	0.58	0.67	0.55

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)	380	997	356	386	1100	210	335	362	110	256	331	310
Future Volume (vph)	380	997	356	386	1100	210	335	362	110	256	331	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1488	3273	3374	1488	3273	3245		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1488	3273	3374	1488	3273	3245		3273	1776	1509
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)	392	1028	367	398	1134	216	345	373	113	264	341	320
RTOR Reduction (vph)	0	0	236	0	0	135	0	17	0	0	0	167
Lane Group Flow (vph)	392	1028	131	398	1134	81	345	469	0	264	341	153
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.4	52.2	52.2	21.1	54.9	54.9	19.2	35.4		16.7	32.9	32.9
Effective Green, g (s)	18.4	52.2	52.2	21.1	54.9	54.9	19.2	35.4		16.7	32.9	32.9
Actuated g/C Ratio	0.13	0.36	0.36	0.14	0.38	0.38	0.13	0.24		0.11	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	412	1206	532	473	1268	559	430	786		374	400	340
v/s Ratio Prot	c0.12	0.30		0.12	c0.34		c0.11	0.14		0.08	c0.19	
v/s Ratio Perm			0.09			0.05						0.10
v/c Ratio	0.95	0.85	0.25	0.84	0.89	0.15	0.80	0.60		0.71	0.85	0.45
Uniform Delay, d1	63.4	43.3	33.0	60.8	42.8	30.1	61.6	49.0		62.3	54.2	48.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	32.0	6.0	0.2	12.3	8.4	0.1	10.3	1.2		6.0	15.9	1.0
Delay (s)	95.3	49.3	33.3	73.1	51.2	30.2	71.9	50.2		68.3	70.2	49.7
Level of Service	F	D	C	E	D	C	E	D		E	E	D
Approach Delay (s)		56.1			53.6			59.2			62.5	
Approach LOS		E			D			E			E	

Intersection Summary				
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	146.0	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	85.4%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	997	356	386	1100	210	335	362	110	256	331	310
Future Volume (veh/h)	380	997	356	386	1100	210	335	362	110	256	331	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	392	1028	367	398	1134	216	345	373	113	264	341	320
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	413	1206	537	429	1300	579	394	664	199	316	419	355
Arrive On Green	0.12	0.35	0.35	0.13	0.38	0.38	0.12	0.26	0.26	0.10	0.23	0.23
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2588	774	3319	1796	1522
Grp Volume(v), veh/h	392	1028	367	398	1134	216	345	244	242	264	341	320
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1655	1659	1796	1522
Q Serve(g_s), s	16.9	40.3	20.7	17.1	44.5	14.8	14.8	17.9	18.4	11.3	26.0	29.5
Cycle Q Clear(g_c), s	16.9	40.3	20.7	17.1	44.5	14.8	14.8	17.9	18.4	11.3	26.0	29.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	413	1206	537	429	1300	579	394	438	425	316	419	355
V/C Ratio(X)	0.95	0.85	0.68	0.93	0.87	0.37	0.87	0.56	0.57	0.83	0.81	0.90
Avail Cap(c_a), veh/h	413	1653	737	429	1653	737	459	484	470	459	510	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.8	43.2	19.3	62.2	41.5	32.3	62.6	46.6	46.8	64.2	52.4	53.8
Incr Delay (d2), s/veh	31.3	3.3	1.5	25.9	4.5	0.4	15.3	1.2	1.3	8.6	8.2	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	16.7	7.3	8.5	18.5	5.5	7.0	7.7	7.7	5.1	12.5	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.0	46.6	20.8	88.1	45.9	32.7	77.9	47.7	48.1	72.8	60.7	73.0
LnGrp LOS	F	D	C	F	D	C	E	D	D	E	E	E
Approach Vol, veh/h		1787			1748			831			925	
Approach Delay, s/veh		51.7			53.9			60.4			68.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	58.3	21.2	39.0	22.0	62.3	17.8	42.4
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	19.1	42.3	16.8	31.5	18.9	46.5	13.3	20.4
Green Ext Time (p_c), s	0.0	8.8	0.4	2.2	0.0	8.5	0.5	2.7

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1550	1596	20	0	100
Future Volume (Veh/h)	0	1550	1596	20	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1649	1698	21	0	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1719				2522	849
vC1, stage 1 conf vol					1698	
vC2, stage 2 conf vol					824	
vCu, unblocked vol	1719				2522	849
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	63
cM capacity (veh/h)	331				114	289

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	824	824	849	849	21	106
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	21	106
cSH	1700	1700	1700	1700	1700	289
Volume to Capacity	0.48	0.48	0.50	0.50	0.01	0.37
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	24.5
Lane LOS						C
Approach Delay (s)	0.0		0.0			24.5
Approach LOS						C

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		57.0%	ICU Level of Service	B
Analysis Period (min)		15		

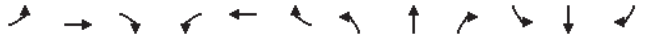
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1550	1596	20	0	100
Future Vol, veh/h	0	1550	1596	20	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1649	1698	21	0	106

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	289
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	289
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	24.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	289
HCM Lane V/C Ratio	-	-	-	0.368
HCM Control Delay (s)	-	-	-	24.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1517	33	3	1556	0	50	0	6	0	0	10
Future Volume (Veh/h)	0	1517	33	3	1556	0	50	0	6	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1564	34	3	1604	0	52	0	6	0	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1604			1598			2382	3174	782	2395	3208	802
vC1, stage 1 conf vol							1564	1564		1610	1610	
vC2, stage 2 conf vol							818	1610		785	1598	
vCu, unblocked vol	1604			1598			2382	3174	782	2395	3208	802
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			46	100	98	100	100	97
cM capacity (veh/h)	360			362			97	100	316	91	98	307

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	782	782	34	3	1069	535	58	10
Volume Left	0	0	0	0	3	0	0	52	0
Volume Right	0	0	0	34	0	0	0	6	10
cSH	1700	1700	1700	1700	362	1700	1700	106	307
Volume to Capacity	0.00	0.46	0.46	0.02	0.01	0.63	0.31	0.55	0.03
Queue Length 95th (ft)	0	0	0	0	1	0	0	63	3
Control Delay (s)	0.0	0.0	0.0	0.0	15.0	0.0	0.0	73.7	17.1
Lane LOS					C			F	C
Approach Delay (s)	0.0				0.0			73.7	17.1
Approach LOS								F	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	59.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1517	33	3	1556	0	50	0	6	0	0	10
Future Vol, veh/h	0	1517	33	3	1556	0	50	0	6	0	0	10
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1564	34	3	1604	0	52	0	6	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1604	0	0	1598	0	0	2372	3174	782	2392	3208	802
Stage 1	-	-	-	-	-	-	1564	1564	-	1610	1610	-
Stage 2	-	-	-	-	-	-	808	1610	-	782	1598	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	360	-	-	362	-	-	~ 16	9	316	15	8	307
Stage 1	-	-	-	-	-	-	106	155	-	99	147	-
Stage 2	-	-	-	-	-	-	320	147	-	332	149	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	360	-	-	362	-	-	~ 15	9	316	15	8	307
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	98	-	90	95	-
Stage 1	-	-	-	-	-	-	106	155	-	99	146	-
Stage 2	-	-	-	-	-	-	307	146	-	326	149	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	73.9	17.1
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	95	316	360	-	-	362	-	-	307
HCM Lane V/C Ratio	0.543	0.02	-	-	-	0.009	-	-	0.034
HCM Control Delay (s)	80.8	16.6	0	-	-	15	-	-	17.1
HCM Lane LOS	F	C	A	-	-	C	-	-	C
HCM 95th %tile Q(veh)	2.5	0.1	0	-	-	0	-	-	0.1

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	300	350	150	311	280	180	62	389	348	100	584	300
Future Volume (veh/h)	300	350	150	311	280	180	62	389	348	100	584	300
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	323	376	161	334	301	194	67	418	374	108	628	323
Approach Volume (veh/h)		699			829			859			1059	
Crossing Volume (veh/h)		1070			808			807			702	
High Capacity (veh/h)		588			728			729			794	
High v/c (veh/h)		1.19			1.14			1.18			1.33	
Low Capacity (veh/h)		453			574			575			631	
Low v/c (veh/h)		1.54			1.44			1.50			1.68	

Intersection Summary												
Maximum v/c High			1.33									
Maximum v/c Low			1.68									
Intersection Capacity Utilization			117.6%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	860	829	859	1059
Demand Flow Rate, veh/h	869	837	868	1069
Vehicles Circulating, veh/h	1080	816	815	709
Vehicles Exiting, veh/h	698	867	971	944
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	18.7	17.8	20.5	54.6
Approach LOS	C	C	C	F

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.403	0.597	0.565	0.435	0.695	0.305
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	163	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	332	374	1919	337	500	490	378	743	326
Cap Entry Lane, veh/h	531	531	0.990	637	710	638	710	703	777
Entry HV Adj Factor	0.990	0.991	161	0.991	0.990	0.989	0.989	0.990	0.991
Flow Entry, veh/h	329	371	1900	334	495	485	374	736	323
Cap Entry, veh/h	526	527	0.085	631	702	631	703	696	770
V/C Ratio	0.625	0.704	0.0	0.529	0.705	0.768	0.532	1.057	0.419
Control Delay, s/veh	20.7	25.0	A	14.6	19.9	25.9	13.5	74.1	10.1
LOS	C	C	0	B	C	D	B	F	B
95th %tile Queue, veh	4	6		3	6	7	3	19	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	112	15	5	97	0	15	1	5	0	0	0
Future Volume (Veh/h)	1	112	15	5	97	0	15	1	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	122	16	5	105	0	16	1	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			138			247	247	130	252	255	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			138			247	247	130	252	255	105
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	99	100	100	100
cM capacity (veh/h)	1474			1433			700	649	914	690	643	944

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	139	110	22	0
Volume Left	1	5	16	0
Volume Right	16	0	5	0
cSH	1474	1433	737	1700
Volume to Capacity	0.00	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.1	0.4	10.0	0.0
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	0.4	10.0	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	112	15	5	97	0	15	1	5	0	0	0
Future Vol, veh/h	1	112	15	5	97	0	15	1	5	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	122	16	5	105	0	16	1	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	138	0	0	247	247	130	250	255	105
Stage 1	-	-	-	-	-	-	132	132	-	115	115	-
Stage 2	-	-	-	-	-	-	115	115	-	135	140	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1474	-	-	1433	-	-	703	652	914	699	645	944
Stage 1	-	-	-	-	-	-	867	783	-	885	797	-
Stage 2	-	-	-	-	-	-	885	797	-	864	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1433	-	-	700	649	914	691	642	944
Mov Cap-2 Maneuver	-	-	-	-	-	-	700	649	-	691	642	-
Stage 1	-	-	-	-	-	-	866	782	-	884	794	-
Stage 2	-	-	-	-	-	-	881	794	-	857	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	10	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	738	1474	-	-	1433	-	-	-
HCM Lane V/C Ratio	0.031	0.001	-	-	0.004	-	-	-
HCM Control Delay (s)	10	7.4	0	-	7.5	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	527	309	495	744	7	54	319	376	376	117
v/c Ratio	0.22	0.72	0.78	0.59	0.67	0.04	0.30	0.72	0.78	0.77	0.22
Control Delay	58.0	44.4	52.5	27.0	5.4	45.4	49.8	15.4	46.4	45.5	4.9
Queue Delay	0.0	0.0	0.1	3.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	44.4	52.6	30.1	6.1	45.4	49.8	15.4	46.4	45.5	4.9
Queue Length 50th (ft)	14	171	193	223	0	4	35	0	234	234	0
Queue Length 95th (ft)	44	264	#358	445	91	19	76	85	#436	#430	34
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	94	902	503	927	1144	344	362	565	605	615	643
Starvation Cap Reductn	0	0	8	321	149	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.58	0.62	0.82	0.75	0.02	0.15	0.56	0.62	0.61	0.18

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)	20	463	32	290	465	699	7	51	300	609	98	110
Future Volume (vph)	20	463	32	290	465	699	7	51	300	609	98	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1787	3533		1787	1881	1557	1787	1881	1599	1698	1725	1560
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1787	3533		1787	1881	1557	1787	1881	1599	1698	1725	1560
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)	21	493	34	309	495	744	7	54	319	648	104	117
RTOR Reduction (vph)	0	4	0	0	0	422	0	0	289	0	0	84
Lane Group Flow (vph)	21	523	0	309	495	322	7	54	30	376	376	33
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	23.2		21.9	43.4	43.4	9.4	9.4	9.4	27.9	27.9	27.9
Effective Green, g (s)	1.7	23.2		21.9	43.4	43.4	9.4	9.4	9.4	27.9	27.9	27.9
Actuated g/C Ratio	0.02	0.23		0.22	0.43	0.43	0.09	0.09	0.09	0.28	0.28	0.28
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	30	816		389	813	673	167	176	149	471	479	433
v/s Ratio Prot	0.01	0.15		c0.17	c0.26		0.00	c0.03		c0.22	0.22	
v/s Ratio Perm						0.21			0.02			0.02
v/c Ratio	0.70	0.64		0.79	0.61	0.48	0.04	0.31	0.20	0.80	0.78	0.08
Uniform Delay, d1	49.1	34.8		37.1	22.0	20.4	41.4	42.5	42.0	33.6	33.5	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
Incremental Delay, d2	52.7	1.7		10.7	1.3	0.5	0.1	1.0	0.7	9.2	8.2	0.1
Delay (s)	101.8	36.6		47.8	23.3	20.9	41.5	43.5	42.7	42.8	41.7	26.8
Level of Service	F	D		D	C	C	D	D	D	D	D	C
Approach Delay (s)		39.1			27.0			42.8			40.2	
Approach LOS		D			C			D			D	

Intersection Summary

HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.8%	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)	20	463	32	290	465	699	7	51	300	609	98	110
Future Volume (veh/h)	20	463	32	290	465	699	7	51	300	609	98	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	493	34	309	495	744	7	54	319	722	0	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	834	57	343	782	647	297	312	264	839	0	372
Arrive On Green	0.02	0.25	0.25	0.19	0.41	0.41	0.17	0.17	0.17	0.23	0.00	0.23
Sat Flow, veh/h	1795	3398	234	1795	1885	1559	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	259	268	309	495	744	7	54	319	722	0	117
Grp Sat Flow(s),veh/h/ln	1795	1791	1841	1795	1885	1559	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.3	14.0	14.1	18.4	22.8	45.4	0.4	2.7	18.1	21.1	0.0	6.7
Cycle Q Clear(g_c), s	1.3	14.0	14.1	18.4	22.8	45.4	0.4	2.7	18.1	21.1	0.0	6.7
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	440	452	343	782	647	297	312	264	839	0	372
V/C Ratio(X)	0.54	0.59	0.59	0.90	0.63	1.15	0.02	0.17	1.21	0.86	0.00	0.31
Avail Cap(c_a), veh/h	82	440	452	435	782	647	297	312	264	1099	0	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	36.4	36.5	43.3	25.4	32.0	38.3	39.2	45.7	40.2	0.0	34.7
Incr Delay (d2), s/veh	11.3	2.1	2.1	18.5	1.7	84.6	0.0	0.3	123.2	5.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.4	6.6	9.9	10.4	31.7	0.2	1.3	16.1	9.8	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	38.5	38.5	61.7	27.1	116.6	38.3	39.5	168.9	45.8	0.0	35.2
LnGrp LOS	E	D	D	E	C	F	D	D	F	D	A	D
Approach Vol, veh/h		548			1548			380			839	
Approach Delay, s/veh		39.5			77.0			148.1			44.3	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.4	31.4		30.1	6.9	49.9		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	23.9		33.5	5.0	45.4		18.1				
Max Q Clear Time (g_c+I1), s	20.4	16.1		23.1	3.3	47.4		20.1				
Green Ext Time (p_c), s	0.5	2.0		2.5	0.0	0.0		0.0				

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

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	1381	30	1253	369	280	32	508	9	32
v/c Ratio	0.53	0.75	0.27	0.76	0.44	0.63	0.05	0.85	0.02	0.05
Control Delay	56.3	22.1	54.2	25.7	8.8	35.7	23.9	37.3	23.5	0.2
Queue Delay	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	23.3	54.2	25.7	8.8	35.7	23.9	37.3	23.5	0.2
Queue Length 50th (ft)	60	380	20	356	52	155	14	237	4	0
Queue Length 95th (ft)	#122	490	51	460	128	246	35	#415	15	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	205	2181	110	2012	983	595	808	761	595	761
Starvation Cap Reductn	0	533	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	0.46	0.84	0.27	0.62	0.38	0.47	0.04	0.67	0.02	0.04

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)	87	1244	40	28	1165	343	260	30	472	8	0	30
Future Volume (vph)	87	1244	40	28	1165	343	260	30	472	8	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3554		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3554		1787	3574	1564	1385	1881	1599	1385	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	94	1338	43	30	1253	369	280	32	508	9	0	32
RTOR Reduction (vph)	0	2	0	0	0	125	0	0	89	0	22	0
Lane Group Flow (vph)	94	1379	0	30	1253	244	280	32	419	9	10	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.7	46.6		2.6	42.5	42.5	28.8	28.8	28.8	28.8	28.8	
Effective Green, g (s)	6.7	46.6		2.6	42.5	42.5	28.8	28.8	28.8	28.8	28.8	
Actuated g/C Ratio	0.07	0.51		0.03	0.46	0.46	0.31	0.31	0.31	0.31	0.31	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	130	1810		50	1660	726	435	592	503	435	503	
v/s Ratio Prot	c0.05	c0.39		0.02	0.35			0.02			0.01	
v/s Ratio Perm						0.16	0.20		c0.26	0.01		
v/c Ratio	0.72	0.76		0.60	0.75	0.34	0.64	0.05	0.83	0.02	0.02	
Uniform Delay, d1	41.5	18.0		43.9	20.2	15.5	26.9	21.9	29.1	21.6	21.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.9	2.0		17.9	2.0	0.3	3.3	0.0	11.3	0.0	0.0	
Delay (s)	59.4	20.0		61.8	22.2	15.8	30.2	21.9	40.4	21.6	21.6	
Level of Service	E	B		E	C	B	C	C	D	C	C	
Approach Delay (s)		22.5			21.5			36.2			21.6	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	80.3%	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)	87	1244	40	28	1165	343	260	30	472	8	0	30
Future Volume (veh/h)	87	1244	40	28	1165	343	260	30	472	8	0	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	94	1338	43	30	1253	0	280	32	508	9	0	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	121	1657	53	53	1542		547	656	556	376	0	556
Arrive On Green	0.07	0.47	0.47	0.03	0.43	0.00	0.35	0.35	0.35	0.35	0.00	0.35
Sat Flow, veh/h	1795	3538	114	1795	3582	1598	1388	1885	1598	872	0	1598
Grp Volume(v), veh/h	94	676	705	30	1253	0	280	32	508	9	0	32
Grp Sat Flow(s),veh/h/ln	1795	1791	1861	1795	1791	1598	1388	1885	1598	872	0	1598
Q Serve(g_s), s	4.5	28.3	28.4	1.4	26.8	0.0	14.7	1.0	26.6	0.6	0.0	1.2
Cycle Q Clear(g_c), s	4.5	28.3	28.4	1.4	26.8	0.0	15.9	1.0	26.6	1.6	0.0	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	839	871	53	1542		547	656	556	376	0	556
V/C Ratio(X)	0.78	0.81	0.81	0.56	0.81		0.51	0.05	0.91	0.02	0.00	0.06
Avail Cap(c_a), veh/h	195	1041	1082	105	1902		626	764	648	426	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	19.9	19.9	41.9	21.8	0.0	24.3	18.9	27.3	19.5	0.0	19.0
Incr Delay (d2), s/veh	10.2	3.9	3.8	9.1	2.3	0.0	0.7	0.0	16.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	11.8	12.3	0.8	11.1	0.0	4.7	0.4	12.0	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	23.8	23.7	51.0	24.1	0.0	25.0	19.0	43.3	19.5	0.0	19.0
LnGrp LOS	D	C	C	D	C		C	B	D	B	A	B
Approach Vol, veh/h		1475			1283	A		820			41	
Approach Delay, s/veh		25.4			24.8			36.1			19.1	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	45.5		35.0	10.4	42.2		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	50.9		35.5	9.5	46.5		35.5				
Max Q Clear Time (g_c+I1), s	3.4	30.4		3.6	6.5	28.8		28.6				
Green Ext Time (p_c), s	0.0	10.1		0.2	0.0	8.9		1.9				

Intersection Summary			
HCM 6th Ctrl Delay	27.6		
HCM 6th LOS	C		

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	508	1308	105	946	296	255	74	133	827
v/c Ratio	0.83	0.87	0.72	0.80	0.75	0.33	0.16	0.69	0.93dr
Control Delay	58.7	34.7	80.7	39.7	62.4	40.0	0.8	69.0	43.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	34.7	80.7	39.7	62.4	40.0	0.8	69.0	43.2
Queue Length 50th (ft)	197	438	81	336	116	89	0	100	224
Queue Length 95th (ft)	#273	540	#171	418	#175	129	1	#177	#342
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	668	1668	152	1306	419	814	469	222	958
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.69	0.72	0.71	0.31	0.16	0.60	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	483	849	393	100	754	144	281	242	70	126	286	500
Future Volume (vph)	483	849	393	100	754	144	281	242	70	126	286	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3390		1787	3480		3467	3574	1599	1787	3205	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3390		1787	3480		3467	3574	1599	1787	3205	
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)	508	894	414	105	794	152	296	255	74	133	301	526
RTOR Reduction (vph)	0	47	0	0	13	0	0	0	58	0	230	0
Lane Group Flow (vph)	508	1261	0	105	933	0	296	255	16	133	597	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	19.9	48.6		9.2	37.9		12.9	24.6	24.6	12.3	24.0	
Effective Green, g (s)	19.9	48.6		9.2	37.9		12.9	24.6	24.6	12.3	24.0	
Actuated g/C Ratio	0.18	0.43		0.08	0.34		0.11	0.22	0.22	0.11	0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	612	1461		145	1170		396	780	349	195	682	
v/s Ratio Prot	c0.15	c0.37		0.06	0.27		c0.09	0.07		0.07	c0.19	
v/s Ratio Perm									0.01			
v/c Ratio	0.83	0.86		0.72	0.80		0.75	0.33	0.05	0.68	0.93dr	
Uniform Delay, d1	44.8	29.0		50.5	33.9		48.3	37.1	34.8	48.3	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.3	5.5		16.4	3.9		7.5	0.2	0.1	9.4	12.1	
Delay (s)	54.1	34.6		66.9	37.8		55.8	37.3	34.8	57.8	55.0	
Level of Service	D	C		E	D		E	D	C	E	E	
Approach Delay (s)		40.0			40.7			45.8			55.4	
Approach LOS		D			D			D			E	

Intersection Summary

HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	849	393	100	754	144	281	242	70	126	286	500
Future Volume (veh/h)	483	849	393	100	754	144	281	242	70	126	286	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	508	894	0	105	794	152	296	255	74	133	301	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	636	1613		135	1026	196	397	526	235	170	457	
Arrive On Green	0.18	0.45	0.00	0.08	0.34	0.34	0.11	0.15	0.15	0.09	0.13	0.00
Sat Flow, veh/h	3483	3676	0	1795	2991	573	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	508	894	0	105	475	471	296	255	74	133	301	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1773	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	10.8	14.1	0.0	4.4	18.3	18.3	6.4	5.1	3.2	5.6	6.2	0.0
Cycle Q Clear(g_c), s	10.8	14.1	0.0	4.4	18.3	18.3	6.4	5.1	3.2	5.6	6.2	0.0
Prop In Lane	1.00		0.00	1.00		0.32	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	636	1613		135	615	608	397	526	235	170	457	
V/C Ratio(X)	0.80	0.55		0.78	0.77	0.77	0.75	0.48	0.32	0.78	0.66	
Avail Cap(c_a), veh/h	969	2480		221	962	952	609	1164	519	323	1182	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	15.6	0.0	35.1	22.7	22.7	33.1	30.3	29.5	34.2	32.1	0.0
Incr Delay (d2), s/veh	2.8	0.3	0.0	9.2	2.1	2.1	2.8	0.7	0.8	7.7	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	5.4	0.0	2.2	7.5	7.4	2.7	2.1	1.2	2.6	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	15.9	0.0	44.3	24.8	24.8	36.0	31.0	30.2	41.9	33.7	0.0
LnGrp LOS	C	B		D	C	C	D	C	C	D	C	
Approach Vol, veh/h		1402	A		1051			625			434	A
Approach Delay, s/veh		22.1			26.8			33.2			36.2	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	39.3	13.3	14.3	18.6	31.0	11.8	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	53.5	13.5	25.5	21.5	41.5	13.9	25.1
Max Q Clear Time (g_c+I1), s	6.4	16.1	8.4	8.2	12.8	20.3	7.6	7.1
Green Ext Time (p_c), s	0.1	7.7	0.5	1.5	1.3	6.2	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	92	518	1197	625	91
v/c Ratio	0.54	0.25	0.79	0.69	0.19
Control Delay	54.5	11.1	22.3	34.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	11.1	22.3	34.9	8.9
Queue Length 50th (ft)	43	55	194	135	0
Queue Length 95th (ft)	#168	170	#490	#348	45
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	171	2539	1931	1059	544
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	0.54	0.20	0.62	0.59	0.17

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)	89	502	570	591	606	88
Future Volume (vph)	89	502	570	591	606	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3273		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3273		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	92	518	588	609	625	91
RTOR Reduction (vph)	0	0	146	0	0	68
Lane Group Flow (vph)	92	518	1051	0	625	23
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.9	47.2	34.8		21.5	21.5
Effective Green, g (s)	7.9	47.2	34.8		21.5	21.5
Actuated g/C Ratio	0.09	0.55	0.41		0.25	0.25
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	164	1963	1325		867	394
v/s Ratio Prot	c0.05	0.14	c0.32			
v/s Ratio Perm					c0.18	0.01
v/c Ratio	0.56	0.26	0.79		0.72	0.06
Uniform Delay, d1	37.3	10.2	22.4		29.5	24.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.3	0.1	3.4		3.0	0.1
Delay (s)	41.7	10.3	25.8		32.4	24.6
Level of Service	D	B	C		C	C
Approach Delay (s)		15.0	25.8		31.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	213	600	322	153	431	433	216	456	338	539	149
v/c Ratio	0.68	0.65	0.51	0.60	0.54	0.63	0.68	0.54	0.61	0.69	0.36
Control Delay	51.3	36.0	7.9	52.3	36.3	8.0	50.8	34.6	44.1	40.5	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	36.0	7.9	52.3	36.3	8.0	50.8	34.6	44.1	40.5	16.2
Queue Length 50th (ft)	122	171	8	88	122	0	123	121	100	157	23
Queue Length 95th (ft)	239	267	82	183	198	84	239	211	171	262	88
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	432	1426	808	351	1265	838	452	1090	857	1064	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.42	0.40	0.44	0.34	0.52	0.48	0.42	0.39	0.51	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	564	303	144	405	407	203	366	63	318	507	140
Future Volume (vph)	200	564	303	144	405	407	203	366	63	318	507	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3574	1571	1787	3574	1578	1787	3495		3467	3574	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3574	1571	1787	3574	1578	1787	3495		3467	3574	1557
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)	213	600	322	153	431	433	216	389	67	338	539	149
RTOR Reduction (vph)	0	0	225	0	0	335	0	11	0	0	0	79
Lane Group Flow (vph)	213	600	97	153	431	98	216	445	0	338	539	70
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	16.4	24.1	24.1	13.4	21.1	21.1	16.7	22.2		15.1	20.6	20.6
Effective Green, g (s)	16.4	24.1	24.1	13.4	21.1	21.1	16.7	22.2		15.1	20.6	20.6
Actuated g/C Ratio	0.18	0.26	0.26	0.14	0.23	0.23	0.18	0.24		0.16	0.22	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	315	928	407	258	812	358	321	836		564	793	345
v/s Ratio Prot	c0.12	c0.17		0.09	0.12		c0.12	0.13		0.10	c0.15	
v/s Ratio Perm			0.06			0.06						0.05
v/c Ratio	0.68	0.65	0.24	0.59	0.53	0.28	0.67	0.53		0.60	0.68	0.20
Uniform Delay, d1	35.7	30.6	27.1	37.1	31.5	29.5	35.5	30.8		36.0	33.1	29.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.7	1.6	0.3	3.6	0.7	0.4	5.5	0.7		1.7	2.3	0.3
Delay (s)	41.4	32.1	27.4	40.8	32.2	30.0	41.0	31.4		37.8	35.4	29.7
Level of Service	D	C	C	D	C	C	D	C		D	D	C
Approach Delay (s)		32.5			32.5			34.5			35.4	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	64.4%	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)	200	564	303	144	405	407	203	366	63	318	507	140
Future Volume (veh/h)	200	564	303	144	405	407	203	366	63	318	507	140
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	600	322	153	431	433	216	389	67	338	539	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	255	1232	548	190	1104	492	258	670	114	442	723	318
Arrive On Green	0.14	0.34	0.34	0.11	0.31	0.31	0.14	0.22	0.22	0.13	0.20	0.20
Sat Flow, veh/h	1795	3582	1592	1795	3582	1596	1795	3059	523	3483	3582	1574
Grp Volume(v), veh/h	213	600	322	153	431	433	216	226	230	338	539	149
Grp Sat Flow(s),veh/h/ln	1795	1791	1592	1795	1791	1596	1795	1791	1791	1742	1791	1574
Q Serve(g_s), s	10.2	11.6	14.7	7.3	8.3	22.7	10.3	10.0	10.1	8.3	12.5	7.4
Cycle Q Clear(g_c), s	10.2	11.6	14.7	7.3	8.3	22.7	10.3	10.0	10.1	8.3	12.5	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	255	1232	548	190	1104	492	258	392	392	442	723	318
V/C Ratio(X)	0.84	0.49	0.59	0.80	0.39	0.88	0.84	0.58	0.59	0.76	0.75	0.47
Avail Cap(c_a), veh/h	438	1443	642	357	1281	571	459	549	549	870	1078	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	22.8	23.8	38.5	24.0	28.9	36.7	30.8	30.8	37.2	33.0	31.0
Incr Delay (d2), s/veh	7.1	0.3	1.0	7.7	0.2	13.4	7.0	1.3	1.4	2.8	1.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.6	5.3	3.5	3.4	9.9	4.9	4.3	4.4	3.6	5.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	23.1	24.8	46.2	24.2	42.4	43.7	32.1	32.2	40.0	34.6	32.1
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		1135			1017			672			1026	
Approach Delay, s/veh		27.5			35.2			35.9			36.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	23.8	13.8	34.8	17.2	22.3	17.0	31.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.0	27.0	17.5	35.5	22.5	26.5	21.5	31.5
Max Q Clear Time (g_c+I1), s	10.3	12.1	9.3	16.7	12.3	14.5	12.2	24.7
Green Ext Time (p_c), s	0.9	2.3	0.2	4.8	0.4	3.2	0.4	2.5

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	56	608	43	85	802
Future Volume (Veh/h)	56	56	608	43	85	802
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	60	60	654	46	91	862
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1723	679			702	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1723	679			702	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	32	87			90	
cM capacity (veh/h)	88	452			898	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	120	700	91	862
Volume Left	60	0	91	0
Volume Right	60	46	0	0
cSH	148	1700	898	1700
Volume to Capacity	0.81	0.41	0.10	0.51
Queue Length 95th (ft)	130	0	8	0
Control Delay (s)	90.3	0.0	9.5	0.0
Lane LOS	F		A	
Approach Delay (s)	90.3	0.0	0.9	
Approach LOS	F			

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	56	608	43	85	802
Future Vol, veh/h	56	56	608	43	85	802
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	60	60	654	46	91	862

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1723	679	0	0	702	0
Stage 1	679	-	-	-	-	-
Stage 2	1044	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	99	453	-	-	900	-
Stage 1	506	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	89	452	-	-	898	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	307	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	89.2	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	149	898	-
HCM Lane V/C Ratio	-	-	0.808	0.102	-
HCM Control Delay (s)	-	-	89.2	9.5	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	5.2	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	10	16	10	10	42	24	408	10	53	539	161
Future Volume (Veh/h)	128	10	16	10	10	42	24	408	10	53	539	161
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	129	10	16	10	10	42	24	412	10	54	544	163
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1168	1127	549	1138	1285	421	712			422		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1168	1127	549	1138	1285	421	712			422		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	9	95	97	94	93	93	97			95		
cM capacity (veh/h)	142	189	535	157	153	632	888			1143		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	155	62	24	422	54	544	163
Volume Left	129	10	24	0	54	0	0
Volume Right	16	42	0	10	0	0	163
cSH	156	317	888	1700	1143	1700	1700
Volume to Capacity	0.99	0.20	0.03	0.25	0.05	0.32	0.10
Queue Length 95th (ft)	189	18	2	0	4	0	0
Control Delay (s)	128.2	19.1	9.2	0.0	8.3	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	128.2	19.1	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	15.3			
Intersection Capacity Utilization	57.0%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	14.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	10	16	10	10	42	24	408	10	53	539	161
Future Vol, veh/h	128	10	16	10	10	42	24	408	10	53	539	161
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	129	10	16	10	10	42	24	412	10	54	544	163

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1152	1127	549	1212	1285	421	712	0	0	422	0	0
Stage 1	657	657	-	465	465	-	-	-	-	-	-	-
Stage 2	495	470	-	747	820	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	175	205	537	160	165	635	892	-	-	1143	-	-
Stage 1	456	463	-	580	565	-	-	-	-	-	-	-
Stage 2	558	562	-	407	390	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	145	189	534	141	152	633	888	-	-	1143	-	-
Mov Cap-2 Maneuver	145	189	-	141	152	-	-	-	-	-	-	-
Stage 1	441	439	-	564	550	-	-	-	-	-	-	-
Stage 2	495	547	-	367	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	122.7	19.8	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	888	-	-	159	305	1143	-	-
HCM Lane V/C Ratio	0.027	-	-	0.978	0.205	0.047	-	-
HCM Control Delay (s)	9.2	-	-	122.7	19.8	8.3	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	7.4	0.8	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	16	136	10	160	14	271	209	271	265	20
Future Volume (vph)	10	10	16	136	10	160	14	271	209	271	265	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	11	17	146	11	172	15	291	225	291	285	22

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	39	329	306	225	434	165
Volume Left (vph)	11	146	15	0	291	0
Volume Right (vph)	17	172	0	225	0	22
Hadj (s)	-0.19	-0.21	0.04	-0.68	0.35	-0.08
Departure Headway (s)	7.6	6.5	6.9	6.1	7.0	6.6
Degree Utilization, x	0.08	0.59	0.59	0.38	0.85	0.30
Capacity (veh/h)	408	529	502	565	498	531
Control Delay (s)	11.3	18.4	17.9	11.7	36.6	11.2
Approach Delay (s)	11.3	18.4	15.3		29.6	
Approach LOS	B	C	C		D	

Intersection Summary				
Delay	21.6			
Level of Service	C			
Intersection Capacity Utilization	65.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	22.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	10	10	16	136	10	160	0	14	271	209	271	265
Future Vol, veh/h	10	10	16	136	10	160	0	14	271	209	271	265
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	11	11	17	146	11	172	0	15	291	225	291	285
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.5	19.1	16.4	31
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	5%	0%	28%	44%	67%	0%
Vol Thru, %	95%	0%	28%	3%	33%	87%
Vol Right, %	0%	100%	44%	52%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	209	36	306	404	153
LT Vol	14	0	10	136	271	0
Through Vol	271	0	10	10	133	133
RT Vol	0	209	16	160	0	20
Lane Flow Rate	306	225	39	329	434	164
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.588	0.385	0.083	0.603	0.85	0.301
Departure Headway (Hd)	6.905	6.163	7.701	6.601	7.053	6.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	582	464	549	512	543
Service Time	4.653	3.91	5.768	4.601	4.798	4.361
HCM Lane V/C Ratio	0.587	0.387	0.084	0.599	0.848	0.302
HCM Control Delay	19.1	12.7	11.5	19.1	38.1	12.2
HCM Lane LOS	C	B	B	C	E	B
HCM 95th-tile Q	3.8	1.8	0.3	4	8.8	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	20
Future Vol, veh/h	20
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	22
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	269	253	150	225	210	206
Future Volume (Veh/h)	269	253	150	225	210	206
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	277	261	155	232	216	212
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	216	428			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	216	428			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	22	67	86			
cM capacity (veh/h)	353	792	1135			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	538	155	116	116	216	212
Volume Left	277	155	0	0	0	0
Volume Right	261	0	0	0	0	212
cSH	686	1135	1700	1700	1700	1700
Volume to Capacity	0.78	0.14	0.07	0.07	0.13	0.12
Queue Length 95th (ft)	193	12	0	0	0	0
Control Delay (s)	28.3	8.7	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	28.3	3.5			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		12.2	
Intersection Capacity Utilization		44.3%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	269	253	150	225	210	206
Future Vol, veh/h	269	253	150	225	210	206
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	277	261	155	232	216	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	642	216	428	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	424	826	1136	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	366	826	1136	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.1	3.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1136	-	366	826	-	-
HCM Lane V/C Ratio	0.136	-	0.758	0.316	-	-
HCM Control Delay (s)	8.7	-	39.9	11.4	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.5	-	6.1	1.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	308	20	0	0	0	0	400	53
Future Volume (Veh/h)	0	0	0	0	308	20	0	0	0	0	400	53
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	335	22	0	0	0	0	435	58
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	632	464	464	464	493	0	493			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	632	464	464	464	493	0	493			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	30	98	100			100		
cM capacity (veh/h)	167	497	600	510	478	1088	1076			1630		

Direction, Lane #	WB 1	SB 1
Volume Total	357	493
Volume Left	0	0
Volume Right	22	58
cSH	499	1700
Volume to Capacity	0.72	0.29
Queue Length 95th (ft)	143	0
Control Delay (s)	28.3	0.0
Lane LOS	D	
Approach Delay (s)	28.3	0.0
Approach LOS	D	

Intersection Summary				
Average Delay	11.9			
Intersection Capacity Utilization	47.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	308	20	0	0	0	0	400	53
Future Vol, veh/h	0	0	0	0	308	20	0	0	0	0	400	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	0	0	335	22	0	0	0	0	435	58

Major/Minor	Minor1			Major2		
Conflicting Flow All	464	493	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	464	493	-	-	-	-
Critical Hdwy	6.41	6.51	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-
Follow-up Hdwy	3.509	4.009	-	-	-	-
Pot Cap-1 Maneuver	558	478	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	635	549	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	558	0	-	-	-	-
Mov Cap-2 Maneuver	558	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	635	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s		0
HCM LOS	-	

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	459	689	264	521	141	424	1063	755	461
v/c Ratio	0.27	0.83	0.67	0.48	0.51	0.69	0.80	0.81	0.87	0.46
Control Delay	57.7	68.6	47.8	44.8	8.2	78.7	70.5	24.7	62.3	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	68.6	47.8	44.8	8.2	78.7	70.5	24.7	62.3	40.4
Queue Length 50th (ft)	65	219	305	211	102	135	212	259	364	177
Queue Length 95th (ft)	118	#298	376	303	188	207	275	317	444	241
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	305	607	1129	612	1049	268	605	1390	970	1068
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	0.25	0.76	0.61	0.43	0.50	0.53	0.70	0.76	0.78	0.43

Intersection Summary

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

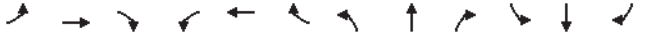


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	333	113	668	256	505	137	411	1031	732	325	122
Future Volume (vph)	73	333	113	668	256	505	137	411	1031	732	325	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3426		3467	1881	1586	1787	3574	2814	3467	3428	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3426		3467	1881	1586	1787	3574	2814	3467	3428	
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)	75	343	116	689	264	521	141	424	1063	755	335	126
RTOR Reduction (vph)	0	22	0	0	0	140	0	0	49	0	26	0
Lane Group Flow (vph)	75	437	0	689	264	381	141	424	1014	755	435	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	21.6	21.6		41.1	41.1	76.1	16.0	20.7	61.8	35.0	39.7	
Effective Green, g (s)	21.6	21.6		41.1	41.1	76.1	16.0	20.7	61.8	35.0	39.7	
Actuated g/C Ratio	0.16	0.16		0.30	0.30	0.55	0.12	0.15	0.44	0.25	0.29	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	277	532		1025	556	868	205	532	1252	873	979	
v/s Ratio Prot	0.04	c0.13		0.20	0.14	0.11	0.08	0.12	c0.24	c0.22	0.13	
v/s Ratio Perm						0.13			0.12			
v/c Ratio	0.27	0.82		0.67	0.47	0.44	0.69	0.80	0.81	0.86	0.44	
Uniform Delay, d1	51.7	56.8		43.0	40.1	18.7	59.0	57.1	33.5	49.7	40.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	9.9		1.8	0.6	0.4	9.2	8.1	4.1	8.9	0.3	
Delay (s)	52.2	66.7		44.7	40.7	19.1	68.3	65.2	37.5	58.6	40.9	
Level of Service	D	E		D	D	B	E	E	D	E	D	
Approach Delay (s)		64.6			34.9			47.4			51.9	
Approach LOS		E			C			D			D	

Intersection Summary

HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	138.9	Sum of lost time (s)	20.5
Intersection Capacity Utilization	82.0%	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)	73	333	113	668	256	505	137	411	1031	732	325	122
Future Volume (veh/h)	73	333	113	668	256	505	137	411	1031	732	325	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	343	116	689	264	521	141	424	1063	755	335	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	275	403	134	985	533	834	167	617	1279	836	796	294
Arrive On Green	0.15	0.15	0.15	0.28	0.28	0.28	0.09	0.17	0.17	0.24	0.31	0.31
Sat Flow, veh/h	1795	2629	874	3483	1885	1594	1795	3582	2812	3483	2560	946
Grp Volume(v), veh/h	75	232	227	689	264	521	141	424	1063	755	233	228
Grp Sat Flow(s),veh/h/ln	1795	1791	1712	1742	1885	1594	1795	1791	1406	1742	1791	1715
Q Serve(g_s), s	5.0	17.0	17.5	23.8	15.7	31.2	10.4	15.0	23.2	28.3	13.9	14.3
Cycle Q Clear(g_c), s	5.0	17.0	17.5	23.8	15.7	31.2	10.4	15.0	23.2	28.3	13.9	14.3
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	275	274	262	985	533	834	167	617	1279	836	557	533
V/C Ratio(X)	0.27	0.85	0.87	0.70	0.50	0.62	0.84	0.69	0.83	0.90	0.42	0.43
Avail Cap(c_a), veh/h	312	311	297	1153	624	911	274	617	1279	990	557	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	55.5	55.7	43.2	40.3	22.8	60.1	52.4	26.3	49.7	36.8	36.9
Incr Delay (d2), s/veh	0.5	17.2	20.9	1.6	0.7	1.2	11.8	3.2	4.8	10.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.0	9.1	10.3	7.3	11.5	5.2	6.9	18.8	13.5	6.2	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	72.7	76.7	44.8	41.0	24.0	72.0	55.6	31.1	60.0	37.3	37.5
LnGrp LOS	D	E	E	D	D	C	E	E	C	E	D	D
Approach Vol, veh/h		534			1474			1628			1216	
Approach Delay, s/veh		71.4			36.7			41.0			51.4	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.0	29.0		25.2	18.3	47.7		43.5				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 38	23.2		23.4	20.6	* 41		44.6				
Max Q Clear Time (g_c+I1), s	30.3	25.2		19.5	12.4	16.3		33.2				
Green Ext Time (p_c), s	2.0	0.0		1.2	0.2	2.9		4.9				

Intersection Summary			
HCM 6th Ctrl Delay			45.7
HCM 6th LOS			D

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	991	653	125	910	425	355	178	551
v/c Ratio	0.72	0.76	0.74	0.67	0.73	0.78	0.46	0.71	0.76
Control Delay	59.5	35.3	14.4	67.5	33.9	56.1	37.4	61.9	46.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	35.3	14.4	67.5	33.9	56.1	37.4	61.9	46.5
Queue Length 50th (ft)	107	333	112	92	293	159	114	129	195
Queue Length 95th (ft)	#170	432	278	#177	385	#235	164	209	258
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	417	1490	939	211	1456	607	898	316	902
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.67	0.70	0.59	0.63	0.70	0.40	0.56	0.61

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)	270	951	627	120	735	138	408	271	70	171	399	130
Future Volume (vph)	270	951	627	120	735	138	408	271	70	171	399	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3481		3467	3464		1787	3430	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3481		3467	3464		1787	3430	
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)	281	991	653	125	766	144	425	282	73	178	416	135
RTOR Reduction (vph)	0	0	297	0	13	0	0	19	0	0	27	0
Lane Group Flow (vph)	281	991	356	125	897	0	425	336	0	178	524	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.2	39.3	39.3	11.3	38.4		17.0	23.7		15.2	21.9	
Effective Green, g (s)	12.2	39.3	39.3	11.3	38.4		17.0	23.7		15.2	21.9	
Actuated g/C Ratio	0.11	0.37	0.37	0.11	0.36		0.16	0.22		0.14	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	393	1306	584	187	1243		548	763		252	698	
v/s Ratio Prot	c0.08	c0.28		0.07	0.26		c0.12	0.10		0.10	c0.15	
v/s Ratio Perm			0.22									
v/c Ratio	0.72	0.76	0.61	0.67	0.72		0.78	0.44		0.71	0.75	
Uniform Delay, d1	46.0	29.9	27.8	46.3	29.9		43.4	36.2		44.0	40.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.1	2.6	1.8	8.7	2.1		6.8	0.4		8.7	4.6	
Delay (s)	52.1	32.5	29.7	55.0	32.0		50.2	36.6		52.7	44.8	
Level of Service	D	C	C	E	C		D	D		D	D	
Approach Delay (s)		34.4			34.8			44.0			46.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	75.5%	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)	270	951	627	120	735	138	408	271	70	171	399	130
Future Volume (veh/h)	270	951	627	120	735	138	408	271	70	171	399	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	281	991	653	125	766	144	425	282	73	178	416	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	361	1315	587	157	1055	198	517	649	165	216	536	172
Arrive On Green	0.10	0.37	0.37	0.09	0.35	0.35	0.15	0.23	0.23	0.12	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	3008	565	3483	2828	719	1795	2663	855
Grp Volume(v), veh/h	281	991	653	125	456	454	425	177	178	178	278	273
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1782	1742	1791	1756	1795	1791	1727
Q Serve(g_s), s	7.2	22.3	20.6	6.3	20.4	20.4	10.9	7.8	8.0	8.9	13.5	13.8
Cycle Q Clear(g_c), s	7.2	22.3	20.6	6.3	20.4	20.4	10.9	7.8	8.0	8.9	13.5	13.8
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.41	1.00		0.50
Lane Grp Cap(c), veh/h	361	1315	587	157	628	625	517	411	403	216	360	347
V/C Ratio(X)	0.78	0.75	1.11	0.80	0.73	0.73	0.82	0.43	0.44	0.82	0.77	0.78
Avail Cap(c_a), veh/h	481	1713	764	244	853	849	701	522	512	365	526	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	25.5	10.9	41.2	26.0	26.0	38.0	30.3	30.4	39.5	34.7	34.8
Incr Delay (d2), s/veh	5.7	1.4	68.3	9.6	2.0	2.0	5.7	0.7	0.8	7.7	4.3	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	9.1	17.2	3.1	8.5	8.4	4.9	3.3	3.3	4.2	6.1	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	26.9	79.2	50.8	28.0	28.0	43.7	31.0	31.1	47.3	39.0	39.8
LnGrp LOS	D	C	F	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1925			1035			780			729	
Approach Delay, s/veh		47.4			30.8			38.0			41.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	38.3	18.2	23.0	14.0	36.8	15.6	25.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	44.0	18.5	27.0	12.7	43.8	18.7	26.8
Max Q Clear Time (g_c+I1), s	8.3	24.3	12.9	15.8	9.2	22.4	10.9	10.0
Green Ext Time (p_c), s	0.1	9.5	0.8	2.4	0.3	5.6	0.3	1.7

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	526	413	17	416	402	11
v/c Ratio	0.68	0.47	0.07	0.29	0.70	0.02
Control Delay	17.0	3.3	10.1	10.0	22.7	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	3.3	10.1	10.0	22.7	10.4
Queue Length 50th (ft)	103	0	2	34	90	1
Queue Length 95th (ft)	258	42	14	82	237	11
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1455	1293	491	2765	1070	962
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	0.36	0.32	0.03	0.15	0.38	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	484	380	16	383	370	10
Future Volume (vph)	484	380	16	383	370	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1519	1734	3471	1733	1553
Flt Permitted	1.00	1.00	0.34	1.00	0.95	1.00
Satd. Flow (perm)	1827	1519	617	3471	1733	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	526	413	17	416	402	11
RTOR Reduction (vph)	0	235	0	0	0	4
Lane Group Flow (vph)	526	178	17	416	402	7
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	20.3	20.3	20.3	20.3	16.0	16.0
Effective Green, g (s)	20.3	20.3	20.3	20.3	16.0	16.0
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.34	0.34
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	787	654	265	1495	588	527
v/s Ratio Prot	c0.29			0.12		0.00
v/s Ratio Perm		0.12	0.03		c0.23	
v/c Ratio	0.67	0.27	0.06	0.28	0.68	0.01
Uniform Delay, d1	10.7	8.6	7.8	8.7	13.4	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.0	0.0	2.6	0.0
Delay (s)	12.4	8.7	7.9	8.7	16.0	10.3
Level of Service	B	A	A	A	B	B
Approach Delay (s)	10.8			8.7	15.8	
Approach LOS	B			A	B	

Intersection Summary				
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	47.1	Sum of lost time (s)	10.8
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	484	380	16	383	370	10
Future Volume (veh/h)	484	380	16	383	370	10
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	526	413	17	416	402	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	725	612	304	1377	497	442
Arrive On Green	0.39	0.39	0.39	0.39	0.28	0.28
Sat Flow, veh/h	1841	1556	587	3589	1753	1560
Grp Volume(v), veh/h	526	413	17	416	402	11
Grp Sat Flow(s),veh/h/ln	1841	1556	587	1749	1753	1560
Q Serve(g_s), s	8.1	7.3	0.8	2.7	7.1	0.2
Cycle Q Clear(g_c), s	8.1	7.3	9.0	2.7	7.1	0.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	725	612	304	1377	497	442
V/C Ratio(X)	0.73	0.67	0.06	0.30	0.81	0.02
Avail Cap(c_a), veh/h	2048	1731	726	3890	1415	1259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	8.4	12.4	7.0	11.1	8.6
Incr Delay (d2), s/veh	0.5	0.5	0.0	0.0	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.4	0.1	0.5	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	8.9	12.4	7.0	12.4	8.7
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	939			433	413	
Approach Delay, s/veh	9.0			7.2	12.3	
Approach LOS	A			A	B	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	18.6				18.6	14.9
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	37.2				37.2	27.0
Max Q Clear Time (g_c+I1), s	10.1				11.0	9.1
Green Ext Time (p_c), s	2.8				1.8	0.6

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	60	0	54	0	5	10	32	179	2	20	332	60
Future Volume (vph)	60	0	54	0	5	10	32	179	2	20	332	60
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
Hourly flow rate (vph)	65	0	59	0	5	11	35	195	2	22	361	65

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	124	16	232	448
Volume Left (vph)	65	0	35	22
Volume Right (vph)	59	11	2	65
Hadj (s)	-0.16	-0.40	0.04	-0.06
Departure Headway (s)	5.3	5.3	4.8	4.5
Degree Utilization, x	0.18	0.02	0.31	0.56
Capacity (veh/h)	602	569	709	773
Control Delay (s)	9.5	8.4	10.0	13.2
Approach Delay (s)	9.5	8.4	10.0	13.2
Approach LOS	A	A	B	B

Intersection Summary					
Delay	11.6				
Level of Service	B				
Intersection Capacity Utilization	44.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	0	54	0	5	10	32	179	2	20	332	60
Future Vol, veh/h	60	0	54	0	5	10	32	179	2	20	332	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	65	0	59	0	5	11	35	195	2	22	361	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.5	8.5	10	13.1
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	53%	0%	5%
Vol Thru, %	84%	0%	33%	81%
Vol Right, %	1%	47%	67%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	114	15	412
LT Vol	32	60	0	20
Through Vol	179	0	5	332
RT Vol	2	54	10	60
Lane Flow Rate	232	124	16	448
Geometry Grp	1	1	1	1
Degree of Util (X)	0.309	0.181	0.024	0.557
Departure Headway (Hd)	4.799	5.27	5.24	4.477
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	746	675	675	802
Service Time	2.856	3.347	3.338	2.524
HCM Lane V/C Ratio	0.311	0.184	0.024	0.559
HCM Control Delay	10	9.5	8.5	13.1
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.3	0.7	0.1	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	12	34	0	9	22	23	94	0	17	159	110
Future Volume (Veh/h)	117	12	34	0	9	22	23	94	0	17	159	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	13	37	0	10	24	25	102	0	18	173	120
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	34			56			520	326	38	358	332	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34			56			520	326	38	358	332	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			91	81	100	96	68	89
cM capacity (veh/h)	1584			1546			291	543	1032	480	539	1058

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	177	34	127	18	293
Volume Left	127	0	25	18	0
Volume Right	37	24	0	0	120
cSH	1584	1546	464	480	674
Volume to Capacity	0.08	0.00	0.27	0.04	0.43
Queue Length 95th (ft)	7	0	28	3	55
Control Delay (s)	5.5	0.0	15.7	12.8	14.4
Lane LOS	A		C	B	B
Approach Delay (s)	5.5	0.0	15.7	14.3	
Approach LOS			C	B	

Intersection Summary					
Average Delay			11.4		
Intersection Capacity Utilization			47.3%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	12	34	0	9	22	23	94	0	17	159	110
Future Vol, veh/h	117	12	34	0	9	22	23	94	0	17	159	110
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	127	13	37	0	10	24	25	102	0	18	173	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	56	0	0	461	326	38	359	332	22
Stage 1	-	-	-	-	-	-	292	292	-	22	22	-
Stage 2	-	-	-	-	-	-	169	34	-	337	310	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1584	-	-	1555	-	-	512	594	1037	598	589	1058
Stage 1	-	-	-	-	-	-	718	673	-	999	879	-
Stage 2	-	-	-	-	-	-	835	869	-	679	661	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1584	-	-	1546	-	-	318	541	1031	480	537	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	541	-	480	537	-
Stage 1	-	-	-	-	-	-	655	613	-	916	879	-
Stage 2	-	-	-	-	-	-	595	869	-	519	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.4	0	15.3	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	475	1584	-	-	1546	-	-	480	672
HCM Lane V/C Ratio	0.268	0.08	-	-	-	-	-	0.038	0.435
HCM Control Delay (s)	15.3	7.5	0	-	0	-	-	12.8	14.4
HCM Lane LOS	C	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1.1	0.3	-	-	0	-	-	0.1	2.2



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	75	83	10	5	10
Future Volume (Veh/h)	10	75	83	10	5	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	82	90	11	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	101				200	96
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	101				200	96
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1479				779	956

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	93	101	16
Volume Left	11	0	5
Volume Right	0	11	11
cSH	1479	1700	892
Volume to Capacity	0.01	0.06	0.02
Queue Length 95th (ft)	1	0	1
Control Delay (s)	0.9	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	0.9	0.0	9.1
Approach LOS			A

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		21.2%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	75	83	10	5	10
Future Vol, veh/h	10	75	83	10	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	11	82	90	11	5	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	101	0	-	0	200	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	104	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1479	-	-	-	784	955
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1479	-	-	-	778	955
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	915	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1479	-	-	-	888
HCM Lane V/C Ratio	0.007	-	-	-	0.018
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Cumulative Plus 1293-Unit Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	435	1761	1723	220	204	342
v/c Ratio	0.81	0.55	0.95	0.25	0.78	0.65
Control Delay	74.0	0.7	43.1	5.7	83.3	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	0.7	43.1	5.7	83.3	45.1
Queue Length 50th (ft)	225	0	832	24	204	282
Queue Length 95th (ft)	298	0	#1128	74	307	397
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	637	3223	1970	945	328	635
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	0.68	0.55	0.87	0.23	0.62	0.54

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)	400	1620	1585	202	188	315
Future Volume (vph)	400	1620	1585	202	188	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3127	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3127	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	1761	1723	220	204	342
RTOR Reduction (vph)	0	0	0	72	0	10
Lane Group Flow (vph)	435	1761	1723	148	204	332
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	25.8	149.7	84.7	84.7	24.2	54.0
Effective Green, g (s)	25.8	149.7	84.7	84.7	24.2	54.0
Actuated g/C Ratio	0.17	1.00	0.57	0.57	0.16	0.36
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	538	3223	1823	815	260	520
v/s Ratio Prot	c0.14	0.55	c0.53		c0.13	0.23
v/s Ratio Perm				0.10		
v/c Ratio	0.81	0.55	0.95	0.18	0.78	0.64
Uniform Delay, d1	59.6	0.0	30.3	15.7	60.2	39.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.7	10.8	0.1	14.7	2.6
Delay (s)	68.3	0.7	41.2	15.9	75.0	42.3
Level of Service	E	A	D	B	E	D
Approach Delay (s)		14.1	38.3		54.5	
Approach LOS		B	D		D	

Intersection Summary

HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	149.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	435	1146	385	441	1176	326	462	660	253	249	304
v/c Ratio	1.14	0.90	0.48	1.12	0.92	0.43	1.09	0.88	0.72	0.69	0.64
Control Delay	148.6	54.3	4.8	141.4	55.6	6.2	130.2	70.1	79.3	66.3	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	148.6	54.3	4.8	141.4	55.6	6.2	130.2	70.1	79.3	66.3	23.9
Queue Length 50th (ft)	~284	581	0	~281	600	15	~291	342	132	235	85
Queue Length 95th (ft)	#434	706	69	#441	733	87	#446	448	193	351	200
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	380	1526	887	392	1526	843	423	879	423	470	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.75	0.43	1.13	0.77	0.39	1.09	0.75	0.60	0.53	0.55

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)	400	1054	354	406	1082	300	425	515	92	233	229	280
Future Volume (vph)	400	1054	354	406	1082	300	425	515	92	233	229	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3172		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3172		3155	1712	1455
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)	435	1146	385	441	1176	326	462	560	100	253	249	304
RTOR Reduction (vph)	0	0	234	0	0	182	0	8	0	0	0	165
Lane Group Flow (vph)	435	1146	151	441	1176	144	462	652	0	253	249	139
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.3	59.4	59.4	18.9	60.0	60.0	20.4	35.6		17.0	32.2	32.2
Effective Green, g (s)	18.3	59.4	59.4	18.9	60.0	60.0	20.4	35.6		17.0	32.2	32.2
Actuated g/C Ratio	0.12	0.39	0.39	0.12	0.40	0.40	0.13	0.23		0.11	0.21	0.21
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	381	1275	570	393	1287	576	424	745		354	363	309
v/s Ratio Prot	c0.14	0.35		c0.14	c0.36		c0.15	c0.21		0.08	0.15	
v/s Ratio Perm			0.10			0.10						0.10
v/c Ratio	1.14	0.90	0.26	1.12	0.91	0.25	1.09	0.87		0.71	0.69	0.45
Uniform Delay, d1	66.6	43.2	31.2	66.3	43.3	30.7	65.5	55.8		64.9	55.0	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	90.6	8.7	0.3	82.9	10.1	0.2	70.0	11.1		6.7	5.3	1.0
Delay (s)	157.2	51.9	31.5	149.2	53.4	30.9	135.6	66.9		71.6	60.3	53.0
Level of Service	F	D	C	F	D	C	F	E		E	E	D
Approach Delay (s)		71.2			71.3			95.2			61.1	
Approach LOS		E			E			F			E	

Intersection Summary				
HCM 2000 Control Delay	74.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	151.5	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	82.7%	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)	400	1054	354	406	1082	300	425	515	92	233	229	280
Future Volume (veh/h)	400	1054	354	406	1082	300	425	515	92	233	229	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	435	1146	385	441	1176	326	462	560	100	253	249	304
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	363	1280	571	363	1348	601	403	716	127	298	388	329
Arrive On Green	0.11	0.39	0.39	0.11	0.41	0.41	0.13	0.26	0.26	0.09	0.22	0.22
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	2793	497	3209	1737	1472
Grp Volume(v), veh/h	435	1146	385	441	1176	326	462	330	330	253	249	304
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1640	1605	1737	1472
Q Serve(g_s), s	18.0	51.9	23.5	18.0	52.2	26.8	20.0	29.6	29.8	12.4	20.7	32.2
Cycle Q Clear(g_c), s	18.0	51.9	23.5	18.0	52.2	26.8	20.0	29.6	29.8	12.4	20.7	32.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	363	1280	571	363	1348	601	403	423	421	298	388	329
V/C Ratio(X)	1.20	0.90	0.67	1.22	0.87	0.54	1.15	0.78	0.78	0.85	0.64	0.92
Avail Cap(c_a), veh/h	363	1451	647	363	1451	647	403	425	422	403	447	379
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	70.6	45.7	18.6	70.6	43.3	35.8	69.6	55.0	55.1	71.2	56.0	60.5
Incr Delay (d2), s/veh	113.3	7.0	2.3	119.8	5.8	0.8	91.1	9.0	9.3	12.1	2.5	26.0
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	12.9	21.5	8.2	13.2	21.3	9.7	13.2	13.3	13.3	5.6	9.3	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	184.0	52.8	21.0	190.4	49.1	36.6	160.8	64.0	64.5	83.3	58.5	86.5
LnGrp LOS	F	D	C	F	D	D	F	E	E	F	E	F
Approach Vol, veh/h		1966			1943			1122			806	
Approach Delay, s/veh		75.6			79.1			104.0			76.8	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.3	69.1	24.0	40.9	22.0	72.4	18.8	46.1
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	20.0	53.9	22.0	34.2	20.0	54.2	14.4	31.8
Green Ext Time (p_c), s	0.0	7.9	0.0	1.4	0.0	7.8	0.4	2.6

Intersection Summary		
HCM 6th Ctrl Delay	82.4	
HCM 6th LOS	F	

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1288	1688	30	0	100
Future Volume (Veh/h)	0	1288	1688	30	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1400	1835	33	0	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1868				2535	918
vC1, stage 1 conf vol					1835	
vC2, stage 2 conf vol					700	
vCu, unblocked vol	1868				2535	918
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	58
cM capacity (veh/h)	288				98	259

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	700	700	918	918	33	109
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	33	109
cSH	1700	1700	1700	1700	1700	259
Volume to Capacity	0.41	0.41	0.54	0.54	0.02	0.42
Queue Length 95th (ft)	0	0	0	0	0	49
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	28.6
Lane LOS						D
Approach Delay (s)	0.0		0.0			28.6
Approach LOS						D

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		59.5%	ICU Level of Service	B
Analysis Period (min)		15		

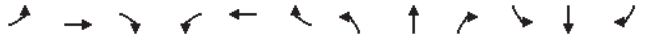
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1288	1688	30	0	100
Future Vol, veh/h	0	1288	1688	30	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1400	1835	33	0	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	918
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	259
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	259
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	28.6
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	259
HCM Lane V/C Ratio	-	-	-	0.42
HCM Control Delay (s)	-	-	-	28.6
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1232	56	3	1692	0	26	0	10	0	0	0
Future Volume (Veh/h)	0	1232	56	3	1692	0	26	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1339	61	3	1839	0	28	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1839			1400			2264	3184	670	2520	3245	920
vC1, stage 1 conf vol							1339	1339		1845	1845	
vC2, stage 2 conf vol							926	1845		675	1400	
vCu, unblocked vol	1839			1400			2264	3184	670	2520	3245	920
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			77	100	97	100	100	100
cM capacity (veh/h)	285			431			124	91	375	65	89	253

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	670	670	61	3	1226	613	39	0
Volume Left	0	0	0	0	3	0	0	28	0
Volume Right	0	0	0	61	0	0	0	11	0
cSH	1700	1700	1700	1700	431	1700	1700	173	1700
Volume to Capacity	0.00	0.39	0.39	0.04	0.01	0.72	0.36	0.23	0.00
Queue Length 95th (ft)	0	0	0	0	1	0	0	21	0
Control Delay (s)	0.0	0.0	0.0	0.0	13.4	0.0	0.0	34.5	0.0
Lane LOS					B			D	A
Approach Delay (s)	0.0				0.0			34.5	0.0
Approach LOS								D	A

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		56.8%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1232	56	3	1692	0	26	0	10	0	0	0
Future Vol, veh/h	0	1232	56	3	1692	0	26	0	10	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	1339	61	3	1839	0	28	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1839	0	0	1400	0	0	2265	3184	670	2515	3245	920
Stage 1	-	-	-	-	-	-	1339	1339	-	1845	1845	-
Stage 2	-	-	-	-	-	-	926	1845	-	670	1400	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	285	-	-	431	-	-	~ 19	8	375	12	8	253
Stage 1	-	-	-	-	-	-	146	200	-	68	110	-
Stage 2	-	-	-	-	-	-	268	110	-	388	186	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	285	-	-	431	-	-	~ 19	8	375	12	8	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	89	-	63	87	-
Stage 1	-	-	-	-	-	-	146	200	-	68	109	-
Stage 2	-	-	-	-	-	-	266	109	-	377	186	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	35.6	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	375	285	-	-	431	-	-	-
HCM Lane V/C Ratio	0.234	0.029	-	-	-	0.008	-	-	-
HCM Control Delay (s)	43.6	14.9	0	-	-	13.4	-	-	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A
HCM 95th %tile Q(veh)	0.9	0.1	0	-	-	0	-	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	204	222	150	318	200	156	63	655	298	100	548	250
Future Volume (veh/h)	204	222	150	318	200	156	63	655	298	100	548	250
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
Hourly flow rate (vph)	222	241	163	346	217	170	68	712	324	109	596	272
Approach Volume (veh/h)		463			733			1104			977	
Crossing Volume (veh/h)		1051			1002			572			631	
High Capacity (veh/h)		597			621			881			840	
High v/c (veh/h)		0.78			1.18			1.25			1.16	
Low Capacity (veh/h)		461			482			708			672	
Low v/c (veh/h)		1.00			1.52			1.56			1.45	

Intersection Summary												
Maximum v/c High			1.25									
Maximum v/c Low			1.56									
Intersection Capacity Utilization			117.9%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	33.2
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	626	733	1104	977
Demand Flow Rate, veh/h	645	755	1137	1006
Vehicles Circulating, veh/h	1082	1032	589	650
Vehicles Exiting, veh/h	574	694	970	1137
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	0.998	1.000
Approach Delay, s/veh	11.0	23.0	46.6	40.0
Approach LOS	B	C	E	E

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.472	0.528	0.706	0.294	0.722	0.278
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	168	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	224	253	1957	356	399	803	334	726	280
Cap Entry Lane, veh/h	530	530	0.971	522	591	785	861	742	817
Entry HV Adj Factor	0.971	0.969	163	0.972	0.971	0.971	0.970	0.971	0.971
Flow Entry, veh/h	218	245	1900	346	387	780	324	705	272
Cap Entry, veh/h	515	514	0.086	508	574	761	834	721	794
V/C Ratio	0.422	0.477	0.0	0.681	0.676	1.024	0.389	0.978	0.343
Control Delay, s/veh	14.1	15.6	A	24.3	21.7	62.2	9.0	52.1	8.6
LOS	B	C	0	C	C	F	A	F	A
95th %tile Queue, veh	2	3		5	5	18	2	15	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	42	5	9	89	0	20	5	15	0	0	0
Future Volume (Veh/h)	5	42	5	9	89	0	20	5	15	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	46	5	10	97	0	22	5	16	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	97			51			176	176	48	194	178	97
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	97			51			176	176	48	194	178	97
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			97	99	98	100	100	100
cM capacity (veh/h)	1460			1518			768	700	1003	731	698	943

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	107	43	0
Volume Left	5	10	22	0
Volume Right	5	0	16	0
cSH	1460	1518	831	1700
Volume to Capacity	0.00	0.01	0.05	0.00
Queue Length 95th (ft)	0	0	4	0
Control Delay (s)	0.7	0.7	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	0.7	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay			2.6	
Intersection Capacity Utilization			16.8%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	42	5	9	89	0	20	5	15	0	0	0
Future Vol, veh/h	5	42	5	9	89	0	20	5	15	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	5	46	5	10	97	0	22	5	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	51	0	0	176	176	49	186	178	97
Stage 1	-	-	-	-	-	-	59	59	-	117	117	-
Stage 2	-	-	-	-	-	-	117	117	-	69	61	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1460	-	-	1518	-	-	773	707	1003	762	705	943
Stage 1	-	-	-	-	-	-	938	834	-	873	787	-
Stage 2	-	-	-	-	-	-	873	787	-	926	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1460	-	-	1518	-	-	767	699	1003	739	697	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	767	699	-	739	697	-
Stage 1	-	-	-	-	-	-	934	831	-	870	781	-
Stage 2	-	-	-	-	-	-	867	781	-	901	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.7	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1460	-	-	1518	-	-	-
HCM Lane V/C Ratio	0.052	0.004	-	-	0.006	-	-	-
HCM Control Delay (s)	9.6	7.5	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	426	388	500	762	11	22	166	344	348	43
v/c Ratio	0.12	0.67	0.80	0.55	0.66	0.08	0.15	0.60	0.78	0.78	0.09
Control Delay	53.5	43.0	47.9	21.4	4.6	47.1	48.0	17.2	47.7	47.3	0.3
Queue Delay	0.0	0.0	0.9	1.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	43.0	48.8	23.0	5.2	47.1	48.0	17.2	47.7	47.3	0.3
Queue Length 50th (ft)	7	133	227	208	0	7	14	0	206	208	0
Queue Length 95th (ft)	28	204	#419	398	74	26	41	65	#404	#405	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	95	867	599	1021	1208	342	360	435	533	541	577
Starvation Cap Reductn	0	0	59	335	162	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.49	0.72	0.73	0.73	0.03	0.06	0.38	0.65	0.64	0.07

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)	10	360	32	357	460	701	10	20	153	546	91	40
Future Volume (vph)	10	360	32	357	460	701	10	20	153	546	91	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3451		1752	1845	1568	1752	1845	1543	1665	1692	1519
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3451		1752	1845	1568	1752	1845	1543	1665	1692	1519
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)	11	391	35	388	500	762	11	22	166	593	99	43
RTOR Reduction (vph)	0	5	0	0	0	401	0	0	153	0	0	32
Lane Group Flow (vph)	11	421	0	388	500	361	11	22	13	344	348	11
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	21.3		26.3	46.8	46.8	7.7	7.7	7.7	25.4	25.4	25.4
Effective Green, g (s)	0.8	21.3		26.3	46.8	46.8	7.7	7.7	7.7	25.4	25.4	25.4
Actuated g/C Ratio	0.01	0.22		0.27	0.47	0.47	0.08	0.08	0.08	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	744		466	874	743	136	143	120	428	435	390
v/s Ratio Prot	0.01	0.12		c0.22	c0.27		0.01	c0.01		c0.21	0.21	
v/s Ratio Perm						0.23			0.01			0.01
v/c Ratio	0.79	0.57		0.83	0.57	0.49	0.08	0.15	0.11	0.80	0.80	0.03
Uniform Delay, d1	48.9	34.6		34.1	18.7	17.7	42.2	42.5	42.3	34.3	34.3	27.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	130.6	1.0		12.1	0.9	0.5	0.3	0.5	0.4	10.5	10.1	0.0
Delay (s)	179.4	35.6		46.2	19.6	18.2	42.5	43.0	42.7	44.8	44.4	27.4
Level of Service	F	D		D	B	B	D	D	D	D	D	C
Approach Delay (s)		39.2			25.2			42.7			43.6	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	68.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	360	32	357	460	701	10	20	153	546	91	40
Future Volume (veh/h)	10	360	32	357	460	701	10	20	153	546	91	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	391	35	388	500	762	11	22	166	664	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	802	71	424	877	743	221	232	196	770	0	339
Arrive On Green	0.01	0.25	0.25	0.24	0.47	0.47	0.12	0.12	0.12	0.22	0.00	0.22
Sat Flow, veh/h	1767	3269	291	1767	1856	1572	1767	1856	1569	3534	0	1554
Grp Volume(v), veh/h	11	210	216	388	500	762	11	22	166	664	0	43
Grp Sat Flow(s),veh/h/ln	1767	1763	1797	1767	1856	1572	1767	1856	1569	1767	0	1554
Q Serve(g_s), s	0.6	10.7	10.8	22.4	20.4	49.5	0.6	1.1	10.9	19.0	0.0	2.3
Cycle Q Clear(g_c), s	0.6	10.7	10.8	22.4	20.4	49.5	0.6	1.1	10.9	19.0	0.0	2.3
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	433	441	424	877	743	221	232	196	770	0	339
V/C Ratio(X)	0.48	0.49	0.49	0.91	0.57	1.03	0.05	0.09	0.85	0.86	0.00	0.13
Avail Cap(c_a), veh/h	84	433	441	531	877	743	304	319	269	995	0	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.3	33.9	33.9	38.8	20.0	27.6	40.4	40.6	44.9	39.5	0.0	33.0
Incr Delay (d2), s/veh	14.4	0.8	0.8	17.9	0.9	39.7	0.1	0.2	16.4	6.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.7	4.8	11.7	8.7	25.8	0.3	0.5	5.0	8.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	34.7	34.8	56.7	20.8	67.4	40.5	40.8	61.2	45.8	0.0	33.1
LnGrp LOS	E	C	C	E	C	F	D	D	E	D	A	C
Approach Vol, veh/h		437			1650			199			707	
Approach Delay, s/veh		35.5			50.8			57.8			45.1	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.7	30.2		27.3	5.9	54.0		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	31.5	23.0		29.5	5.0	49.5		18.0				
Max Q Clear Time (g_c+I1), s	24.4	12.8		21.0	2.6	51.5		12.9				
Green Ext Time (p_c), s	0.8	1.9		1.9	0.0	0.0		0.3				

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

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	1073	57	1404	432	235	22	272	11	11
v/c Ratio	0.44	0.56	0.35	0.74	0.45	0.72	0.05	0.50	0.03	0.02
Control Delay	52.5	15.7	50.6	20.0	6.6	47.8	29.7	11.3	29.6	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	16.3	50.6	20.0	6.6	47.8	29.7	11.3	29.6	0.1
Queue Length 50th (ft)	47	219	35	341	46	141	11	25	6	0
Queue Length 95th (ft)	98	312	78	473	122	228	31	97	20	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	207	2258	196	2261	1086	474	632	684	470	655
Starvation Cap Reductn	0	691	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	0.68	0.29	0.62	0.40	0.50	0.03	0.40	0.02	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	937	51	52	1292	397	216	20	250	10	0	10
Future Volume (vph)	70	937	51	52	1292	397	216	20	250	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3472		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1752	3472		1752	3505	1530	1384	1845	1568	1371	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)	76	1018	55	57	1404	432	235	22	272	11	0	11
RTOR Reduction (vph)	0	4	0	0	0	130	0	0	171	0	8	0
Lane Group Flow (vph)	76	1069	0	57	1404	302	235	22	101	11	3	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.5	48.3		6.0	47.8	47.8	20.8	20.8	20.8	20.8	20.8	
Effective Green, g (s)	6.5	48.3		6.0	47.8	47.8	20.8	20.8	20.8	20.8	20.8	
Actuated g/C Ratio	0.07	0.55		0.07	0.54	0.54	0.23	0.23	0.23	0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	128	1892		118	1890	825	324	433	368	321	368	
v/s Ratio Prot	c0.04	0.31		0.03	c0.40			0.01			0.00	
v/s Ratio Perm						0.20	c0.17		0.06	0.01		
v/c Ratio	0.59	0.57		0.48	0.74	0.37	0.73	0.05	0.28	0.03	0.01	
Uniform Delay, d1	39.8	13.2		39.8	15.7	11.7	31.3	26.3	27.7	26.2	26.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	0.4		3.1	1.6	0.3	7.8	0.0	0.4	0.0	0.0	
Delay (s)	47.0	13.6		42.9	17.3	12.0	39.1	26.3	28.1	26.2	26.0	
Level of Service	D	B		D	B	B	D	C	C	C	C	
Approach Delay (s)		15.8			16.9			32.9			26.1	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	69.8%	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)	70	937	51	52	1292	397	216	20	250	10	0	10
Future Volume (veh/h)	70	937	51	52	1292	397	216	20	250	10	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	1018	55	57	1404	0	235	22	272	11	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	1841	99	85	1883		397	402	340	326	0	340
Arrive On Green	0.06	0.54	0.54	0.05	0.53	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3400	184	1767	3526	1572	1392	1856	1572	1077	0	1572
Grp Volume(v), veh/h	76	528	545	57	1404	0	235	22	272	11	0	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1821	1767	1763	1572	1392	1856	1572	1077	0	1572
Q Serve(g_s), s	3.0	13.6	13.6	2.2	21.4	0.0	11.1	0.7	11.4	0.6	0.0	0.4
Cycle Q Clear(g_c), s	3.0	13.6	13.6	2.2	21.4	0.0	11.5	0.7	11.4	1.2	0.0	0.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	954	986	85	1883		397	402	340	326	0	340
V/C Ratio(X)	0.78	0.55	0.55	0.67	0.75		0.59	0.05	0.80	0.03	0.00	0.03
Avail Cap(c_a), veh/h	241	1394	1440	229	2763		646	734	622	519	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.4	10.4	10.4	32.6	12.5	0.0	26.0	21.6	25.8	22.1	0.0	21.5
Incr Delay (d2), s/veh	12.3	0.5	0.5	8.9	0.6	0.0	1.4	0.1	4.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.6	4.8	1.1	7.3	0.0	3.6	0.3	4.4	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	10.9	10.9	41.4	13.2	0.0	27.5	21.7	30.1	22.1	0.0	21.5
LnGrp LOS	D	B	B	D	B		C	C	C	C	A	C
Approach Vol, veh/h		1149			1461	A		529			22	
Approach Delay, s/veh		13.2			14.3			28.6			21.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	42.2		19.6	8.4	41.6		19.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.0	55.0		27.5	9.5	54.5		27.5				
Max Q Clear Time (g_c+I1), s	4.2	15.6		3.2	5.0	23.4		13.5				
Green Ext Time (p_c), s	0.0	9.0		0.0	0.1	13.7		1.5				

Intersection Summary			
HCM 6th Ctrl Delay	16.3		
HCM 6th LOS	B		

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	342	960	65	1193	413	203	54	170	698
v/c Ratio	0.85	0.61	0.49	0.88	0.86	0.27	0.13	0.78	1.09dr
Control Delay	70.5	24.2	65.5	40.8	67.6	40.3	2.2	73.3	52.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	24.2	65.5	40.8	67.6	40.3	2.2	73.3	52.5
Queue Length 50th (ft)	136	271	49	429	163	70	0	129	216
Queue Length 95th (ft)	#217	342	96	525	#249	106	8	#230	#330
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	411	1577	153	1468	496	762	415	242	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.61	0.42	0.81	0.83	0.27	0.13	0.70	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	584	299	60	911	187	380	187	50	156	192	450
Future Volume (vph)	315	584	299	60	911	187	380	187	50	156	192	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3342		1770	3442		3433	3539	1583	1770	3167	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3342		1770	3442		3433	3539	1583	1770	3167	
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)	342	635	325	65	990	203	413	203	54	170	209	489
RTOR Reduction (vph)	0	53	0	0	15	0	0	0	43	0	142	0
Lane Group Flow (vph)	342	907	0	65	1178	0	413	203	11	170	556	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.5	52.1		7.3	45.9		16.1	24.3	24.3	14.3	22.5	
Effective Green, g (s)	13.5	52.1		7.3	45.9		16.1	24.3	24.3	14.3	22.5	
Actuated g/C Ratio	0.12	0.45		0.06	0.40		0.14	0.21	0.21	0.12	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	399	1501		111	1361		476	741	331	218	614	
v/s Ratio Prot	c0.10	0.27		0.04	c0.34		c0.12	0.06		0.10	c0.18	
v/s Ratio Perm									0.01			
v/c Ratio	0.86	0.60		0.59	0.87		0.87	0.27	0.03	0.78	1.09dr	
Uniform Delay, d1	50.3	24.2		52.9	32.2		48.9	38.5	36.5	49.3	45.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.4	0.7		7.7	6.0		15.3	0.2	0.0	16.1	16.9	
Delay (s)	66.7	24.9		60.5	38.2		64.2	38.7	36.5	65.4	62.6	
Level of Service	E	C		E	D		E	D	D	E	E	
Approach Delay (s)		35.8			39.4			54.2			63.2	
Approach LOS		D			D			D			E	

Intersection Summary				
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	85.8%	ICU Level of Service	E	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	584	299	60	911	187	380	187	50	156	192	450
Future Volume (veh/h)	315	584	299	60	911	187	380	187	50	156	192	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	635	0	65	990	203	413	203	54	170	209	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	433	1771		84	1232	252	510	436	195	209	328	
Arrive On Green	0.13	0.50	0.00	0.05	0.42	0.42	0.15	0.12	0.12	0.12	0.09	0.00
Sat Flow, veh/h	3456	3647	0	1781	2931	600	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	342	635	0	65	600	593	413	203	54	170	209	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1753	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	8.1	9.1	0.0	3.0	24.7	24.9	9.7	4.5	2.6	7.8	4.8	0.0
Cycle Q Clear(g_c), s	8.1	9.1	0.0	3.0	24.7	24.9	9.7	4.5	2.6	7.8	4.8	0.0
Prop In Lane	1.00		0.00	1.00		0.34	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	433	1771		84	747	737	510	436	195	209	328	
V/C Ratio(X)	0.79	0.36		0.77	0.80	0.81	0.81	0.47	0.28	0.82	0.64	
Avail Cap(c_a), veh/h	565	2209		210	1024	1010	680	1034	461	332	996	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.6	12.8	0.0	39.5	21.3	21.3	34.6	34.2	33.4	36.1	36.7	0.0
Incr Delay (d2), s/veh	5.7	0.1	0.0	14.0	3.3	3.4	5.4	0.8	0.8	8.2	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.4	0.0	1.6	10.1	10.0	4.3	1.9	1.0	3.7	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	13.0	0.0	53.5	24.6	24.7	40.0	35.0	34.2	44.3	38.8	0.0
LnGrp LOS	D	B		D	C	C	D	C	C	D	D	
Approach Vol, veh/h		977	A		1258			670			379	A
Approach Delay, s/veh		22.9			26.1			38.0			41.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	46.3	16.9	12.2	15.0	39.7	14.3	14.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.9	52.1	16.5	23.5	13.7	48.3	15.6	24.4
Max Q Clear Time (g_c+I1), s	5.0	11.1	11.7	6.8	10.1	26.9	9.8	6.5
Green Ext Time (p_c), s	0.0	5.0	0.7	1.0	0.4	8.4	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	96	476	1408	627	143
v/c Ratio	0.71	0.22	0.83	0.79	0.30
Control Delay	73.4	10.0	24.3	43.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	10.0	24.3	43.9	8.2
Queue Length 50th (ft)	53	50	276	167	0
Queue Length 95th (ft)	#183	151	#701	#381	56
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	135	2165	1699	793	475
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	0.71	0.22	0.83	0.79	0.30

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)	88	438	708	587	577	132
Future Volume (vph)	88	438	708	587	577	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3244		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3244		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	476	770	638	627	143
RTOR Reduction (vph)	0	0	106	0	0	111
Lane Group Flow (vph)	96	476	1302	0	627	32
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.3	58.6	46.8		22.1	22.1
Effective Green, g (s)	7.3	58.6	46.8		22.1	22.1
Actuated g/C Ratio	0.07	0.59	0.48		0.22	0.22
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	129	2085	1541		762	351
v/s Ratio Prot	c0.05	0.14	c0.40			
v/s Ratio Perm					c0.18	0.02
v/c Ratio	0.74	0.23	0.84		0.82	0.09
Uniform Delay, d1	44.7	9.4	22.7		36.3	30.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.5	0.1	4.5		7.2	0.1
Delay (s)	65.2	9.4	27.1		43.5	30.4
Level of Service	E	A	C		D	C
Approach Delay (s)		18.8	27.1		41.1	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	142	370	153	95	804	618	249	625	277	322	311
v/c Ratio	0.66	0.28	0.23	0.52	0.69	0.82	0.77	0.76	0.66	0.52	0.63
Control Delay	62.0	24.8	5.1	58.3	33.7	22.9	59.2	43.5	53.7	43.4	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	24.8	5.1	58.3	33.7	22.9	59.2	43.5	53.7	43.4	14.3
Queue Length 50th (ft)	94	94	0	63	251	166	163	210	94	107	22
Queue Length 95th (ft)	#190	146	44	127	342	354	#303	295	154	166	116
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	256	1538	754	241	1506	865	398	1085	485	797	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.24	0.20	0.39	0.53	0.71	0.63	0.58	0.57	0.40	0.56

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)	131	340	141	87	740	569	229	529	46	255	296	286
Future Volume (vph)	131	340	141	87	740	569	229	529	46	255	296	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1527	1752	3505	1528	1752	3458		3400	3505	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1527	1752	3505	1528	1752	3458		3400	3505	1519
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)	142	370	153	95	804	618	249	575	50	277	322	311
RTOR Reduction (vph)	0	0	95	0	0	242	0	5	0	0	0	226
Lane Group Flow (vph)	142	370	58	95	804	376	249	620	0	277	322	85
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	12.6	39.2	39.2	8.8	35.4	35.4	18.9	24.4		12.7	18.2	18.2
Effective Green, g (s)	12.6	39.2	39.2	8.8	35.4	35.4	18.9	24.4		12.7	18.2	18.2
Actuated g/C Ratio	0.12	0.38	0.38	0.09	0.34	0.34	0.18	0.24		0.12	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	214	1332	580	149	1203	524	321	818		418	618	268
v/s Ratio Prot	c0.08	c0.11		0.05	0.23		c0.14	c0.18		0.08	0.09	
v/s Ratio Perm			0.04			c0.25						0.06
v/c Ratio	0.66	0.28	0.10	0.64	0.67	0.72	0.78	0.76		0.66	0.52	0.32
Uniform Delay, d1	43.2	22.1	20.6	45.6	28.8	29.5	40.1	36.6		43.2	38.5	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.5	0.1	0.1	8.6	1.4	4.7	11.1	4.0		3.9	0.8	0.7
Delay (s)	50.7	22.3	20.7	54.2	30.3	34.1	51.2	40.6		47.1	39.3	37.7
Level of Service	D	C	C	D	C	C	D	D		D	D	D
Approach Delay (s)		28.0			33.3			43.7			41.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	18.0	
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)	131	340	141	87	740	569	229	529	46	255	296	286
Future Volume (veh/h)	131	340	141	87	740	569	229	529	46	255	296	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	142	370	153	95	804	618	249	575	50	277	322	311
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	171	1446	641	120	1344	595	281	856	74	342	712	312
Arrive On Green	0.10	0.41	0.41	0.07	0.38	0.38	0.16	0.26	0.26	0.10	0.20	0.20
Sat Flow, veh/h	1767	3526	1562	1767	3526	1561	1767	3281	285	3428	3526	1544
Grp Volume(v), veh/h	142	370	153	95	804	618	249	308	317	277	322	311
Grp Sat Flow(s),veh/h/ln	1767	1763	1562	1767	1763	1561	1767	1763	1803	1714	1763	1544
Q Serve(g_s), s	8.8	7.7	7.1	5.9	20.4	42.5	15.4	17.5	17.6	8.8	8.9	22.4
Cycle Q Clear(g_c), s	8.8	7.7	7.1	5.9	20.4	42.5	15.4	17.5	17.6	8.8	8.9	22.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	171	1446	641	120	1344	595	281	460	470	342	712	312
V/C Ratio(X)	0.83	0.26	0.24	0.79	0.60	1.04	0.89	0.67	0.67	0.81	0.45	1.00
Avail Cap(c_a), veh/h	230	1446	641	216	1344	595	357	489	500	434	712	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	21.7	21.5	51.2	27.6	34.5	45.9	36.9	36.9	49.1	39.1	44.5
Incr Delay (d2), s/veh	17.0	0.1	0.2	11.0	0.7	47.1	19.3	3.3	3.3	8.8	0.5	50.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.1	2.6	2.9	8.4	23.0	8.2	7.8	8.0	4.2	3.9	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.5	21.8	21.7	62.2	28.4	81.6	65.2	40.2	40.2	58.0	39.5	94.7
LnGrp LOS	E	C	C	E	C	F	E	D	D	E	D	F
Approach Vol, veh/h		665			1517			874			910	
Approach Delay, s/veh		31.3			52.2			47.3			64.0	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	33.6	12.1	50.2	22.2	27.0	15.3	47.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.1	30.9	13.6	43.4	22.5	22.5	14.5	42.5
Max Q Clear Time (g_c+I1), s	10.8	19.6	7.9	9.7	17.4	24.4	10.8	44.5
Green Ext Time (p_c), s	0.3	2.8	0.1	2.9	0.3	0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	47	54	744	56	56	520
Future Volume (Veh/h)	47	54	744	56	56	520
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	59	809	61	61	565
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1526	840			870	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1526	840			870	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	84			92	
cM capacity (veh/h)	119	365			775	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	110	870	61	565
Volume Left	51	0	61	0
Volume Right	59	61	0	0
cSH	187	1700	775	1700
Volume to Capacity	0.59	0.51	0.08	0.33
Queue Length 95th (ft)	81	0	6	0
Control Delay (s)	48.7	0.0	10.0	0.0
Lane LOS	E		B	
Approach Delay (s)	48.7	0.0	1.0	
Approach LOS	E			

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	54	744	56	56	520
Future Vol, veh/h	47	54	744	56	56	520
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	-	-	-	60	-
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	51	59	809	61	61	565

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1527	840	0	0	870	0
Stage 1	840	-	-	-	-	-
Stage 2	687	-	-	-	-	-
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	129	365	-	-	775	-
Stage 1	424	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	119	365	-	-	775	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	49	0	1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	186	775	-
HCM Lane V/C Ratio	-	-	0.59	0.079	-
HCM Control Delay (s)	-	-	49	10	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	3.2	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	10	42	10	20	104	35	508	10	35	400	100
Future Volume (Veh/h)	139	10	42	10	20	104	35	508	10	35	400	100
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	151	11	46	11	22	113	38	552	11	38	435	109
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1270	1158	441	1198	1262	560	550			565		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1270	1158	441	1198	1262	560	550			565		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	92	92	86	79	96			96		
cM capacity (veh/h)	95	180	613	134	156	526	1014			1005		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	208	146	38	563	38	435	109
Volume Left	151	11	38	0	38	0	0
Volume Right	46	113	0	11	0	0	109
cSH	120	334	1014	1700	1005	1700	1700
Volume to Capacity	1.73	0.44	0.04	0.33	0.04	0.26	0.06
Queue Length 95th (ft)	397	53	3	0	3	0	0
Control Delay (s)	423.5	23.9	8.7	0.0	8.7	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	423.5	23.9	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	60.0			
Intersection Capacity Utilization	58.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	51.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	10	42	10	20	104	35	508	10	35	400	100
Future Vol, veh/h	139	10	42	10	20	104	35	508	10	35	400	100
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	11	46	11	22	113	38	552	11	38	435	109

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1219	1158	441	1230	1262	561	550	0	0	565	0	0
Stage 1	517	517	-	636	636	-	-	-	-	-	-	-
Stage 2	702	641	-	594	626	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	157	196	616	154	170	527	1020	-	-	1007	-	-
Stage 1	541	534	-	466	472	-	-	-	-	-	-	-
Stage 2	429	469	-	491	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 103	180	612	128	156	525	1014	-	-	1005	-	-
Mov Cap-2 Maneuver	~ 103	180	-	128	156	-	-	-	-	-	-	-
Stage 1	518	511	-	448	454	-	-	-	-	-	-	-
Stage 2	308	451	-	428	456	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 361.8	24.2	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1014	-	-	130	331	1005	-	-
HCM Lane V/C Ratio	0.038	-	-	1.597	0.44	0.038	-	-
HCM Control Delay (s)	8.7	-	-	$ 361.8	24.2	8.7	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	14.9	2.2	0.1	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	12	273	10	287	15	250	138	254	199	10
Future Volume (vph)	20	10	12	273	10	287	15	250	138	254	199	10
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
Hourly flow rate (vph)	22	11	13	297	11	312	16	272	150	276	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	46	620	288	150	384	119
Volume Left (vph)	22	297	16	0	276	0
Volume Right (vph)	13	312	0	150	0	11
Hadj (s)	-0.04	-0.17	0.06	-0.67	0.39	-0.03
Departure Headway (s)	8.4	6.5	7.7	7.0	7.8	7.4
Degree Utilization, x	0.11	1.12	0.62	0.29	0.84	0.25
Capacity (veh/h)	397	546	454	506	449	478
Control Delay (s)	12.4	100.3	21.1	11.6	38.4	11.6
Approach Delay (s)	12.4	100.3	17.9		32.1	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	54.0			
Level of Service	F			
Intersection Capacity Utilization	79.3%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	56.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	10	12	273	10	287	0	15	250	138	254	199
Future Vol, veh/h	20	10	12	273	10	287	0	15	250	138	254	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	13	297	11	312	0	16	272	150	276	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.1	102.9	19.8	34.7
HCM LOS	B	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	6%	0%	48%	48%	72%	0%
Vol Thru, %	94%	0%	24%	2%	28%	91%
Vol Right, %	0%	100%	29%	50%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	138	42	570	354	110
LT Vol	15	0	20	273	254	0
Through Vol	250	0	10	10	100	100
RT Vol	0	138	12	287	0	10
Lane Flow Rate	288	150	46	620	384	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.617	0.291	0.108	1.127	0.837	0.245
Departure Headway (Hd)	8.242	7.484	8.987	6.546	8.364	7.925
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	483	401	551	438	456
Service Time	5.942	5.184	6.987	4.637	6.064	5.625
HCM Lane V/C Ratio	0.653	0.311	0.115	1.125	0.877	0.261
HCM Control Delay	23.3	13.2	13.1	102.9	41.4	13.2
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	4	1.2	0.4	20	8	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	183	135	221	208	122	388
Future Volume (Veh/h)	183	135	221	208	122	388
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	147	240	226	133	422
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	133	555			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	133	555			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	27	83	76			
cM capacity (veh/h)	272	888	1005			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	346	240	113	113	133	422
Volume Left	199	240	0	0	0	0
Volume Right	147	0	0	0	0	422
cSH	473	1005	1700	1700	1700	1700
Volume to Capacity	0.73	0.24	0.07	0.07	0.08	0.25
Queue Length 95th (ft)	149	23	0	0	0	0
Control Delay (s)	31.4	9.7	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	31.4	5.0			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay		9.6	
Intersection Capacity Utilization		42.9%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	183	135	221	208	122	388
Future Vol, veh/h	183	135	221	208	122	388
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	145	105	-	-	0
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	199	147	240	226	133	422

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	133	555	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	373	913	1007	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	913	1007	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.7	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1007	-	284	913	-	-
HCM Lane V/C Ratio	0.239	-	0.7	0.161	-	-
HCM Control Delay (s)	9.7	-	42.7	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	4.8	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	3	190	10	0	0	0	0	386	20
Future Volume (Veh/h)	0	0	0	3	190	10	0	0	0	0	386	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3	207	11	0	0	0	0	420	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	534	431	431	431	442	0	442			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	431	431	431	442	0	442			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	59	99	100			100		
cM capacity (veh/h)	309	517	624	535	510	1085	1118			1623		

Direction, Lane #	WB 1	SB 1
Volume Total	221	442
Volume Left	3	0
Volume Right	11	22
cSH	530	1700
Volume to Capacity	0.42	0.26
Queue Length 95th (ft)	51	0
Control Delay (s)	16.6	0.0
Lane LOS	C	
Approach Delay (s)	16.6	0.0
Approach LOS	C	

Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	38.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	190	10	0	0	0	0	386	20
Future Vol, veh/h	0	0	0	3	190	10	0	0	0	0	386	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	207	11	0	0	0	0	420	22

Major/Minor	Minor1			Major2		
Conflicting Flow All	431	442	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	431	442	-	-	-	-
Critical Hdwy	6.42	6.52	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-	-	-
Pot Cap-1 Maneuver	581	510	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	655	576	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	581	0	-	-	-	-
Mov Cap-2 Maneuver	581	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	655	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	14.7	0
HCM LOS	B	

Minor Lane/Major Mvmt	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	581	-	-	-
HCM Lane V/C Ratio	0.361	-	-	-
HCM Control Delay (s)	14.7	0	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	1.6	-	-	-

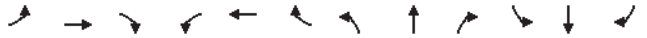
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	367	1193	435	579	126	315	582	420	329
v/c Ratio	0.11	0.78	0.81	0.54	0.52	0.66	0.69	0.36	0.75	0.51
Control Delay	58.1	62.6	40.1	33.1	5.0	78.1	66.9	7.2	65.0	47.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	62.6	40.1	33.1	5.0	78.1	66.9	7.2	65.0	47.8
Queue Length 50th (ft)	21	151	498	300	52	116	152	63	195	128
Queue Length 95th (ft)	53	216	628	433	135	189	207	86	264	185
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	255	533	1602	869	1141	247	585	1714	647	750
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	0.10	0.69	0.74	0.50	0.51	0.51	0.54	0.34	0.65	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	218	120	1098	400	533	116	290	535	386	210	93
Future Volume (vph)	23	218	120	1098	400	533	116	290	535	386	210	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3351		3433	1863	1569	1770	3539	2787	3433	3352	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3351		3433	1863	1569	1770	3539	2787	3433	3352	
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)	25	237	130	1193	435	579	126	315	582	420	228	101
RTOR Reduction (vph)	0	50	0	0	0	174	0	0	52	0	34	0
Lane Group Flow (vph)	25	317	0	1193	435	405	126	315	530	420	295	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	17.1	17.1		58.7	58.7	81.0	14.7	17.5	76.2	22.3	25.1	
Effective Green, g (s)	17.1	17.1		58.7	58.7	81.0	14.7	17.5	76.2	22.3	25.1	
Actuated g/C Ratio	0.13	0.13		0.43	0.43	0.60	0.11	0.13	0.56	0.16	0.18	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	222	421		1480	803	933	191	455	1560	562	618	
v/s Ratio Prot	0.01	c0.09		c0.35	0.23	0.07	0.07	c0.09	0.15	c0.12	0.09	
v/s Ratio Perm						0.19			0.04			
v/c Ratio	0.11	0.75		0.81	0.54	0.43	0.66	0.69	0.34	0.75	0.48	
Uniform Delay, d1	52.8	57.5		33.7	28.7	15.0	58.3	56.7	16.3	54.2	49.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	7.5		3.3	0.7	0.3	8.0	4.5	0.1	5.4	0.6	
Delay (s)	53.0	64.9		37.1	29.5	15.4	66.3	61.2	16.4	59.6	50.2	
Level of Service	D	E		D	C	B	E	E	B	E	D	
Approach Delay (s)		64.2			29.9			36.4			55.5	
Approach LOS		E			C			D			E	

Intersection Summary				
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	136.1	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	77.3%	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)	23	218	120	1098	400	533	116	290	535	386	210	93
Future Volume (veh/h)	23	218	120	1098	400	533	116	290	535	386	210	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	237	130	1193	435	579	126	315	582	420	228	101
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	231	292	154	1430	774	874	153	530	1570	494	478	205
Arrive On Green	0.13	0.13	0.13	0.41	0.41	0.41	0.09	0.15	0.15	0.14	0.20	0.20
Sat Flow, veh/h	1781	2245	1188	3456	1870	1564	1781	3554	2790	3456	2420	1037
Grp Volume(v), veh/h	25	186	181	1193	435	579	126	315	582	420	165	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1656	1728	1870	1564	1781	1777	1395	1728	1777	1681
Q Serve(g_s), s	1.5	12.7	13.3	38.6	22.2	32.5	8.7	10.3	14.4	14.8	10.3	10.8
Cycle Q Clear(g_c), s	1.5	12.7	13.3	38.6	22.2	32.5	8.7	10.3	14.4	14.8	10.3	10.8
Prop In Lane	1.00		0.72	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	231	231	215	1430	774	874	153	530	1570	494	351	332
V/C Ratio(X)	0.11	0.80	0.84	0.83	0.56	0.66	0.82	0.59	0.37	0.85	0.47	0.49
Avail Cap(c_a), veh/h	277	276	258	1734	939	1011	268	632	1651	701	409	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	52.7	53.0	32.7	27.9	19.5	56.1	49.6	15.1	52.2	44.3	44.5
Incr Delay (d2), s/veh	0.2	13.5	18.9	3.1	0.6	1.3	10.5	1.1	0.1	7.0	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.6	6.7	16.1	9.8	11.4	4.3	4.6	9.1	6.9	4.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.1	66.3	71.9	35.8	28.6	20.8	66.6	50.6	15.2	59.2	45.3	45.7
LnGrp LOS	D	E	E	D	C	C	E	D	B	E	D	D
Approach Vol, veh/h		392			2207			1023			749	
Approach Delay, s/veh		67.7			30.5			32.4			53.1	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.5	24.4		20.8	16.5	30.4		57.0				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 25	22.2		19.4	18.8	* 29		62.6				
Max Q Clear Time (g_c+I1), s	16.8	16.4		15.3	10.7	12.8		40.6				
Green Ext Time (p_c), s	1.0	2.2		0.9	0.2	1.7		11.1				

Intersection Summary												
HCM 6th Ctrl Delay			38.2									
HCM 6th LOS			D									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	786	291	132	1483	676	387	300	507
v/c Ratio	0.79	0.60	0.38	0.72	1.00	1.04	0.63	0.89	0.77
Control Delay	88.4	32.3	4.7	71.4	55.7	89.8	46.4	73.4	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.4	32.3	4.7	71.4	55.7	89.8	46.4	73.4	44.4
Queue Length 50th (ft)	45	243	0	93	543	~271	134	212	153
Queue Length 95th (ft)	#104	341	60	#188	#799	#424	185	#396	213
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	151	1306	767	202	1483	653	811	349	861
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.60	0.38	0.65	1.00	1.04	0.48	0.86	0.59

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)	110	723	268	121	1091	273	622	307	49	276	267	200
Future Volume (vph)	110	723	268	121	1091	273	622	307	49	276	267	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3416		3433	3458		1770	3312	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3416		3433	3458		1770	3312	
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)	120	786	291	132	1186	297	676	334	53	300	290	217
RTOR Reduction (vph)	0	0	183	0	18	0	0	11	0	0	75	0
Lane Group Flow (vph)	120	786	108	132	1465	0	676	376	0	300	432	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	5.0	41.8	41.8	11.8	48.6		21.5	19.9		21.6	20.0	
Effective Green, g (s)	5.0	41.8	41.8	11.8	48.6		21.5	19.9		21.6	20.0	
Actuated g/C Ratio	0.04	0.37	0.37	0.10	0.43		0.19	0.18		0.19	0.18	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1307	585	184	1467		652	608		338	585	
v/s Ratio Prot	0.03	0.22		c0.07	c0.43		c0.20	0.11		c0.17	0.13	
v/s Ratio Perm			0.07									
v/c Ratio	0.79	0.60	0.18	0.72	1.00		1.04	0.62		0.89	0.74	
Uniform Delay, d1	53.5	28.9	24.1	49.0	32.2		45.8	43.1		44.6	44.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.3	0.8	0.2	12.5	23.0		45.1	1.9		23.3	4.9	
Delay (s)	77.9	29.7	24.3	61.6	55.3		90.9	45.0		67.8	48.9	
Level of Service	E	C	C	E	E		F	D		E	D	
Approach Delay (s)		33.2			55.8			74.2			56.0	
Approach LOS		C			E			E			E	

Intersection Summary					
HCM 2000 Control Delay	54.2	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	1.00				
Actuated Cycle Length (s)	113.1	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	89.8%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	723	268	121	1091	273	622	307	49	276	267	200
Future Volume (veh/h)	110	723	268	121	1091	273	622	307	49	276	267	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	786	291	132	1186	297	676	334	53	300	290	217
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	152	1349	602	160	1199	297	651	581	91	328	362	263
Arrive On Green	0.04	0.38	0.38	0.09	0.43	0.43	0.19	0.19	0.19	0.18	0.18	0.18
Sat Flow, veh/h	3456	3554	1585	1781	2819	697	3456	3073	483	1781	1963	1427
Grp Volume(v), veh/h	120	786	291	132	742	741	676	192	195	300	262	245
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1739	1728	1777	1779	1781	1777	1613
Q Serve(g_s), s	3.9	20.1	9.1	8.3	47.0	48.5	21.5	11.2	11.4	18.8	16.1	16.7
Cycle Q Clear(g_c), s	3.9	20.1	9.1	8.3	47.0	48.5	21.5	11.2	11.4	18.8	16.1	16.7
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.27	1.00		0.88
Lane Grp Cap(c), veh/h	152	1349	602	160	756	740	651	336	336	328	328	298
V/C Ratio(X)	0.79	0.58	0.48	0.83	0.98	1.00	1.04	0.57	0.58	0.92	0.80	0.82
Avail Cap(c_a), veh/h	152	1349	602	201	756	740	651	408	409	348	421	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	28.2	8.7	51.0	32.3	32.8	46.3	42.0	42.1	45.7	44.5	44.7
Incr Delay (d2), s/veh	24.2	0.6	0.6	19.7	28.3	33.5	45.4	1.5	1.6	27.1	8.1	10.9
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	2.2	8.3	2.9	4.5	24.9	26.0	13.1	4.9	5.0	10.6	7.6	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	28.8	9.3	70.8	60.6	66.3	91.6	43.6	43.7	72.8	52.6	55.6
LnGrp LOS	E	C	A	E	E	F	F	D	D	E	D	E
Approach Vol, veh/h		1197			1615			1063			807	
Approach Delay, s/veh		29.0			64.0			74.2			61.0	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	47.8	26.0	25.5	9.5	53.0	25.5	26.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	40.6	21.5	27.0	5.0	48.5	22.3	26.2
Max Q Clear Time (g_c+I1), s	10.3	22.1	23.5	18.7	5.9	50.5	20.8	13.4
Green Ext Time (p_c), s	0.1	6.0	0.0	1.9	0.0	0.0	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	56.9
HCM 6th LOS	E

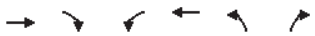
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	392	236	13	910	413	7
v/c Ratio	0.54	0.32	0.04	0.66	0.67	0.01
Control Delay	14.6	3.2	10.3	14.5	19.4	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	3.2	10.3	14.5	19.4	8.8
Queue Length 50th (ft)	69	0	2	88	81	1
Queue Length 95th (ft)	182	35	12	198	208	7
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1427	1235	667	2711	1264	1133
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	0.27	0.19	0.02	0.34	0.33	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	217	12	837	380	6
Future Volume (vph)	361	217	12	837	380	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1532	1749	3505	1752	1568
Flt Permitted	1.00	1.00	0.47	1.00	0.95	1.00
Satd. Flow (perm)	1845	1532	864	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	236	13	910	413	7
RTOR Reduction (vph)	0	142	0	0	0	3
Lane Group Flow (vph)	392	94	13	910	413	4
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	17.7	17.7	17.7	17.7	15.9	15.9
Effective Green, g (s)	17.7	17.7	17.7	17.7	15.9	15.9
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.36	0.36
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	735	610	344	1397	627	561
v/s Ratio Prot	0.21			c0.26		0.00
v/s Ratio Perm		0.06	0.02		c0.24	
v/c Ratio	0.53	0.15	0.04	0.65	0.66	0.01
Uniform Delay, d1	10.2	8.6	8.2	10.8	12.0	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.0	0.8	1.9	0.0
Delay (s)	10.6	8.6	8.2	11.7	13.9	9.2
Level of Service	B	A	A	B	B	A
Approach Delay (s)	9.8			11.6	13.8	
Approach LOS	A			B	B	

Intersection Summary				
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	10.8
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	361	217	12	837	380	6
Future Volume (veh/h)	361	217	12	837	380	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	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	392	236	13	910	413	7
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	732	617	395	1390	508	452
Arrive On Green	0.39	0.39	0.39	0.39	0.29	0.29
Sat Flow, veh/h	1856	1565	790	3618	1767	1572
Grp Volume(v), veh/h	392	236	13	910	413	7
Grp Sat Flow(s),veh/h/ln	1856	1565	790	1763	1767	1572
Q Serve(g_s), s	5.5	3.7	0.4	7.2	7.4	0.1
Cycle Q Clear(g_c), s	5.5	3.7	5.9	7.2	7.4	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	732	617	395	1390	508	452
V/C Ratio(X)	0.54	0.38	0.03	0.65	0.81	0.02
Avail Cap(c_a), veh/h	1836	1548	866	3488	1592	1417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	7.3	10.2	8.4	11.2	8.7
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.2	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.7	0.1	1.5	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.1	7.5	10.2	8.6	12.5	8.7
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	628			923	420	
Approach Delay, s/veh	7.9			8.6	12.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		18.8				18.8	15.2
Change Period (Y+Rc), s		5.4				5.4	5.4
Max Green Setting (Gmax), s		33.6				33.6	30.6
Max Q Clear Time (g_c+I1), s		7.5				9.2	9.4
Green Ext Time (p_c), s		1.8				4.2	0.6

Intersection Summary			
HCM 6th Ctrl Delay		9.2	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	265	102	7	782	0	61	0	12	0	0	5
Future Volume (Veh/h)	0	265	102	7	782	0	61	0	12	0	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	288	111	8	850	0	66	0	13	0	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.84			0.84	0.84	0.84	0.84	0.84	
vC, conflicting volume	850			399			790	1210	344	1216	1265	425
vC1, stage 1 conf vol							344	344		866	866	
vC2, stage 2 conf vol							446	866		350	399	
vCu, unblocked vol	850			194			657	1155	128	1163	1221	425
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			87	100	98	100	100	99
cM capacity (veh/h)	784			1160			492	337	757	291	330	578

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	399	433	425	79	5
Volume Left	0	8	0	66	0
Volume Right	111	0	0	13	5
cSH	784	1160	1700	589	578
Volume to Capacity	0.00	0.01	0.25	0.13	0.01
Queue Length 95th (ft)	0	1	0	12	1
Control Delay (s)	0.0	0.2	0.0	12.8	11.3
Lane LOS		A		B	B
Approach Delay (s)	0.0	0.1		12.8	11.3
Approach LOS				B	B

Intersection Summary					
Average Delay		0.9			
Intersection Capacity Utilization		43.2%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	265	102	7	782	0	61	0	12	0	0	5
Future Vol, veh/h	0	265	102	7	782	0	61	0	12	0	0	5
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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	288	111	8	850	0	66	0	13	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	850	0	0	399	0	0	785	1210	344	1216	1265	425
Stage 1	-	-	-	-	-	-	344	344	-	866	866	-
Stage 2	-	-	-	-	-	-	441	866	-	350	399	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	786	-	-	1158	-	-	296	182	698	147	169	578
Stage 1	-	-	-	-	-	-	671	636	-	315	369	-
Stage 2	-	-	-	-	-	-	566	369	-	666	601	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	786	-	-	1158	-	-	290	180	698	143	167	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	470	327	-	286	322	-
Stage 1	-	-	-	-	-	-	671	636	-	315	364	-
Stage 2	-	-	-	-	-	-	553	364	-	654	601	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	13.3	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	470	698	786	-	-	1158	-	-	578
HCM Lane V/C Ratio	0.141	0.019	-	-	-	0.007	-	-	0.009
HCM Control Delay (s)	13.9	10.3	0	-	-	8.1	0.1	-	11.3
HCM Lane LOS	B	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0	-	-	0	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	80	106	86	23	246	82	230	190	37	38	152	249
Future Volume (veh/h)	80	106	86	23	246	82	230	190	37	38	152	249
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
Hourly flow rate (vph)	87	115	93	25	267	89	250	207	40	41	165	271
Approach Volume (veh/h)		295			381			497			477	
Crossing Volume (veh/h)		231			544			243			542	
High Capacity (veh/h)		1156			901			1145			903	
High v/c (veh/h)		0.26			0.42			0.43			0.53	
Low Capacity (veh/h)		953			726			943			727	
Low v/c (veh/h)		0.31			0.52			0.53			0.66	

Intersection Summary					
Maximum v/c High		0.53			
Maximum v/c Low		0.66			
Intersection Capacity Utilization		98.1%	ICU Level of Service		F

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	295	381	497	477
Demand Flow Rate, veh/h	301	389	507	486
Vehicles Circulating, veh/h	235	555	248	552
Vehicles Exiting, veh/h	803	200	288	391
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	11.7	8.8	15.0
Approach LOS	A	B	A	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	301	389	507	486
Cap Entry Lane, veh/h	1086	783	1071	786
Entry HV Adj Factor	0.979	0.979	0.980	0.981
Flow Entry, veh/h	295	381	497	477
Cap Entry, veh/h	1063	767	1050	771
V/C Ratio	0.277	0.497	0.473	0.618
Control Delay, s/veh	6.1	11.7	8.8	15.0
LOS	A	B	A	C
95th %tile Queue, veh	1	3	3	4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	5	24	1	17	19	40	275	1	9	163	57
Future Volume (vph)	17	5	24	1	17	19	40	275	1	9	163	57
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
Hourly flow rate (vph)	18	5	26	1	18	21	43	299	1	10	177	62

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	49	40	343	249
Volume Left (vph)	18	1	43	10
Volume Right (vph)	26	21	1	62
Hadj (s)	-0.11	-0.17	0.16	-0.01
Departure Headway (s)	5.2	5.2	4.6	4.5
Degree Utilization, x	0.07	0.06	0.44	0.31
Capacity (veh/h)	610	612	766	765
Control Delay (s)	8.6	8.5	11.1	9.6
Approach Delay (s)	8.6	8.5	11.1	9.6
Approach LOS	A	A	B	A

Intersection Summary				
Delay	10.2			
Level of Service	B			
Intersection Capacity Utilization	47.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	5	24	1	17	19	40	275	1	9	163	57
Future Vol, veh/h	17	5	24	1	17	19	40	275	1	9	163	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	18	5	26	1	18	21	43	299	1	10	177	62
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8.5	11.1	9.6
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	37%	3%	4%
Vol Thru, %	87%	11%	46%	71%
Vol Right, %	0%	52%	51%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	316	46	37	229
LT Vol	40	17	1	9
Through Vol	275	5	17	163
RT Vol	1	24	19	57
Lane Flow Rate	343	50	40	249
Geometry Grp	1	1	1	1
Degree of Util (X)	0.435	0.072	0.057	0.311
Departure Headway (Hd)	4.558	5.185	5.139	4.501
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	790	688	694	799
Service Time	2.588	3.238	3.193	2.533
HCM Lane V/C Ratio	0.434	0.073	0.058	0.312
HCM Control Delay	11.1	8.6	8.5	9.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.2	0.2	0.2	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	85	37	15	0	89	25	30	123	1	7	77	117
Future Volume (Veh/h)	85	37	15	0	89	25	30	123	1	7	77	117
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	40	16	0	97	27	33	134	1	8	84	127
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	124			56			512	356	48	410	350	110
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	124			56			512	356	48	410	350	110
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			90	75	100	98	84	86
cM capacity (veh/h)	1450			1536			340	531	1015	420	534	937

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	148	124	168	8	211
Volume Left	92	0	33	8	0
Volume Right	16	27	1	0	127
cSH	1450	1536	479	420	721
Volume to Capacity	0.06	0.00	0.35	0.02	0.29
Queue Length 95th (ft)	5	0	39	1	30
Control Delay (s)	4.9	0.0	16.5	13.7	12.0
Lane LOS	A		C	B	B
Approach Delay (s)	4.9	0.0	16.5	12.1	
Approach LOS			C	B	

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	43.7%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	85	37	15	0	89	25	30	123	1	7	77	117
Future Vol, veh/h	85	37	15	0	89	25	30	123	1	7	77	117
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	92	40	16	0	97	27	33	134	1	8	84	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	56	0	0	448	356	48	411	351	111
Stage 1	-	-	-	-	-	-	232	232	-	111	111	-
Stage 2	-	-	-	-	-	-	216	124	-	300	240	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1450	-	-	1536	-	-	518	567	1015	548	570	937
Stage 1	-	-	-	-	-	-	766	709	-	889	800	-
Stage 2	-	-	-	-	-	-	782	789	-	705	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1450	-	-	1536	-	-	375	530	1015	420	532	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	530	-	420	532	-
Stage 1	-	-	-	-	-	-	715	662	-	830	800	-
Stage 2	-	-	-	-	-	-	605	789	-	525	657	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.7	0	16	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	492	1450	-	-	1536	-	-	420	720
HCM Lane V/C Ratio	0.34	0.064	-	-	-	-	-	0.018	0.293
HCM Control Delay (s)	16	7.7	0	-	0	-	-	13.7	12.1
HCM Lane LOS	C	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1.5	0.2	-	-	0	-	-	0.1	1.2



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	8	166	144	21	123	56
Future Volume (veh/h)	8	166	144	21	123	56
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	180	157	23	134	61
Approach Volume (veh/h)	189		180			195
Crossing Volume (veh/h)	157		134			9
High Capacity (veh/h)	1225		1247			1375
High v/c (veh/h)	0.15		0.14			0.14
Low Capacity (veh/h)	1016		1036			1152
Low v/c (veh/h)	0.19		0.17			0.17

Intersection Summary				
Maximum v/c High		0.15		
Maximum v/c Low		0.19		
Intersection Capacity Utilization		39.3%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	189	180	195
Demand Flow Rate, veh/h	193	183	199
Vehicles Circulating, veh/h	160	137	9
Vehicles Exiting, veh/h	160	71	344
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.6	4.4	3.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	193	183	199
Cap Entry Lane, veh/h	1172	1200	1367
Entry HV Adj Factor	0.979	0.983	0.979
Flow Entry, veh/h	189	180	195
Cap Entry, veh/h	1148	1179	1338
V/C Ratio	0.165	0.153	0.146
Control Delay, s/veh	4.6	4.4	3.9
LOS	A	A	A
95th %tile Queue, veh	1	1	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	72	90	10	5	14
Future Volume (Veh/h)	18	72	90	10	5	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	78	98	11	5	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	109				222	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109				222	104
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	98
cM capacity (veh/h)	1475				754	949

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	98	109	20
Volume Left	20	0	5
Volume Right	0	11	15
cSH	1475	1700	891
Volume to Capacity	0.01	0.06	0.02
Queue Length 95th (ft)	1	0	2
Control Delay (s)	1.6	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	1.6	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	72	90	10	5	14
Future Vol, veh/h	18	72	90	10	5	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	20	78	98	11	5	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	222	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	118	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1475	-	-	-	764	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	753	948
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	888
HCM Lane V/C Ratio	0.013	-	-	-	0.023
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	334	1643	1633	162	159	302
v/c Ratio	0.64	0.50	0.89	0.18	0.62	0.57
Control Delay	57.4	0.5	32.1	4.6	63.5	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	0.5	32.1	4.6	63.5	36.9
Queue Length 50th (ft)	128	0	565	11	118	180
Queue Length 95th (ft)	224	0	877	51	235	336
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	835	3312	2513	1155	430	830
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	0.40	0.50	0.65	0.14	0.37	0.36

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	331	1627	1617	160	157	299
Future Volume (vph)	331	1627	1617	160	157	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3213	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3213	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	334	1643	1633	162	159	302
RTOR Reduction (vph)	0	0	0	57	0	12
Lane Group Flow (vph)	334	1643	1633	105	159	290
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	20.0	121.5	67.5	67.5	19.0	43.0
Effective Green, g (s)	20.0	121.5	67.5	67.5	19.0	43.0
Actuated g/C Ratio	0.16	1.00	0.56	0.56	0.16	0.35
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	528	3312	1840	823	258	524
v/s Ratio Prot	c0.10	0.50	c0.49		c0.10	0.20
v/s Ratio Perm				0.07		
v/c Ratio	0.63	0.50	0.89	0.13	0.62	0.55
Uniform Delay, d1	47.3	0.0	23.7	12.9	47.8	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.5	5.8	0.1	4.5	1.3
Delay (s)	49.8	0.5	29.4	13.0	52.4	32.8
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.9	28.0		39.6	
Approach LOS		A	C		D	

Intersection Summary				
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	121.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	392	1073	374	405	1134	216	377	505	271	356	320
v/c Ratio	0.98	0.87	0.48	0.95	0.90	0.31	0.85	0.61	0.73	0.88	0.63
Control Delay	104.8	52.9	5.0	97.4	55.1	4.8	82.0	52.1	77.9	78.8	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.8	52.9	5.0	97.4	55.1	4.8	82.0	52.1	77.9	78.8	23.4
Queue Length 50th (ft)	~211	521	0	209	556	0	192	225	136	340	92
Queue Length 95th (ft)	#372	628	68	#388	679	54	#330	322	205	#539	217
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	400	1606	904	425	1606	821	445	920	445	495	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.67	0.41	0.95	0.71	0.26	0.85	0.55	0.61	0.72	0.56

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)	380	1041	363	393	1100	210	366	375	114	263	345	310
Future Volume (vph)	380	1041	363	393	1100	210	366	375	114	263	345	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1488	3273	3374	1488	3273	3245		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1488	3273	3374	1488	3273	3245		3273	1776	1509
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)	392	1073	374	405	1134	216	377	387	118	271	356	320
RTOR Reduction (vph)	0	0	237	0	0	135	0	16	0	0	0	165
Lane Group Flow (vph)	392	1073	137	405	1134	81	377	489	0	271	356	155
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.3	54.4	54.4	19.5	55.6	55.6	20.3	37.5		17.0	34.2	34.2
Effective Green, g (s)	18.3	54.4	54.4	19.5	55.6	55.6	20.3	37.5		17.0	34.2	34.2
Actuated g/C Ratio	0.12	0.37	0.37	0.13	0.37	0.37	0.14	0.25		0.11	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	401	1231	543	428	1259	555	445	816		373	407	346
v/s Ratio Prot	c0.12	0.32		c0.12	c0.34		c0.12	c0.15		0.08	c0.20	
v/s Ratio Perm			0.09			0.05						0.10
v/c Ratio	0.98	0.87	0.25	0.95	0.90	0.15	0.85	0.60		0.73	0.87	0.45
Uniform Delay, d1	65.1	44.0	33.1	64.2	44.1	31.0	62.8	49.1		63.8	55.3	49.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	38.6	7.0	0.2	29.7	9.1	0.1	13.9	1.2		6.9	18.4	0.9
Delay (s)	103.7	51.1	33.3	93.9	53.2	31.1	76.7	50.3		70.7	73.8	50.2
Level of Service	F	D	C	F	D	C	E	D		E	E	D
Approach Delay (s)		58.7			59.8			61.6			64.9	
Approach LOS		E			E			E			E	

Intersection Summary				
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	149.0	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	87.0%	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)	380	1041	363	393	1100	210	366	375	114	263	345	310
Future Volume (veh/h)	380	1041	363	393	1100	210	366	375	114	263	345	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	392	1073	374	405	1134	216	377	387	118	271	356	320
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	397	1241	553	397	1316	586	420	675	203	321	416	353
Arrive On Green	0.12	0.36	0.36	0.12	0.39	0.39	0.13	0.26	0.26	0.10	0.23	0.23
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2583	778	3319	1796	1522
Grp Volume(v), veh/h	392	1073	374	405	1134	216	377	254	251	271	356	320
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1654	1659	1796	1522
Q Serve(g_s), s	17.8	43.9	21.3	18.0	46.0	15.3	16.9	19.5	19.9	12.1	28.6	30.8
Cycle Q Clear(g_c), s	17.8	43.9	21.3	18.0	46.0	15.3	16.9	19.5	19.9	12.1	28.6	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	397	1241	553	397	1316	586	420	446	432	321	416	353
V/C Ratio(X)	0.99	0.86	0.68	1.02	0.86	0.37	0.90	0.57	0.58	0.84	0.86	0.91
Avail Cap(c_a), veh/h	397	1587	707	397	1587	707	441	465	450	441	489	415
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	66.2	44.5	18.9	66.3	42.6	33.1	64.8	48.2	48.4	66.9	55.4	56.3
Incr Delay (d2), s/veh	41.8	4.3	1.8	50.5	4.4	0.4	20.3	1.5	1.7	10.5	12.3	21.3
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	9.6	18.4	7.6	10.2	19.2	5.7	8.2	8.4	8.3	5.5	14.2	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.0	48.7	20.6	116.8	47.0	33.5	85.1	49.8	50.1	77.4	67.8	77.6
LnGrp LOS	F	D	C	F	D	C	F	D	D	E	E	E
Approach Vol, veh/h		1839			1755			882			947	
Approach Delay, s/veh		55.6			61.4			65.0			73.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.3	62.0	23.0	40.2	22.0	65.3	18.5	44.7
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	20.0	45.9	18.9	32.8	19.8	48.0	14.1	21.9
Green Ext Time (p_c), s	0.0	8.8	0.2	2.1	0.0	8.3	0.5	2.7

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	1554	1603	20	0	100
Future Volume (Veh/h)	0	1554	1603	20	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1653	1705	21	0	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1726				2532	852
vC1, stage 1 conf vol					1705	
vC2, stage 2 conf vol					826	
vCu, unblocked vol	1726				2532	852
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	63
cM capacity (veh/h)	329				113	287

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	826	826	852	852	21	106
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	21	106
cSH	1700	1700	1700	1700	1700	287
Volume to Capacity	0.49	0.49	0.50	0.50	0.01	0.37
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	24.7
Lane LOS						C
Approach Delay (s)	0.0		0.0			24.7
Approach LOS						C

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		57.2%	ICU Level of Service	B
Analysis Period (min)		15		

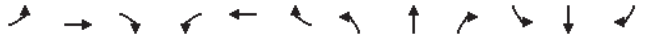
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1554	1603	20	0	100
Future Vol, veh/h	0	1554	1603	20	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1653	1705	21	0	106

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	853
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	287
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	287
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	24.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	287
HCM Lane V/C Ratio	-	-	-	0.371
HCM Control Delay (s)	-	-	-	24.7
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1521	33	3	1563	0	50	0	6	0	0	10
Future Volume (Veh/h)	0	1521	33	3	1563	0	50	0	6	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1568	34	3	1611	0	52	0	6	0	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1611			1602			2390	3185	784	2404	3219	806
vC1, stage 1 conf vol							1568	1568		1617	1617	
vC2, stage 2 conf vol							822	1617		787	1602	
vCu, unblocked vol	1611			1602			2390	3185	784	2404	3219	806
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			46	100	98	100	100	97
cM capacity (veh/h)	358			361			96	100	315	90	97	305

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	784	784	34	3	1074	537	58	10
Volume Left	0	0	0	0	3	0	0	52	0
Volume Right	0	0	0	34	0	0	0	6	10
cSH	1700	1700	1700	1700	361	1700	1700	106	305
Volume to Capacity	0.00	0.46	0.46	0.02	0.01	0.63	0.32	0.55	0.03
Queue Length 95th (ft)	0	0	0	0	1	0	0	64	3
Control Delay (s)	0.0	0.0	0.0	0.0	15.1	0.0	0.0	74.5	17.2
Lane LOS					C			F	C
Approach Delay (s)	0.0				0.0			74.5	17.2
Approach LOS								F	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	59.3%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1521	33	3	1563	0	50	0	6	0	0	10
Future Vol, veh/h	0	1521	33	3	1563	0	50	0	6	0	0	10
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1568	34	3	1611	0	52	0	6	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1611	0	0	1602	0	0	2380	3185	784	2401	3219	806
Stage 1	-	-	-	-	-	-	1568	1568	-	1617	1617	-
Stage 2	-	-	-	-	-	-	812	1617	-	784	1602	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	358	-	-	361	-	-	~ 16	8	315	15	8	305
Stage 1	-	-	-	-	-	-	105	154	-	98	146	-
Stage 2	-	-	-	-	-	-	318	146	-	331	148	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	358	-	-	361	-	-	~ 15	8	315	15	8	305
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	97	-	89	94	-
Stage 1	-	-	-	-	-	-	105	154	-	98	145	-
Stage 2	-	-	-	-	-	-	305	145	-	325	148	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	75.3	17.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	94	315	358	-	-	361	-	-	305
HCM Lane V/C Ratio	0.548	0.02	-	-	-	0.009	-	-	0.034
HCM Control Delay (s)	82.3	16.7	0	-	-	15.1	-	-	17.2
HCM Lane LOS	F	C	A	-	-	C	-	-	C
HCM 95th %tile Q(veh)	2.5	0.1	0	-	-	0	-	-	0.1

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	300	350	150	325	280	180	62	447	357	100	628	300
Future Volume (veh/h)	300	350	150	325	280	180	62	447	357	100	628	300
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	323	376	161	349	301	194	67	481	384	108	675	323
Approach Volume (veh/h)		699			844			932			1106	
Crossing Volume (veh/h)		1132			871			807			717	
High Capacity (veh/h)		558			692			729			784	
High v/c (veh/h)		1.25			1.22			1.28			1.41	
Low Capacity (veh/h)		428			542			575			623	
Low v/c (veh/h)		1.63			1.56			1.62			1.78	

Intersection Summary												
Maximum v/c High			1.41									
Maximum v/c Low			1.78									
Intersection Capacity Utilization			123.0%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	38.7
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	860	844	932	1106
Demand Flow Rate, veh/h	869	852	942	1117
Vehicles Circulating, veh/h	1143	880	815	724
Vehicles Exiting, veh/h	698	877	1034	1008
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	21.6	20.7	27.0	75.7
Approach LOS	C	C	D	F

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.413	0.587	0.588	0.412	0.708	0.292
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	163	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	332	374	1919	352	500	554	388	791	326
Cap Entry Lane, veh/h	502	502	0.990	601	672	638	710	694	767
Entry HV Adj Factor	0.990	0.991	161	0.991	0.990	0.990	0.990	0.990	0.991
Flow Entry, veh/h	329	371	1900	349	495	548	384	783	323
Cap Entry, veh/h	497	497	0.085	596	665	631	703	687	760
V/C Ratio	0.662	0.745	0.0	0.586	0.744	0.869	0.546	1.141	0.425
Control Delay, s/veh	23.6	29.2	A	17.2	23.2	36.2	13.8	102.6	10.3
LOS	C	D	0	C	C	E	B	F	B
95th %tile Queue, veh	5	6		4	7	10	3	24	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	117	15	20	105	0	15	1	15	0	0	0
Future Volume (Veh/h)	1	117	15	20	105	0	15	1	15	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	127	16	22	114	0	16	1	16	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	114			143			295	295	135	312	303	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			143			295	295	135	312	303	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			98	100	98	100	100	100
cM capacity (veh/h)	1463			1427			645	603	909	617	597	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	136	33	0
Volume Left	1	22	16	0
Volume Right	16	0	16	0
cSH	1463	1427	749	1700
Volume to Capacity	0.00	0.02	0.04	0.00
Queue Length 95th (ft)	0	1	3	0
Control Delay (s)	0.1	1.3	10.0	0.0
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	1.3	10.0	0.0
Approach LOS			B	A

Intersection Summary					
Average Delay			1.7		
Intersection Capacity Utilization			27.1%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	117	15	20	105	0	15	1	15	0	0	0
Future Vol, veh/h	1	117	15	20	105	0	15	1	15	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	127	16	22	114	0	16	1	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	114	0	0	143	0	0	295	295	135	304	303	114
Stage 1	-	-	-	-	-	-	137	137	-	158	158	-
Stage 2	-	-	-	-	-	-	158	158	-	146	145	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1463	-	-	1427	-	-	653	613	909	644	607	933
Stage 1	-	-	-	-	-	-	861	779	-	840	763	-
Stage 2	-	-	-	-	-	-	840	763	-	852	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1427	-	-	645	603	909	623	597	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	645	603	-	623	597	-
Stage 1	-	-	-	-	-	-	860	778	-	839	751	-
Stage 2	-	-	-	-	-	-	827	751	-	835	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.2	10	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	749	1463	-	-	1427	-	-	-
HCM Lane V/C Ratio	0.045	0.001	-	-	0.015	-	-	-
HCM Control Delay (s)	10	7.5	0	-	7.6	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	551	309	510	762	7	54	319	387	396	117
v/c Ratio	0.23	0.75	0.78	0.61	0.68	0.04	0.30	0.72	0.79	0.80	0.21
Control Delay	58.6	45.6	53.6	27.7	5.5	45.6	50.3	15.6	47.3	47.5	4.8
Queue Delay	0.0	0.0	0.1	4.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	45.6	53.8	32.2	6.3	45.6	50.3	15.6	47.3	47.5	4.8
Queue Length 50th (ft)	14	184	199	240	0	5	36	0	248	253	0
Queue Length 95th (ft)	44	277	#358	463	93	19	76	85	#458	#467	34
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	93	885	493	913	1147	337	355	560	593	602	633
Starvation Cap Reductn	0	0	9	320	147	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.62	0.64	0.86	0.76	0.02	0.15	0.57	0.65	0.66	0.18

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)	20	486	32	290	479	716	7	51	300	638	98	110
Future Volume (vph)	20	486	32	290	479	716	7	51	300	638	98	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3535		1787	1881	1557	1787	1881	1599	1698	1724	1560
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3535		1787	1881	1557	1787	1881	1599	1698	1724	1560
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)	21	517	34	309	510	762	7	54	319	679	104	117
RTOR Reduction (vph)	0	4	0	0	0	433	0	0	290	0	0	84
Lane Group Flow (vph)	21	547	0	309	510	329	7	54	29	387	396	33
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	23.7		22.0	44.0	44.0	9.4	9.4	9.4	28.8	28.8	28.8
Effective Green, g (s)	1.7	23.7		22.0	44.0	44.0	9.4	9.4	9.4	28.8	28.8	28.8
Actuated g/C Ratio	0.02	0.23		0.22	0.43	0.43	0.09	0.09	0.09	0.28	0.28	0.28
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	29	822		385	812	672	164	173	147	479	487	440
v/s Ratio Prot	0.01	0.15		c0.17	c0.27		0.00	c0.03		0.23	c0.23	
v/s Ratio Perm						0.21			0.02			0.02
v/c Ratio	0.72	0.67		0.80	0.63	0.49	0.04	0.31	0.20	0.81	0.81	0.08
Uniform Delay, d1	49.9	35.5		37.9	22.6	20.9	42.1	43.2	42.8	34.0	34.0	26.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	61.8	2.0		11.5	1.5	0.6	0.1	1.0	0.7	9.7	10.0	0.1
Delay (s)	111.7	37.5		49.3	24.1	21.4	42.3	44.3	43.4	43.6	44.0	26.9
Level of Service	F	D		D	C	C	D	D	D	D	D	C
Approach Delay (s)		40.3			27.7			43.5			41.6	
Approach LOS		D			C			D			D	

Intersection Summary

HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.2%	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)	20	486	32	290	479	716	7	51	300	638	98	110
Future Volume (veh/h)	20	486	32	290	479	716	7	51	300	638	98	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	517	34	309	510	762	7	54	319	753	0	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	823	54	342	774	640	294	309	262	866	0	384
Arrive On Green	0.02	0.24	0.24	0.19	0.41	0.41	0.16	0.16	0.16	0.24	0.00	0.24
Sat Flow, veh/h	1795	3410	224	1795	1885	1559	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	271	280	309	510	762	7	54	319	753	0	117
Grp Sat Flow(s),veh/h/ln	1795	1791	1843	1795	1885	1559	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.3	15.0	15.0	18.6	24.2	45.4	0.4	2.7	18.1	22.3	0.0	6.7
Cycle Q Clear(g_c), s	1.3	15.0	15.0	18.6	24.2	45.4	0.4	2.7	18.1	22.3	0.0	6.7
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	432	445	342	774	640	294	309	262	866	0	384
V/C Ratio(X)	0.54	0.63	0.63	0.90	0.66	1.19	0.02	0.17	1.22	0.87	0.00	0.30
Avail Cap(c_a), veh/h	81	432	445	430	774	640	294	309	262	1088	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	37.5	37.5	43.7	26.3	32.6	38.8	39.8	46.2	40.3	0.0	34.3
Incr Delay (d2), s/veh	11.4	2.9	2.8	18.9	2.1	100.6	0.0	0.3	128.3	6.4	0.0	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	0.7	6.9	7.2	10.0	11.1	34.4	0.2	1.3	16.4	10.4	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	40.3	40.3	62.7	28.4	133.2	38.8	40.1	174.5	46.7	0.0	34.8
LnGrp LOS	E	D	D	E	C	F	D	D	F	D	A	C
Approach Vol, veh/h		572			1581			380			870	
Approach Delay, s/veh		41.2			85.6			152.9			45.1	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.6	31.2		31.2	6.9	49.9		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	23.9		33.5	5.0	45.4		18.1				
Max Q Clear Time (g_c+I1), s	20.6	17.0		24.3	3.3	47.4		20.1				
Green Ext Time (p_c), s	0.5	1.9		2.4	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		75.3	
HCM 6th LOS		E	

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	1435	30	1286	373	280	32	508	9	32
v/c Ratio	0.53	0.78	0.28	0.78	0.44	0.63	0.05	0.85	0.02	0.05
Control Delay	56.8	23.1	54.6	26.4	9.1	35.8	23.9	37.9	23.5	0.2
Queue Delay	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	24.5	54.6	26.4	9.1	35.8	23.9	37.9	23.5	0.2
Queue Length 50th (ft)	61	407	20	373	55	155	14	239	4	0
Queue Length 95th (ft)	#122	522	51	478	132	246	35	#418	15	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	202	2186	108	1980	969	586	795	749	586	749
Starvation Cap Reductn	0	518	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	0.47	0.86	0.28	0.65	0.38	0.48	0.04	0.68	0.02	0.04

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)	87	1295	40	28	1196	347	260	30	472	8	0	30
Future Volume (vph)	87	1295	40	28	1196	347	260	30	472	8	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3555		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3555		1787	3574	1564	1385	1881	1599	1385	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	94	1392	43	30	1286	373	280	32	508	9	0	32
RTOR Reduction (vph)	0	2	0	0	0	123	0	0	87	0	22	0
Lane Group Flow (vph)	94	1433	0	30	1286	250	280	32	421	9	10	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.7	47.2		2.7	43.2	43.2	29.1	29.1	29.1	29.1	29.1	
Effective Green, g (s)	6.7	47.2		2.7	43.2	43.2	29.1	29.1	29.1	29.1	29.1	
Actuated g/C Ratio	0.07	0.51		0.03	0.47	0.47	0.31	0.31	0.31	0.31	0.31	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	129	1814		52	1669	730	435	591	503	435	503	
v/s Ratio Prot	c0.05	c0.40		0.02	0.36			0.02			0.01	
v/s Ratio Perm						0.16	0.20		c0.26	0.01		
v/c Ratio	0.73	0.79		0.58	0.77	0.34	0.64	0.05	0.84	0.02	0.02	
Uniform Delay, d1	42.0	18.6		44.3	20.5	15.6	27.2	22.1	29.5	21.9	21.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.5	2.4		14.6	2.3	0.3	3.3	0.0	11.5	0.0	0.0	
Delay (s)	60.5	21.0		58.9	22.8	15.9	30.5	22.1	41.0	21.9	21.9	
Level of Service	E	C		E	C	B	C	C	D	C	C	
Approach Delay (s)		23.4			21.9			36.7			21.9	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	81.7%	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)	87	1295	40	28	1196	347	260	30	472	8	0	30
Future Volume (veh/h)	87	1295	40	28	1196	347	260	30	472	8	0	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	94	1392	43	30	1286	0	280	32	508	9	0	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	121	1680	52	53	1562		542	653	553	372	0	553
Arrive On Green	0.07	0.47	0.47	0.03	0.44	0.00	0.35	0.35	0.35	0.35	0.00	0.35
Sat Flow, veh/h	1795	3544	109	1795	3582	1598	1388	1885	1598	872	0	1598
Grp Volume(v), veh/h	94	703	732	30	1286	0	280	32	508	9	0	32
Grp Sat Flow(s),veh/h/ln	1795	1791	1862	1795	1791	1598	1388	1885	1598	872	0	1598
Q Serve(g_s), s	4.6	30.5	30.6	1.5	28.4	0.0	15.1	1.0	27.4	0.6	0.0	1.2
Cycle Q Clear(g_c), s	4.6	30.5	30.6	1.5	28.4	0.0	16.3	1.0	27.4	1.6	0.0	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	849	883	53	1562		542	653	553	372	0	553
V/C Ratio(X)	0.78	0.83	0.83	0.57	0.82		0.52	0.05	0.92	0.02	0.00	0.06
Avail Cap(c_a), veh/h	190	1015	1056	102	1855		610	745	632	415	0	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	20.4	20.5	43.0	22.3	0.0	25.0	19.5	28.1	20.1	0.0	19.6
Incr Delay (d2), s/veh	10.3	4.9	4.9	9.3	2.7	0.0	0.8	0.0	17.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	13.0	13.6	0.8	11.8	0.0	4.9	0.4	12.5	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	25.4	25.3	52.3	25.0	0.0	25.8	19.5	45.4	20.1	0.0	19.6
LnGrp LOS	D	C	C	D	C		C	B	D	C	A	B
Approach Vol, veh/h		1529			1316	A		820			41	
Approach Delay, s/veh		27.0			25.6			37.7			19.7	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	47.1		35.6	10.5	43.7		35.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	50.9		35.5	9.5	46.5		35.5				
Max Q Clear Time (g_c+I1), s	3.5	32.6		3.6	6.6	30.4		29.4				
Green Ext Time (p_c), s	0.0	9.9		0.2	0.0	8.6		1.7				

Intersection Summary			
HCM 6th Ctrl Delay	28.8		
HCM 6th LOS	C		

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	508	1362	105	979	309	255	74	147	827
v/c Ratio	0.84	0.89	0.74	0.81	0.79	0.34	0.17	0.75	0.94dr
Control Delay	59.8	36.4	82.9	40.3	65.7	40.8	0.8	73.6	44.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	36.4	82.9	40.3	65.7	40.8	0.8	73.6	44.9
Queue Length 50th (ft)	197	469	81	353	122	89	0	111	226
Queue Length 95th (ft)	#273	577	#171	437	#187	129	1	#204	#345
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	653	1633	148	1278	410	791	460	217	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.83	0.71	0.77	0.75	0.32	0.16	0.68	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	483	879	415	100	777	153	294	242	70	140	286	500
Future Volume (vph)	483	879	415	100	777	153	294	242	70	140	286	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3387		1787	3478		3467	3574	1599	1787	3205	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3387		1787	3478		3467	3574	1599	1787	3205	
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)	508	925	437	105	818	161	309	255	74	147	301	526
RTOR Reduction (vph)	0	47	0	0	14	0	0	0	58	0	227	0
Lane Group Flow (vph)	508	1315	0	105	965	0	309	255	16	147	600	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	20.1	50.4		9.2	39.5		13.0	24.5	24.5	12.8	24.3	
Effective Green, g (s)	20.1	50.4		9.2	39.5		13.0	24.5	24.5	12.8	24.3	
Actuated g/C Ratio	0.17	0.44		0.08	0.34		0.11	0.21	0.21	0.11	0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	606	1485		143	1195		392	762	340	199	677	
v/s Ratio Prot	c0.15	c0.39		0.06	0.28		c0.09	0.07		0.08	c0.19	
v/s Ratio Perm									0.01			
v/c Ratio	0.84	0.89		0.73	0.81		0.79	0.33	0.05	0.74	0.94dr	
Uniform Delay, d1	45.8	29.6		51.7	34.2		49.6	38.3	35.9	49.4	44.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.9	6.7		17.6	4.1		10.1	0.3	0.1	13.4	13.3	
Delay (s)	55.7	36.3		69.3	38.4		59.7	38.6	36.0	62.8	57.2	
Level of Service	E	D		E	D		E	D	D	E	E	
Approach Delay (s)		41.6			41.4			48.5			58.1	
Approach LOS		D			D			D			E	

Intersection Summary

HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	879	415	100	777	153	294	242	70	140	286	500
Future Volume (veh/h)	483	879	415	100	777	153	294	242	70	140	286	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	508	925	0	105	818	161	309	255	74	147	301	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	631	1634		135	1042	205	406	501	223	185	452	
Arrive On Green	0.18	0.46	0.00	0.08	0.35	0.35	0.12	0.14	0.14	0.10	0.13	0.00
Sat Flow, veh/h	3483	3676	0	1795	2976	586	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	508	925	0	105	492	487	309	255	74	147	301	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1770	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	11.1	15.1	0.0	4.6	19.6	19.6	6.9	5.3	3.3	6.4	6.4	0.0
Cycle Q Clear(g_c), s	11.1	15.1	0.0	4.6	19.6	19.6	6.9	5.3	3.3	6.4	6.4	0.0
Prop In Lane	1.00		0.00	1.00		0.33	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	631	1634		135	627	620	406	501	223	185	452	
V/C Ratio(X)	0.81	0.57		0.78	0.78	0.78	0.76	0.51	0.33	0.80	0.67	
Avail Cap(c_a), veh/h	940	2405		214	933	922	590	1128	503	313	1146	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	15.9	0.0	36.2	23.2	23.2	34.1	31.7	30.9	34.9	33.2	0.0
Incr Delay (d2), s/veh	3.2	0.3	0.0	9.3	2.6	2.7	3.5	0.8	0.9	7.6	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	5.8	0.0	2.3	8.1	8.0	2.9	2.2	1.3	3.0	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	16.2	0.0	45.5	25.8	25.9	37.6	32.5	31.8	42.5	34.9	0.0
LnGrp LOS	C	B		D	C	C	D	C	C	D	C	
Approach Vol, veh/h		1433	A		1084			638			448	A
Approach Delay, s/veh		22.7			27.7			34.9			37.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	40.8	13.8	14.5	18.9	32.4	12.7	15.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	53.5	13.5	25.5	21.5	41.5	13.9	25.1
Max Q Clear Time (g_c+I1), s	6.6	17.1	8.9	8.4	13.1	21.6	8.4	7.3
Green Ext Time (p_c), s	0.1	8.0	0.5	1.5	1.3	6.3	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	92	588	1257	647	91
v/c Ratio	0.58	0.28	0.80	0.72	0.19
Control Delay	58.9	11.3	23.1	37.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	11.3	23.1	37.3	9.0
Queue Length 50th (ft)	47	67	223	154	0
Queue Length 95th (ft)	#168	194	#570	#368	45
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	159	2362	1812	985	513
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	0.58	0.25	0.69	0.66	0.18

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)	89	570	615	604	628	88
Future Volume (vph)	89	570	615	604	628	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3281		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3281		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	92	588	634	623	647	91
RTOR Reduction (vph)	0	0	134	0	0	68
Lane Group Flow (vph)	92	588	1123	0	647	23
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.8	50.8	38.5		22.5	22.5
Effective Green, g (s)	7.8	50.8	38.5		22.5	22.5
Actuated g/C Ratio	0.09	0.56	0.42		0.25	0.25
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	153	2001	1392		860	391
v/s Ratio Prot	c0.05	0.16	c0.34			
v/s Ratio Perm					c0.19	0.01
v/c Ratio	0.60	0.29	0.81		0.75	0.06
Uniform Delay, d1	40.0	10.5	22.8		31.5	26.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.5	0.1	3.5		3.8	0.1
Delay (s)	46.5	10.6	26.4		35.3	26.1
Level of Service	D	B	C		D	C
Approach Delay (s)		15.4	26.4		34.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	213	853	337	163	580	496	226	481	433	554	149
v/c Ratio	0.72	0.79	0.54	0.67	0.60	0.66	0.74	0.65	0.72	0.73	0.37
Control Delay	58.5	41.1	14.8	60.0	37.5	10.8	58.1	41.8	49.7	46.1	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	41.1	14.8	60.0	37.5	10.8	58.1	41.8	49.7	46.1	18.0
Queue Length 50th (ft)	148	292	60	114	188	32	157	161	155	197	30
Queue Length 95th (ft)	241	401	162	195	270	151	252	227	219	273	92
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	383	1265	699	311	1128	797	401	950	760	944	481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.67	0.48	0.52	0.51	0.62	0.56	0.51	0.57	0.59	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	802	317	153	545	466	212	375	77	407	521	140
Future Volume (vph)	200	802	317	153	545	466	212	375	77	407	521	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3574	1570	1787	3574	1577	1787	3483		3467	3574	1554
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3574	1570	1787	3574	1577	1787	3483		3467	3574	1554
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)	213	853	337	163	580	496	226	399	82	433	554	149
RTOR Reduction (vph)	0	0	156	0	0	318	0	15	0	0	0	77
Lane Group Flow (vph)	213	853	181	163	580	178	226	466	0	433	554	72
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	17.2	31.3	31.3	14.2	28.3	28.3	17.9	21.8		18.2	22.1	22.1
Effective Green, g (s)	17.2	31.3	31.3	14.2	28.3	28.3	17.9	21.8		18.2	22.1	22.1
Actuated g/C Ratio	0.17	0.30	0.30	0.14	0.27	0.27	0.17	0.21		0.18	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	296	1080	474	245	977	431	309	733		609	763	331
v/s Ratio Prot	c0.12	c0.24		0.09	0.16		c0.13	0.13		0.12	c0.15	
v/s Ratio Perm			0.12			0.11						0.05
v/c Ratio	0.72	0.79	0.38	0.67	0.59	0.41	0.73	0.64		0.71	0.73	0.22
Uniform Delay, d1	40.9	33.1	28.5	42.4	32.6	30.8	40.5	37.2		40.2	37.9	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
Incremental Delay, d2	8.1	3.9	0.5	6.7	1.0	0.6	8.6	1.8		3.9	3.5	0.3
Delay (s)	49.0	37.0	29.0	49.1	33.6	31.5	49.1	39.0		44.1	41.3	33.9
Level of Service	D	D	C	D	C	C	D	D		D	D	C
Approach Delay (s)		36.9			34.8			42.3			41.4	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	72.2%	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)	200	802	317	153	545	466	212	375	77	407	521	140
Future Volume (veh/h)	200	802	317	153	545	466	212	375	77	407	521	140
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	853	337	163	580	496	226	399	82	433	554	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	251	1275	567	198	1170	521	265	575	117	530	712	313
Arrive On Green	0.14	0.36	0.36	0.11	0.33	0.33	0.15	0.19	0.19	0.15	0.20	0.20
Sat Flow, veh/h	1795	3582	1592	1795	3582	1596	1795	2964	604	3483	3582	1574
Grp Volume(v), veh/h	213	853	337	163	580	496	226	240	241	433	554	149
Grp Sat Flow(s),veh/h/ln	1795	1791	1592	1795	1791	1596	1795	1791	1777	1742	1791	1574
Q Serve(g_s), s	11.1	19.3	16.6	8.5	12.5	29.2	11.8	12.0	12.2	11.6	14.1	8.1
Cycle Q Clear(g_c), s	11.1	19.3	16.6	8.5	12.5	29.2	11.8	12.0	12.2	11.6	14.1	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	251	1275	567	198	1170	521	265	348	345	530	712	313
V/C Ratio(X)	0.85	0.67	0.59	0.82	0.50	0.95	0.85	0.69	0.70	0.82	0.78	0.48
Avail Cap(c_a), veh/h	402	1324	588	327	1175	523	421	503	499	798	988	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	26.2	25.3	41.8	26.0	31.6	39.9	36.0	36.1	39.4	36.5	34.1
Incr Delay (d2), s/veh	9.3	1.3	1.5	8.2	0.3	27.5	9.5	2.4	2.6	4.1	2.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.0	6.2	4.1	5.1	14.5	5.8	5.3	5.4	5.1	6.3	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	27.4	26.8	50.0	26.3	59.1	49.5	38.4	38.7	43.5	39.2	35.2
LnGrp LOS	D	C	C	D	C	E	D	D	D	D	D	D
Approach Vol, veh/h		1403			1239			707			1136	
Approach Delay, s/veh		30.6			42.6			42.0			40.3	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.1	23.2	15.1	38.7	18.7	23.6	17.9	35.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.0	27.0	17.5	35.5	22.5	26.5	21.5	31.5
Max Q Clear Time (g_c+I1), s	13.6	14.2	10.5	21.3	13.8	16.1	13.1	31.2
Green Ext Time (p_c), s	1.0	2.3	0.2	5.9	0.4	3.0	0.4	0.2

Intersection Summary		
HCM 6th Ctrl Delay		38.2
HCM 6th LOS		D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	61	60	635	51	92	832
Future Volume (Veh/h)	61	60	635	51	92	832
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	66	65	683	55	99	895
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1806	712			740	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1806	712			740	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	15	85			89	
cM capacity (veh/h)	77	433			869	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	131	738	99	895
Volume Left	66	0	99	0
Volume Right	65	55	0	0
cSH	131	1700	869	1700
Volume to Capacity	1.00	0.43	0.11	0.53
Queue Length 95th (ft)	176	0	10	0
Control Delay (s)	144.5	0.0	9.7	0.0
Lane LOS	F		A	
Approach Delay (s)	144.5	0.0	1.0	
Approach LOS	F			

Intersection Summary				
Average Delay		10.7		
Intersection Capacity Utilization		58.7%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	10.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	60	635	51	92	832
Future Vol, veh/h	61	60	635	51	92	832
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	66	65	683	55	99	895

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1806	713	0	0	740	0
Stage 1	713	-	-	-	-	-
Stage 2	1093	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	88	434	-	-	871	-
Stage 1	488	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	78	433	-	-	869	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	141.8	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	131	869	-
HCM Lane V/C Ratio	-	-	0.993	0.114	-
HCM Control Delay (s)	-	-	141.8	9.7	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	6.9	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	10	17	10	10	42	25	425	10	53	568	166
Future Volume (Veh/h)	136	10	17	10	10	42	25	425	10	53	568	166
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	137	10	17	10	10	42	25	429	10	54	574	168
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1217	1176	579	1188	1339	438	747			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1217	1176	579	1188	1339	438	747			439		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	97	93	93	93	97			95		
cM capacity (veh/h)	130	177	514	144	141	618	862			1126		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	164	62	25	439	54	574	168
Volume Left	137	10	25	0	54	0	0
Volume Right	17	42	0	10	0	0	168
cSH	143	298	862	1700	1126	1700	1700
Volume to Capacity	1.14	0.21	0.03	0.26	0.05	0.34	0.10
Queue Length 95th (ft)	231	19	2	0	4	0	0
Control Delay (s)	180.3	20.2	9.3	0.0	8.4	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	180.3	20.2	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	21.2			
Intersection Capacity Utilization	59.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	20.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	10	17	10	10	42	25	425	10	53	568	166
Future Vol, veh/h	136	10	17	10	10	42	25	425	10	53	568	166
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	137	10	17	10	10	42	25	429	10	54	574	168

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1201	1176	579	1264	1339	438	747	0	0	439	0	0
Stage 1	687	687	-	484	484	-	-	-	-	-	-	-
Stage 2	514	489	-	780	855	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	162	192	517	147	153	621	866	-	-	1126	-	-
Stage 1	439	449	-	566	554	-	-	-	-	-	-	-
Stage 2	545	551	-	390	376	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 133	177	515	128	141	619	862	-	-	1126	-	-
Mov Cap-2 Maneuver	~ 133	177	-	128	141	-	-	-	-	-	-	-
Stage 1	424	425	-	550	538	-	-	-	-	-	-	-
Stage 2	482	535	-	350	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	170.8	21.1	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	862	-	-	147	286	1126	-	-
HCM Lane V/C Ratio	0.029	-	-	1.12	0.219	0.048	-	-
HCM Control Delay (s)	9.3	-	-	170.8	21.1	8.4	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	9	0.8	0.1	-	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	16	171	10	178	14	271	267	301	265	20
Future Volume (vph)	10	10	16	171	10	178	14	271	267	301	265	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	11	17	184	11	191	15	291	287	324	285	22

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	39	386	306	287	467	165
Volume Left (vph)	11	184	15	0	324	0
Volume Right (vph)	17	191	0	287	0	22
Hadj (s)	-0.19	-0.18	0.04	-0.68	0.36	-0.08
Departure Headway (s)	8.2	6.7	7.3	6.6	7.5	7.0
Degree Utilization, x	0.09	0.72	0.62	0.53	0.97	0.32
Capacity (veh/h)	387	386	480	540	467	501
Control Delay (s)	12.0	25.3	20.5	15.4	60.3	12.1
Approach Delay (s)	12.0	25.3	18.0		47.7	
Approach LOS	B	D	C		E	

Intersection Summary				
Delay	31.0			
Level of Service	D			
Intersection Capacity Utilization	69.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	32.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	10	10	16	171	10	178	0	14	271	267	301	265
Future Vol, veh/h	10	10	16	171	10	178	0	14	271	267	301	265
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	11	11	17	184	11	191	0	15	291	287	324	285
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.3	26.5	19.1	49.1
HCM LOS	B	D	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	5%	0%	28%	48%	69%	0%
Vol Thru, %	95%	0%	28%	3%	31%	87%
Vol Right, %	0%	100%	44%	50%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	267	36	359	434	153
LT Vol	14	0	10	171	301	0
Through Vol	271	0	10	10	133	133
RT Vol	0	267	16	178	0	20
Lane Flow Rate	306	287	39	386	466	164
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.625	0.526	0.09	0.733	0.972	0.321
Departure Headway (Hd)	7.345	6.599	8.345	6.839	7.504	7.053
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	490	545	428	529	485	510
Service Time	5.101	4.354	6.429	4.882	5.256	4.804
HCM Lane V/C Ratio	0.624	0.527	0.091	0.73	0.961	0.322
HCM Control Delay	21.6	16.5	12.3	26.5	61.8	13.1
HCM Lane LOS	C	C	B	D	F	B
HCM 95th-tile Q	4.2	3	0.3	6.1	12.4	1.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	20
Future Vol, veh/h	20
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	22
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	327	253	150	225	210	241
Future Volume (Veh/h)	327	253	150	225	210	241
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	337	261	155	232	216	248
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	216	464			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	216	464			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	4	67	86			
cM capacity (veh/h)	351	792	1101			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	598	155	116	116	216	248
Volume Left	337	155	0	0	0	0
Volume Right	261	0	0	0	0	248
cSH	584	1101	1700	1700	1700	1700
Volume to Capacity	1.02	0.14	0.07	0.07	0.13	0.15
Queue Length 95th (ft)	398	12	0	0	0	0
Control Delay (s)	70.3	8.8	0.0	0.0	0.0	0.0
Lane LOS	F	A				
Approach Delay (s)	70.3	3.5			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay		30.0	
Intersection Capacity Utilization		47.5%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	327	253	150	225	210	241
Future Vol, veh/h	327	253	150	225	210	241
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	337	261	155	232	216	248

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	642	216	464	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	424	826	1102	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	826	1102	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.4	3.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1102	-	364	826	-	-
HCM Lane V/C Ratio	0.14	-	0.926	0.316	-	-
HCM Control Delay (s)	8.8	-	64.6	11.4	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	9.7	1.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	315	20	0	0	0	0	400	53
Future Volume (Veh/h)	0	0	0	0	315	20	0	0	0	0	400	53
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	342	22	0	0	0	0	435	58
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	635	464	464	464	493	0	493			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	635	464	464	464	493	0	493			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	29	98	100			100		
cM capacity (veh/h)	161	497	600	510	478	1088	1076			1630		

Direction, Lane #	WB 1	SB 1
Volume Total	364	493
Volume Left	0	0
Volume Right	22	58
cSH	499	1700
Volume to Capacity	0.73	0.29
Queue Length 95th (ft)	150	0
Control Delay (s)	29.3	0.0
Lane LOS	D	
Approach Delay (s)	29.3	0.0
Approach LOS	D	

Intersection Summary				
Average Delay	12.5			
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	315	20	0	0	0	0	400	53
Future Vol, veh/h	0	0	0	0	315	20	0	0	0	0	400	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	0	0	342	22	0	0	0	0	435	58

Major/Minor	Minor1			Major2		
Conflicting Flow All	464	493	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	464	493	-	-	-	-
Critical Hdwy	6.41	6.51	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-
Follow-up Hdwy	3.509	4.009	-	-	-	-
Pot Cap-1 Maneuver	558	478	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	635	549	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	558	0	-	-	-	-
Mov Cap-2 Maneuver	558	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	635	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s		0
HCM LOS	-	

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	482	767	277	539	141	424	1192	793	461
v/c Ratio	0.27	0.88	0.73	0.48	0.53	0.70	0.82	0.90	0.90	0.46
Control Delay	58.2	74.9	50.5	45.5	8.7	81.4	73.7	33.6	67.1	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	58.2	74.9	50.5	45.5	8.7	81.4	73.7	33.6	67.1	41.2
Queue Length 50th (ft)	65	233	349	224	114	135	212	317	388	177
Queue Length 95th (ft)	118	#325	426	318	203	207	275	431	#496	241
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	290	578	1075	583	1043	256	576	1338	924	1034
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	0.26	0.83	0.71	0.48	0.52	0.55	0.74	0.89	0.86	0.45

Intersection Summary

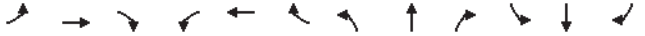
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	355	113	744	269	523	137	411	1156	769	325	122
Future Volume (vph)	73	355	113	744	269	523	137	411	1156	769	325	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3433		3467	1881	1585	1787	3574	2814	3467	3428	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3433		3467	1881	1585	1787	3574	2814	3467	3428	
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)	75	366	116	767	277	539	141	424	1192	793	335	126
RTOR Reduction (vph)	0	20	0	0	0	137	0	0	48	0	26	0
Lane Group Flow (vph)	75	462	0	767	277	402	141	424	1144	793	435	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	22.3	22.3		43.9	43.9	80.5	16.2	21.0	64.9	36.6	41.4	
Effective Green, g (s)	22.3	22.3		43.9	43.9	80.5	16.2	21.0	64.9	36.6	41.4	
Actuated g/C Ratio	0.15	0.15		0.30	0.30	0.56	0.11	0.15	0.45	0.25	0.29	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	530		1054	572	884	200	520	1265	879	983	
v/s Ratio Prot	0.04	c0.13		0.22	0.15	0.12	0.08	0.12	c0.27	c0.23	0.13	
v/s Ratio Perm						0.14			0.13			
v/c Ratio	0.27	0.87		0.73	0.48	0.46	0.70	0.82	0.90	0.90	0.44	
Uniform Delay, d1	53.8	59.6		44.9	41.0	18.9	61.7	59.8	36.8	52.1	42.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	14.5		2.5	0.6	0.4	10.7	9.5	9.3	12.4	0.3	
Delay (s)	54.4	74.1		47.4	41.6	19.3	72.5	69.3	46.1	64.5	42.3	
Level of Service	D	E		D	D	B	E	E	D	E	D	
Approach Delay (s)		71.5			36.8			53.8			56.4	
Approach LOS		E			D			D			E	

Intersection Summary

HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	144.3	Sum of lost time (s)	20.5
Intersection Capacity Utilization	88.1%	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)	73	355	113	744	269	523	137	411	1156	769	325	122
Future Volume (veh/h)	73	355	113	744	269	523	137	411	1156	769	325	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	366	116	767	277	539	141	424	1192	793	335	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	280	417	130	994	538	850	166	592	1267	862	799	295
Arrive On Green	0.16	0.16	0.16	0.29	0.29	0.29	0.09	0.17	0.17	0.25	0.31	0.31
Sat Flow, veh/h	1795	2676	835	3483	1885	1594	1795	3582	2812	3483	2560	946
Grp Volume(v), veh/h	75	243	239	767	277	539	141	424	1192	793	233	228
Grp Sat Flow(s),veh/h/ln	1795	1791	1720	1742	1885	1594	1795	1791	1406	1742	1791	1715
Q Serve(g_s), s	5.2	18.6	19.1	28.3	17.3	33.5	10.9	15.7	23.2	31.1	14.4	14.8
Cycle Q Clear(g_c), s	5.2	18.6	19.1	28.3	17.3	33.5	10.9	15.7	23.2	31.1	14.4	14.8
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	280	279	268	994	538	850	166	592	1267	862	559	536
V/C Ratio(X)	0.27	0.87	0.89	0.77	0.51	0.63	0.85	0.72	0.94	0.92	0.42	0.43
Avail Cap(c_a), veh/h	299	299	287	1107	599	902	263	592	1267	950	559	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	57.9	58.1	46.0	42.0	23.1	62.7	55.5	27.5	51.5	38.1	38.3
Incr Delay (d2), s/veh	0.5	22.3	26.4	3.1	0.8	1.3	13.7	4.1	13.5	13.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.2	10.3	12.5	8.1	12.4	5.5	7.3	23.5	15.1	6.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	80.2	84.5	49.0	42.8	24.5	76.4	59.6	41.1	64.6	38.6	38.8
LnGrp LOS	D	F	F	D	D	C	E	E	D	E	D	D
Approach Vol, veh/h		557			1583			1757			1254	
Approach Delay, s/veh		78.3			39.6			48.4			55.1	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.4	29.0		26.5	18.8	49.6		45.5				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 38	23.2		23.4	20.6	* 41		44.6				
Max Q Clear Time (g_c+I1), s	33.1	25.2		21.1	12.9	16.8		35.5				
Green Ext Time (p_c), s	1.6	0.0		0.8	0.2	2.9		4.6				

Intersection Summary												
HCM 6th Ctrl Delay			50.5									
HCM 6th LOS			D									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	1168	683	139	1037	443	382	217	558
v/c Ratio	0.75	0.86	0.77	0.74	0.79	0.82	0.52	0.81	0.78
Control Delay	63.0	41.1	16.8	74.7	36.6	60.4	39.3	70.1	49.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	41.1	16.8	74.7	36.6	60.4	39.3	70.1	49.0
Queue Length 50th (ft)	107	424	150	103	354	168	123	158	198
Queue Length 95th (ft)	#170	#552	330	#206	457	#251	173	#283	262
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	394	1408	907	200	1377	574	851	299	854
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.83	0.75	0.69	0.75	0.77	0.45	0.73	0.65

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)	270	1121	656	133	834	161	425	275	92	208	406	130
Future Volume (vph)	270	1121	656	133	834	161	425	275	92	208	406	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3479		3467	3440		1787	3431	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3479		3467	3440		1787	3431	
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)	281	1168	683	139	869	168	443	286	96	217	423	135
RTOR Reduction (vph)	0	0	285	0	13	0	0	28	0	0	26	0
Lane Group Flow (vph)	281	1168	398	139	1024	0	443	354	0	217	532	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.3	42.6	42.6	11.8	42.1		17.6	23.1		17.0	22.5	
Effective Green, g (s)	12.3	42.6	42.6	11.8	42.1		17.6	23.1		17.0	22.5	
Actuated g/C Ratio	0.11	0.38	0.38	0.10	0.37		0.16	0.21		0.15	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	1353	605	187	1301		542	706		270	686	
v/s Ratio Prot	c0.08	c0.33		0.08	0.29		c0.13	0.10		0.12	c0.15	
v/s Ratio Perm			0.25									
v/c Ratio	0.74	0.86	0.66	0.74	0.79		0.82	0.50		0.80	0.77	
Uniform Delay, d1	48.6	32.3	28.9	48.9	31.2		45.9	39.6		46.1	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.6	5.9	2.6	14.7	3.2		9.3	0.6		15.8	5.5	
Delay (s)	56.2	38.2	31.5	63.6	34.4		55.2	40.2		61.9	48.1	
Level of Service	E	D	C	E	C		E	D		E	D	
Approach Delay (s)		38.4			37.9			48.2			51.9	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	81.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	1121	656	133	834	161	425	275	92	208	406	130
Future Volume (veh/h)	270	1121	656	133	834	161	425	275	92	208	406	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	281	1168	683	139	869	168	443	286	96	217	423	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	350	1389	620	169	1142	221	519	544	179	250	524	165
Arrive On Green	0.10	0.39	0.39	0.09	0.38	0.38	0.15	0.21	0.21	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	2992	578	3483	2649	871	1795	2674	845
Grp Volume(v), veh/h	281	1168	683	139	520	517	443	191	191	217	282	276
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1780	1742	1791	1728	1795	1791	1728
Q Serve(g_s), s	8.2	30.8	24.8	7.9	26.3	26.3	12.9	9.9	10.2	12.3	15.6	15.9
Cycle Q Clear(g_c), s	8.2	30.8	24.8	7.9	26.3	26.3	12.9	9.9	10.2	12.3	15.6	15.9
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.50	1.00		0.49
Lane Grp Cap(c), veh/h	350	1389	620	169	683	679	519	368	355	250	351	338
V/C Ratio(X)	0.80	0.84	1.10	0.82	0.76	0.76	0.85	0.52	0.54	0.87	0.80	0.82
Avail Cap(c_a), veh/h	426	1516	676	216	755	750	620	462	446	323	465	449
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	45.7	28.9	12.0	46.2	28.0	28.0	43.1	36.8	36.9	43.8	39.9	40.0
Incr Delay (d2), s/veh	8.9	4.1	67.4	17.7	4.1	4.2	9.8	1.1	1.3	17.5	7.4	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	13.2	19.2	4.3	11.4	11.4	6.1	4.3	4.3	6.5	7.4	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	33.0	79.5	63.9	32.1	32.2	52.9	37.9	38.2	61.3	47.3	48.5
LnGrp LOS	D	C	F	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h		2132			1176			825			775	
Approach Delay, s/veh		50.8			35.9			46.0			51.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	44.8	20.0	24.8	14.9	44.2	19.0	25.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	44.0	18.5	27.0	12.7	43.8	18.7	26.8
Max Q Clear Time (g_c+I1), s	9.9	32.8	14.9	17.9	10.2	28.3	14.3	12.2
Green Ext Time (p_c), s	0.1	7.5	0.6	2.2	0.2	5.8	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	922	413	22	657	402	18
v/c Ratio	0.91	0.40	0.21	0.34	0.81	0.04
Control Delay	31.5	2.5	15.9	9.9	35.8	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	2.5	15.9	9.9	35.8	11.7
Queue Length 50th (ft)	317	0	4	72	153	2
Queue Length 95th (ft)	#679	42	23	132	247	15
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1009	1024	107	1919	694	629
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	0.91	0.40	0.21	0.34	0.58	0.03

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)	848	380	20	604	370	17
Future Volume (vph)	848	380	20	604	370	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1518	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	1827	1518	195	3471	1732	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	922	413	22	657	402	18
RTOR Reduction (vph)	0	185	0	0	0	7
Lane Group Flow (vph)	922	228	22	657	402	11
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	37.4	37.4	37.4	37.4	19.4	19.4
Effective Green, g (s)	37.4	37.4	37.4	37.4	19.4	19.4
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.29	0.29
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1010	839	107	1920	497	445
v/s Ratio Prot	c0.50			0.19		0.01
v/s Ratio Perm		0.15	0.11		c0.23	
v/c Ratio	0.91	0.27	0.21	0.34	0.81	0.02
Uniform Delay, d1	13.6	7.9	7.6	8.3	22.4	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.0	0.1	0.3	0.0	8.9	0.0
Delay (s)	25.6	8.0	8.0	8.4	31.3	17.3
Level of Service	C	A	A	A	C	B
Approach Delay (s)	20.2			8.3	30.7	
Approach LOS	C			A	C	

Intersection Summary

HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	10.8
Intersection Capacity Utilization	74.1%	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)	848	380	20	604	370	17
Future Volume (veh/h)	848	380	20	604	370	17
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	922	413	22	657	402	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	1025	867	166	1947	459	408
Arrive On Green	0.56	0.56	0.56	0.56	0.26	0.26
Sat Flow, veh/h	1841	1557	403	3589	1753	1560
Grp Volume(v), veh/h	922	413	22	657	402	18
Grp Sat Flow(s),veh/h/ln	1841	1557	403	1749	1753	1560
Q Serve(g_s), s	26.5	9.5	3.0	6.1	13.1	0.5
Cycle Q Clear(g_c), s	26.5	9.5	29.5	6.1	13.1	0.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1025	867	166	1947	459	408
V/C Ratio(X)	0.90	0.48	0.13	0.34	0.88	0.04
Avail Cap(c_a), veh/h	1151	974	194	2187	796	708
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	11.7	8.0	24.8	7.2	21.0	16.4
Incr Delay (d2), s/veh	8.4	0.2	0.1	0.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	2.3	0.3	1.6	4.9	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.1	8.1	24.9	7.2	23.4	16.4
LnGrp LOS	C	A	C	A	C	B
Approach Vol, veh/h	1335			679	420	
Approach Delay, s/veh	16.4			7.8	23.1	
Approach LOS	B			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	38.5				38.5	21.0
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	37.2				37.2	27.0
Max Q Clear Time (g_c+I1), s	28.5				31.5	15.1
Green Ext Time (p_c), s	3.5				1.6	0.5

Intersection Summary			
HCM 6th Ctrl Delay		15.2	
HCM 6th LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	793	63	18	480	10	135	0	15	0	0	10
Future Volume (Veh/h)	10	793	63	18	480	10	135	0	15	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	862	68	20	522	11	147	0	16	0	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.48			0.48	0.48	0.48	0.48	0.48	
vC, conflicting volume	533			930			1230	1491	896	1494	1520	266
vC1, stage 1 conf vol							918	918		568	568	
vC2, stage 2 conf vol							312	573		926	952	
vCu, unblocked vol	533			322			942	1481	251	1487	1540	266
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			50	100	96	100	100	98
cM capacity (veh/h)	1031			597			295	262	362	237	238	732

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	941	281	272	163	11
Volume Left	11	20	0	147	0
Volume Right	68	0	11	16	11
cSH	1031	597	1700	327	732
Volume to Capacity	0.01	0.03	0.16	0.50	0.02
Queue Length 95th (ft)	1	3	0	66	1
Control Delay (s)	0.3	1.2	0.0	27.4	10.0
Lane LOS	A	A		D	A
Approach Delay (s)	0.3	0.6		27.4	10.0
Approach LOS				D	A

Intersection Summary					
Average Delay		3.1			
Intersection Capacity Utilization		74.4%	ICU Level of Service		D
Analysis Period (min)		15			

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	10	793	63	18	480	10	135	0	15	0	0	10
Future Vol, veh/h	10	793	63	18	480	10	135	0	15	0	0	10
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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	862	68	20	522	11	147	0	16	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	533	0	0	930	0	0	1219	1491	896	1494	1520	267
Stage 1	-	-	-	-	-	-	918	918	-	568	568	-
Stage 2	-	-	-	-	-	-	301	573	-	926	952	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1033	-	-	733	-	-	~ 146	123	338	93	118	732
Stage 1	-	-	-	-	-	-	325	350	-	476	505	-
Stage 2	-	-	-	-	-	-	684	503	-	321	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1033	-	-	733	-	-	~ 137	116	338	84	111	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	287	282	-	238	265	-
Stage 1	-	-	-	-	-	-	318	342	-	466	485	-
Stage 2	-	-	-	-	-	-	648	483	-	299	330	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	28.6	10
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	287	338	1033	-	-	733	-	-	732
HCM Lane V/C Ratio	0.511	0.048	0.011	-	-	0.027	-	-	0.015
HCM Control Delay (s)	30	16.2	8.5	0	-	10	0.2	-	10
HCM Lane LOS	D	C	A	A	-	B	A	-	B
HCM 95th %tile Q(veh)	2.7	0.2	0	-	-	0.1	-	-	0

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	245	265	233	43	160	50	149	157	33	75	304	173
Future Volume (veh/h)	245	265	233	43	160	50	149	157	33	75	304	173
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
Hourly flow rate (vph)	266	288	253	47	174	54	162	171	36	82	330	188
Approach Volume (veh/h)		807			275			369			600	
Crossing Volume (veh/h)		459			599			636			383	
High Capacity (veh/h)		964			862			837			1025	
High v/c (veh/h)		0.84			0.32			0.44			0.59	
Low Capacity (veh/h)		782			691			669			836	
Low v/c (veh/h)		1.03			0.40			0.55			0.72	

Intersection Summary					
Maximum v/c High		0.84			
Maximum v/c Low		1.03			
Intersection Capacity Utilization		111.1%	ICU Level of Service		H

Intersection	
Intersection Delay, s/veh	25.6
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	807	275	369	600
Demand Flow Rate, veh/h	823	280	376	613
Vehicles Circulating, veh/h	469	610	649	390
Vehicles Exiting, veh/h	534	415	643	500
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	44.6	9.8	13.4	14.7
Approach LOS	E	A	B	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	823	280	376	613
Cap Entry Lane, veh/h	855	741	712	927
Entry HV Adj Factor	0.981	0.980	0.980	0.979
Flow Entry, veh/h	807	275	369	600
Cap Entry, veh/h	839	726	698	908
V/C Ratio	0.962	0.378	0.528	0.661
Control Delay, s/veh	44.6	9.8	13.4	14.7
LOS	E	A	B	B
95th %tile Queue, veh	16	2	3	5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	67	17	54	1	16	21	32	208	3	31	349	64
Future Volume (vph)	67	17	54	1	16	21	32	208	3	31	349	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	18	59	1	17	23	35	226	3	34	379	70

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	150	41	264	483
Volume Left (vph)	73	1	35	34
Volume Right (vph)	59	23	3	70
Hadj (s)	-0.12	-0.31	0.04	-0.06
Departure Headway (s)	5.7	5.7	5.1	4.8
Degree Utilization, x	0.24	0.07	0.38	0.64
Capacity (veh/h)	553	509	667	732
Control Delay (s)	10.4	9.1	11.2	15.9
Approach Delay (s)	10.4	9.1	11.2	15.9
Approach LOS	B	A	B	C

Intersection Summary				
Delay	13.4			
Level of Service	B			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	67	17	54	1	16	21	32	208	3	31	349	64
Future Vol, veh/h	67	17	54	1	16	21	32	208	3	31	349	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	73	18	59	1	17	23	35	226	3	34	379	70
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	9.2	11.2	16
HCM LOS	B	A	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	49%	3%	7%
Vol Thru, %	86%	12%	42%	79%
Vol Right, %	1%	39%	55%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	138	38	444
LT Vol	32	67	1	31
Through Vol	208	17	16	349
RT Vol	3	54	21	64
Lane Flow Rate	264	150	41	483
Geometry Grp	1	1	1	1
Degree of Util (X)	0.376	0.236	0.066	0.643
Departure Headway (Hd)	5.118	5.667	5.723	4.793
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	703	633	625	758
Service Time	3.147	3.707	3.771	2.793
HCM Lane V/C Ratio	0.376	0.237	0.066	0.637
HCM Control Delay	11.2	10.5	9.2	16
HCM Lane LOS	B	B	A	C
HCM 95th-tile Q	1.8	0.9	0.2	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	117	100	34	1	63	22	23	116	1	17	172	110
Future Volume (Veh/h)	117	100	34	1	63	22	23	116	1	17	172	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	109	37	1	68	24	25	126	1	18	187	120
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	92			152			683	482	134	528	488	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			152			683	482	134	528	488	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			87	71	100	95	57	88
cM capacity (veh/h)	1509			1427			199	442	913	337	438	983

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	273	93	152	18	307
Volume Left	127	1	25	18	0
Volume Right	37	24	1	0	120
cSH	1509	1427	369	337	559
Volume to Capacity	0.08	0.00	0.41	0.05	0.55
Queue Length 95th (ft)	7	0	49	4	83
Control Delay (s)	3.9	0.1	21.4	16.3	19.0
Lane LOS	A	A	C	C	C
Approach Delay (s)	3.9	0.1	21.4	18.8	
Approach LOS			C	C	

Intersection Summary				
Average Delay	12.4			
Intersection Capacity Utilization	53.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	117	100	34	1	63	22	23	116	1	17	172	110
Future Vol, veh/h	117	100	34	1	63	22	23	116	1	17	172	110
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	127	109	37	1	68	24	25	126	1	18	187	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	92	0	0	152	0	0	624	482	134	527	488	80
Stage 1	-	-	-	-	-	-	388	388	-	82	82	-
Stage 2	-	-	-	-	-	-	236	94	-	445	406	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1509	-	-	1435	-	-	399	485	918	463	482	983
Stage 1	-	-	-	-	-	-	638	611	-	929	829	-
Stage 2	-	-	-	-	-	-	769	819	-	594	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1427	-	-	216	437	913	335	435	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	437	-	335	435	-
Stage 1	-	-	-	-	-	-	576	552	-	844	828	-
Stage 2	-	-	-	-	-	-	522	818	-	416	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.5	0.1	21	18.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	375	1509	-	-	1427	-	-	335	556
HCM Lane V/C Ratio	0.406	0.084	-	-	0.001	-	-	0.055	0.551
HCM Control Delay (s)	21	7.6	0	-	7.5	0	-	16.4	19.1
HCM Lane LOS	C	A	A	-	A	A	-	C	C
HCM 95th %tile Q(veh)	1.9	0.3	-	-	0	-	-	0.2	3.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	24	133	105	14	170	162
Future Volume (veh/h)	24	133	105	14	170	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	145	114	15	185	176
Approach Volume (veh/h)	171		129			361
Crossing Volume (veh/h)	114		185			26
High Capacity (veh/h)	1267		1198			1357
High v/c (veh/h)	0.13		0.11			0.27
Low Capacity (veh/h)	1054		992			1136
Low v/c (veh/h)	0.16		0.13			0.32

Intersection Summary				
Maximum v/c High	0.27			
Maximum v/c Low	0.32			
Intersection Capacity Utilization	40.8%	ICU Level of Service		A

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	171	129	361
Demand Flow Rate, veh/h	175	131	369
Vehicles Circulating, veh/h	116	189	27
Vehicles Exiting, veh/h	204	207	264
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.2	5.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	175	131	369
Cap Entry Lane, veh/h	1226	1138	1342
Entry HV Adj Factor	0.977	0.983	0.980
Flow Entry, veh/h	171	129	361
Cap Entry, veh/h	1198	1118	1315
V/C Ratio	0.143	0.115	0.275
Control Delay, s/veh	4.2	4.2	5.1
LOS	A	A	A
95th %tile Queue, veh	0	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	94	114	10	5	25
Future Volume (Veh/h)	20	94	114	10	5	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	102	124	11	5	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	135				276	130
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	135				276	130
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	97
cM capacity (veh/h)	1437				699	915

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	124	135	32
Volume Left	22	0	5
Volume Right	0	11	27
cSH	1437	1700	873
Volume to Capacity	0.02	0.08	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	1.4	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	1.4	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	94	114	10	5	25
Future Vol, veh/h	20	94	114	10	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	22	102	124	11	5	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	276	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1437	-	-	-	709	914
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1437	-	-	-	698	914
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1437	-	-	-	869
HCM Lane V/C Ratio	0.015	-	-	-	0.038
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Cumulative Plus 1293-Unit Project (Phase 1)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	12	257	10	279	15	250	132	251	199	10
Future Volume (vph)	20	10	12	257	10	279	15	250	132	251	199	10
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
Hourly flow rate (vph)	22	11	13	279	11	303	16	272	143	273	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	46	593	288	143	381	119
Volume Left (vph)	22	279	16	0	273	0
Volume Right (vph)	13	303	0	143	0	11
Hadj (s)	-0.04	-0.18	0.06	-0.67	0.39	-0.03
Departure Headway (s)	8.3	6.5	7.7	7.0	7.8	7.4
Degree Utilization, x	0.11	1.07	0.62	0.28	0.83	0.25
Capacity (veh/h)	397	548	454	506	450	478
Control Delay (s)	12.3	83.2	21.1	11.4	37.5	11.6
Approach Delay (s)	12.3	83.2	17.9		31.4	
Approach LOS	B	F	C		D	

Intersection Summary					
Delay	46.7				
Level of Service	E				
Intersection Capacity Utilization	77.8%	ICU Level of Service		D	
Analysis Period (min)	15				

Intersection	
Intersection Delay, s/veh	50.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	10	12	257	10	279	0	15	250	132	251	199
Future Vol, veh/h	20	10	12	257	10	279	0	15	250	132	251	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	13	279	11	303	0	16	272	143	273	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.9	90	19.6	33.5
HCM LOS	B	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	6%	0%	48%	47%	72%	0%
Vol Thru, %	94%	0%	24%	2%	28%	91%
Vol Right, %	0%	100%	29%	51%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	132	42	546	351	110
LT Vol	15	0	20	257	251	0
Through Vol	250	0	10	10	100	100
RT Vol	0	132	12	279	0	10
Lane Flow Rate	288	143	46	593	381	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.615	0.277	0.108	1.089	0.828	0.245
Departure Headway (Hd)	8.141	7.384	8.867	6.605	8.264	7.826
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	446	489	407	552	442	462
Service Time	5.841	5.084	6.867	4.609	5.964	5.526
HCM Lane V/C Ratio	0.646	0.292	0.113	1.074	0.862	0.258
HCM Control Delay	23	12.9	12.9	90	39.9	13
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	4	1.1	0.4	18.2	7.9	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	135	221	208	122	372
Future Volume (Veh/h)	177	135	221	208	122	372
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	192	147	240	226	133	404
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	133	537			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	133	537			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	30	83	76			
cM capacity (veh/h)	273	888	1020			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	339	240	113	113	133	404
Volume Left	192	240	0	0	0	0
Volume Right	147	0	0	0	0	404
cSH	483	1020	1700	1700	1700	1700
Volume to Capacity	0.70	0.24	0.07	0.07	0.08	0.24
Queue Length 95th (ft)	136	23	0	0	0	0
Control Delay (s)	29.3	9.6	0.0	0.0	0.0	0.0
Lane LOS	D	A				
Approach Delay (s)	29.3	4.9			0.0	
Approach LOS	D					

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	41.9%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	177	135	221	208	122	372
Future Vol, veh/h	177	135	221	208	122	372
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	145	105	-	-	0
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	192	147	240	226	133	404

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	133	537	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	373	913	1023	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	913	1023	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.1	4.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1023	-	285	913	-	-
HCM Lane V/C Ratio	0.235	-	0.675	0.161	-	-
HCM Control Delay (s)	9.6	-	40.3	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	4.5	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	16	161	10	173	14	271	250	292	265	20
Future Volume (vph)	10	10	16	161	10	173	14	271	250	292	265	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	11	17	173	11	186	15	291	269	314	285	22

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	39	370	306	269	457	165
Volume Left (vph)	11	173	15	0	314	0
Volume Right (vph)	17	186	0	269	0	22
Hadj (s)	-0.19	-0.19	0.04	-0.68	0.36	-0.08
Departure Headway (s)	8.0	6.7	7.2	6.5	7.4	6.9
Degree Utilization, x	0.09	0.68	0.61	0.48	0.93	0.32
Capacity (veh/h)	393	525	482	541	457	508
Control Delay (s)	11.8	22.8	19.7	14.1	51.7	11.9
Approach Delay (s)	11.8	22.8	17.1		41.2	
Approach LOS	B	C	C		E	

Intersection Summary				
Delay	27.6			
Level of Service	D			
Intersection Capacity Utilization	68.4%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	28.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	10	10	16	161	10	173	0	14	271	250	292	265
Future Vol, veh/h	10	10	16	161	10	173	0	14	271	250	292	265
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	11	11	17	173	11	186	0	15	291	269	314	285
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12	23.9	18.2	42.6
HCM LOS	B	C	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	5%	0%	28%	47%	69%	0%
Vol Thru, %	95%	0%	28%	3%	31%	87%
Vol Right, %	0%	100%	44%	50%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	250	36	344	425	153
LT Vol	14	0	10	161	292	0
Through Vol	271	0	10	10	133	133
RT Vol	0	250	16	173	0	20
Lane Flow Rate	306	269	39	370	456	164
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.614	0.483	0.088	0.695	0.935	0.315
Departure Headway (Hd)	7.215	6.47	8.152	6.761	7.372	6.925
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	556	438	536	493	518
Service Time	4.969	4.223	6.23	4.801	5.123	4.675
HCM Lane V/C Ratio	0.612	0.484	0.089	0.69	0.925	0.317
HCM Control Delay	20.8	15.2	12	23.9	53.3	12.8
HCM Lane LOS	C	C	B	C	F	B
HCM 95th-tile Q	4.1	2.6	0.3	5.4	11.2	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	20
Future Vol, veh/h	20
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	22
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	310	253	150	225	210	231
Future Volume (Veh/h)	310	253	150	225	210	231
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	320	261	155	232	216	238
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	216	454			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	216	454			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	9	67	86			
cM capacity (veh/h)	352	792	1110			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	581	155	116	116	216	238
Volume Left	320	155	0	0	0	0
Volume Right	261	0	0	0	0	238
cSH	615	1110	1700	1700	1700	1700
Volume to Capacity	0.95	0.14	0.07	0.07	0.13	0.14
Queue Length 95th (ft)	320	12	0	0	0	0
Control Delay (s)	50.0	8.8	0.0	0.0	0.0	0.0
Lane LOS	E	A				
Approach Delay (s)	50.0	3.5			0.0	
Approach LOS	E					

Intersection Summary				
Average Delay	21.4			
Intersection Capacity Utilization	46.5%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	15.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	310	253	150	225	210	231
Future Vol, veh/h	310	253	150	225	210	231
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	320	261	155	232	216	238

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	642	216	454	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	424	826	1111	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	365	826	1111	-	-	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.5	3.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1111	-	365	826	-	-
HCM Lane V/C Ratio	0.139	-	0.876	0.316	-	-
HCM Control Delay (s)	8.8	-	55.2	11.4	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	8.5	1.4	-	-

Cumulative Plus 1293-Unit and School Project

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	435	1773	1733	221	207	342
v/c Ratio	0.82	0.55	0.95	0.25	0.80	0.65
Control Delay	75.1	0.7	43.4	5.8	84.8	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	0.7	43.4	5.8	84.8	45.8
Queue Length 50th (ft)	225	0	850	25	208	283
Queue Length 95th (ft)	298	0	#1141	74	312	398
Internal Link Dist (ft)		942	856		514	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	627	3223	1939	933	323	624
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	0.69	0.55	0.89	0.24	0.64	0.55

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)	400	1631	1594	203	190	315
Future Volume (vph)	400	1631	1594	203	190	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3127	3223	3223	1442	1612	1442
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3127	3223	3223	1442	1612	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	1773	1733	221	207	342
RTOR Reduction (vph)	0	0	0	71	0	9
Lane Group Flow (vph)	435	1773	1733	150	207	333
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	25.9	151.5	86.1	86.1	24.5	54.4
Effective Green, g (s)	25.9	151.5	86.1	86.1	24.5	54.4
Actuated g/C Ratio	0.17	1.00	0.57	0.57	0.16	0.36
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	534	3223	1831	819	260	517
v/s Ratio Prot	c0.14	0.55	c0.54		c0.13	0.23
v/s Ratio Perm				0.10		
v/c Ratio	0.81	0.55	0.95	0.18	0.80	0.64
Uniform Delay, d1	60.5	0.0	30.5	15.8	61.1	40.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	0.7	10.9	0.1	15.8	2.8
Delay (s)	69.8	0.7	41.5	15.9	76.9	43.2
Level of Service	E	A	D	B	E	D
Approach Delay (s)		14.3	38.6		55.9	
Approach LOS		B	D		E	

Intersection Summary				
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	151.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	435	1158	387	443	1176	326	474	665	255	253	304
v/c Ratio	1.15	0.91	0.48	1.15	0.92	0.43	1.13	0.88	0.72	0.70	0.64
Control Delay	149.8	54.8	4.8	150.2	55.7	6.2	139.8	70.5	79.8	66.6	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.8	54.8	4.8	150.2	55.7	6.2	139.8	70.5	79.8	66.6	23.8
Queue Length 50th (ft)	~286	592	0	~291	604	15	~308	347	134	240	85
Queue Length 95th (ft)	#434	716	68	#445	733	87	#461	452	194	357	200
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	379	1521	886	385	1521	841	421	876	421	468	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.76	0.44	1.15	0.77	0.39	1.13	0.76	0.61	0.54	0.55

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)	400	1065	356	408	1082	300	436	519	93	235	233	280
Future Volume (vph)	400	1065	356	408	1082	300	436	519	93	235	233	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	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
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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3155	3252	1455	3155	3252	1455	3155	3172		3155	1712	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3155	3252	1455	3155	3252	1455	3155	3172		3155	1712	1455
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)	435	1158	387	443	1176	326	474	564	101	255	253	304
RTOR Reduction (vph)	0	0	234	0	0	182	0	8	0	0	0	165
Lane Group Flow (vph)	435	1158	153	443	1176	144	474	657	0	255	253	139
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.3	59.9	59.9	18.6	60.2	60.2	20.3	35.8		17.0	32.5	32.5
Effective Green, g (s)	18.3	59.9	59.9	18.6	60.2	60.2	20.3	35.8		17.0	32.5	32.5
Actuated g/C Ratio	0.12	0.39	0.39	0.12	0.40	0.40	0.13	0.24		0.11	0.21	0.21
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	380	1282	573	386	1288	576	421	747		353	366	311
v/s Ratio Prot	c0.14	0.36		c0.14	c0.36		c0.15	c0.21		0.08	0.15	
v/s Ratio Perm			0.10			0.10						0.10
v/c Ratio	1.14	0.90	0.27	1.15	0.91	0.25	1.13	0.88		0.72	0.69	0.45
Uniform Delay, d1	66.8	43.3	31.1	66.7	43.4	30.7	65.8	56.0		65.2	55.1	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	91.7	9.1	0.3	92.5	10.0	0.2	82.8	11.5		7.1	5.5	1.0
Delay (s)	158.5	52.4	31.4	159.1	53.4	30.9	148.6	67.4		72.3	60.6	52.9
Level of Service	F	D	C	F	D	C	F	E		E	E	D
Approach Delay (s)		71.6			73.7			101.2			61.4	
Approach LOS		E			E			F			E	

Intersection Summary				
HCM 2000 Control Delay	76.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	151.9	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	83.2%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	1065	356	408	1082	300	436	519	93	235	233	280
Future Volume (veh/h)	400	1065	356	408	1082	300	436	519	93	235	233	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	435	1158	387	443	1176	326	474	564	101	255	253	304
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	361	1288	574	361	1356	605	401	712	127	299	388	329
Arrive On Green	0.11	0.39	0.39	0.11	0.41	0.41	0.12	0.26	0.26	0.09	0.22	0.22
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	2792	498	3209	1737	1472
Grp Volume(v), veh/h	435	1158	387	443	1176	326	474	333	332	255	253	304
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1640	1605	1737	1472
Q Serve(g_s), s	18.0	52.8	23.7	18.0	52.3	26.9	20.0	30.1	30.3	12.5	21.2	32.4
Cycle Q Clear(g_c), s	18.0	52.8	23.7	18.0	52.3	26.9	20.0	30.1	30.3	12.5	21.2	32.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	361	1288	574	361	1356	605	401	421	418	299	388	329
V/C Ratio(X)	1.21	0.90	0.67	1.23	0.87	0.54	1.18	0.79	0.79	0.85	0.65	0.92
Avail Cap(c_a), veh/h	361	1442	643	361	1442	643	401	422	420	401	445	377
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	71.1	45.9	18.7	71.1	43.2	35.7	70.1	55.7	55.8	71.5	56.5	60.9
Incr Delay (d2), s/veh	116.2	7.4	2.4	124.9	5.6	0.8	105.1	9.7	10.1	12.5	2.8	26.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	22.0	8.3	13.5	21.3	9.7	14.0	13.6	13.6	5.6	9.5	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.3	53.3	21.1	196.0	48.9	36.5	175.2	65.4	65.9	84.1	59.3	87.2
LnGrp LOS	F	D	C	F	D	D	F	E	E	F	E	F
Approach Vol, veh/h		1980			1945			1139			812	
Approach Delay, s/veh		76.4			80.3			111.2			77.5	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.3	69.8	24.0	41.1	22.0	73.1	18.9	46.2
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	20.0	54.8	22.0	34.4	20.0	54.3	14.5	32.3
Green Ext Time (p_c), s	0.0	7.7	0.0	1.4	0.0	7.7	0.4	2.6

Intersection Summary	
HCM 6th Ctrl Delay	84.6
HCM 6th LOS	F

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1289	1690	30	0	100
Future Volume (Veh/h)	0	1289	1690	30	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1401	1837	33	0	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1870				2538	918
vC1, stage 1 conf vol					1837	
vC2, stage 2 conf vol					700	
vCu, unblocked vol	1870				2538	918
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	58
cM capacity (veh/h)	287				97	259

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	700	700	918	918	33	109
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	33	109
cSH	1700	1700	1700	1700	1700	259
Volume to Capacity	0.41	0.41	0.54	0.54	0.02	0.42
Queue Length 95th (ft)	0	0	0	0	0	49
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	28.7
Lane LOS						D
Approach Delay (s)	0.0		0.0			28.7
Approach LOS						D

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		59.6%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1289	1690	30	0	100
Future Vol, veh/h	0	1289	1690	30	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1401	1837	33	0	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	919
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	259
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	259
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	28.6
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	259
HCM Lane V/C Ratio	-	-	-	0.42
HCM Control Delay (s)	-	-	-	28.6
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1233	56	3	1694	0	26	0	10	0	0	0
Future Volume (Veh/h)	0	1233	56	3	1694	0	26	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1340	61	3	1841	0	28	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1841			1401			2266	3187	670	2522	3248	920
vC1, stage 1 conf vol							1340	1340		1847	1847	
vC2, stage 2 conf vol							926	1847		676	1401	
vCu, unblocked vol	1841			1401			2266	3187	670	2522	3248	920
tC, single (s)	4.4			4.4			7.8	6.8	7.2	7.8	6.8	7.2
tC, 2 stage (s)							6.8	5.8		6.8	5.8	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			77	100	97	100	100	100
cM capacity (veh/h)	284			431			124	91	375	65	89	253

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	670	670	61	3	1227	614	39	0
Volume Left	0	0	0	0	3	0	0	28	0
Volume Right	0	0	0	61	0	0	0	11	0
cSH	1700	1700	1700	1700	431	1700	1700	173	1700
Volume to Capacity	0.00	0.39	0.39	0.04	0.01	0.72	0.36	0.23	0.00
Queue Length 95th (ft)	0	0	0	0	1	0	0	21	0
Control Delay (s)	0.0	0.0	0.0	0.0	13.4	0.0	0.0	34.5	0.0
Lane LOS					B			D	A
Approach Delay (s)	0.0				0.0			34.5	0.0
Approach LOS								D	A

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		56.8%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1233	56	3	1694	0	26	0	10	0	0	0
Future Vol, veh/h	0	1233	56	3	1694	0	26	0	10	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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	0	1340	61	3	1841	0	28	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1841	0	0	1401	0	0	2267	3187	670	2517	3248	921
Stage 1	-	-	-	-	-	-	1340	1340	-	1847	1847	-
Stage 2	-	-	-	-	-	-	927	1847	-	670	1401	-
Critical Hdwy	4.36	-	-	4.36	-	-	7.76	6.76	7.16	7.76	6.76	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.76	5.76	-	6.76	5.76	-
Follow-up Hdwy	2.33	-	-	2.33	-	-	3.63	4.13	3.43	3.63	4.13	3.43
Pot Cap-1 Maneuver	284	-	-	431	-	-	~ 19	8	375	12	7	252
Stage 1	-	-	-	-	-	-	146	200	-	68	109	-
Stage 2	-	-	-	-	-	-	268	109	-	388	186	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	431	-	-	~ 19	8	375	12	7	252
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	88	-	63	86	-
Stage 1	-	-	-	-	-	-	146	200	-	68	108	-
Stage 2	-	-	-	-	-	-	266	108	-	377	186	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	35.6	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	375	284	-	-	431	-	-	-
HCM Lane V/C Ratio	0.234	0.029	-	-	-	0.008	-	-	-
HCM Control Delay (s)	43.6	14.9	0	-	-	13.4	-	-	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A
HCM 95th %tile Q(veh)	0.9	0.1	0	-	-	0	-	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	204	222	150	322	200	156	63	675	301	100	559	250
Future Volume (veh/h)	204	222	150	322	200	156	63	675	301	100	559	250
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
Hourly flow rate (vph)	222	241	163	350	217	170	68	734	327	109	608	272
Approach Volume (veh/h)		463			737			1129			989	
Crossing Volume (veh/h)		1067			1024			572			635	
High Capacity (veh/h)		589			610			881			838	
High v/c (veh/h)		0.79			1.21			1.28			1.18	
Low Capacity (veh/h)		454			472			708			670	
Low v/c (veh/h)		1.02			1.56			1.59			1.48	

Intersection Summary												
Maximum v/c High			1.28									
Maximum v/c Low			1.59									
Intersection Capacity Utilization			119.5%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	36.8
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	626	737	1129	989
Demand Flow Rate, veh/h	645	759	1163	1018
Vehicles Circulating, veh/h	1099	1055	589	655
Vehicles Exiting, veh/h	574	697	987	1160
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	0.998	1.000
Approach Delay, s/veh	11.3	24.4	52.8	43.8
Approach LOS	B	C	F	E

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.474	0.526	0.710	0.290	0.725	0.275
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	168	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	224	253	1957	360	399	826	337	738	280
Cap Entry Lane, veh/h	522	522	0.971	511	579	785	861	739	814
Entry HV Adj Factor	0.971	0.969	163	0.972	0.971	0.971	0.970	0.971	0.971
Flow Entry, veh/h	218	245	1900	350	387	802	327	717	272
Cap Entry, veh/h	507	506	0.086	497	562	761	834	718	791
V/C Ratio	0.429	0.484	0.0	0.704	0.689	1.054	0.392	0.999	0.344
Control Delay, s/veh	14.5	16.0	A	26.2	22.8	70.7	9.0	57.2	8.6
LOS	B	C	0	D	C	F	A	F	A
95th %tile Queue, veh	2	3		5	5	20	2	16	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	43	5	13	91	0	20	5	18	0	0	0
Future Volume (Veh/h)	5	43	5	13	91	0	20	5	18	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	47	5	14	99	0	22	5	20	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	99			52			186	186	50	209	189	99
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	99			52			186	186	50	209	189	99
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			97	99	98	100	100	100
cM capacity (veh/h)	1457			1516			754	689	1002	710	686	941

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	113	47	0
Volume Left	5	14	22	0
Volume Right	5	0	20	0
cSH	1457	1516	833	1700
Volume to Capacity	0.00	0.01	0.06	0.00
Queue Length 95th (ft)	0	1	4	0
Control Delay (s)	0.7	1.0	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	1.0	9.6	0.0
Approach LOS			A	A

Intersection Summary					
Average Delay			2.8		
Intersection Capacity Utilization			17.9%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	43	5	13	91	0	20	5	18	0	0	0
Future Vol, veh/h	5	43	5	13	91	0	20	5	18	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	5	47	5	14	99	0	22	5	20	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	99	0	0	52	0	0	187	187	50	199	189	99
Stage 1	-	-	-	-	-	-	60	60	-	127	127	-
Stage 2	-	-	-	-	-	-	127	127	-	72	62	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.272	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1457	-	-	1516	-	-	760	697	1002	747	695	941
Stage 1	-	-	-	-	-	-	937	833	-	863	780	-
Stage 2	-	-	-	-	-	-	863	780	-	923	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1457	-	-	1516	-	-	752	687	1002	720	685	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	687	-	720	685	-
Stage 1	-	-	-	-	-	-	933	830	-	860	772	-
Stage 2	-	-	-	-	-	-	854	772	-	895	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.9	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1457	-	-	1516	-	-	-
HCM Lane V/C Ratio	0.056	0.004	-	-	0.009	-	-	-
HCM Control Delay (s)	9.6	7.5	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	432	388	504	768	11	22	166	349	351	43
v/c Ratio	0.12	0.68	0.81	0.56	0.66	0.08	0.15	0.60	0.78	0.78	0.09
Control Delay	53.7	43.2	48.4	21.6	4.6	47.2	48.1	17.3	48.2	47.5	0.3
Queue Delay	0.0	0.0	0.9	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	43.2	49.3	23.2	5.2	47.2	48.1	17.3	48.2	47.5	0.3
Queue Length 50th (ft)	7	136	229	211	0	7	14	0	210	211	0
Queue Length 95th (ft)	28	207	#419	403	76	26	41	65	#412	#412	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	94	861	595	1017	1208	339	358	433	529	537	574
Starvation Cap Reductn	0	0	60	335	162	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.50	0.73	0.74	0.73	0.03	0.06	0.38	0.66	0.65	0.07

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)	10	365	32	357	464	707	10	20	153	553	91	40
Future Volume (vph)	10	365	32	357	464	707	10	20	153	553	91	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1752	3452		1752	1845	1568	1752	1845	1543	1665	1692	1519
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1752	3452		1752	1845	1568	1752	1845	1543	1665	1692	1519
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)	11	397	35	388	504	768	11	22	166	601	99	43
RTOR Reduction (vph)	0	5	0	0	0	404	0	0	153	0	0	32
Lane Group Flow (vph)	11	427	0	388	504	364	11	22	13	349	351	11
Confl. Peds. (#/hr)			8						1			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	0.8	21.5		26.3	47.0	47.0	7.7	7.7	7.7	25.7	25.7	25.7
Effective Green, g (s)	0.8	21.5		26.3	47.0	47.0	7.7	7.7	7.7	25.7	25.7	25.7
Actuated g/C Ratio	0.01	0.22		0.27	0.47	0.47	0.08	0.08	0.08	0.26	0.26	0.26
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	748		464	874	742	135	143	119	431	438	393
v/s Ratio Prot	0.01	0.12		c0.22	c0.27		0.01	c0.01		c0.21	0.21	
v/s Ratio Perm						0.23			0.01			0.01
v/c Ratio	0.79	0.57		0.84	0.58	0.49	0.08	0.15	0.11	0.81	0.80	0.03
Uniform Delay, d1	49.1	34.7		34.4	18.9	17.9	42.5	42.7	42.6	34.5	34.4	27.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	130.6	1.1		12.3	0.9	0.5	0.3	0.5	0.4	10.7	10.1	0.0
Delay (s)	179.7	35.8		46.8	19.8	18.4	42.7	43.2	43.0	45.2	44.5	27.5
Level of Service	F	D		D	B	B	D	D	D	D	D	C
Approach Delay (s)		39.3			25.5			43.0			43.8	
Approach LOS		D			C			D			D	

Intersection Summary

HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.3%	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)	10	365	32	357	464	707	10	20	153	553	91	40
Future Volume (veh/h)	10	365	32	357	464	707	10	20	153	553	91	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	397	35	388	504	768	11	22	166	672	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	799	70	424	874	741	221	232	196	777	0	342
Arrive On Green	0.01	0.24	0.24	0.24	0.47	0.47	0.12	0.12	0.12	0.22	0.00	0.22
Sat Flow, veh/h	1767	3274	287	1767	1856	1572	1767	1856	1569	3534	0	1555
Grp Volume(v), veh/h	11	213	219	388	504	768	11	22	166	672	0	43
Grp Sat Flow(s),veh/h/ln	1767	1763	1798	1767	1856	1572	1767	1856	1569	1767	0	1555
Q Serve(g_s), s	0.6	10.9	11.0	22.5	20.7	49.5	0.6	1.1	10.9	19.2	0.0	2.3
Cycle Q Clear(g_c), s	0.6	10.9	11.0	22.5	20.7	49.5	0.6	1.1	10.9	19.2	0.0	2.3
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	430	439	424	874	741	221	232	196	777	0	342
V/C Ratio(X)	0.48	0.49	0.50	0.92	0.58	1.04	0.05	0.09	0.85	0.86	0.00	0.13
Avail Cap(c_a), veh/h	84	430	439	530	874	741	303	318	269	992	0	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	34.1	34.2	38.9	20.2	27.8	40.5	40.7	45.0	39.5	0.0	32.9
Incr Delay (d2), s/veh	14.4	0.9	0.9	18.0	0.9	43.0	0.1	0.2	16.5	6.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.8	5.0	11.7	8.9	26.4	0.3	0.5	5.1	8.9	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	35.0	35.1	56.9	21.1	70.8	40.6	40.9	61.5	46.1	0.0	33.1
LnGrp LOS	E	D	D	E	C	F	D	D	E	D	A	C
Approach Vol, veh/h		443			1660			199			715	
Approach Delay, s/veh		35.8			52.5			58.1			45.3	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.7	30.2		27.6	5.9	54.0		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	31.5	23.0		29.5	5.0	49.5		18.0				
Max Q Clear Time (g_c+I1), s	24.5	13.0		21.2	2.6	51.5		12.9				
Green Ext Time (p_c), s	0.7	1.9		1.9	0.0	0.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		48.7	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	1088	57	1416	433	235	22	272	11	11
v/c Ratio	0.44	0.57	0.35	0.75	0.45	0.72	0.05	0.51	0.03	0.02
Control Delay	52.5	15.9	50.7	20.2	6.6	47.8	29.7	11.6	29.6	0.1
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	16.4	50.7	20.2	6.6	47.8	29.7	11.6	29.6	0.1
Queue Length 50th (ft)	47	223	35	345	46	141	11	27	6	0
Queue Length 95th (ft)	98	318	78	479	123	228	31	99	20	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	207	2256	196	2259	1085	473	631	681	469	654
Starvation Cap Reductn	0	686	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	0.69	0.29	0.63	0.40	0.50	0.03	0.40	0.02	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	950	51	52	1303	398	216	20	250	10	0	10
Future Volume (vph)	70	950	51	52	1303	398	216	20	250	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3472		1752	3505	1530	1752	1845	1568	1752	1568	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1752	3472		1752	3505	1530	1384	1845	1568	1371	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)	76	1033	55	57	1416	433	235	22	272	11	0	11
RTOR Reduction (vph)	0	4	0	0	0	130	0	0	168	0	8	0
Lane Group Flow (vph)	76	1084	0	57	1416	303	235	22	104	11	3	0
Confl. Peds. (#/hr)			6			1						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.5	48.4		6.0	47.9	47.9	20.8	20.8	20.8	20.8	20.8	
Effective Green, g (s)	6.5	48.4		6.0	47.9	47.9	20.8	20.8	20.8	20.8	20.8	
Actuated g/C Ratio	0.07	0.55		0.07	0.54	0.54	0.23	0.23	0.23	0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	128	1894		118	1892	826	324	432	367	321	367	
v/s Ratio Prot	c0.04	0.31		0.03	c0.40			0.01			0.00	
v/s Ratio Perm						0.20	c0.17		0.07	0.01		
v/c Ratio	0.59	0.57		0.48	0.75	0.37	0.73	0.05	0.28	0.03	0.01	
Uniform Delay, d1	39.8	13.3		39.9	15.7	11.7	31.3	26.3	27.8	26.2	26.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	0.4		3.1	1.7	0.3	7.8	0.0	0.4	0.0	0.0	
Delay (s)	47.0	13.7		42.9	17.4	12.0	39.2	26.4	28.3	26.2	26.0	
Level of Service	D	B		D	B	B	D	C	C	C	C	
Approach Delay (s)		15.9			16.9			33.0			26.1	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	70.1%	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)	70	950	51	52	1303	398	216	20	250	10	0	10
Future Volume (veh/h)	70	950	51	52	1303	398	216	20	250	10	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	1033	55	57	1416	0	235	22	272	11	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	1851	99	84	1890		396	401	340	325	0	340
Arrive On Green	0.06	0.54	0.54	0.05	0.54	0.00	0.22	0.22	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1767	3403	181	1767	3526	1572	1392	1856	1572	1077	0	1572
Grp Volume(v), veh/h	76	535	553	57	1416	0	235	22	272	11	0	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1822	1767	1763	1572	1392	1856	1572	1077	0	1572
Q Serve(g_s), s	3.0	14.0	14.0	2.2	21.8	0.0	11.2	0.7	11.5	0.6	0.0	0.4
Cycle Q Clear(g_c), s	3.0	14.0	14.0	2.2	21.8	0.0	11.6	0.7	11.5	1.2	0.0	0.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	959	991	84	1890		396	401	340	325	0	340
V/C Ratio(X)	0.78	0.56	0.56	0.67	0.75		0.59	0.05	0.80	0.03	0.00	0.03
Avail Cap(c_a), veh/h	239	1382	1428	227	2738		641	727	616	514	0	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	10.5	10.5	32.9	12.6	0.0	26.3	21.8	26.1	22.3	0.0	21.7
Incr Delay (d2), s/veh	12.3	0.5	0.5	9.0	0.7	0.0	1.4	0.1	4.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.8	4.9	1.1	7.5	0.0	3.6	0.3	4.4	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	11.0	11.0	41.9	13.3	0.0	27.7	21.9	30.5	22.4	0.0	21.8
LnGrp LOS	D	B	B	D	B		C	C	C	C	A	C
Approach Vol, veh/h		1164			1473	A		529			22	
Approach Delay, s/veh		13.2			14.4			28.9			22.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	42.7		19.7	8.4	42.1		19.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.0	55.0		27.5	9.5	54.5		27.5				
Max Q Clear Time (g_c+I1), s	4.2	16.0		3.2	5.0	23.8		13.6				
Green Ext Time (p_c), s	0.0	9.2		0.0	0.1	13.8		1.5				

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

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	342	972	65	1205	417	203	54	174	698
v/c Ratio	0.85	0.62	0.49	0.89	0.87	0.27	0.13	0.79	1.09dr
Control Delay	70.8	24.4	65.5	41.3	68.6	40.5	2.3	74.8	53.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	24.4	65.5	41.3	68.6	40.5	2.3	74.8	53.0
Queue Length 50th (ft)	136	276	49	435	165	70	0	132	216
Queue Length 95th (ft)	#217	349	96	533	#253	106	8	#240	#331
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	409	1575	153	1462	494	757	413	241	788
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.62	0.42	0.82	0.84	0.27	0.13	0.72	0.89

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	591	304	60	918	190	384	187	50	160	192	450
Future Volume (vph)	315	591	304	60	918	190	384	187	50	160	192	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3341		1770	3441		3433	3539	1583	1770	3167	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3341		1770	3441		3433	3539	1583	1770	3167	
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)	342	642	330	65	998	207	417	203	54	174	209	489
RTOR Reduction (vph)	0	53	0	0	14	0	0	0	43	0	141	0
Lane Group Flow (vph)	342	919	0	65	1191	0	417	203	11	174	557	0
Confl. Peds. (#/hr)			3									
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.5	52.4		7.3	46.2		16.1	24.2	24.2	14.4	22.5	
Effective Green, g (s)	13.5	52.4		7.3	46.2		16.1	24.2	24.2	14.4	22.5	
Actuated g/C Ratio	0.12	0.45		0.06	0.40		0.14	0.21	0.21	0.12	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	398	1505		111	1366		475	736	329	219	612	
v/s Ratio Prot	c0.10	0.28		0.04	c0.35		c0.12	0.06		0.10	c0.18	
v/s Ratio Perm									0.01			
v/c Ratio	0.86	0.61		0.59	0.87		0.88	0.28	0.03	0.79	1.09dr	
Uniform Delay, d1	50.5	24.2		53.0	32.3		49.1	38.7	36.7	49.5	45.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.6	0.7		7.7	6.4		16.6	0.2	0.0	17.8	17.4	
Delay (s)	67.1	25.0		60.7	38.7		65.7	38.9	36.8	67.3	63.4	
Level of Service	E	C		E	D		E	D	D	E	E	
Approach Delay (s)		35.9			39.8			55.3			64.1	
Approach LOS		D			D			E			E	

Intersection Summary

HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	86.2%	ICU Level of Service	E	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	591	304	60	918	190	384	187	50	160	192	450
Future Volume (veh/h)	315	591	304	60	918	190	384	187	50	160	192	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	642	0	65	998	207	417	203	54	174	209	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1778		84	1236	256	512	430	192	212	326	
Arrive On Green	0.12	0.50	0.00	0.05	0.42	0.42	0.15	0.12	0.12	0.12	0.09	0.00
Sat Flow, veh/h	3456	3647	0	1781	2924	605	3456	3554	1585	1781	3647	0
Grp Volume(v), veh/h	342	642	0	65	606	599	417	203	54	174	209	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1752	1728	1777	1585	1781	1777	0
Q Serve(g_s), s	8.1	9.3	0.0	3.1	25.3	25.4	9.9	4.5	2.6	8.1	4.8	0.0
Cycle Q Clear(g_c), s	8.1	9.3	0.0	3.1	25.3	25.4	9.9	4.5	2.6	8.1	4.8	0.0
Prop In Lane	1.00		0.00	1.00		0.35	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	431	1778		84	751	741	512	430	192	212	326	
V/C Ratio(X)	0.79	0.36		0.77	0.81	0.81	0.81	0.47	0.28	0.82	0.64	
Avail Cap(c_a), veh/h	559	2185		208	1013	999	673	1023	456	328	986	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.0	12.9	0.0	39.9	21.4	21.5	34.9	34.7	33.9	36.4	37.1	0.0
Incr Delay (d2), s/veh	5.9	0.1	0.0	13.9	3.5	3.7	5.8	0.8	0.8	9.1	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.5	0.0	1.6	10.4	10.3	4.4	1.9	1.0	3.8	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	13.0	0.0	53.9	25.0	25.2	40.7	35.5	34.7	45.5	39.2	0.0
LnGrp LOS	D	B		D	C	C	D	D	C	D	D	
Approach Vol, veh/h		984	A		1270			674			383	A
Approach Delay, s/veh		23.1			26.5			38.7			42.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	46.9	17.1	12.3	15.1	40.3	14.6	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.9	52.1	16.5	23.5	13.7	48.3	15.6	24.4
Max Q Clear Time (g_c+I1), s	5.1	11.3	11.9	6.8	10.1	27.4	10.1	6.5
Green Ext Time (p_c), s	0.0	5.1	0.7	1.0	0.4	8.4	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	96	493	1428	633	143
v/c Ratio	0.71	0.23	0.84	0.80	0.30
Control Delay	73.4	10.1	24.9	44.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	10.1	24.9	44.2	8.2
Queue Length 50th (ft)	53	52	285	169	0
Queue Length 95th (ft)	#183	156	#719	#386	56
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	135	2165	1699	793	475
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	0.71	0.23	0.84	0.80	0.30

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)	88	454	723	591	582	132
Future Volume (vph)	88	454	723	591	582	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	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	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3246		3400	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3246		3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	493	786	642	633	143
RTOR Reduction (vph)	0	0	104	0	0	111
Lane Group Flow (vph)	96	493	1324	0	633	32
Confl. Peds. (#/hr)				3		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.3	58.6	46.8		22.1	22.1
Effective Green, g (s)	7.3	58.6	46.8		22.1	22.1
Actuated g/C Ratio	0.07	0.59	0.48		0.22	0.22
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	129	2085	1542		762	351
v/s Ratio Prot	c0.05	0.14	c0.41			
v/s Ratio Perm					c0.19	0.02
v/c Ratio	0.74	0.24	0.86		0.83	0.09
Uniform Delay, d1	44.7	9.4	22.9		36.4	30.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.5	0.1	5.0		7.7	0.1
Delay (s)	65.2	9.5	27.9		44.1	30.4
Level of Service	E	A	C		D	C
Approach Delay (s)		18.6	27.9		41.6	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	142	433	158	98	855	640	252	632	301	326	311
v/c Ratio	0.67	0.32	0.23	0.54	0.72	0.84	0.79	0.77	0.71	0.52	0.63
Control Delay	63.8	25.4	5.0	59.9	34.8	25.1	61.0	44.7	56.6	44.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	25.4	5.0	59.9	34.8	25.1	61.0	44.7	56.6	44.2	15.0
Queue Length 50th (ft)	98	115	0	68	276	192	172	222	108	115	27
Queue Length 95th (ft)	#190	171	45	130	368	#396	#309	299	#175	167	121
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	249	1493	739	234	1462	850	387	1053	470	774	543
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.29	0.21	0.42	0.58	0.75	0.65	0.60	0.64	0.42	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)	131	398	145	90	787	589	232	532	50	277	300	286
Future Volume (vph)	131	398	145	90	787	589	232	532	50	277	300	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1526	1752	3505	1527	1752	3454		3400	3505	1518
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1526	1752	3505	1527	1752	3454		3400	3505	1518
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)	142	433	158	98	855	640	252	578	54	301	326	311
RTOR Reduction (vph)	0	0	97	0	0	239	0	6	0	0	0	221
Lane Group Flow (vph)	142	433	61	98	855	401	252	626	0	301	326	90
Confl. Peds. (#/hr)			9			9			4			12
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	12.7	40.7	40.7	9.0	37.0	37.0	19.3	24.9		13.1	18.7	18.7
Effective Green, g (s)	12.7	40.7	40.7	9.0	37.0	37.0	19.3	24.9		13.1	18.7	18.7
Actuated g/C Ratio	0.12	0.39	0.39	0.09	0.35	0.35	0.18	0.24		0.12	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	210	1349	587	149	1226	534	319	813		421	620	268
v/s Ratio Prot	c0.08	c0.12		0.06	0.24		c0.14	c0.18		0.09	0.09	
v/s Ratio Perm			0.04			c0.26						0.06
v/c Ratio	0.68	0.32	0.10	0.66	0.70	0.75	0.79	0.77		0.71	0.53	0.34
Uniform Delay, d1	44.5	22.8	20.8	46.9	29.5	30.3	41.3	37.7		44.5	39.5	38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.3	0.1	0.1	10.0	1.8	5.9	12.2	4.4		5.7	0.8	0.8
Delay (s)	52.9	22.9	20.9	56.9	31.3	36.2	53.5	42.2		50.2	40.3	38.8
Level of Service	D	C	C	E	C	D	D	D		D	D	D
Approach Delay (s)		28.3			34.8			45.4			43.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	105.7	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	72.3%	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)	131	398	145	90	787	589	232	532	50	277	300	286
Future Volume (veh/h)	131	398	145	90	787	589	232	532	50	277	300	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	142	433	158	98	855	640	252	578	54	301	326	311
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	171	1436	636	123	1341	594	283	832	78	364	710	311
Arrive On Green	0.10	0.41	0.41	0.07	0.38	0.38	0.16	0.26	0.26	0.11	0.20	0.20
Sat Flow, veh/h	1767	3526	1562	1767	3526	1561	1767	3258	304	3428	3526	1544
Grp Volume(v), veh/h	142	433	158	98	855	640	252	312	320	301	326	311
Grp Sat Flow(s),veh/h/ln	1767	1763	1562	1767	1763	1561	1767	1763	1799	1714	1763	1544
Q Serve(g_s), s	8.8	9.3	7.4	6.1	22.2	42.5	15.6	17.9	18.0	9.6	9.1	22.5
Cycle Q Clear(g_c), s	8.8	9.3	7.4	6.1	22.2	42.5	15.6	17.9	18.0	9.6	9.1	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	171	1436	636	123	1341	594	283	450	460	364	710	311
V/C Ratio(X)	0.83	0.30	0.25	0.79	0.64	1.08	0.89	0.69	0.70	0.83	0.46	1.00
Avail Cap(c_a), veh/h	229	1436	636	215	1341	594	356	488	498	433	710	311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	22.4	21.8	51.2	28.3	34.6	45.9	37.6	37.7	48.9	39.2	44.6
Incr Delay (d2), s/veh	17.1	0.1	0.2	10.9	1.0	59.5	19.8	3.8	3.8	10.8	0.5	50.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.7	0.0	3.0	9.2	25.0	8.3	8.1	8.3	4.6	3.9	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.7	22.5	22.0	62.1	29.3	94.1	65.7	41.5	41.5	59.7	39.7	95.5
LnGrp LOS	E	C	C	E	C	F	E	D	D	E	D	F
Approach Vol, veh/h		733			1593			884			938	
Approach Delay, s/veh		30.9			57.4			48.4			64.6	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	33.0	12.3	50.0	22.4	27.0	15.3	47.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.1	30.9	13.6	43.4	22.5	22.5	14.5	42.5
Max Q Clear Time (g_c+I1), s	11.6	20.0	8.1	11.3	17.6	24.5	10.8	44.5
Green Ext Time (p_c), s	0.3	2.8	0.1	3.4	0.3	0.0	0.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay		52.4
HCM 6th LOS		D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	55	752	58	58	528
Future Volume (Veh/h)	48	55	752	58	58	528
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	60	817	63	63	574
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1548	848			880	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1548	848			880	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	83			92	
cM capacity (veh/h)	115	361			768	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	112	880	63	574
Volume Left	52	0	63	0
Volume Right	60	63	0	0
cSH	181	1700	768	1700
Volume to Capacity	0.62	0.52	0.08	0.34
Queue Length 95th (ft)	87	0	7	0
Control Delay (s)	52.5	0.0	10.1	0.0
Lane LOS	F		B	
Approach Delay (s)	52.5	0.0	1.0	
Approach LOS	F			

Intersection Summary				
Average Delay		4.0		
Intersection Capacity Utilization		60.9%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	55	752	58	58	528
Future Vol, veh/h	48	55	752	58	58	528
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	-	-	-	60	-
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	52	60	817	63	63	574

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1549	849	0	0	880	0
Stage 1	849	-	-	-	-	-
Stage 2	700	-	-	-	-	-
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	125	361	-	-	768	-
Stage 1	419	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	115	361	-	-	768	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	419	-	-	-	-	-
Stage 2	453	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	52.7	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	181	768	-
HCM Lane V/C Ratio	-	-	0.619	0.082	-
HCM Control Delay (s)	-	-	52.7	10.1	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.5	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	10	42	10	20	104	35	514	10	35	407	101
Future Volume (Veh/h)	141	10	42	10	20	104	35	514	10	35	407	101
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	11	46	11	22	113	38	559	11	38	442	110
Pedestrians		6			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1284	1172	448	1212	1276	568	558			572		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1284	1172	448	1212	1276	568	558			572		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	92	92	86	78	96			96		
cM capacity (veh/h)	92	177	607	131	153	521	1007			999		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	210	146	38	570	38	442	110
Volume Left	153	11	38	0	38	0	0
Volume Right	46	113	0	11	0	0	110
cSH	117	328	1007	1700	999	1700	1700
Volume to Capacity	1.80	0.44	0.04	0.34	0.04	0.26	0.06
Queue Length 95th (ft)	411	55	3	0	3	0	0
Control Delay (s)	454.7	24.5	8.7	0.0	8.7	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	454.7	24.5	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	64.2			
Intersection Capacity Utilization	58.3%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	54.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	141	10	42	10	20	104	35	514	10	35	407	101
Future Vol, veh/h	141	10	42	10	20	104	35	514	10	35	407	101
Conflicting Peds, #/hr	1	0	0	0	0	1	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	11	46	11	22	113	38	559	11	38	442	110

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1233	1172	448	1245	1277	568	558	0	0	572	0	0
Stage 1	524	524	-	643	643	-	-	-	-	-	-	-
Stage 2	709	648	-	602	634	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	154	192	611	151	166	522	1013	-	-	1001	-	-
Stage 1	537	530	-	462	468	-	-	-	-	-	-	-
Stage 2	425	466	-	486	473	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 101	176	608	125	152	521	1007	-	-	999	-	-
Mov Cap-2 Maneuver	~ 101	176	-	125	152	-	-	-	-	-	-	-
Stage 1	514	507	-	444	449	-	-	-	-	-	-	-
Stage 2	304	447	-	423	452	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 386.4	24.7	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1007	-	-	127	326	999	-	-
HCM Lane V/C Ratio	0.038	-	-	1.652	0.447	0.038	-	-
HCM Control Delay (s)	8.7	-	-	$ 386.4	24.7	8.7	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	15.4	2.2	0.1	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	10	12	286	10	293	15	250	152	261	199	10
Future Volume (vph)	20	10	12	286	10	293	15	250	152	261	199	10
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
Hourly flow rate (vph)	22	11	13	311	11	318	16	272	165	284	216	11

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	46	640	288	165	392	119
Volume Left (vph)	22	311	16	0	284	0
Volume Right (vph)	13	318	0	165	0	11
Hadj (s)	-0.04	-0.17	0.06	-0.67	0.40	-0.03
Departure Headway (s)	8.4	6.5	7.7	7.0	7.9	7.4
Degree Utilization, x	0.11	1.16	0.62	0.32	0.86	0.25
Capacity (veh/h)	395	533	453	504	449	476
Control Delay (s)	12.4	115.8	21.2	12.1	41.1	11.6
Approach Delay (s)	12.4	115.8	17.9		34.2	
Approach LOS	B	F	C		D	

Intersection Summary				
Delay	60.8			
Level of Service	F			
Intersection Capacity Utilization	80.8%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	64.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	20	10	12	286	10	293	0	15	250	152	261	199
Future Vol, veh/h	20	10	12	286	10	293	0	15	250	152	261	199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	13	311	11	318	0	16	272	165	284	216
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.3	121.1	20.2	37.6
HCM LOS	B	F	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	6%	0%	48%	49%	72%	0%
Vol Thru, %	94%	0%	24%	2%	28%	91%
Vol Right, %	0%	100%	29%	50%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	152	42	589	361	110
LT Vol	15	0	20	286	261	0
Through Vol	250	0	10	10	100	100
RT Vol	0	152	12	293	0	10
Lane Flow Rate	288	165	46	640	392	119
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.619	0.322	0.108	1.177	0.858	0.246
Departure Headway (Hd)	8.387	7.628	9.179	6.62	8.504	8.061
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	435	474	393	551	431	449
Service Time	6.087	5.328	7.179	4.687	6.204	5.761
HCM Lane V/C Ratio	0.662	0.348	0.117	1.162	0.91	0.265
HCM Control Delay	23.8	13.9	13.3	121.1	44.9	13.4
HCM Lane LOS	C	B	B	F	E	B
HCM 95th-tile Q	4.1	1.4	0.4	22.5	8.5	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	10
Future Vol, veh/h	10
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	11
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	197	135	221	208	122	401
Future Volume (Veh/h)	197	135	221	208	122	401
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	214	147	240	226	133	436
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	133	569			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	133	569			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	21	83	76			
cM capacity (veh/h)	271	888	993			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	361	240	113	113	133	436
Volume Left	214	240	0	0	0	0
Volume Right	147	0	0	0	0	436
cSH	457	993	1700	1700	1700	1700
Volume to Capacity	0.79	0.24	0.07	0.07	0.08	0.26
Queue Length 95th (ft)	177	24	0	0	0	0
Control Delay (s)	36.3	9.8	0.0	0.0	0.0	0.0
Lane LOS	E	A				
Approach Delay (s)	36.3	5.0			0.0	
Approach LOS	E					

Intersection Summary			
Average Delay		11.1	
Intersection Capacity Utilization		43.7%	ICU Level of Service
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	197	135	221	208	122	401
Future Vol, veh/h	197	135	221	208	122	401
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	145	105	-	-	0
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	214	147	240	226	133	436

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	133	569	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	373	913	995	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	913	995	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.8	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	995	-	283	913	-	-
HCM Lane V/C Ratio	0.241	-	0.757	0.161	-	-
HCM Control Delay (s)	9.8	-	48.6	9.7	-	-
HCM Lane LOS	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.9	-	5.6	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	3	192	10	0	0	0	0	386	20
Future Volume (Veh/h)	0	0	0	3	192	10	0	0	0	0	386	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3	209	11	0	0	0	0	420	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	536	431	431	431	442	0	442			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536	431	431	431	442	0	442			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	59	99	100			100		
cM capacity (veh/h)	307	517	624	535	510	1085	1118			1623		

Direction, Lane #	WB 1	SB 1
Volume Total	223	442
Volume Left	3	0
Volume Right	11	22
cSH	530	1700
Volume to Capacity	0.42	0.26
Queue Length 95th (ft)	52	0
Control Delay (s)	16.6	0.0
Lane LOS	C	
Approach Delay (s)	16.6	0.0
Approach LOS	C	

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A	
Analysis Period (min)	15			

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	0	0	3	192	10	0	0	0	0	386	20
Future Vol, veh/h	0	0	0	3	192	10	0	0	0	0	386	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	209	11	0	0	0	0	420	22

Major/Minor	Minor1			Major2		
Conflicting Flow All	431	442	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	431	442	-	-	-	-
Critical Hdwy	6.42	6.52	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-	-	-
Pot Cap-1 Maneuver	581	510	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	655	576	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	581	0	-	-	-	-
Mov Cap-2 Maneuver	581	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	655	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	14.7	0
HCM LOS	B	

Minor Lane/Major Mvmt	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	581	-	-	-
HCM Lane V/C Ratio	0.365	-	-	-
HCM Control Delay (s)	14.7	0	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	1.7	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	372	1222	439	586	126	315	615	429	329
v/c Ratio	0.11	0.79	0.82	0.55	0.53	0.67	0.70	0.38	0.76	0.50
Control Delay	58.1	64.1	41.2	33.4	5.2	78.8	67.6	7.6	66.1	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	64.1	41.2	33.4	5.2	78.8	67.6	7.6	66.1	48.0
Queue Length 50th (ft)	21	155	523	308	56	117	153	71	201	129
Queue Length 95th (ft)	53	221	651	438	141	189	207	94	270	185
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	252	524	1580	857	1140	244	577	1691	639	740
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	0.10	0.71	0.77	0.51	0.51	0.52	0.55	0.36	0.67	0.44

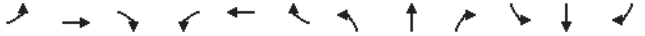
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	223	120	1124	404	539	116	290	566	395	210	93
Future Volume (vph)	23	223	120	1124	404	539	116	290	566	395	210	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3354		3433	1863	1569	1770	3539	2787	3433	3352	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3354		3433	1863	1569	1770	3539	2787	3433	3352	
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)	25	242	130	1222	439	586	126	315	615	429	228	101
RTOR Reduction (vph)	0	47	0	0	0	174	0	0	48	0	34	0
Lane Group Flow (vph)	25	325	0	1222	439	412	126	315	567	429	295	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	17.4	17.4		59.6	59.6	82.2	14.7	17.6	77.2	22.6	25.5	
Effective Green, g (s)	17.4	17.4		59.6	59.6	82.2	14.7	17.6	77.2	22.6	25.5	
Actuated g/C Ratio	0.13	0.13		0.43	0.43	0.60	0.11	0.13	0.56	0.16	0.19	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	423		1485	806	936	188	452	1562	563	620	
v/s Ratio Prot	0.01	c0.10		c0.36	0.24	0.07	0.07	c0.09	0.16	c0.12	0.09	
v/s Ratio Perm						0.19			0.05			
v/c Ratio	0.11	0.77		0.82	0.54	0.44	0.67	0.70	0.36	0.76	0.48	
Uniform Delay, d1	53.3	58.2		34.4	29.0	15.2	59.2	57.5	16.7	55.0	50.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	8.1		3.8	0.8	0.3	9.0	4.6	0.1	6.0	0.6	
Delay (s)	53.5	66.3		38.2	29.7	15.5	68.2	62.1	16.8	61.0	50.7	
Level of Service	D	E		D	C	B	E	E	B	E	D	
Approach Delay (s)		65.5			30.6			36.5			56.5	
Approach LOS		E			C			D			E	

Intersection Summary				
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	137.7	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	78.4%	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)	23	223	120	1124	404	539	116	290	566	395	210	93
Future Volume (veh/h)	23	223	120	1124	404	539	116	290	566	395	210	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	242	130	1222	439	586	126	315	615	429	228	101
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	231	293	152	1437	778	879	152	540	1584	499	490	210
Arrive On Green	0.13	0.13	0.13	0.42	0.42	0.42	0.09	0.15	0.15	0.14	0.20	0.20
Sat Flow, veh/h	1781	2262	1174	3456	1870	1564	1781	3554	2790	3456	2420	1037
Grp Volume(v), veh/h	25	188	184	1222	439	586	126	315	615	429	165	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1659	1728	1870	1564	1781	1777	1395	1728	1777	1681
Q Serve(g_s), s	1.6	13.4	14.0	41.4	23.2	34.1	9.0	10.7	15.8	15.7	10.6	11.2
Cycle Q Clear(g_c), s	1.6	13.4	14.0	41.4	23.2	34.1	9.0	10.7	15.8	15.7	10.6	11.2
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	231	230	215	1437	778	879	152	540	1584	499	360	340
V/C Ratio(X)	0.11	0.82	0.85	0.85	0.56	0.67	0.83	0.58	0.39	0.86	0.46	0.48
Avail Cap(c_a), veh/h	267	266	248	1669	903	984	258	609	1638	675	393	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	54.9	55.2	34.2	28.9	20.0	58.3	51.1	15.5	54.2	45.5	45.7
Incr Delay (d2), s/veh	0.2	15.9	21.8	3.9	0.6	1.5	10.8	1.1	0.2	8.4	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.1	7.2	17.5	10.3	12.1	4.4	4.7	10.0	7.4	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	70.8	77.0	38.1	29.5	21.5	69.2	52.3	15.7	62.6	46.4	46.7
LnGrp LOS	D	E	E	D	C	C	E	D	B	E	D	D
Approach Vol, veh/h		397			2247			1056			758	
Approach Delay, s/veh		72.3			32.1			33.0			55.6	
Approach LOS		E			C			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.4	25.5		21.4	16.9	32.0		59.3				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 25	22.2		19.4	18.8	* 29		62.6				
Max Q Clear Time (g_c+I1), s	17.7	17.8		16.0	11.0	13.2		43.4				
Green Ext Time (p_c), s	1.0	1.8		0.8	0.2	1.7		10.5				

Intersection Summary			
HCM 6th Ctrl Delay		39.9	
HCM 6th LOS		D	

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	830	299	136	1527	683	394	310	509
v/c Ratio	0.79	0.64	0.39	0.73	1.03	1.05	0.64	0.91	0.77
Control Delay	88.5	33.2	4.7	72.4	63.7	93.1	46.8	75.9	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.5	33.2	4.7	72.4	63.7	93.1	46.8	75.9	44.6
Queue Length 50th (ft)	45	262	0	96	~617	~277	136	221	155
Queue Length 95th (ft)	#104	364	61	#196	#837	#430	188	#415	215
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	151	1300	770	202	1482	652	811	348	858
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.64	0.39	0.67	1.03	1.05	0.49	0.89	0.59

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)	110	764	275	125	1125	280	628	308	54	285	269	200
Future Volume (vph)	110	764	275	125	1125	280	628	308	54	285	269	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3416		3433	3450		1770	3313	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3416		3433	3450		1770	3313	
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)	120	830	299	136	1223	304	683	335	59	310	292	217
RTOR Reduction (vph)	0	0	189	0	18	0	0	12	0	0	73	0
Lane Group Flow (vph)	120	830	110	136	1509	0	683	382	0	310	436	0
Confl. Peds. (#/hr)						10			5			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	5.0	41.6	41.6	12.0	48.6		21.6	19.8		21.9	20.1	
Effective Green, g (s)	5.0	41.6	41.6	12.0	48.6		21.6	19.8		21.9	20.1	
Actuated g/C Ratio	0.04	0.37	0.37	0.11	0.43		0.19	0.17		0.19	0.18	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1299	581	187	1465		654	602		342	587	
v/s Ratio Prot	0.03	0.23		c0.08	c0.44		c0.20	0.11		c0.18	0.13	
v/s Ratio Perm			0.07									
v/c Ratio	0.79	0.64	0.19	0.73	1.03		1.04	0.63		0.91	0.74	
Uniform Delay, d1	53.6	29.6	24.4	49.1	32.3		45.9	43.4		44.7	44.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.3	1.0	0.2	13.2	31.6		47.3	2.2		26.3	5.0	
Delay (s)	78.0	30.7	24.5	62.2	64.0		93.1	45.6		71.0	49.2	
Level of Service	E	C	C	E	E		F	D		E	D	
Approach Delay (s)		33.8			63.8			75.7			57.5	
Approach LOS		C			E			E			E	

Intersection Summary					
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service		E	
HCM 2000 Volume to Capacity ratio	1.02				
Actuated Cycle Length (s)	113.3	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	91.2%	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)	110	764	275	125	1125	280	628	308	54	285	269	200
Future Volume (veh/h)	110	764	275	125	1125	280	628	308	54	285	269	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	830	299	136	1223	304	683	335	59	310	292	217
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	151	1340	597	164	1201	294	651	557	97	337	364	263
Arrive On Green	0.04	0.38	0.38	0.09	0.43	0.43	0.19	0.18	0.18	0.19	0.18	0.18
Sat Flow, veh/h	3456	3554	1585	1781	2825	692	3456	3021	526	1781	1969	1422
Grp Volume(v), veh/h	120	830	299	136	763	764	683	195	199	310	263	246
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1740	1728	1777	1771	1781	1777	1614
Q Serve(g_s), s	3.9	21.7	9.4	8.6	48.5	48.5	21.5	11.5	11.8	19.5	16.1	16.7
Cycle Q Clear(g_c), s	3.9	21.7	9.4	8.6	48.5	48.5	21.5	11.5	11.8	19.5	16.1	16.7
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.30	1.00		0.88
Lane Grp Cap(c), veh/h	151	1340	597	164	755	740	651	327	326	337	329	299
V/C Ratio(X)	0.79	0.62	0.50	0.83	1.01	1.03	1.05	0.60	0.61	0.92	0.80	0.82
Avail Cap(c_a), veh/h	151	1340	597	201	755	740	651	408	407	348	420	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	28.9	8.9	50.9	32.8	32.8	46.3	42.7	42.8	45.4	44.5	44.7
Incr Delay (d2), s/veh	24.3	0.9	0.7	20.8	35.2	42.0	48.8	1.7	1.8	28.5	8.2	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	9.0	3.0	4.7	26.9	27.8	13.4	5.1	5.2	11.1	7.7	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	29.8	9.6	71.7	68.0	74.8	95.1	44.4	44.6	73.9	52.7	55.8
LnGrp LOS	E	C	A	E	F	F	F	D	D	E	D	E
Approach Vol, veh/h		1249			1663			1077			819	
Approach Delay, s/veh		29.6			71.4			76.6			61.6	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	47.5	26.0	25.6	9.5	53.0	26.1	25.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	40.6	21.5	27.0	5.0	48.5	22.3	26.2
Max Q Clear Time (g_c+I1), s	10.6	23.7	23.5	18.7	5.9	50.5	21.5	13.8
Green Ext Time (p_c), s	0.1	6.1	0.0	1.9	0.0	0.0	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	488	236	14	991	413	9
v/c Ratio	0.64	0.31	0.05	0.69	0.68	0.02
Control Delay	16.6	3.1	10.5	14.9	20.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	3.1	10.5	14.9	20.7	9.4
Queue Length 50th (ft)	96	0	2	104	90	1
Queue Length 95th (ft)	241	35	13	225	222	9
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1370	1196	503	2604	1204	1080
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	0.36	0.20	0.03	0.38	0.34	0.01

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	449	217	13	912	380	8
Future Volume (vph)	449	217	13	912	380	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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	1531	1750	3505	1752	1568
Flt Permitted	1.00	1.00	0.37	1.00	0.95	1.00
Satd. Flow (perm)	1845	1531	678	3505	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	488	236	14	991	413	9
RTOR Reduction (vph)	0	137	0	0	0	3
Lane Group Flow (vph)	488	99	14	991	413	6
Confl. Peds. (#/hr)		4	4		1	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	19.7	19.7	19.7	19.7	16.5	16.5
Effective Green, g (s)	19.7	19.7	19.7	19.7	16.5	16.5
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.35	0.35
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	773	641	284	1469	615	550
v/s Ratio Prot	0.26			c0.28		0.00
v/s Ratio Perm		0.06	0.02		c0.24	
v/c Ratio	0.63	0.15	0.05	0.67	0.67	0.01
Uniform Delay, d1	10.8	8.5	8.1	11.1	12.9	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	0.0	1.0	2.3	0.0
Delay (s)	12.0	8.5	8.1	12.0	15.2	9.9
Level of Service	B	A	A	B	B	A
Approach Delay (s)	10.9			12.0	15.1	
Approach LOS	B			B	B	

Intersection Summary				
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	55.3%	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)	449	217	13	912	380	8
Future Volume (veh/h)	449	217	13	912	380	8
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	488	236	14	991	413	9
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	770	649	349	1462	504	449
Arrive On Green	0.41	0.41	0.41	0.41	0.29	0.29
Sat Flow, veh/h	1856	1565	723	3618	1767	1572
Grp Volume(v), veh/h	488	236	14	991	413	9
Grp Sat Flow(s),veh/h/ln	1856	1565	723	1763	1767	1572
Q Serve(g_s), s	7.5	3.7	0.6	8.2	7.8	0.1
Cycle Q Clear(g_c), s	7.5	3.7	8.1	8.2	7.8	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	770	649	349	1462	504	449
V/C Ratio(X)	0.63	0.36	0.04	0.68	0.82	0.02
Avail Cap(c_a), veh/h	1731	1460	724	3290	1502	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.4	7.3	11.6	8.6	12.0	9.2
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.2	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.7	0.1	1.8	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.7	7.4	11.6	8.8	13.3	9.3
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	724			1005	422	
Approach Delay, s/veh	8.3			8.8	13.2	
Approach LOS	A			A	B	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	20.3				20.3	15.7
Change Period (Y+Rc), s	5.4				5.4	5.4
Max Green Setting (Gmax), s	33.6				33.6	30.6
Max Q Clear Time (g_c+I1), s	9.5				10.2	9.8
Green Ext Time (p_c), s	2.2				4.7	0.6

Intersection Summary			
HCM 6th Ctrl Delay		9.5	
HCM 6th LOS		A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	344	113	9	850	0	70	0	13	0	0	5
Future Volume (Veh/h)	0	344	113	9	850	0	70	0	13	0	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	374	123	10	924	0	76	0	14	0	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.78			0.78	0.78	0.78	0.78	0.78	
vC, conflicting volume	924			497			922	1380	436	1386	1441	462
vC1, stage 1 conf vol							436	436		944	944	
vC2, stage 2 conf vol							487	944		442	497	
vCu, unblocked vol	924			219			762	1346	140	1355	1425	462
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			83	100	98	100	100	99
cM capacity (veh/h)	735			1055			447	302	691	256	294	547

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	497	472	462	90	5
Volume Left	0	10	0	76	0
Volume Right	123	0	0	14	5
cSH	735	1055	1700	530	547
Volume to Capacity	0.00	0.01	0.27	0.17	0.01
Queue Length 95th (ft)	0	1	0	15	1
Control Delay (s)	0.0	0.3	0.0	14.0	11.6
Lane LOS		A		B	B
Approach Delay (s)	0.0	0.1		14.0	11.6
Approach LOS				B	B

Intersection Summary					
Average Delay		1.0			
Intersection Capacity Utilization		47.0%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	0	344	113	9	850	0	70	0	13	0	0	5
Future Vol, veh/h	0	344	113	9	850	0	70	0	13	0	0	5
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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	374	123	10	924	0	76	0	14	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	924	0	0	497	0	0	918	1380	436	1387	1441	462
Stage 1	-	-	-	-	-	-	436	436	-	944	944	-
Stage 2	-	-	-	-	-	-	482	944	-	443	497	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	737	-	-	1065	-	-	239	144	619	111	132	547
Stage 1	-	-	-	-	-	-	598	579	-	283	340	-
Stage 2	-	-	-	-	-	-	535	340	-	593	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	737	-	-	1065	-	-	233	141	619	107	129	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	295	-	253	289	-
Stage 1	-	-	-	-	-	-	598	579	-	283	334	-
Stage 2	-	-	-	-	-	-	520	334	-	579	544	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	14.7	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	423	619	737	-	-	1065	-	-	547
HCM Lane V/C Ratio	0.18	0.023	-	-	-	0.009	-	-	0.01
HCM Control Delay (s)	15.4	11	0	-	-	8.4	0.1	-	11.6
HCM Lane LOS	C	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	99	147	91	25	281	98	235	198	38	56	160	267
Future Volume (veh/h)	99	147	91	25	281	98	235	198	38	56	160	267
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
Hourly flow rate (vph)	108	160	99	27	305	107	255	215	41	61	174	290
Approach Volume (veh/h)		367			439			511			525	
Crossing Volume (veh/h)		262			578			329			587	
High Capacity (veh/h)		1128			877			1069			871	
High v/c (veh/h)		0.33			0.50			0.48			0.60	
Low Capacity (veh/h)		928			704			876			699	
Low v/c (veh/h)		0.40			0.62			0.58			0.75	

Intersection Summary				
Maximum v/c High		0.60		
Maximum v/c Low		0.75		
Intersection Capacity Utilization		107.8%	ICU Level of Service	G

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	367	439	511	525
Demand Flow Rate, veh/h	374	448	521	535
Vehicles Circulating, veh/h	267	589	335	599
Vehicles Exiting, veh/h	867	267	306	438
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.2	14.6	10.6	19.7
Approach LOS	A	B	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	374	448	521	535
Cap Entry Lane, veh/h	1051	757	981	749
Entry HV Adj Factor	0.981	0.980	0.980	0.980
Flow Entry, veh/h	367	439	511	525
Cap Entry, veh/h	1031	741	961	734
V/C Ratio	0.356	0.592	0.531	0.714
Control Delay, s/veh	7.2	14.6	10.6	19.7
LOS	A	B	B	C
95th %tile Queue, veh	2	4	3	6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	9	24	1	20	22	40	282	1	12	169	58
Future Volume (vph)	19	9	24	1	20	22	40	282	1	12	169	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	10	26	1	22	24	43	307	1	13	184	63

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	57	47	351	260
Volume Left (vph)	21	1	43	13
Volume Right (vph)	26	24	1	63
Hadj (s)	-0.06	-0.17	0.16	0.00
Departure Headway (s)	5.3	5.3	4.6	4.6
Degree Utilization, x	0.08	0.07	0.45	0.33
Capacity (veh/h)	596	600	754	752
Control Delay (s)	8.8	8.6	11.4	9.9
Approach Delay (s)	8.8	8.6	11.4	9.9
Approach LOS	A	A	B	A

Intersection Summary				
Delay	10.5			
Level of Service	B			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	9	24	1	20	22	40	282	1	12	169	58
Future Vol, veh/h	19	9	24	1	20	22	40	282	1	12	169	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	21	10	26	1	22	24	43	307	1	13	184	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.6	11.4	9.8
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	37%	2%	5%
Vol Thru, %	87%	17%	47%	71%
Vol Right, %	0%	46%	51%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	323	52	43	239
LT Vol	40	19	1	12
Through Vol	282	9	20	169
RT Vol	1	24	22	58
Lane Flow Rate	351	57	47	260
Geometry Grp	1	1	1	1
Degree of Util (X)	0.45	0.083	0.068	0.329
Departure Headway (Hd)	4.611	5.281	5.201	4.558
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	674	684	787
Service Time	2.649	3.345	3.265	2.599
HCM Lane V/C Ratio	0.451	0.085	0.069	0.33
HCM Control Delay	11.4	8.8	8.6	9.8
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.4	0.3	0.2	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	59	15	0	107	25	30	128	1	7	81	117
Future Volume (Veh/h)	85	59	15	0	107	25	30	128	1	7	81	117
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	64	16	0	116	27	33	139	1	8	88	127
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			80			556	399	72	456	394	130
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			80			556	399	72	456	394	130
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			89	72	100	98	83	86
cM capacity (veh/h)	1427			1505			311	501	985	383	505	915

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	172	143	173	8	215
Volume Left	92	0	33	8	0
Volume Right	16	27	1	0	127
cSH	1427	1505	450	383	687
Volume to Capacity	0.06	0.00	0.38	0.02	0.31
Queue Length 95th (ft)	5	0	45	2	33
Control Delay (s)	4.4	0.0	17.9	14.6	12.6
Lane LOS	A		C	B	B
Approach Delay (s)	4.4	0.0	17.9	12.7	
Approach LOS			C	B	

Intersection Summary					
Average Delay			9.4		
Intersection Capacity Utilization			49.1%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	85	59	15	0	107	25	30	128	1	7	81	117
Future Vol, veh/h	85	59	15	0	107	25	30	128	1	7	81	117
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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	92	64	16	0	116	27	33	139	1	8	88	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	80	0	0	493	399	72	456	394	130
Stage 1	-	-	-	-	-	-	256	256	-	130	130	-
Stage 2	-	-	-	-	-	-	237	143	-	326	264	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1427	-	-	1505	-	-	483	536	985	511	539	914
Stage 1	-	-	-	-	-	-	744	692	-	869	785	-
Stage 2	-	-	-	-	-	-	762	775	-	682	686	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1427	-	-	1505	-	-	341	500	985	381	502	914
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	500	-	381	502	-
Stage 1	-	-	-	-	-	-	693	645	-	810	785	-
Stage 2	-	-	-	-	-	-	582	775	-	498	639	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.1	0	17.4	12.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	461	1427	-	-	1505	-	-	381	684
HCM Lane V/C Ratio	0.375	0.065	-	-	-	-	-	0.02	0.315
HCM Control Delay (s)	17.4	7.7	0	-	0	-	-	14.6	12.7
HCM Lane LOS	C	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1.7	0.2	-	-	0	-	-	0.1	1.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	13	180	175	25	138	92
Future Volume (veh/h)	13	180	175	25	138	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	196	190	27	150	100
Approach Volume (veh/h)	210		217			250
Crossing Volume (veh/h)	190		150			14
High Capacity (veh/h)	1193		1232			1370
High v/c (veh/h)	0.18		0.18			0.18
Low Capacity (veh/h)	988		1022			1148
Low v/c (veh/h)	0.21		0.21			0.22

Intersection Summary				
Maximum v/c High		0.18		
Maximum v/c Low		0.22		
Intersection Capacity Utilization		45.1%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	210	217	250
Demand Flow Rate, veh/h	214	222	255
Vehicles Circulating, veh/h	194	153	14
Vehicles Exiting, veh/h	181	116	394
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	4.8	4.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	214	222	255
Cap Entry Lane, veh/h	1132	1180	1360
Entry HV Adj Factor	0.981	0.978	0.980
Flow Entry, veh/h	210	217	250
Cap Entry, veh/h	1111	1155	1334
V/C Ratio	0.189	0.188	0.187
Control Delay, s/veh	4.9	4.8	4.3
LOS	A	A	A
95th %tile Queue, veh	1	1	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	78	97	10	5	18
Future Volume (Veh/h)	21	78	97	10	5	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	85	105	11	5	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116				242	110
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116				242	110
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	98
cM capacity (veh/h)	1466				733	940

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	108	116	25
Volume Left	23	0	5
Volume Right	0	11	20
cSH	1466	1700	890
Volume to Capacity	0.02	0.07	0.03
Queue Length 95th (ft)	1	0	2
Control Delay (s)	1.7	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	1.7	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	78	97	10	5	18
Future Vol, veh/h	21	78	97	10	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	23	85	105	11	5	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	242	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1466	-	-	-	744	940
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	893	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1466	-	-	-	732	940
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1466	-	-	-	885
HCM Lane V/C Ratio	0.016	-	-	-	0.028
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	334	1645	1636	163	160	302
v/c Ratio	0.65	0.50	0.89	0.19	0.62	0.57
Control Delay	57.7	0.5	32.2	4.6	63.6	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	0.5	32.2	4.6	63.6	37.0
Queue Length 50th (ft)	128	0	568	12	120	181
Queue Length 95th (ft)	225	0	882	52	238	336
Internal Link Dist (ft)		1017	748		574	
Turn Bay Length (ft)	345			330	450	
Base Capacity (vph)	831	3312	2506	1153	428	826
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	0.40	0.50	0.65	0.14	0.37	0.37

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	331	1629	1620	161	158	299
Future Volume (vph)	331	1629	1620	161	158	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	7.3	7.3	4.2	3.7
Lane Util. Factor	0.97	0.95	0.95	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)	3213	3312	3312	1482	1656	1482
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3213	3312	3312	1482	1656	1482
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	334	1645	1636	163	160	302
RTOR Reduction (vph)	0	0	0	57	0	12
Lane Group Flow (vph)	334	1645	1636	106	160	290
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	8	Free!	6		7!	4
Permitted Phases				6		4
Actuated Green, G (s)	19.9	122.0	67.9	67.9	19.2	43.1
Effective Green, g (s)	19.9	122.0	67.9	67.9	19.2	43.1
Actuated g/C Ratio	0.16	1.00	0.56	0.56	0.16	0.35
Clearance Time (s)	3.5		7.3	7.3	4.2	3.7
Vehicle Extension (s)	3.0		4.0	4.0	3.5	3.0
Lane Grp Cap (vph)	524	3312	1843	824	260	523
v/s Ratio Prot	c0.10	0.50	c0.49		c0.10	0.20
v/s Ratio Perm				0.07		
v/c Ratio	0.64	0.50	0.89	0.13	0.62	0.56
Uniform Delay, d1	47.7	0.0	23.7	12.9	48.0	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.5	5.8	0.1	4.5	1.3
Delay (s)	50.2	0.5	29.5	13.0	52.4	33.0
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.9	28.0		39.7	
Approach LOS		A	C		D	

Intersection Summary				
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

HCM 6th Edition methodology cannot be performed with phasing conflicts.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	392	1075	375	406	1134	216	380	507	272	357	320
v/c Ratio	0.98	0.87	0.48	0.96	0.90	0.31	0.86	0.61	0.73	0.88	0.63
Control Delay	105.1	53.0	5.0	98.6	55.2	4.8	82.8	52.1	77.8	79.0	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.1	53.0	5.0	98.6	55.2	4.8	82.8	52.1	77.8	79.0	23.3
Queue Length 50th (ft)	~211	523	1	210	556	0	194	225	136	341	92
Queue Length 95th (ft)	#372	629	69	#390	679	54	#334	323	206	#541	217
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	400	1604	903	424	1604	821	444	920	444	495	574
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.67	0.42	0.96	0.71	0.26	0.86	0.55	0.61	0.72	0.56

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)	380	1043	364	394	1100	210	369	376	115	264	346	310
Future Volume (vph)	380	1043	364	394	1100	210	369	376	115	264	346	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3273	3374	1488	3273	3374	1488	3273	3244		3273	1776	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3273	3374	1488	3273	3374	1488	3273	3244		3273	1776	1509
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)	392	1075	375	406	1134	216	380	388	119	272	357	320
RTOR Reduction (vph)	0	0	237	0	0	135	0	17	0	0	0	165
Lane Group Flow (vph)	392	1075	138	406	1134	81	380	490	0	272	357	155
Confl. Peds. (#/hr)			1			1			2			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	18.3	54.5	54.5	19.4	55.6	55.6	20.3	37.5		17.0	34.2	34.2
Effective Green, g (s)	18.3	54.5	54.5	19.4	55.6	55.6	20.3	37.5		17.0	34.2	34.2
Actuated g/C Ratio	0.12	0.37	0.37	0.13	0.37	0.37	0.14	0.25		0.11	0.23	0.23
Clearance Time (s)	4.0	7.3	7.3	4.0	7.3	7.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	401	1234	544	426	1259	555	445	816		373	407	346
v/s Ratio Prot	c0.12	0.32		c0.12	c0.34		c0.12	c0.15		0.08	c0.20	
v/s Ratio Perm			0.09			0.05						0.10
v/c Ratio	0.98	0.87	0.25	0.95	0.90	0.15	0.85	0.60		0.73	0.88	0.45
Uniform Delay, d1	65.1	44.0	33.0	64.3	44.1	31.0	62.9	49.1		63.8	55.4	49.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	38.6	7.0	0.2	31.4	9.1	0.1	14.7	1.2		7.0	18.7	0.9
Delay (s)	103.7	51.0	33.3	95.7	53.2	31.1	77.6	50.4		70.8	74.1	50.2
Level of Service	F	D	C	F	D	C	E	D		E	E	D
Approach Delay (s)		58.6			60.3			62.0			65.1	
Approach LOS		E			E			E			E	

Intersection Summary				
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	149.0	Sum of lost time (s)	20.6	
Intersection Capacity Utilization	87.2%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	1043	364	394	1100	210	369	376	115	264	346	310
Future Volume (veh/h)	380	1043	364	394	1100	210	369	376	115	264	346	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	392	1075	375	406	1134	216	380	388	119	272	357	320
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	396	1242	554	396	1317	587	422	675	204	322	416	352
Arrive On Green	0.12	0.36	0.36	0.12	0.39	0.39	0.13	0.26	0.26	0.10	0.23	0.23
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2579	781	3319	1796	1522
Grp Volume(v), veh/h	392	1075	375	406	1134	216	380	255	252	272	357	320
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1654	1659	1796	1522
Q Serve(g_s), s	17.8	44.2	21.5	18.0	46.2	15.4	17.0	19.6	20.0	12.2	28.8	30.9
Cycle Q Clear(g_c), s	17.8	44.2	21.5	18.0	46.2	15.4	17.0	19.6	20.0	12.2	28.8	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	396	1242	554	396	1317	587	422	447	433	322	416	352
V/C Ratio(X)	0.99	0.87	0.68	1.03	0.86	0.37	0.90	0.57	0.58	0.85	0.86	0.91
Avail Cap(c_a), veh/h	396	1582	705	396	1582	705	439	463	449	439	488	413
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	66.4	44.6	18.9	66.5	42.7	33.2	65.0	48.4	48.6	67.1	55.7	56.5
Incr Delay (d2), s/veh	42.8	4.3	1.8	52.2	4.4	0.4	20.8	1.6	1.8	10.7	12.7	21.5
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	9.7	18.5	7.7	10.3	19.3	5.7	8.4	8.5	8.4	5.6	14.3	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.2	48.9	20.7	118.7	47.1	33.6	85.8	50.0	50.3	77.8	68.4	77.9
LnGrp LOS	F	D	C	F	D	C	F	D	D	E	E	E
Approach Vol, veh/h		1842			1756			887			949	
Approach Delay, s/veh		56.0			62.0			65.4			74.3	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.3	62.3	23.2	40.3	22.0	65.6	18.6	44.8
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	18.0	* 70	20.0	41.0	18.0	70.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	20.0	46.2	19.0	32.9	19.8	48.2	14.2	22.0
Green Ext Time (p_c), s	0.0	8.8	0.2	2.1	0.0	8.3	0.5	2.7

Intersection Summary	
HCM 6th Ctrl Delay	62.7
HCM 6th LOS	E

Notes

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1555	1604	20	0	100
Future Volume (Veh/h)	0	1555	1604	20	0	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1654	1706	21	0	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1727				2533	853
vC1, stage 1 conf vol					1706	
vC2, stage 2 conf vol					827	
vCu, unblocked vol	1727				2533	853
tC, single (s)	4.3				7.0	7.1
tC, 2 stage (s)					6.0	
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	63
cM capacity (veh/h)	328				112	287

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	827	827	853	853	21	106
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	21	106
cSH	1700	1700	1700	1700	1700	287
Volume to Capacity	0.49	0.49	0.50	0.50	0.01	0.37
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	24.7
Lane LOS						C
Approach Delay (s)	0.0		0.0			24.7
Approach LOS						C

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		57.2%	ICU Level of Service	B
Analysis Period (min)		15		

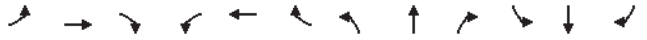
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1555	1604	20	0	100
Future Vol, veh/h	0	1555	1604	20	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	165	-	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	1654	1706	21	0	106

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	853
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.4
Pot Cap-1 Maneuver	0	-	-	-	0	287
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	287
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	24.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	287
HCM Lane V/C Ratio	-	-	-	0.371
HCM Control Delay (s)	-	-	-	24.7
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1522	33	3	1564	0	50	0	6	0	0	10
Future Volume (Veh/h)	0	1522	33	3	1564	0	50	0	6	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1569	34	3	1612	0	52	0	6	0	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1612			1603			2391	3187	784	2406	3221	806
vC1, stage 1 conf vol							1569	1569		1618	1618	
vC2, stage 2 conf vol							822	1618		788	1603	
vCu, unblocked vol	1612			1603			2391	3187	784	2406	3221	806
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)							6.7	5.7		6.7	5.7	
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			99			46	100	98	100	100	97
cM capacity (veh/h)	357			360			96	100	315	90	97	305

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	784	784	34	3	1075	537	58	10
Volume Left	0	0	0	0	3	0	0	52	0
Volume Right	0	0	0	34	0	0	0	6	10
cSH	1700	1700	1700	1700	360	1700	1700	105	305
Volume to Capacity	0.00	0.46	0.46	0.02	0.01	0.63	0.32	0.55	0.03
Queue Length 95th (ft)	0	0	0	0	1	0	0	64	3
Control Delay (s)	0.0	0.0	0.0	0.0	15.1	0.0	0.0	74.7	17.2
Lane LOS					C			F	C
Approach Delay (s)	0.0				0.0			74.7	17.2
Approach LOS								F	C

Intersection Summary				
Average Delay		1.4		
Intersection Capacity Utilization		59.3%	ICU Level of Service	B
Analysis Period (min)		15		

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1522	33	3	1564	0	50	0	6	0	0	10
Future Vol, veh/h	0	1522	33	3	1564	0	50	0	6	0	0	10
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	275	-	275	305	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	12	12	12	12	12	12	12	12	12	12	12
Mvmt Flow	0	1569	34	3	1612	0	52	0	6	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1612	0	0	1603	0	0	2381	3187	785	2403	3221	806
Stage 1	-	-	-	-	-	-	1569	1569	-	1618	1618	-
Stage 2	-	-	-	-	-	-	812	1618	-	785	1603	-
Critical Hdwy	4.34	-	-	4.34	-	-	7.74	6.74	7.14	7.74	6.74	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.74	-	6.74	5.74	-
Follow-up Hdwy	2.32	-	-	2.32	-	-	3.62	4.12	3.42	3.62	4.12	3.42
Pot Cap-1 Maneuver	357	-	-	360	-	-	~ 16	8	315	15	8	305
Stage 1	-	-	-	-	-	-	105	154	-	97	145	-
Stage 2	-	-	-	-	-	-	318	145	-	331	148	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	357	-	-	360	-	-	~ 15	8	315	15	8	305
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	97	-	88	94	-
Stage 1	-	-	-	-	-	-	105	154	-	97	144	-
Stage 2	-	-	-	-	-	-	305	144	-	325	148	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	75.3	17.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	94	315	357	-	-	360	-	-	305
HCM Lane V/C Ratio	0.548	0.02	-	-	-	0.009	-	-	0.034
HCM Control Delay (s)	82.3	16.7	0	-	-	15.1	-	-	17.2
HCM Lane LOS	F	C	A	-	-	C	-	-	C
HCM 95th %tile Q(veh)	2.5	0.1	0	-	-	0	-	-	0.1

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	300	350	150	326	280	180	62	453	358	100	630	300
Future Volume (veh/h)	300	350	150	326	280	180	62	453	358	100	630	300
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	323	376	161	351	301	194	67	487	385	108	677	323
Approach Volume (veh/h)		699			846			939			1108	
Crossing Volume (veh/h)		1136			877			807			719	
High Capacity (veh/h)		557			688			729			783	
High v/c (veh/h)		1.26			1.23			1.29			1.42	
Low Capacity (veh/h)		426			539			575			622	
Low v/c (veh/h)		1.64			1.57			1.63			1.78	

Intersection Summary												
Maximum v/c High			1.42									
Maximum v/c Low			1.78									
Intersection Capacity Utilization			123.4%		ICU Level of Service				H			

Intersection	
Intersection Delay, s/veh	39.6
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	2	2	2
Adj Approach Flow, veh/h	860	846	939	1108
Demand Flow Rate, veh/h	869	855	949	1119
Vehicles Circulating, veh/h	1148	886	815	727
Vehicles Exiting, veh/h	698	878	1039	1014
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	21.9	21.0	27.8	77.3
Approach LOS	C	C	D	F

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	R
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	R
RT Channelized			Free						
Lane Util	0.470	0.530		0.415	0.585	0.590	0.410	0.709	0.291
Follow-Up Headway, s	2.535	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.544	4.544	163	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	332	374	1919	355	500	560	389	793	326
Cap Entry Lane, veh/h	500	500	0.990	597	669	638	710	692	765
Entry HV Adj Factor	0.990	0.991	161	0.989	0.990	0.990	0.990	0.990	0.991
Flow Entry, veh/h	329	371	1900	351	495	554	385	785	323
Cap Entry, veh/h	494	495	0.085	591	662	631	703	685	758
V/C Ratio	0.665	0.749	0.0	0.594	0.748	0.878	0.548	1.147	0.426
Control Delay, s/veh	23.9	29.6	A	17.6	23.5	37.5	13.9	104.9	10.4
LOS	C	D	0	C	C	E	B	F	B
95th %tile Queue, veh	5	6		4	7	10	3	25	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	118	15	21	106	0	15	1	16	0	0	0
Future Volume (Veh/h)	1	118	15	21	106	0	15	1	16	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	128	16	23	115	0	16	1	17	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	115			144			299	299	136	316	307	115
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			144			299	299	136	316	307	115
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			98	100	98	100	100	100
cM capacity (veh/h)	1462			1426			641	600	907	612	593	932

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	145	138	34	0
Volume Left	1	23	16	0
Volume Right	16	0	17	0
cSH	1462	1426	749	1700
Volume to Capacity	0.00	0.02	0.05	0.00
Queue Length 95th (ft)	0	1	4	0
Control Delay (s)	0.1	1.4	10.0	0.0
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	1.4	10.0	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			27.2%	ICU Level of Service
Analysis Period (min)			15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	118	15	21	106	0	15	1	16	0	0	0
Future Vol, veh/h	1	118	15	21	106	0	15	1	16	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	128	16	23	115	0	16	1	17	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	115	0	0	144	0	0	299	299	136	308	307	115
Stage 1	-	-	-	-	-	-	138	138	-	161	161	-
Stage 2	-	-	-	-	-	-	161	161	-	147	146	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	1462	-	-	1426	-	-	649	610	907	641	604	932
Stage 1	-	-	-	-	-	-	860	779	-	836	761	-
Stage 2	-	-	-	-	-	-	836	761	-	851	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1462	-	-	1426	-	-	640	599	907	619	593	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	599	-	619	593	-
Stage 1	-	-	-	-	-	-	859	778	-	835	748	-
Stage 2	-	-	-	-	-	-	822	748	-	833	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.3	10	0
HCM LOS			B	A

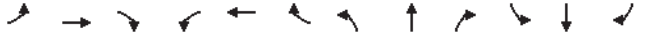
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	749	1462	-	-	1426	-	-	-
HCM Lane V/C Ratio	0.046	0.001	-	-	0.016	-	-	-
HCM Control Delay (s)	10	7.5	0	-	7.6	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	552	309	511	764	7	54	319	388	396	117
v/c Ratio	0.23	0.75	0.78	0.61	0.69	0.04	0.30	0.72	0.79	0.80	0.21
Control Delay	58.6	45.7	53.6	27.8	5.5	45.6	50.3	15.6	47.4	47.5	4.8
Queue Delay	0.0	0.0	0.1	4.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	45.7	53.8	32.3	6.3	45.6	50.3	15.6	47.4	47.5	4.8
Queue Length 50th (ft)	14	184	199	240	0	5	36	0	248	253	0
Queue Length 95th (ft)	44	277	#358	464	94	19	76	85	#458	#467	34
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	93	885	493	913	1148	337	355	560	593	602	633
Starvation Cap Reductn	0	0	9	320	146	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.62	0.64	0.86	0.76	0.02	0.15	0.57	0.65	0.66	0.18

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)	20	487	32	290	480	718	7	51	300	639	98	110
Future Volume (vph)	20	487	32	290	480	718	7	51	300	639	98	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1787	3535		1787	1881	1557	1787	1881	1599	1698	1724	1560
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1787	3535		1787	1881	1557	1787	1881	1599	1698	1724	1560
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)	21	518	34	309	511	764	7	54	319	680	104	117
RTOR Reduction (vph)	0	4	0	0	0	434	0	0	290	0	0	84
Lane Group Flow (vph)	21	548	0	309	511	330	7	54	29	388	396	33
Confl. Peds. (#/hr)			4			2						2
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	1.7	23.7		22.0	44.0	44.0	9.4	9.4	9.4	28.8	28.8	28.8
Effective Green, g (s)	1.7	23.7		22.0	44.0	44.0	9.4	9.4	9.4	28.8	28.8	28.8
Actuated g/C Ratio	0.02	0.23		0.22	0.43	0.43	0.09	0.09	0.09	0.28	0.28	0.28
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	29	822		385	812	672	164	173	147	479	487	440
v/s Ratio Prot	0.01	0.16		c0.17	c0.27		0.00	c0.03		0.23	c0.23	
v/s Ratio Perm						0.21			0.02			0.02
v/c Ratio	0.72	0.67		0.80	0.63	0.49	0.04	0.31	0.20	0.81	0.81	0.08
Uniform Delay, d1	49.9	35.5		37.9	22.6	20.9	42.1	43.2	42.8	34.0	34.0	26.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	61.8	2.1		11.5	1.5	0.6	0.1	1.0	0.7	10.0	10.0	0.1
Delay (s)	111.7	37.6		49.3	24.1	21.4	42.3	44.3	43.4	44.0	44.0	26.9
Level of Service	F	D		D	C	C	D	D	D	D	D	C
Approach Delay (s)		40.3			27.7			43.5			41.8	
Approach LOS		D			C			D			D	

Intersection Summary

HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.2%	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)	20	487	32	290	480	718	7	51	300	639	98	110
Future Volume (veh/h)	20	487	32	290	480	718	7	51	300	639	98	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	518	34	309	511	764	7	54	319	754	0	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	823	54	342	774	640	294	309	261	867	0	384
Arrive On Green	0.02	0.24	0.24	0.19	0.41	0.41	0.16	0.16	0.16	0.24	0.00	0.24
Sat Flow, veh/h	1795	3410	223	1795	1885	1559	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	271	281	309	511	764	7	54	319	754	0	117
Grp Sat Flow(s),veh/h/ln	1795	1791	1843	1795	1885	1559	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.3	15.0	15.1	18.6	24.2	45.4	0.4	2.7	18.1	22.3	0.0	6.7
Cycle Q Clear(g_c), s	1.3	15.0	15.1	18.6	24.2	45.4	0.4	2.7	18.1	22.3	0.0	6.7
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	432	445	342	774	640	294	309	261	867	0	384
V/C Ratio(X)	0.54	0.63	0.63	0.90	0.66	1.19	0.02	0.18	1.22	0.87	0.00	0.30
Avail Cap(c_a), veh/h	81	432	445	430	774	640	294	309	261	1088	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	37.5	37.5	43.7	26.4	32.6	38.8	39.8	46.2	40.3	0.0	34.3
Incr Delay (d2), s/veh	11.4	2.9	2.9	18.9	2.1	102.0	0.0	0.3	128.4	6.5	0.0	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	0.7	7.0	7.2	10.0	11.1	34.6	0.2	1.3	16.4	10.4	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	40.4	40.4	62.7	28.4	134.6	38.9	40.1	174.7	46.7	0.0	34.8
LnGrp LOS	E	D	D	E	C	F	D	D	F	D	A	C
Approach Vol, veh/h		573			1584			380			871	
Approach Delay, s/veh		41.3			86.3			153.0			45.1	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.6	31.2		31.2	6.9	49.9		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	23.9		33.5	5.0	45.4		18.1				
Max Q Clear Time (g_c+I1), s	20.6	17.1		24.3	3.3	47.4		20.1				
Green Ext Time (p_c), s	0.5	1.9		2.4	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		75.7	
HCM 6th LOS		E	

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	1439	30	1289	374	280	32	508	9	32
v/c Ratio	0.53	0.78	0.28	0.78	0.44	0.63	0.05	0.85	0.02	0.05
Control Delay	56.8	23.1	54.6	26.4	9.1	35.8	23.9	38.0	23.5	0.2
Queue Delay	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	24.6	54.6	26.4	9.1	35.8	23.9	38.0	23.5	0.2
Queue Length 50th (ft)	61	410	20	374	56	155	14	239	4	0
Queue Length 95th (ft)	#122	524	51	480	133	246	35	#418	15	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	202	2187	108	1980	969	586	795	749	586	749
Starvation Cap Reductn	0	517	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	0.47	0.86	0.28	0.65	0.39	0.48	0.04	0.68	0.02	0.04

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)	87	1298	40	28	1199	348	260	30	472	8	0	30
Future Volume (vph)	87	1298	40	28	1199	348	260	30	472	8	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3555		1787	3574	1564	1787	1881	1599	1787	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	3555		1787	3574	1564	1385	1881	1599	1385	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	94	1396	43	30	1289	374	280	32	508	9	0	32
RTOR Reduction (vph)	0	2	0	0	0	123	0	0	87	0	22	0
Lane Group Flow (vph)	94	1437	0	30	1289	251	280	32	421	9	10	0
Confl. Peds. (#/hr)			5									
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Actuated Green, G (s)	6.7	47.3		2.7	43.3	43.3	29.1	29.1	29.1	29.1	29.1	
Effective Green, g (s)	6.7	47.3		2.7	43.3	43.3	29.1	29.1	29.1	29.1	29.1	
Actuated g/C Ratio	0.07	0.51		0.03	0.47	0.47	0.31	0.31	0.31	0.31	0.31	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	129	1815		52	1671	731	435	591	502	435	502	
v/s Ratio Prot	c0.05	c0.40		0.02	0.36			0.02			0.01	
v/s Ratio Perm						0.16	0.20		c0.26	0.01		
v/c Ratio	0.73	0.79		0.58	0.77	0.34	0.64	0.05	0.84	0.02	0.02	
Uniform Delay, d1	42.1	18.6		44.4	20.5	15.6	27.3	22.1	29.6	21.9	21.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.5	2.4		14.6	2.3	0.3	3.3	0.0	11.7	0.0	0.0	
Delay (s)	60.5	21.1		58.9	22.8	15.9	30.5	22.2	41.2	21.9	21.9	
Level of Service	E	C		E	C	B	C	C	D	C	C	
Approach Delay (s)		23.5			21.9			36.8			21.9	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	81.8%	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)	87	1298	40	28	1199	348	260	30	472	8	0	30
Future Volume (veh/h)	87	1298	40	28	1199	348	260	30	472	8	0	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	94	1396	43	30	1289	0	280	32	508	9	0	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	121	1682	52	53	1564		542	653	553	372	0	553
Arrive On Green	0.07	0.47	0.47	0.03	0.44	0.00	0.35	0.35	0.35	0.35	0.00	0.35
Sat Flow, veh/h	1795	3544	109	1795	3582	1598	1388	1885	1598	872	0	1598
Grp Volume(v), veh/h	94	704	735	30	1289	0	280	32	508	9	0	32
Grp Sat Flow(s),veh/h/ln	1795	1791	1862	1795	1791	1598	1388	1885	1598	872	0	1598
Q Serve(g_s), s	4.6	30.7	30.8	1.5	28.5	0.0	15.2	1.0	27.4	0.6	0.0	1.2
Cycle Q Clear(g_c), s	4.6	30.7	30.8	1.5	28.5	0.0	16.4	1.0	27.4	1.6	0.0	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	850	884	53	1564		542	653	553	372	0	553
V/C Ratio(X)	0.78	0.83	0.83	0.57	0.82		0.52	0.05	0.92	0.02	0.00	0.06
Avail Cap(c_a), veh/h	189	1013	1053	102	1850		609	744	630	414	0	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	20.5	20.5	43.1	22.3	0.0	25.1	19.6	28.2	20.1	0.0	19.6
Incr Delay (d2), s/veh	10.3	5.0	5.0	9.3	2.7	0.0	0.8	0.0	17.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	13.1	13.6	0.8	11.9	0.0	4.9	0.4	12.5	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	25.5	25.5	52.5	25.0	0.0	25.9	19.6	45.6	20.1	0.0	19.7
LnGrp LOS	D	C	C	D	C		C	B	D	C	A	B
Approach Vol, veh/h		1533			1319	A		820			41	
Approach Delay, s/veh		27.1			25.7			37.8			19.8	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	47.2		35.7	10.5	43.8		35.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	50.9		35.5	9.5	46.5		35.5				
Max Q Clear Time (g_c+I1), s	3.5	32.8		3.6	6.6	30.5		29.4				
Green Ext Time (p_c), s	0.0	9.9		0.2	0.0	8.6		1.7				

Intersection Summary				
HCM 6th Ctrl Delay	28.9			
HCM 6th LOS	C			

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	508	1364	105	982	311	255	74	148	827
v/c Ratio	0.84	0.89	0.74	0.81	0.79	0.34	0.17	0.75	0.94dr
Control Delay	59.9	36.5	82.9	40.4	66.0	40.8	0.8	73.8	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	36.5	82.9	40.4	66.0	40.8	0.8	73.8	45.0
Queue Length 50th (ft)	197	470	81	354	122	89	0	112	226
Queue Length 95th (ft)	#273	577	#171	439	#189	129	1	#207	#345
Internal Link Dist (ft)		353		673		608			523
Turn Bay Length (ft)	295		235		140		130	225	
Base Capacity (vph)	653	1632	148	1277	410	789	459	217	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.84	0.71	0.77	0.76	0.32	0.16	0.68	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	483	880	416	100	779	154	295	242	70	141	286	500
Future Volume (vph)	483	880	416	100	779	154	295	242	70	141	286	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		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	1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	3387		1787	3478		3467	3574	1599	1787	3205	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	3387		1787	3478		3467	3574	1599	1787	3205	
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)	508	926	438	105	820	162	311	255	74	148	301	526
RTOR Reduction (vph)	0	48	0	0	14	0	0	0	58	0	227	0
Lane Group Flow (vph)	508	1316	0	105	968	0	311	255	16	148	600	0
Confl. Peds. (#/hr)			1			1						1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	20.1	50.4		9.2	39.5		13.1	24.5	24.5	12.8	24.2	
Effective Green, g (s)	20.1	50.4		9.2	39.5		13.1	24.5	24.5	12.8	24.2	
Actuated g/C Ratio	0.17	0.44		0.08	0.34		0.11	0.21	0.21	0.11	0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	606	1485		143	1195		395	762	340	199	675	
v/s Ratio Prot	c0.15	c0.39		0.06	0.28		c0.09	0.07		0.08	c0.19	
v/s Ratio Perm									0.01			
v/c Ratio	0.84	0.89		0.73	0.81		0.79	0.33	0.05	0.74	0.94dr	
Uniform Delay, d1	45.8	29.6		51.7	34.3		49.5	38.3	35.9	49.5	44.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.9	6.7		17.6	4.3		10.0	0.3	0.1	14.0	13.5	
Delay (s)	55.7	36.4		69.3	38.6		59.5	38.6	36.0	63.4	57.6	
Level of Service	E	D		E	D		E	D	D	E	E	
Approach Delay (s)		41.6			41.5			48.4			58.4	
Approach LOS		D			D			D			E	

Intersection Summary

HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	880	416	100	779	154	295	242	70	141	286	500
Future Volume (veh/h)	483	880	416	100	779	154	295	242	70	141	286	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	508	926	0	105	820	162	311	255	74	148	301	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	630	1636		135	1043	206	408	500	223	186	451	
Arrive On Green	0.18	0.46	0.00	0.08	0.35	0.35	0.12	0.14	0.14	0.10	0.13	0.00
Sat Flow, veh/h	3483	3676	0	1795	2973	587	3483	3582	1598	1795	3676	0
Grp Volume(v), veh/h	508	926	0	105	494	488	311	255	74	148	301	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1770	1742	1791	1598	1795	1791	0
Q Serve(g_s), s	11.2	15.1	0.0	4.6	19.8	19.8	6.9	5.3	3.3	6.4	6.4	0.0
Cycle Q Clear(g_c), s	11.2	15.1	0.0	4.6	19.8	19.8	6.9	5.3	3.3	6.4	6.4	0.0
Prop In Lane	1.00		0.00	1.00		0.33	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	630	1636		135	628	621	408	500	223	186	451	
V/C Ratio(X)	0.81	0.57		0.78	0.79	0.79	0.76	0.51	0.33	0.80	0.67	
Avail Cap(c_a), veh/h	937	2397		213	930	919	588	1125	502	312	1143	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.4	15.9	0.0	36.3	23.3	23.3	34.2	31.9	31.0	35.0	33.3	0.0
Incr Delay (d2), s/veh	3.2	0.3	0.0	9.3	2.7	2.7	3.6	0.8	0.9	7.6	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	5.8	0.0	2.3	8.2	8.1	3.0	2.2	1.3	3.0	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	16.2	0.0	45.6	26.0	26.0	37.8	32.7	31.9	42.6	35.0	0.0
LnGrp LOS	C	B		D	C	C	D	C	C	D	D	
Approach Vol, veh/h		1434	A		1087			640			449	A
Approach Delay, s/veh		22.7			27.9			35.1			37.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	41.0	13.9	14.6	19.0	32.5	12.8	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	53.5	13.5	25.5	21.5	41.5	13.9	25.1
Max Q Clear Time (g_c+I1), s	6.6	17.1	8.9	8.4	13.2	21.8	8.4	7.3
Green Ext Time (p_c), s	0.1	8.0	0.4	1.5	1.3	6.3	0.2	1.6

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

Notes

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	92	591	1263	648	91
v/c Ratio	0.58	0.28	0.80	0.73	0.19
Control Delay	59.2	11.3	23.2	37.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	11.3	23.2	37.5	9.0
Queue Length 50th (ft)	47	67	226	155	0
Queue Length 95th (ft)	#168	195	#577	#368	45
Internal Link Dist (ft)		1151	2310	505	
Turn Bay Length (ft)	125			120	
Base Capacity (vph)	158	2351	1804	980	511
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	0.58	0.25	0.70	0.66	0.18

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)	89	573	620	605	629	88
Future Volume (vph)	89	573	620	605	629	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3282		3467	1578
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3282		3467	1578
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	92	591	639	624	648	91
RTOR Reduction (vph)	0	0	133	0	0	69
Lane Group Flow (vph)	92	591	1130	0	648	23
Confl. Peds. (#/hr)				4		1
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases					4	4
Actuated Green, G (s)	7.8	51.1	38.8		22.5	22.5
Effective Green, g (s)	7.8	51.1	38.8		22.5	22.5
Actuated g/C Ratio	0.09	0.56	0.43		0.25	0.25
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	153	2006	1399		857	390
v/s Ratio Prot	c0.05	0.17	c0.34			
v/s Ratio Perm					c0.19	0.01
v/c Ratio	0.60	0.29	0.81		0.76	0.06
Uniform Delay, d1	40.1	10.5	22.8		31.7	26.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.5	0.1	3.5		3.8	0.1
Delay (s)	46.6	10.6	26.4		35.5	26.2
Level of Service	D	B	C		D	C
Approach Delay (s)		15.4	26.4		34.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	213	867	338	164	594	502	227	483	438	555	149
v/c Ratio	0.72	0.80	0.54	0.67	0.61	0.67	0.74	0.65	0.72	0.74	0.37
Control Delay	58.6	41.7	15.2	60.3	37.7	11.6	58.4	42.0	50.0	46.3	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	41.7	15.2	60.3	37.7	11.6	58.4	42.0	50.0	46.3	18.0
Queue Length 50th (ft)	149	300	63	115	194	39	158	162	157	198	30
Queue Length 95th (ft)	241	408	166	196	278	165	254	228	221	273	92
Internal Link Dist (ft)		1092			186			1440		2310	
Turn Bay Length (ft)	150		150	170		140	230		245		100
Base Capacity (vph)	381	1258	695	310	1123	791	399	945	756	939	479
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.69	0.49	0.53	0.53	0.63	0.57	0.51	0.58	0.59	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	815	318	154	558	472	213	376	78	412	522	140
Future Volume (vph)	200	815	318	154	558	472	213	376	78	412	522	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3574	1570	1787	3574	1577	1787	3482		3467	3574	1554
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3574	1570	1787	3574	1577	1787	3482		3467	3574	1554
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)	213	867	338	164	594	502	227	400	83	438	555	149
RTOR Reduction (vph)	0	0	154	0	0	312	0	15	0	0	0	77
Lane Group Flow (vph)	213	867	184	164	594	190	227	468	0	438	555	72
Confl. Peds. (#/hr)			4			1						10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	17.2	31.6	31.6	14.2	28.6	28.6	18.0	21.8		18.3	22.1	22.1
Effective Green, g (s)	17.2	31.6	31.6	14.2	28.6	28.6	18.0	21.8		18.3	22.1	22.1
Actuated g/C Ratio	0.17	0.30	0.30	0.14	0.28	0.28	0.17	0.21		0.18	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	295	1086	477	244	983	434	309	730		610	760	330
v/s Ratio Prot	c0.12	c0.24		0.09	0.17		c0.13	0.13		0.13	c0.16	
v/s Ratio Perm			0.12			0.12						0.05
v/c Ratio	0.72	0.80	0.39	0.67	0.60	0.44	0.73	0.64		0.72	0.73	0.22
Uniform Delay, d1	41.1	33.2	28.5	42.6	32.7	31.0	40.7	37.5		40.4	38.1	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.4	4.2	0.5	7.1	1.1	0.7	8.7	1.9		4.0	3.6	0.3
Delay (s)	49.5	37.4	29.0	49.7	33.8	31.7	49.4	39.4		44.4	41.7	34.1
Level of Service	D	D	C	D	C	C	D	D		D	D	C
Approach Delay (s)		37.2			35.0			42.6			41.8	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	103.9	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	72.7%	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)	200	815	318	154	558	472	213	376	78	412	522	140
Future Volume (veh/h)	200	815	318	154	558	472	213	376	78	412	522	140
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	867	338	164	594	502	227	400	83	438	555	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	251	1274	566	199	1170	522	266	572	118	534	712	313
Arrive On Green	0.14	0.36	0.36	0.11	0.33	0.33	0.15	0.19	0.19	0.15	0.20	0.20
Sat Flow, veh/h	1795	3582	1592	1795	3582	1596	1795	2958	608	3483	3582	1574
Grp Volume(v), veh/h	213	867	338	164	594	502	227	241	242	438	555	149
Grp Sat Flow(s),veh/h/ln	1795	1791	1592	1795	1791	1596	1795	1791	1776	1742	1791	1574
Q Serve(g_s), s	11.2	19.8	16.7	8.6	12.9	29.8	11.9	12.1	12.3	11.7	14.2	8.1
Cycle Q Clear(g_c), s	11.2	19.8	16.7	8.6	12.9	29.8	11.9	12.1	12.3	11.7	14.2	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	251	1274	566	199	1170	522	266	346	343	534	712	313
V/C Ratio(X)	0.85	0.68	0.60	0.82	0.51	0.96	0.85	0.70	0.71	0.82	0.78	0.48
Avail Cap(c_a), veh/h	400	1319	586	326	1170	522	419	502	497	795	985	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	26.4	25.4	41.9	26.2	31.9	40.1	36.2	36.3	39.5	36.6	34.2
Incr Delay (d2), s/veh	9.4	1.4	1.6	8.4	0.4	30.0	9.8	2.5	2.7	4.3	2.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.2	6.2	4.2	5.3	15.1	5.8	5.4	5.4	5.2	6.3	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	27.8	27.0	50.3	26.5	61.9	49.8	38.7	39.0	43.8	39.4	35.3
LnGrp LOS	D	C	C	D	C	E	D	D	D	D	D	D
Approach Vol, veh/h		1418			1260			710			1142	
Approach Delay, s/veh		30.9			43.7			42.4			40.5	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.3	23.1	15.2	38.8	18.8	23.7	18.0	36.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.0	27.0	17.5	35.5	22.5	26.5	21.5	31.5
Max Q Clear Time (g_c+I1), s	13.7	14.3	10.6	21.8	13.9	16.2	13.2	31.8
Green Ext Time (p_c), s	1.0	2.3	0.2	5.8	0.4	3.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	62	61	637	52	93	834
Future Volume (Veh/h)	62	61	637	52	93	834
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	67	66	685	56	100	897
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1812	715			743	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1812	715			743	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	13	85			88	
cM capacity (veh/h)	77	432			867	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	133	741	100	897
Volume Left	67	0	100	0
Volume Right	66	56	0	0
cSH	129	1700	867	1700
Volume to Capacity	1.03	0.44	0.12	0.53
Queue Length 95th (ft)	182	0	10	0
Control Delay (s)	152.5	0.0	9.7	0.0
Lane LOS	F		A	
Approach Delay (s)	152.5	0.0	1.0	
Approach LOS	F			

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	11.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	61	637	52	93	834
Future Vol, veh/h	62	61	637	52	93	834
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	67	66	685	56	100	897

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1812	715	0	0	743	0
Stage 1	715	-	-	-	-	-
Stage 2	1097	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	87	432	-	-	869	-
Stage 1	486	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	431	-	-	867	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	284	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	149.3	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	130	867	-
HCM Lane V/C Ratio	-	-	1.017	0.115	-
HCM Control Delay (s)	-	-	149.3	9.7	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	7.2	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	10	17	10	10	42	25	427	10	53	569	167
Future Volume (Veh/h)	137	10	17	10	10	42	25	427	10	53	569	167
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	138	10	17	10	10	42	25	431	10	54	575	169
Pedestrians		5									4	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1220	1179	580	1191	1343	440	749			441		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1220	1179	580	1191	1343	440	749			441		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	97	93	93	93	97			95		
cM capacity (veh/h)	129	176	514	143	140	617	860			1124		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	165	62	25	441	54	575	169
Volume Left	138	10	25	0	54	0	0
Volume Right	17	42	0	10	0	0	169
cSH	143	297	860	1700	1124	1700	1700
Volume to Capacity	1.16	0.21	0.03	0.26	0.05	0.34	0.10
Queue Length 95th (ft)	235	19	2	0	4	0	0
Control Delay (s)	185.4	20.3	9.3	0.0	8.4	0.0	0.0
Lane LOS	F	C	A		A		
Approach Delay (s)	185.4	20.3	0.5		0.6		
Approach LOS	F	C					

Intersection Summary				
Average Delay	21.8			
Intersection Capacity Utilization	59.1%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	20.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	10	17	10	10	42	25	427	10	53	569	167
Future Vol, veh/h	137	10	17	10	10	42	25	427	10	53	569	167
Conflicting Peds, #/hr	4	0	0	0	0	4	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	70	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	138	10	17	10	10	42	25	431	10	54	575	169

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1204	1179	580	1267	1343	440	749	0	0	441	0	0
Stage 1	688	688	-	486	486	-	-	-	-	-	-	-
Stage 2	516	491	-	781	857	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	162	191	516	146	153	619	864	-	-	1124	-	-
Stage 1	438	448	-	565	553	-	-	-	-	-	-	-
Stage 2	544	550	-	389	375	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 133	176	514	127	141	617	860	-	-	1124	-	-
Mov Cap-2 Maneuver	~ 133	176	-	127	141	-	-	-	-	-	-	-
Stage 1	423	424	-	549	537	-	-	-	-	-	-	-
Stage 2	481	534	-	349	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	176.2	21.2	0.5	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	860	-	-	146	285	1124	-	-
HCM Lane V/C Ratio	0.029	-	-	1.135	0.22	0.048	-	-
HCM Control Delay (s)	9.3	-	-	176.2	21.2	8.4	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	9.2	0.8	0.1	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	10	16	175	10	180	14	271	271	302	265	20
Future Volume (vph)	10	10	16	175	10	180	14	271	271	302	265	20
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	11	17	188	11	194	15	291	291	325	285	22

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	39	393	306	291	468	165
Volume Left (vph)	11	188	15	0	325	0
Volume Right (vph)	17	194	0	291	0	22
Hadj (s)	-0.19	-0.18	0.04	-0.68	0.36	-0.08
Departure Headway (s)	8.3	6.8	7.4	6.6	7.5	7.1
Degree Utilization, x	0.09	0.74	0.63	0.54	0.98	0.32
Capacity (veh/h)	385	393	478	539	468	498
Control Delay (s)	12.1	26.4	20.8	15.8	62.4	12.2
Approach Delay (s)	12.1	26.4	18.4		49.3	
Approach LOS	B	D	C		E	

Intersection Summary					
Delay	31.9				
Level of Service	D				
Intersection Capacity Utilization	69.9%	ICU Level of Service		C	
Analysis Period (min)	15				

Intersection	
Intersection Delay, s/veh	33.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	10	10	16	175	10	180	0	14	271	271	302	265
Future Vol, veh/h	10	10	16	175	10	180	0	14	271	271	302	265
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	2	1	1	1	1	1
Mvmt Flow	11	11	17	188	11	194	0	15	291	291	325	285
Number of Lanes	0	1	0	0	1	0	0	0	1	1	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.3	27.6	19.5	50.7
HCM LOS	B	D	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	5%	0%	28%	48%	70%	0%
Vol Thru, %	95%	0%	28%	3%	30%	87%
Vol Right, %	0%	100%	44%	49%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	271	36	365	435	153
LT Vol	14	0	10	175	302	0
Through Vol	271	0	10	10	133	133
RT Vol	0	271	16	180	0	20
Lane Flow Rate	306	291	39	392	467	164
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.629	0.538	0.09	0.748	0.98	0.323
Departure Headway (Hd)	7.389	6.643	8.405	6.861	7.549	7.097
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	542	425	526	481	507
Service Time	5.145	4.398	6.493	4.901	5.302	4.85
HCM Lane V/C Ratio	0.628	0.537	0.092	0.745	0.971	0.323
HCM Control Delay	21.9	16.9	12.3	27.6	63.9	13.2
HCM Lane LOS	C	C	B	D	F	B
HCM 95th-tile Q	4.3	3.2	0.3	6.4	12.6	1.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	20
Future Vol, veh/h	20
Peak Hour Factor	0.93
Heavy Vehicles, %	1
Mvmt Flow	22
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	331	253	150	225	210	245
Future Volume (Veh/h)	331	253	150	225	210	245
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	341	261	155	232	216	253
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	216	469			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	216	469			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	3	67	86			
cM capacity (veh/h)	351	792	1096			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	602	155	116	116	216	253
Volume Left	341	155	0	0	0	0
Volume Right	261	0	0	0	0	253
cSH	581	1096	1700	1700	1700	1700
Volume to Capacity	1.04	0.14	0.07	0.07	0.13	0.15
Queue Length 95th (ft)	411	12	0	0	0	0
Control Delay (s)	73.9	8.8	0.0	0.0	0.0	0.0
Lane LOS	F	A				
Approach Delay (s)	73.9	3.5			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay		31.5	
Intersection Capacity Utilization		47.7%	ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Int Delay, s/veh	18.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	331	253	150	225	210	245
Future Vol, veh/h	331	253	150	225	210	245
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	145	105	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	341	261	155	232	216	253

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	642	216	469	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.615	6.215	4.115	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	424	826	1097	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	826	1097	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.9	3.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1097	-	364	826	-	-
HCM Lane V/C Ratio	0.141	-	0.937	0.316	-	-
HCM Control Delay (s)	8.8	-	66.9	11.4	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	10	1.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	316	20	0	0	0	0	400	53
Future Volume (Veh/h)	0	0	0	0	316	20	0	0	0	0	400	53
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	343	22	0	0	0	0	435	58
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	636	464	464	464	493	0	493			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636	464	464	464	493	0	493			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	28	98	100			100		
cM capacity (veh/h)	160	497	600	510	478	1088	1076			1630		

Direction, Lane #	WB 1	SB 1
Volume Total	365	493
Volume Left	0	0
Volume Right	22	58
cSH	499	1700
Volume to Capacity	0.73	0.29
Queue Length 95th (ft)	151	0
Control Delay (s)	29.5	0.0
Lane LOS	D	
Approach Delay (s)	29.5	0.0
Approach LOS	D	

Intersection Summary				
Average Delay	12.5			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	316	20	0	0	0	0	400	53
Future Vol, veh/h	0	0	0	0	316	20	0	0	0	0	400	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	25	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	0	0	343	22	0	0	0	0	435	58

Major/Minor	Minor1			Major2		
Conflicting Flow All	464	493	-	-	-	0
Stage 1	0	0	-	-	-	-
Stage 2	464	493	-	-	-	-
Critical Hdwy	6.41	6.51	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-
Follow-up Hdwy	3.509	4.009	-	-	-	-
Pot Cap-1 Maneuver	558	478	0	0	-	-
Stage 1	-	-	0	0	-	-
Stage 2	635	549	0	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	558	0	-	-	-	-
Mov Cap-2 Maneuver	558	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	635	0	-	-	-	-

Approach	WB	SB
HCM Control Delay, s		0
HCM LOS	-	

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	483	775	278	541	141	424	1199	795	461
v/c Ratio	0.27	0.88	0.73	0.49	0.53	0.70	0.82	0.91	0.91	0.46
Control Delay	58.3	75.2	50.7	45.6	8.8	81.6	73.9	34.2	67.4	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	58.3	75.2	50.7	45.6	8.8	81.6	73.9	34.2	67.4	41.2
Queue Length 50th (ft)	65	234	354	225	116	135	212	320	389	177
Queue Length 95th (ft)	118	#326	431	319	205	207	275	#442	#498	241
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	290	577	1073	582	1043	255	575	1336	922	1033
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	0.26	0.84	0.72	0.48	0.52	0.55	0.74	0.90	0.86	0.45

Intersection Summary

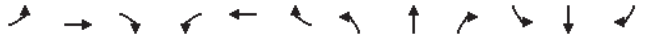
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	356	113	752	270	525	137	411	1163	771	325	122
Future Volume (vph)	73	356	113	752	270	525	137	411	1163	771	325	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	0.88	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	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	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3433		3467	1881	1585	1787	3574	2814	3467	3428	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3433		3467	1881	1585	1787	3574	2814	3467	3428	
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)	75	367	116	775	278	541	141	424	1199	795	335	126
RTOR Reduction (vph)	0	20	0	0	0	137	0	0	48	0	26	0
Lane Group Flow (vph)	75	463	0	775	278	404	141	424	1151	795	435	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	8	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	22.3	22.3		44.1	44.1	80.7	16.2	21.1	65.2	36.6	41.5	
Effective Green, g (s)	22.3	22.3		44.1	44.1	80.7	16.2	21.1	65.2	36.6	41.5	
Actuated g/C Ratio	0.15	0.15		0.30	0.30	0.56	0.11	0.15	0.45	0.25	0.29	
Clearance Time (s)	4.6	4.6		5.4	5.4	4.7	5.8	5.8	5.4	4.7	4.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	529		1057	573	884	200	521	1268	877	983	
v/s Ratio Prot	0.04	c0.13		0.22	0.15	0.12	0.08	0.12	c0.28	c0.23	0.13	
v/s Ratio Perm						0.14			0.13			
v/c Ratio	0.27	0.87		0.73	0.49	0.46	0.70	0.81	0.91	0.91	0.44	
Uniform Delay, d1	54.0	59.8		45.0	41.0	19.0	61.9	59.8	36.9	52.3	42.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	14.9		2.7	0.6	0.4	10.7	9.4	9.5	12.8	0.3	
Delay (s)	54.5	74.7		47.6	41.6	19.3	72.6	69.3	46.4	65.2	42.4	
Level of Service	D	E		D	D	B	E	E	D	E	D	
Approach Delay (s)		72.0			37.0			54.0			56.8	
Approach LOS		E			D			D			E	

Intersection Summary

HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	20.5
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	356	113	752	270	525	137	411	1163	771	325	122
Future Volume (veh/h)	73	356	113	752	270	525	137	411	1163	771	325	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	367	116	775	278	541	141	424	1199	795	335	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	280	417	130	996	539	852	166	590	1267	863	799	295
Arrive On Green	0.16	0.16	0.16	0.29	0.29	0.29	0.09	0.16	0.16	0.25	0.31	0.31
Sat Flow, veh/h	1795	2677	834	3483	1885	1594	1795	3582	2812	3483	2560	946
Grp Volume(v), veh/h	75	244	239	775	278	541	141	424	1199	795	233	228
Grp Sat Flow(s),veh/h/ln	1795	1791	1720	1742	1885	1594	1795	1791	1406	1742	1791	1715
Q Serve(g_s), s	5.2	18.7	19.2	28.8	17.4	33.7	10.9	15.8	23.2	31.3	14.4	14.9
Cycle Q Clear(g_c), s	5.2	18.7	19.2	28.8	17.4	33.7	10.9	15.8	23.2	31.3	14.4	14.9
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	280	279	268	996	539	852	166	590	1267	863	559	535
V/C Ratio(X)	0.27	0.87	0.89	0.78	0.52	0.64	0.85	0.72	0.95	0.92	0.42	0.43
Avail Cap(c_a), veh/h	298	298	286	1104	597	901	263	590	1267	948	559	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	58.0	58.3	46.2	42.1	23.2	62.9	55.7	27.6	51.6	38.3	38.4
Incr Delay (d2), s/veh	0.5	22.7	26.7	3.3	0.8	1.4	13.8	4.2	14.3	13.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.3	10.4	12.7	8.1	12.5	5.5	7.3	23.8	15.3	6.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	80.7	85.0	49.4	42.9	24.5	76.7	59.9	41.9	64.9	38.8	38.9
LnGrp LOS	D	F	F	D	D	C	E	E	D	E	D	D
Approach Vol, veh/h		558			1594			1764			1256	
Approach Delay, s/veh		78.8			39.8			49.0			55.3	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.6	29.0		26.5	18.8	49.7		45.6				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 38	23.2		23.4	20.6	* 41		44.6				
Max Q Clear Time (g_c+I1), s	33.3	25.2		21.2	12.9	16.9		35.7				
Green Ext Time (p_c), s	1.5	0.0		0.7	0.2	2.9		4.5				

Intersection Summary												
HCM 6th Ctrl Delay			50.9									
HCM 6th LOS			D									

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	1177	684	140	1049	445	385	219	559
v/c Ratio	0.75	0.87	0.77	0.75	0.80	0.82	0.53	0.81	0.78
Control Delay	63.2	41.6	16.9	75.2	36.9	60.7	39.5	70.7	49.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	41.6	16.9	75.2	36.9	60.7	39.5	70.7	49.1
Queue Length 50th (ft)	107	428	151	104	360	168	124	160	198
Queue Length 95th (ft)	#170	#578	335	#208	465	#253	175	#287	263
Internal Link Dist (ft)		1510			1609		962		896
Turn Bay Length (ft)	140			80		150		110	
Base Capacity (vph)	393	1405	905	199	1374	573	850	298	853
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.84	0.76	0.70	0.76	0.78	0.45	0.73	0.66

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)	270	1130	657	134	844	163	427	276	93	210	407	130
Future Volume (vph)	270	1130	657	134	844	163	427	276	93	210	407	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	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	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	3574	1599	1787	3479		3467	3439		1787	3432	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	3574	1599	1787	3479		3467	3439		1787	3432	
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)	281	1177	684	140	879	170	445	288	97	219	424	135
RTOR Reduction (vph)	0	0	284	0	13	0	0	28	0	0	26	0
Lane Group Flow (vph)	281	1177	400	140	1036	0	445	357	0	219	533	0
Confl. Peds. (#/hr)						2						3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	12.3	42.7	42.7	11.8	42.2		17.6	23.1		17.1	22.6	
Effective Green, g (s)	12.3	42.7	42.7	11.8	42.2		17.6	23.1		17.1	22.6	
Actuated g/C Ratio	0.11	0.38	0.38	0.10	0.37		0.16	0.20		0.15	0.20	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	378	1354	605	187	1302		541	704		271	688	
v/s Ratio Prot	c0.08	c0.33		0.08	0.30		c0.13	0.10		0.12	c0.16	
v/s Ratio Perm			0.25									
v/c Ratio	0.74	0.87	0.66	0.75	0.80		0.82	0.51		0.81	0.77	
Uniform Delay, d1	48.7	32.4	29.0	49.0	31.4		46.0	39.8		46.2	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.7	6.2	2.7	15.1	3.5		9.8	0.6		16.0	5.4	
Delay (s)	56.4	38.6	31.7	64.1	34.9		55.8	40.3		62.3	48.1	
Level of Service	E	D	C	E	C		E	D		E	D	
Approach Delay (s)		38.7			38.3			48.6			52.1	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	82.0%	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)	270	1130	657	134	844	163	427	276	93	210	407	130
Future Volume (veh/h)	270	1130	657	134	844	163	427	276	93	210	407	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	281	1177	684	140	879	170	445	288	97	219	424	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	349	1391	620	170	1145	221	520	541	178	252	524	165
Arrive On Green	0.10	0.39	0.39	0.09	0.38	0.38	0.15	0.20	0.20	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	2992	579	3483	2646	873	1795	2676	844
Grp Volume(v), veh/h	281	1177	684	140	526	523	445	193	192	219	282	277
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1780	1742	1791	1728	1795	1791	1729
Q Serve(g_s), s	8.3	31.3	25.0	8.0	26.8	26.9	13.0	10.0	10.4	12.5	15.7	16.0
Cycle Q Clear(g_c), s	8.3	31.3	25.0	8.0	26.8	26.9	13.0	10.0	10.4	12.5	15.7	16.0
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.51	1.00		0.49
Lane Grp Cap(c), veh/h	349	1391	620	170	685	681	520	366	353	252	350	338
V/C Ratio(X)	0.80	0.85	1.10	0.82	0.77	0.77	0.86	0.53	0.54	0.87	0.81	0.82
Avail Cap(c_a), veh/h	423	1507	672	215	750	745	616	459	443	321	462	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	29.1	12.1	46.5	28.2	28.2	43.4	37.1	37.2	44.0	40.2	40.3
Incr Delay (d2), s/veh	9.1	4.4	67.6	18.2	4.4	4.5	10.1	1.2	1.3	18.1	7.6	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	13.5	19.3	4.3	11.7	11.6	6.2	4.4	4.4	6.7	7.5	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	33.6	79.7	64.7	32.6	32.7	53.5	38.3	38.5	62.1	47.8	49.0
LnGrp LOS	E	C	F	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h		2142			1189			830			778	
Approach Delay, s/veh		51.1			36.4			46.5			52.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	45.1	20.1	25.0	15.0	44.5	19.2	25.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	44.0	18.5	27.0	12.7	43.8	18.7	26.8
Max Q Clear Time (g_c+I1), s	10.0	33.3	15.0	18.0	10.3	28.9	14.5	12.4
Green Ext Time (p_c), s	0.1	7.3	0.6	2.1	0.2	5.7	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	943	413	23	680	402	20
v/c Ratio	0.93	0.40	0.21	0.35	0.81	0.04
Control Delay	34.4	2.5	16.3	10.0	35.8	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	2.5	16.3	10.0	35.8	11.6
Queue Length 50th (ft)	332	0	4	75	153	3
Queue Length 95th (ft)	#702	42	24	136	247	16
Internal Link Dist (ft)	1629			570	669	
Turn Bay Length (ft)			75			50
Base Capacity (vph)	1009	1024	107	1919	694	629
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	0.93	0.40	0.21	0.35	0.58	0.03

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)	868	380	21	626	370	18
Future Volume (vph)	868	380	21	626	370	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	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)	1827	1518	1735	3471	1732	1553
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	1827	1518	195	3471	1732	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	943	413	23	680	402	20
RTOR Reduction (vph)	0	185	0	0	0	8
Lane Group Flow (vph)	943	228	23	680	402	12
Confl. Peds. (#/hr)		2	2		3	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Perm	Prot
Protected Phases	2			6		8
Permitted Phases		2	6		8	
Actuated Green, G (s)	37.4	37.4	37.4	37.4	19.4	19.4
Effective Green, g (s)	37.4	37.4	37.4	37.4	19.4	19.4
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.29	0.29
Clearance Time (s)	5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	1010	839	107	1920	497	445
v/s Ratio Prot	c0.52			0.20		0.01
v/s Ratio Perm		0.15	0.12		c0.23	
v/c Ratio	0.93	0.27	0.21	0.35	0.81	0.03
Uniform Delay, d1	14.0	7.9	7.7	8.4	22.4	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	0.1	0.4	0.0	8.9	0.0
Delay (s)	28.6	8.0	8.0	8.4	31.3	17.3
Level of Service	C	A	A	A	C	B
Approach Delay (s)	22.4			8.4	30.6	
Approach LOS	C			A	C	

Intersection Summary				
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	10.8	
Intersection Capacity Utilization	75.2%	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)	868	380	21	626	370	18
Future Volume (veh/h)	868	380	21	626	370	18
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	943	413	23	680	402	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	1039	879	159	1974	457	406
Arrive On Green	0.56	0.56	0.56	0.56	0.26	0.26
Sat Flow, veh/h	1841	1557	395	3589	1753	1560
Grp Volume(v), veh/h	943	413	23	680	402	20
Grp Sat Flow(s),veh/h/ln	1841	1557	395	1749	1753	1560
Q Serve(g_s), s	28.2	9.7	3.4	6.5	13.6	0.6
Cycle Q Clear(g_c), s	28.2	9.7	31.6	6.5	13.6	0.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1039	879	159	1974	457	406
V/C Ratio(X)	0.91	0.47	0.14	0.34	0.88	0.05
Avail Cap(c_a), veh/h	1110	939	174	2109	767	683
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	12.0	8.0	26.1	7.3	21.9	17.1
Incr Delay (d2), s/veh	10.0	0.1	0.2	0.0	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	2.4	0.3	1.7	5.3	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.0	8.1	26.3	7.3	25.3	17.1
LnGrp LOS	C	A	C	A	C	B
Approach Vol, veh/h	1356			703	422	
Approach Delay, s/veh	17.7			7.9	24.9	
Approach LOS	B			A	C	

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		40.2				40.2	21.5
Change Period (Y+Rc), s		5.4				5.4	5.4
Max Green Setting (Gmax), s		37.2				37.2	27.0
Max Q Clear Time (g_c+I1), s		30.2				33.6	15.6
Green Ext Time (p_c), s		3.2				1.2	0.5

Intersection Summary			
HCM 6th Ctrl Delay		16.2	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	811	65	19	499	10	138	0	16	0	0	10
Future Volume (Veh/h)	10	811	65	19	499	10	138	0	16	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	882	71	21	542	11	150	0	17	0	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									4			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		650										
pX, platoon unblocked				0.48			0.48	0.48	0.48	0.48	0.48	
vC, conflicting volume	553			953			1264	1534	918	1538	1564	276
vC1, stage 1 conf vol							940	940		590	590	
vC2, stage 2 conf vol							324	595		948	975	
vCu, unblocked vol	553			360			1007	1572	286	1578	1634	276
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			46	100	95	100	100	98
cM capacity (veh/h)	1013			574			280	250	341	222	225	721

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	964	292	282	167	11
Volume Left	11	21	0	150	0
Volume Right	71	0	11	17	11
cSH	1013	574	1700	311	721
Volume to Capacity	0.01	0.04	0.17	0.54	0.02
Queue Length 95th (ft)	1	3	0	74	1
Control Delay (s)	0.3	1.3	0.0	30.2	10.1
Lane LOS	A	A		D	B
Approach Delay (s)	0.3	0.7		30.2	10.1
Approach LOS				D	B

Intersection Summary					
Average Delay		3.4			
Intersection Capacity Utilization		75.7%	ICU Level of Service		D
Analysis Period (min)		15			

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	10	811	65	19	499	10	138	0	16	0	0	10
Future Vol, veh/h	10	811	65	19	499	10	138	0	16	0	0	10
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	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	882	71	21	542	11	150	0	17	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	553	0	0	953	0	0	1253	1535	918	1538	1565	277
Stage 1	-	-	-	-	-	-	940	940	-	590	590	-
Stage 2	-	-	-	-	-	-	313	595	-	948	975	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1015	-	-	719	-	-	~ 138	116	328	86	111	721
Stage 1	-	-	-	-	-	-	316	341	-	462	494	-
Stage 2	-	-	-	-	-	-	673	492	-	312	329	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1015	-	-	719	-	-	~ 129	109	328	77	104	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	274	-	228	256	-
Stage 1	-	-	-	-	-	-	309	333	-	451	473	-
Stage 2	-	-	-	-	-	-	635	471	-	289	321	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	30.6	10.1
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	328	1015	-	-	719	-	-	721
HCM Lane V/C Ratio	0.54	0.053	0.011	-	-	0.029	-	-	0.015
HCM Control Delay (s)	32.2	16.6	8.6	0	-	10.2	0.2	-	10.1
HCM Lane LOS	D	C	A	A	-	B	A	-	B
HCM 95th %tile Q(veh)	3	0.2	0	-	-	0.1	-	-	0

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	250	274	234	44	170	54	150	159	34	79	306	178
Future Volume (veh/h)	250	274	234	44	170	54	150	159	34	79	306	178
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
Hourly flow rate (vph)	272	298	254	48	185	59	163	173	37	86	333	193
Approach Volume (veh/h)		824			292			373			612	
Crossing Volume (veh/h)		467			608			656			396	
High Capacity (veh/h)		958			856			824			1014	
High v/c (veh/h)		0.86			0.34			0.45			0.60	
Low Capacity (veh/h)		777			686			657			826	
Low v/c (veh/h)		1.06			0.43			0.57			0.74	

Intersection Summary					
Maximum v/c High		0.86			
Maximum v/c Low		1.06			
Intersection Capacity Utilization		112.2%	ICU Level of Service		H

Intersection	
Intersection Delay, s/veh	28.5
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	824	292	373	612
Demand Flow Rate, veh/h	840	298	380	625
Vehicles Circulating, veh/h	477	619	669	404
Vehicles Exiting, veh/h	552	430	648	513
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	51.0	10.4	14.1	15.7
Approach LOS	F	B	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	840	298	380	625
Cap Entry Lane, veh/h	848	734	697	914
Entry HV Adj Factor	0.981	0.981	0.980	0.980
Flow Entry, veh/h	824	292	373	612
Cap Entry, veh/h	832	720	684	895
V/C Ratio	0.990	0.406	0.545	0.684
Control Delay, s/veh	51.0	10.4	14.1	15.7
LOS	F	B	B	C
95th %tile Queue, veh	17	2	3	6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	68	18	54	1	17	22	32	209	3	32	351	65
Future Volume (vph)	68	18	54	1	17	22	32	209	3	32	351	65
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
Hourly flow rate (vph)	74	20	59	1	18	24	35	227	3	35	382	71

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	153	43	265	488
Volume Left (vph)	74	1	35	35
Volume Right (vph)	59	24	3	71
Hadj (s)	-0.12	-0.31	0.04	-0.06
Departure Headway (s)	5.7	5.8	5.2	4.8
Degree Utilization, x	0.24	0.07	0.38	0.65
Capacity (veh/h)	551	506	662	729
Control Delay (s)	10.5	9.2	11.3	16.3
Approach Delay (s)	10.5	9.2	11.3	16.3
Approach LOS	B	A	B	C

Intersection Summary				
Delay	13.7			
Level of Service	B			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	68	18	54	1	17	22	32	209	3	32	351	65
Future Vol, veh/h	68	18	54	1	17	22	32	209	3	32	351	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	74	20	59	1	18	24	35	227	3	35	382	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	9.2	11.3	16.3
HCM LOS	B	A	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	49%	3%	7%
Vol Thru, %	86%	13%	42%	78%
Vol Right, %	1%	39%	55%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	140	40	448
LT Vol	32	68	1	32
Through Vol	209	18	17	351
RT Vol	3	54	22	65
Lane Flow Rate	265	152	43	487
Geometry Grp	1	1	1	1
Degree of Util (X)	0.379	0.241	0.069	0.651
Departure Headway (Hd)	5.143	5.693	5.749	4.813
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	700	630	621	755
Service Time	3.173	3.734	3.8	2.813
HCM Lane V/C Ratio	0.379	0.241	0.069	0.645
HCM Control Delay	11.3	10.5	9.2	16.3
HCM Lane LOS	B	B	A	C
HCM 95th-tile Q	1.8	0.9	0.2	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	117	105	34	1	68	22	23	117	1	17	173	110
Future Volume (Veh/h)	117	105	34	1	68	22	23	117	1	17	173	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	114	37	1	74	24	25	127	1	18	188	120
Pedestrians								6				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	98			157			694	492	138	539	499	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	98			157			694	492	138	539	499	86
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			87	71	100	95	56	88
cM capacity (veh/h)	1501			1421			193	435	907	329	432	976

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	278	99	153	18	308
Volume Left	127	1	25	18	0
Volume Right	37	24	1	0	120
cSH	1501	1421	362	329	552
Volume to Capacity	0.08	0.00	0.42	0.05	0.56
Queue Length 95th (ft)	7	0	51	4	85
Control Delay (s)	3.9	0.1	22.0	16.6	19.5
Lane LOS	A	A	C	C	C
Approach Delay (s)	3.9	0.1	22.0	19.3	
Approach LOS			C	C	

Intersection Summary					
Average Delay			12.5		
Intersection Capacity Utilization			53.4%	ICU Level of Service	A
Analysis Period (min)			15		

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↑	
Traffic Vol, veh/h	117	105	34	1	68	22	23	117	1	17	173	110
Future Vol, veh/h	117	105	34	1	68	22	23	117	1	17	173	110
Conflicting Peds, #/hr	0	0	6	6	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	-	-	-	-	-	-	-	-	-	50	-	-
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	127	114	37	1	74	24	25	127	1	18	188	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	157	0	0	635	493	139	539	499	86
Stage 1	-	-	-	-	-	-	393	393	-	88	88	-
Stage 2	-	-	-	-	-	-	242	100	-	451	411	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1501	-	-	1429	-	-	393	478	912	455	475	976
Stage 1	-	-	-	-	-	-	634	608	-	922	824	-
Stage 2	-	-	-	-	-	-	764	814	-	590	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1421	-	-	210	431	907	327	428	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	431	-	327	428	-
Stage 1	-	-	-	-	-	-	572	548	-	836	823	-
Stage 2	-	-	-	-	-	-	517	813	-	410	538	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.5	0.1	21.5	19.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	1501	-	-	1421	-	-	327	547
HCM Lane V/C Ratio	0.415	0.085	-	-	0.001	-	-	0.057	0.562
HCM Control Delay (s)	21.5	7.6	0	-	7.5	0	-	16.7	19.7
HCM Lane LOS	C	A	A	-	A	A	-	C	C
HCM 95th %tile Q(veh)	2	0.3	-	-	0	-	-	0.2	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Right Turn Channelized						
Traffic Volume (veh/h)	25	137	114	15	174	170
Future Volume (veh/h)	25	137	114	15	174	170
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	149	124	16	189	185
Approach Volume (veh/h)	176		140			374
Crossing Volume (veh/h)	124		189			27
High Capacity (veh/h)	1257		1194			1356
High v/c (veh/h)	0.14		0.12			0.28
Low Capacity (veh/h)	1045		988			1135
Low v/c (veh/h)	0.17		0.14			0.33

Intersection Summary			
Maximum v/c High	0.28		
Maximum v/c Low	0.33		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	4.8
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	176	140	374
Demand Flow Rate, veh/h	180	142	382
Vehicles Circulating, veh/h	126	193	28
Vehicles Exiting, veh/h	209	217	278
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	4.3	5.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	180	142	382
Cap Entry Lane, veh/h	1213	1133	1341
Entry HV Adj Factor	0.978	0.983	0.980
Flow Entry, veh/h	176	140	374
Cap Entry, veh/h	1186	1114	1314
V/C Ratio	0.148	0.125	0.285
Control Delay, s/veh	4.3	4.3	5.3
LOS	A	A	A
95th %tile Queue, veh	1	0	1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	96	115	10	5	26
Future Volume (Veh/h)	21	96	115	10	5	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	104	125	11	5	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	136				280	130
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136				280	130
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	97
cM capacity (veh/h)	1436				694	914

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	127	136	33
Volume Left	23	0	5
Volume Right	0	11	28
cSH	1436	1700	872
Volume to Capacity	0.02	0.08	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	1.5	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	1.5	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	96	115	10	5	26
Future Vol, veh/h	21	96	115	10	5	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	23	104	125	11	5	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	136	0	-	0	281	131
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	150	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1436	-	-	-	705	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	873	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1436	-	-	-	693	913
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	873	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1436	-	-	-	869
HCM Lane V/C Ratio	0.016	-	-	-	0.039
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Cumulative Plus 1293-Unit and School Project (Mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	435	1158	387	443	1176	326	474	665	255	253	304
v/c Ratio	0.88	0.97	0.50	0.90	0.99	0.45	0.92	0.88	0.74	0.82	0.49
Control Delay	84.6	69.1	5.6	86.7	72.3	8.1	88.4	71.2	81.3	82.3	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.6	69.1	5.6	86.7	72.3	8.1	88.4	71.2	81.3	82.3	23.0
Queue Length 50th (ft)	231	~638	0	236	~681	24	256	349	135	255	134
Queue Length 95th (ft)	#329	#839	79	#340	#860	109	#377	435	189	361	225
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	527	1190	778	527	1190	717	527	843	405	385	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.97	0.50	0.84	0.99	0.45	0.90	0.79	0.63	0.66	0.48

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 (veh/h)	400	1065	356	408	1082	300	436	519	93	235	233	280
Future Volume (veh/h)	400	1065	356	408	1082	300	436	519	93	235	233	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	435	1158	387	443	1176	326	474	564	101	255	253	304
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, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	476	1162	518	481	1235	551	509	718	128	299	333	500
Arrive On Green	0.15	0.35	0.35	0.15	0.37	0.37	0.16	0.26	0.26	0.09	0.19	0.19
Sat Flow, veh/h	3209	3300	1472	3209	3300	1472	3209	2792	498	3209	1737	1472
Grp Volume(v), veh/h	435	1158	387	443	1176	326	474	333	332	255	253	304
Grp Sat Flow(s),veh/h/ln	1605	1650	1472	1605	1650	1472	1605	1650	1640	1605	1737	1472
Q Serve(g_s), s	21.6	56.7	24.2	22.0	56.1	28.8	23.6	30.3	30.6	12.7	22.3	27.8
Cycle Q Clear(g_c), s	21.6	56.7	24.2	22.0	56.1	28.8	23.6	30.3	30.6	12.7	22.3	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	476	1162	518	481	1235	551	509	424	422	299	333	500
V/C Ratio(X)	0.91	1.00	0.75	0.92	0.95	0.59	0.93	0.78	0.79	0.85	0.76	0.61
Avail Cap(c_a), veh/h	516	1162	518	516	1235	551	516	424	422	397	376	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.9	52.3	19.3	67.9	49.3	40.7	67.2	55.9	56.0	72.3	61.9	44.4
Incr Delay (d2), s/veh	19.9	25.4	5.9	20.6	15.6	1.7	23.6	9.3	9.6	12.9	7.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	26.5	9.0	10.2	24.7	10.6	11.3	13.6	13.7	5.7	10.5	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.8	77.7	25.1	88.4	64.9	42.4	90.8	65.2	65.6	85.2	69.7	46.2
LnGrp LOS	F	E	C	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		1980			1945			1139			812	
Approach Delay, s/veh		69.7			66.5			76.0			65.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.5	64.3	29.7	36.3	28.0	67.8	19.1	46.9
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	24.0	* 57	26.0	35.0	26.0	57.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	24.0	58.7	25.6	29.8	23.6	58.1	14.7	32.6
Green Ext Time (p_c), s	0.2	0.0	0.1	1.2	0.4	0.0	0.4	2.5

Intersection Summary	
HCM 6th Ctrl Delay	69.3
HCM 6th LOS	E

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	204	222	150	322	200	156	63	675	301	100	559	250
Future Volume (veh/h)	204	222	150	322	200	156	63	675	301	100	559	250
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
Hourly flow rate (vph)	222	241	163	350	217	170	68	734	327	109	608	272
Approach Volume (veh/h)		463			737			1129			989	
Crossing Volume (veh/h)		1067			1024			572			635	
High Capacity (veh/h)		589			610			881			838	
High v/c (veh/h)		0.79			1.21			1.28			1.18	
Low Capacity (veh/h)		454			472			708			670	
Low v/c (veh/h)		1.02			1.56			1.59			1.48	

Intersection Summary					
Maximum v/c High	1.28				
Maximum v/c Low	1.59				
Intersection Capacity Utilization	110.9%	ICU Level of Service		H	

Intersection	
Intersection Delay, s/veh	29.6
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	626	737	1129	989
Demand Flow Rate, veh/h	645	759	1163	1018
Vehicles Circulating, veh/h	1099	1055	589	655
Vehicles Exiting, veh/h	574	697	987	1160
Ped Vol Crossing Leg, #/h	0	0	3	0
Ped Cap Adj	1.000	1.000	0.998	1.000
Approach Delay, s/veh	14.5	24.4	52.8	16.7
Approach LOS	B	C	F	C

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	TR
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	TR
RT Channelized			Yield						
Lane Util	0.470	0.530		0.474	0.526	0.710	0.290	0.470	0.530
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	168	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	224	253	504	360	399	826	337	478	540
Cap Entry Lane, veh/h	491	558	0.971	511	579	785	861	739	814
Entry HV Adj Factor	0.971	0.969	163	0.972	0.971	0.971	0.970	0.972	0.970
Flow Entry, veh/h	218	245	490	350	387	802	327	465	524
Cap Entry, veh/h	477	541	0.333	497	562	761	834	718	790
V/C Ratio	0.456	0.453	12.6	0.704	0.689	1.054	0.392	0.647	0.664
Control Delay, s/veh	16.0	14.3	B	26.2	22.8	70.7	9.0	16.9	16.4
LOS	C	B	1	D	C	F	A	C	C
95th %tile Queue, veh	2	2		5	5	20	2	5	5

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	11	432	388	504	768	11	22	166	349	351	43
v/c Ratio	0.12	0.44	0.85	0.48	0.52	0.12	0.23	0.31	0.78	0.77	0.08
Control Delay	48.6	33.1	34.7	6.5	2.0	48.5	51.5	6.2	47.3	46.5	0.3
Queue Delay	0.0	0.0	1.5	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	33.2	36.2	6.9	2.6	48.5	51.5	6.2	47.3	46.5	0.3
Queue Length 50th (ft)	7	134	173	54	14	7	14	13	201	202	0
Queue Length 95th (ft)	25	175	#366	113	0	25	39	34	#364	#362	0
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	91	1029	492	1042	1479	92	97	566	466	473	543
Starvation Cap Reductn	0	0	27	185	361	0	0	0	0	0	0
Spillback Cap Reductn	0	32	0	0	0	0	0	1	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.43	0.83	0.59	0.69	0.12	0.23	0.29	0.75	0.74	0.08

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 (veh/h)	10	365	32	357	464	707	10	20	153	553	91	40
Future Volume (veh/h)	10	365	32	357	464	707	10	20	153	553	91	40
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	397	35	388	504	768	11	22	166	672	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	529	46	688	998	1190	88	92	690	774	0	340
Arrive On Green	0.01	0.16	0.16	0.13	0.18	0.18	0.05	0.05	0.05	0.22	0.00	0.22
Sat Flow, veh/h	1767	3271	287	1767	1856	1572	1767	1856	1563	3534	0	1555
Grp Volume(v), veh/h	11	213	219	388	504	768	11	22	166	672	0	43
Grp Sat Flow(s),veh/h/ln	1767	1763	1795	1767	1856	1572	1767	1856	1563	1767	0	1555
Q Serve(g_s), s	0.6	11.5	11.7	20.6	24.5	25.2	0.6	1.1	0.0	18.3	0.0	2.2
Cycle Q Clear(g_c), s	0.6	11.5	11.7	20.6	24.5	25.2	0.6	1.1	0.0	18.3	0.0	2.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	285	290	688	998	1190	88	92	690	774	0	340
V/C Ratio(X)	0.47	0.75	0.75	0.56	0.50	0.65	0.12	0.24	0.24	0.87	0.00	0.13
Avail Cap(c_a), veh/h	88	405	413	688	998	1190	88	93	691	937	0	412
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.65	0.65	0.65	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.0	40.0	40.0	35.6	29.1	10.7	45.4	45.7	17.6	37.7	0.0	31.4
Incr Delay (d2), s/veh	14.2	16.3	16.6	0.7	0.3	0.8	0.6	1.3	0.2	7.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	6.3	6.5	9.9	12.2	20.3	0.3	0.6	2.3	8.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	56.3	56.6	36.3	29.4	11.5	46.1	47.0	17.7	45.2	0.0	31.5
LnGrp LOS	E	E	E	D	C	B	D	D	B	D	A	C
Approach Vol, veh/h		443			1660			199			715	
Approach Delay, s/veh		56.6			22.7			22.5			44.4	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	43.5	20.7		26.4	5.8	58.3		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	27.5	23.0		26.5	5.0	45.5		5.0				
Max Q Clear Time (g_c+I1), s	22.6	13.7		20.3	2.6	27.2		3.1				
Green Ext Time (p_c), s	0.6	1.8		1.6	0.0	6.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	1088	57	1416	433	235	22	272	11	11
v/c Ratio	0.54	0.54	0.27	0.68	0.42	0.80	0.06	0.53	0.04	0.02
Control Delay	49.8	11.7	36.7	13.6	2.3	56.8	29.3	10.4	28.9	0.1
Queue Delay	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	11.8	36.7	13.6	2.3	56.8	29.3	10.4	28.9	0.1
Queue Length 50th (ft)	49	243	33	338	32	140	11	19	6	0
Queue Length 95th (ft)	m72	295	m43	m489	m32	220	30	87	20	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	152	2124	227	2072	1026	352	470	574	349	539
Starvation Cap Reductn	0	180	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	50	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.56	0.25	0.70	0.42	0.67	0.05	0.47	0.03	0.02

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)	70	950	51	52	1303	398	216	20	250	10	0	10
Future Volume (veh/h)	70	950	51	52	1303	398	216	20	250	10	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	1033	55	57	1416	0	235	22	272	11	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	1236	66	534	2151		342	371	314	277	0	314
Arrive On Green	0.07	0.48	0.48	0.30	0.61	0.00	0.20	0.20	0.20	0.20	0.00	0.20
Sat Flow, veh/h	1767	3403	181	1767	3526	1572	1392	1856	1572	1077	0	1572
Grp Volume(v), veh/h	76	535	553	57	1416	0	235	22	272	11	0	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1821	1767	1763	1572	1392	1856	1572	1077	0	1572
Q Serve(g_s), s	4.2	26.3	26.3	2.3	26.2	0.0	16.4	1.0	16.7	0.8	0.0	0.6
Cycle Q Clear(g_c), s	4.2	26.3	26.3	2.3	26.2	0.0	16.9	1.0	16.7	1.8	0.0	0.6
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	640	661	534	2151		342	371	314	277	0	314
V/C Ratio(X)	0.78	0.84	0.84	0.11	0.66		0.69	0.06	0.87	0.04	0.00	0.04
Avail Cap(c_a), veh/h	150	918	949	534	2151		419	473	401	336	0	401
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.8	23.3	23.3	25.2	12.7	0.0	39.1	32.4	38.7	33.1	0.0	32.2
Incr Delay (d2), s/veh	11.1	10.3	10.0	0.1	1.6	0.0	3.5	0.1	14.7	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.3	11.6	1.0	9.9	0.0	5.8	0.4	7.6	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	33.6	33.3	25.3	14.3	0.0	42.5	32.5	53.4	33.2	0.0	32.3
LnGrp LOS	E	C	C	C	B		D	C	D	C	A	C
Approach Vol, veh/h		1164			1473	A		529			22	
Approach Delay, s/veh		35.0			14.7			47.7			32.7	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.7	40.8		24.5	10.0	65.5		24.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.2	52.1		25.5	8.5	52.5		25.5				
Max Q Clear Time (g_c+I1), s	4.3	28.3		3.8	6.2	28.2		18.9				
Green Ext Time (p_c), s	0.0	8.0		0.0	0.0	12.3		1.1				

Intersection Summary		
HCM 6th Ctrl Delay	27.7	
HCM 6th LOS	C	

Notes

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	972	65	1205	417	203	54	174	209	489
v/c Ratio	1.25	0.74	0.56	1.01	0.79	0.22	0.10	0.73	0.46	0.92
Control Delay	168.1	17.9	64.0	62.1	52.8	28.9	0.4	59.6	35.0	46.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.1	17.9	64.0	62.1	52.8	28.9	0.4	59.6	35.0	46.8
Queue Length 50th (ft)	~135	84	41	~461	132	52	0	106	110	190
Queue Length 95th (ft)	#225	#197	#98	#595	#189	82	0	#188	178	#376
Internal Link Dist (ft)		353		673		608			523	
Turn Bay Length (ft)	295		235		140		130	225		
Base Capacity (vph)	274	1316	120	1195	549	990	561	265	503	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.74	0.54	1.01	0.76	0.21	0.10	0.66	0.42	0.86

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 (veh/h)	315	591	304	60	918	190	384	187	50	160	192	450
Future Volume (veh/h)	315	591	304	60	918	190	384	187	50	160	192	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	642	0	65	998	207	417	203	54	174	209	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	801	1759		84	906	188	489	576	257	207	256	
Arrive On Green	0.23	0.49	0.00	0.05	0.31	0.31	0.14	0.16	0.16	0.12	0.14	0.00
Sat Flow, veh/h	3456	3647	0	1781	2924	605	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	342	642	0	65	606	599	417	203	54	174	209	0
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1781	1777	1752	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	8.4	11.1	0.0	3.6	31.0	31.0	11.8	5.1	3.0	9.6	10.9	0.0
Cycle Q Clear(g_c), s	8.4	11.1	0.0	3.6	31.0	31.0	11.8	5.1	3.0	9.6	10.9	0.0
Prop In Lane	1.00		0.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	801	1759		84	551	543	489	576	257	207	256	
V/C Ratio(X)	0.43	0.37		0.78	1.10	1.10	0.85	0.35	0.21	0.84	0.82	
Avail Cap(c_a), veh/h	801	1759		116	551	543	553	995	444	267	505	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	15.6	0.0	47.1	34.5	34.5	41.9	37.2	36.3	43.3	42.0	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.0	19.6	68.4	70.0	11.2	0.4	0.4	16.9	6.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.5	0.0	2.0	23.3	23.2	5.6	2.2	1.1	5.0	5.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	16.2	0.0	66.8	102.9	104.5	53.1	37.6	36.7	60.2	48.3	0.0
LnGrp LOS	C	B		E	F	F	D	D	D	E	D	
Approach Vol, veh/h		984	A		1270			674			383	A
Approach Delay, s/veh		22.0			101.8			47.1			53.7	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	54.0	18.6	18.2	27.7	35.5	16.1	20.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	32.5	16.0	27.0	8.0	31.0	15.0	28.0
Max Q Clear Time (g_c+I1), s	5.6	13.1	13.8	12.9	10.4	33.0	11.6	7.1
Green Ext Time (p_c), s	0.0	4.3	0.4	0.8	0.0	0.0	0.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	112	880	63	574
v/c Ratio	0.49	0.36	0.12	0.38
Control Delay	24.5	7.3	3.1	4.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.5	7.3	3.1	4.0
Queue Length 50th (ft)	25	95	5	69
Queue Length 95th (ft)	68	160	16	145
Internal Link Dist (ft)	2642	1057		1090
Turn Bay Length (ft)			60	
Base Capacity (vph)	711	2455	507	1508
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.36	0.12	0.38

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	48	55	752	58	58	528	
Future Volume (veh/h)	48	55	752	58	58	528	
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	1900	1900	1870	1870	1870	1870	
Adj Flow Rate, veh/h	52	60	817	63	63	574	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	2	2	2	2	
Cap, veh/h	67	77	2288	176	541	1474	
Arrive On Green	0.09	0.09	0.68	0.68	0.05	0.79	
Sat Flow, veh/h	769	888	3437	258	1781	1870	
Grp Volume(v), veh/h	113	0	434	446	63	574	
Grp Sat Flow(s),veh/h/ln	1672	0	1777	1824	1781	1870	
Q Serve(g_s), s	5.3	0.0	8.2	8.2	0.7	7.5	
Cycle Q Clear(g_c), s	5.3	0.0	8.2	8.2	0.7	7.5	
Prop In Lane	0.46	0.53		0.14	1.00		
Lane Grp Cap(c), veh/h	146	0	1216	1249	541	1474	
V/C Ratio(X)	0.78	0.00	0.36	0.36	0.12	0.39	
Avail Cap(c_a), veh/h	669	0	1216	1249	580	1474	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.71	0.71	1.00	1.00	
Uniform Delay (d), s/veh	35.7	0.0	5.3	5.3	3.2	2.6	
Incr Delay (d2), s/veh	8.5	0.0	0.6	0.6	0.1	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	2.4	0.0	2.4	2.5	0.2	1.6	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	44.3	0.0	5.9	5.8	3.3	3.4	
LnGrp LOS	D	A	A	A	A	A	
Approach Vol, veh/h	113		880			637	
Approach Delay, s/veh	44.3		5.8			3.4	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	8.3	59.8				68.0	12.0
Change Period (Y+Rc), s	4.5	5.0				5.0	5.0
Max Green Setting (Gmax), s	5.5	28.0				38.0	32.0
Max Q Clear Time (g_c+I1), s	2.7	10.2				9.5	7.3
Green Ext Time (p_c), s	0.0	5.2				3.9	0.3

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	210	146	38	570	38	442	110
v/c Ratio	0.57	0.29	0.20	0.66	0.20	0.51	0.14
Control Delay	21.2	7.5	27.7	18.4	27.7	14.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	7.5	27.7	18.4	27.7	14.4	4.4
Queue Length 50th (ft)	41	6	10	95	10	67	1
Queue Length 95th (ft)	113	44	40	#362	40	226	29
Internal Link Dist (ft)	560	1033		1337		1057	
Turn Bay Length (ft)			30		70		60
Base Capacity (vph)	781	972	189	933	189	936	822
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	0.27	0.15	0.20	0.61	0.20	0.47	0.13

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 (veh/h)	141	10	42	10	20	104	35	514	10	35	407	101
Future Volume (veh/h)	141	10	42	10	20	104	35	514	10	35	407	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	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	153	11	46	11	22	113	38	559	11	38	442	110
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	365	29	66	109	63	253	77	713	14	77	730	614
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.39	0.39	0.04	0.39	0.39
Sat Flow, veh/h	1039	146	332	56	313	1263	1781	1828	36	1781	1870	1573
Grp Volume(v), veh/h	210	0	0	146	0	0	38	0	570	38	442	110
Grp Sat Flow(s),veh/h/ln	1517	0	0	1632	0	0	1781	0	1864	1781	1870	1573
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.0	0.8	0.0	10.6	0.8	7.5	1.8
Cycle Q Clear(g_c), s	4.6	0.0	0.0	3.1	0.0	0.0	0.8	0.0	10.6	0.8	7.5	1.8
Prop In Lane	0.73		0.22	0.08		0.77	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	461	0	0	424	0	0	77	0	727	77	730	614
V/C Ratio(X)	0.46	0.00	0.00	0.34	0.00	0.00	0.49	0.00	0.78	0.49	0.61	0.18
Avail Cap(c_a), veh/h	1104	0	0	1195	0	0	225	0	1107	225	1111	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	13.9	0.0	0.0	18.5	0.0	10.6	18.5	9.6	7.9
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.5	0.0	0.0	4.8	0.0	2.1	4.8	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	1.0	0.0	0.0	0.4	0.0	3.4	0.4	2.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	14.4	0.0	0.0	23.4	0.0	12.7	23.4	10.4	8.0
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	B	A
Approach Vol, veh/h		210			146			608			590	
Approach Delay, s/veh		15.1			14.4			13.4			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	20.4		12.4	6.7	20.4		12.4				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	5.0	23.5		27.0	5.0	23.5		27.0				
Max Q Clear Time (g_c+I1), s	2.8	12.6		6.6	2.8	9.5		5.1				
Green Ext Time (p_c), s	0.0	2.7		1.2	0.0	2.6		0.8				

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

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	322	318	16	272	165	284	227
v/c Ratio	0.30	0.68	0.51	0.12	0.65	0.34	0.69	0.13
Control Delay	39.0	35.9	6.7	46.1	38.5	6.7	39.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	35.9	6.7	46.1	38.5	6.7	39.7	13.8
Queue Length 50th (ft)	17	150	0	8	131	0	137	30
Queue Length 95th (ft)	58	278	65	32	241	45	256	68
Internal Link Dist (ft)	284	314			712			1337
Turn Bay Length (ft)							120	
Base Capacity (vph)	151	715	780	129	654	669	621	2210
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.45	0.41	0.12	0.42	0.25	0.46	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	12	286	10	293	15	250	152	261	199	10
Future Volume (veh/h)	20	10	12	286	10	293	15	250	152	261	199	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	11	13	311	11	318	16	272	165	284	216	11
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	34	17	20	500	18	437	34	381	317	339	1290	65
Arrive On Green	0.04	0.04	0.04	0.29	0.29	0.29	0.02	0.20	0.20	0.19	0.38	0.38
Sat Flow, veh/h	794	397	469	1723	61	1506	1781	1870	1558	1781	3440	174
Grp Volume(v), veh/h	46	0	0	322	0	318	16	272	165	284	111	116
Grp Sat Flow(s),veh/h/ln	1659	0	0	1784	0	1506	1781	1870	1558	1781	1777	1837
Q Serve(g_s), s	1.9	0.0	0.0	10.9	0.0	13.2	0.6	9.4	6.6	10.7	2.9	2.9
Cycle Q Clear(g_c), s	1.9	0.0	0.0	10.9	0.0	13.2	0.6	9.4	6.6	10.7	2.9	2.9
Prop In Lane	0.48		0.28	0.97		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	70	0	0	518	0	437	34	381	317	339	667	689
V/C Ratio(X)	0.65	0.00	0.00	0.62	0.00	0.73	0.47	0.71	0.52	0.84	0.17	0.17
Avail Cap(c_a), veh/h	131	0	0	705	0	595	128	645	537	614	1098	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	0.0	21.4	0.0	22.2	33.8	25.8	24.7	27.1	14.5	14.5
Incr Delay (d2), s/veh	9.9	0.0	0.0	1.2	0.0	2.9	9.7	2.5	1.3	5.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	4.5	0.0	4.8	0.3	4.0	2.3	4.8	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	0.0	22.6	0.0	25.1	43.5	28.3	26.0	32.6	14.6	14.6
LnGrp LOS	D	A	A	C	A	C	D	C	C	C	B	B
Approach Vol, veh/h		46			640			453			511	
Approach Delay, s/veh		42.7			23.8			28.0			24.6	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.3	19.2		7.4	6.3	31.1		24.7				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	24.0	24.0		5.5	5.0	43.0		27.5				
Max Q Clear Time (g_c+I1), s	12.7	11.4		3.9	2.6	4.9		15.2				
Green Ext Time (p_c), s	0.6	1.6		0.0	0.0	1.3		2.7				

Intersection Summary		
HCM 6th Ctrl Delay	25.7	
HCM 6th LOS	C	

Intersection has too many lanes per leg.
HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	197	135	221	208	122	401
Future Vol, veh/h	197	135	221	208	122	401
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	214	147	240	226	133	436
Number of Lanes	1	1	1	2	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	16.3	15.4	26.1
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	221	104	104	197	135	122	401
LT Vol	221	0	0	197	0	0	0
Through Vol	0	104	104	0	0	122	0
RT Vol	0	0	0	0	135	0	401
Lane Flow Rate	240	113	113	214	147	133	436
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.532	0.234	0.178	0.492	0.287	0.268	0.795
Departure Headway (Hd)	7.978	7.466	5.675	8.271	7.052	7.282	6.566
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	480	631	437	509	493	554
Service Time	5.723	5.211	3.419	6.018	4.799	5.024	4.307
HCM Lane V/C Ratio	0.531	0.235	0.179	0.49	0.289	0.27	0.787
HCM Control Delay	19.5	12.5	9.7	18.8	12.6	12.7	30.2
HCM Lane LOS	C	B	A	C	B	B	D
HCM 95th-tile Q	3.1	0.9	0.6	2.6	1.2	1.1	7.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	3	192	10	0	0	0	0	386	20
Future Volume (vph)	0	0	0	3	192	10	0	0	0	0	386	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3	209	11	0	0	0	0	420	22

Direction, Lane #	WB 1	WB 2	SB 1
Volume Total (vph)	212	11	442
Volume Left (vph)	3	0	0
Volume Right (vph)	0	11	22
Hadj (s)	0.04	-0.57	0.00
Departure Headway (s)	5.0	3.2	4.5
Degree Utilization, x	0.29	0.01	0.55
Capacity (veh/h)	671	1121	785
Control Delay (s)	10.1	6.2	12.8
Approach Delay (s)	9.9		12.8
Approach LOS	A		B

Intersection Summary				
Delay	11.8			
Level of Service	B			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	192	10	0	0	0	0	386	20
Future Vol, veh/h	0	0	0	3	192	10	0	0	0	0	386	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	209	11	0	0	0	0	420	22
Number of Lanes	0	0	0	0	1	1	0	0	0	0	1	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	2
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	10.9	13.1
HCM LOS	B	B

Lane	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	0%	0%
Vol Thru, %	98%	0%	95%
Vol Right, %	0%	100%	5%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	195	10	406
LT Vol	3	0	0
Through Vol	192	0	386
RT Vol	0	10	20
Lane Flow Rate	212	11	441
Geometry Grp	7	7	2
Degree of Util (X)	0.329	0.015	0.555
Departure Headway (Hd)	5.58	4.865	4.531
Convergence, Y/N	Yes	Yes	Yes
Cap	642	731	794
Service Time	3.339	2.624	2.562
HCM Lane V/C Ratio	0.33	0.015	0.555
HCM Control Delay	11.1	7.7	13.1
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.4	0	3.5

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	372	1222	439	586	126	315	615	429	329
v/c Ratio	0.11	0.79	0.82	0.55	0.53	0.67	0.70	0.38	0.76	0.50
Control Delay	58.1	64.1	41.2	33.4	5.2	78.8	67.6	7.6	66.1	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	64.1	41.2	33.4	5.2	78.8	67.6	7.6	66.1	48.0
Queue Length 50th (ft)	21	155	523	308	56	117	153	71	201	129
Queue Length 95th (ft)	53	221	651	438	141	189	207	94	270	185
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	252	524	1580	857	1140	244	577	1691	639	740
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	0.10	0.71	0.77	0.51	0.51	0.52	0.55	0.36	0.67	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	223	120	1124	404	539	116	290	566	395	210	93
Future Volume (veh/h)	23	223	120	1124	404	539	116	290	566	395	210	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	242	130	1222	439	586	126	315	615	429	228	101
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	231	293	152	1437	778	879	152	540	1584	499	490	210
Arrive On Green	0.13	0.13	0.13	0.42	0.42	0.42	0.09	0.15	0.15	0.14	0.20	0.20
Sat Flow, veh/h	1781	2262	1174	3456	1870	1564	1781	3554	2790	3456	2420	1037
Grp Volume(v), veh/h	25	188	184	1222	439	586	126	315	615	429	165	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1659	1728	1870	1564	1781	1777	1395	1728	1777	1681
Q Serve(g_s), s	1.6	13.4	14.0	41.4	23.2	34.1	9.0	10.7	15.8	15.7	10.6	11.2
Cycle Q Clear(g_c), s	1.6	13.4	14.0	41.4	23.2	34.1	9.0	10.7	15.8	15.7	10.6	11.2
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	231	230	215	1437	778	879	152	540	1584	499	360	340
V/C Ratio(X)	0.11	0.82	0.85	0.85	0.56	0.67	0.83	0.58	0.39	0.86	0.46	0.48
Avail Cap(c_a), veh/h	267	266	248	1669	903	984	258	609	1638	675	393	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	54.9	55.2	34.2	28.9	20.0	58.3	51.1	15.5	54.2	45.5	45.7
Incr Delay (d2), s/veh	0.2	15.9	21.8	3.9	0.6	1.5	10.8	1.1	0.2	8.4	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.1	7.2	17.5	10.3	12.1	4.4	4.7	10.0	7.4	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	70.8	77.0	38.1	29.5	21.5	69.2	52.3	15.7	62.6	46.4	46.7
LnGrp LOS	D	E	E	D	C	C	E	D	B	E	D	D
Approach Vol, veh/h		397			2247			1056			758	
Approach Delay, s/veh		72.3			32.1			33.0			55.6	
Approach LOS		E			C			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.4	25.5		21.4	16.9	32.0		59.3				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 25	22.2		19.4	18.8	* 29		62.6				
Max Q Clear Time (g_c+I1), s	17.7	17.8		16.0	11.0	13.2		43.4				
Green Ext Time (p_c), s	1.0	1.8		0.8	0.2	1.7		10.5				

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	830	299	136	1223	304	683	394	310	509
v/c Ratio	0.71	0.74	0.42	0.70	0.92	0.41	0.92	0.60	0.84	0.75
Control Delay	72.1	36.9	5.5	64.9	43.1	6.8	58.9	40.6	59.1	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	36.9	5.5	64.9	43.1	6.8	58.9	40.6	59.1	38.9
Queue Length 50th (ft)	40	252	0	85	388	18	223	122	187	134
Queue Length 95th (ft)	#92	362	63	#182	#598	86	#362	172	#342	192
Internal Link Dist (ft)		1510			1609			962		896
Turn Bay Length (ft)	140			80			150		110	
Base Capacity (vph)	168	1119	705	207	1331	742	742	859	416	952
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	0.71	0.74	0.42	0.66	0.92	0.41	0.92	0.46	0.75	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 (veh/h)	110	764	275	125	1125	280	628	308	54	285	269	200
Future Volume (veh/h)	110	764	275	125	1125	280	628	308	54	285	269	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	830	299	136	1223	304	683	335	59	310	292	217
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	170	1155	515	166	1312	580	738	639	111	345	377	272
Arrive On Green	0.05	0.33	0.33	0.09	0.37	0.37	0.21	0.21	0.21	0.19	0.19	0.19
Sat Flow, veh/h	3456	3554	1585	1781	3554	1572	3456	3022	526	1781	1969	1422
Grp Volume(v), veh/h	120	830	299	136	1223	304	683	195	199	310	263	246
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1572	1728	1777	1771	1781	1777	1614
Q Serve(g_s), s	3.5	21.0	8.8	7.6	33.7	15.4	19.7	9.9	10.1	17.3	14.3	14.8
Cycle Q Clear(g_c), s	3.5	21.0	8.8	7.6	33.7	15.4	19.7	9.9	10.1	17.3	14.3	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.88
Lane Grp Cap(c), veh/h	170	1155	515	166	1312	580	738	376	375	345	340	309
V/C Ratio(X)	0.71	0.72	0.58	0.82	0.93	0.52	0.93	0.52	0.53	0.90	0.77	0.80
Avail Cap(c_a), veh/h	170	1155	515	208	1333	590	739	434	433	418	471	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	30.3	8.7	45.3	30.9	25.1	39.3	35.6	35.7	40.1	39.1	39.3
Incr Delay (d2), s/veh	12.7	2.2	1.6	18.3	11.8	0.8	17.5	1.1	1.2	19.5	5.2	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.9	0.2	4.1	15.7	5.6	9.9	4.3	4.4	9.2	6.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	32.5	10.4	63.7	42.7	25.9	56.8	36.7	36.8	59.6	44.3	46.4
LnGrp LOS	E	C	B	E	D	C	E	D	D	E	D	D
Approach Vol, veh/h		1249			1663			1077			819	
Approach Delay, s/veh		29.9			41.4			49.4			50.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.6	26.3	24.0	9.5	42.1	24.2	26.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	31.3	21.8	27.0	5.0	38.2	23.9	24.9
Max Q Clear Time (g_c+I1), s	9.5	23.0	21.7	16.8	5.5	35.7	19.3	12.1
Green Ext Time (p_c), s	0.1	4.0	0.0	2.1	0.0	1.9	0.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	392	1075	375	406	1134	216	380	507	272	357	320
v/c Ratio	0.91	0.93	0.50	0.80	0.92	0.32	0.80	0.61	0.74	0.92	0.48
Control Delay	91.4	62.9	6.5	76.6	58.8	5.4	77.3	52.7	79.5	87.8	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	62.9	6.5	76.6	58.8	5.4	77.3	52.7	79.5	87.8	24.3
Queue Length 50th (ft)	214	563	8	216	583	2	201	239	144	372	151
Queue Length 95th (ft)	#335	#716	91	283	697	58	264	311	200	#587	258
Internal Link Dist (ft)		1323			2509			853		451	
Turn Bay Length (ft)	225		485	125		390	160		140		
Base Capacity (vph)	432	1269	786	561	1403	743	561	895	432	410	663
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.85	0.48	0.72	0.81	0.29	0.68	0.57	0.63	0.87	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 (veh/h)	380	1043	364	394	1100	210	369	376	115	264	346	310
Future Volume (veh/h)	380	1043	364	394	1100	210	369	376	115	264	346	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	392	1075	375	406	1134	216	380	388	119	272	357	320
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	435	1201	535	454	1298	578	436	648	196	323	390	530
Arrive On Green	0.13	0.35	0.35	0.14	0.38	0.38	0.13	0.25	0.25	0.10	0.22	0.22
Sat Flow, veh/h	3319	3413	1521	3319	3413	1521	3319	2579	781	3319	1796	1522
Grp Volume(v), veh/h	392	1075	375	406	1134	216	380	255	252	272	357	320
Grp Sat Flow(s),veh/h/ln	1659	1706	1521	1659	1706	1521	1659	1706	1653	1659	1796	1522
Q Serve(g_s), s	17.1	43.8	21.2	17.7	45.3	15.1	16.5	19.4	19.8	11.8	28.5	25.5
Cycle Q Clear(g_c), s	17.1	43.8	21.2	17.7	45.3	15.1	16.5	19.4	19.8	11.8	28.5	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	435	1201	535	454	1298	578	436	429	415	323	390	530
V/C Ratio(X)	0.90	0.90	0.70	0.89	0.87	0.37	0.87	0.60	0.61	0.84	0.92	0.60
Avail Cap(c_a), veh/h	452	1323	590	587	1463	652	587	476	461	452	428	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	45.1	18.9	62.4	42.3	32.9	62.6	48.5	48.6	65.2	56.2	39.6
Incr Delay (d2), s/veh	20.6	7.8	3.3	11.6	5.7	0.4	10.5	1.7	1.9	9.8	23.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	18.9	7.8	8.0	19.1	5.6	7.5	8.4	8.3	5.4	15.2	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.5	52.8	22.2	74.0	47.9	33.3	73.1	50.1	50.5	75.0	79.3	41.2
LnGrp LOS	F	D	C	E	D	C	E	D	D	E	E	D
Approach Vol, veh/h		1842			1756			887			949	
Approach Delay, s/veh		53.1			52.2			60.1			65.2	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	59.0	23.3	37.2	23.3	63.2	18.3	42.2
Change Period (Y+Rc), s	7.3	* 7.3	4.0	5.3	4.0	7.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	* 57	26.0	35.0	20.0	63.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	19.7	45.8	18.5	30.5	19.1	47.3	13.8	21.8
Green Ext Time (p_c), s	0.4	5.9	0.8	1.4	0.1	7.1	0.5	2.8

Intersection Summary	
HCM 6th Ctrl Delay	56.1
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized			MOYes									
Traffic Volume (veh/h)	300	350	150	326	280	180	62	453	358	100	630	300
Future Volume (veh/h)	300	350	150	326	280	180	62	453	358	100	630	300
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	323	376	161	351	301	194	67	487	385	108	677	323
Approach Volume (veh/h)		699			846			939			1108	
Crossing Volume (veh/h)		1136			877			807			719	
High Capacity (veh/h)		557			688			729			783	
High v/c (veh/h)		1.26			1.23			1.29			1.42	
Low Capacity (veh/h)		426			539			575			622	
Low v/c (veh/h)		1.64			1.57			1.63			1.78	

Intersection Summary					
Maximum v/c High	1.42				
Maximum v/c Low	1.78				
Intersection Capacity Utilization	114.7%	ICU Level of Service		H	

Intersection	
Intersection Delay, s/veh	24.0
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	860	846	939	1108
Demand Flow Rate, veh/h	869	855	949	1119
Vehicles Circulating, veh/h	1148	886	815	727
Vehicles Exiting, veh/h	698	878	1039	1014
Ped Vol Crossing Leg, #/h	1	1	1	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	23.7	21.0	27.8	23.3
Approach LOS	C	C	D	C

Lane	Left	Right	Bypass	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	R	L	TR	LT	R	LT	TR
Assumed Moves	LT	TR	R	L	TR	LT	R	LT	TR
RT Channelized			Yield						
Lane Util	0.470	0.530		0.415	0.585	0.590	0.410	0.470	0.530
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	163	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	332	374	478	355	500	560	389	526	593
Cap Entry Lane, veh/h	470	535	0.990	597	669	638	710	692	765
Entry HV Adj Factor	0.990	0.991	161	0.989	0.990	0.990	0.990	0.990	0.990
Flow Entry, veh/h	329	371	473	351	495	554	385	521	587
Cap Entry, veh/h	465	530	0.340	591	662	631	703	685	758
V/C Ratio	0.707	0.699	13.2	0.594	0.748	0.878	0.548	0.761	0.775
Control Delay, s/veh	27.9	24.5	B	17.6	23.5	37.5	13.9	23.8	22.9
LOS	D	C	1	C	C	E	B	C	C
95th %tile Queue, veh	5	5		4	7	10	3	7	8

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	552	309	511	764	7	54	319	388	396	117
v/c Ratio	0.18	0.55	0.84	0.56	0.58	0.07	0.49	0.70	0.79	0.79	0.21
Control Delay	48.0	34.4	45.4	13.2	4.3	46.4	61.6	28.0	45.0	45.2	2.4
Queue Delay	0.0	0.0	0.0	0.9	0.2	0.0	0.0	2.8	1.7	1.8	0.0
Total Delay	48.0	34.4	45.4	14.0	4.5	46.4	61.6	30.8	46.8	47.0	2.4
Queue Length 50th (ft)	13	171	192	198	174	4	34	80	226	231	0
Queue Length 95th (ft)	38	222	#323	310	222	19	#83	177	#384	#391	18
Internal Link Dist (ft)		346		307			744			674	
Turn Bay Length (ft)	65		125			140		165	150		185
Base Capacity (vph)	116	1033	404	935	1338	104	110	484	515	523	587
Starvation Cap Reductn	0	0	0	189	95	0	0	0	0	0	0
Spillback Cap Reductn	0	6	0	0	0	0	0	82	41	42	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.54	0.76	0.68	0.61	0.07	0.49	0.79	0.82	0.82	0.20

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 (veh/h)	20	487	32	290	480	718	7	51	300	639	98	110
Future Volume (veh/h)	20	487	32	290	480	718	7	51	300	639	98	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	21	518	34	309	511	764	7	54	319	754	0	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	234	647	42	606	749	1007	90	94	619	871	0	386
Arrive On Green	0.13	0.19	0.19	0.34	0.40	0.40	0.05	0.05	0.05	0.24	0.00	0.24
Sat Flow, veh/h	1795	3410	223	1795	1885	1559	1795	1885	1598	3591	0	1591
Grp Volume(v), veh/h	21	272	280	309	511	764	7	54	319	754	0	117
Grp Sat Flow(s),veh/h/ln	1795	1791	1842	1795	1885	1559	1795	1885	1598	1795	0	1591
Q Serve(g_s), s	1.0	14.5	14.6	13.8	22.4	34.6	0.4	2.8	0.0	20.1	0.0	6.0
Cycle Q Clear(g_c), s	1.0	14.5	14.6	13.8	22.4	34.6	0.4	2.8	0.0	20.1	0.0	6.0
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	340	350	606	749	1007	90	94	619	871	0	386
V/C Ratio(X)	0.09	0.80	0.80	0.51	0.68	0.76	0.08	0.57	0.52	0.87	0.00	0.30
Avail Cap(c_a), veh/h	234	439	451	606	792	1042	99	104	627	1059	0	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	38.7	38.7	26.5	24.9	12.7	45.3	46.5	23.4	36.3	0.0	31.0
Incr Delay (d2), s/veh	0.2	17.6	17.5	0.5	1.7	2.4	0.4	6.2	0.7	6.6	0.0	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	0.5	8.0	8.3	5.9	10.1	19.7	0.2	1.5	5.7	9.4	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	56.3	56.2	27.0	26.6	15.1	45.7	52.6	24.1	42.9	0.0	31.4
LnGrp LOS	D	E	E	C	C	B	D	D	C	D	A	C
Approach Vol, veh/h		573			1584			380			871	
Approach Delay, s/veh		55.6			21.1			28.6			41.3	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	23.5		28.8	17.5	44.2		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	2.5	24.5		29.5	5.0	42.0		5.5				
Max Q Clear Time (g_c+I1), s	1.5	16.6		22.1	3.0	36.6		4.8				
Green Ext Time (p_c), s	0.5	2.2		2.1	0.0	3.1		0.1				

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

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	1439	30	1289	374	154	158	508	9	32
v/c Ratio	0.38	0.82	0.08	0.61	0.36	0.75	0.76	0.75	0.06	0.07
Control Delay	49.7	22.0	32.8	6.3	0.9	62.1	62.5	31.6	35.1	0.3
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	23.6	32.8	6.3	0.9	62.1	62.5	31.6	35.1	0.3
Queue Length 50th (ft)	61	337	19	116	4	97	101	255	5	0
Queue Length 95th (ft)	m94	413	m23	m141	m10	#172	#183	375	19	0
Internal Link Dist (ft)		307		269			836			575
Turn Bay Length (ft)	120		220		145	130		110	95	
Base Capacity (vph)	265	1759	382	2185	1076	243	247	675	167	494
Starvation Cap Reductn	0	167	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	51	0	0	0	0	0	3
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.90	0.08	0.60	0.35	0.63	0.64	0.75	0.05	0.07

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 (veh/h)	87	1298	40	28	1199	348	260	30	472	8	0	30
Future Volume (veh/h)	87	1298	40	28	1199	348	260	30	472	8	0	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		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	94	1396	43	30	1289	0	303	0	508	9	0	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	482	1567	48	478	1576		530	0	675	212	0	250
Arrive On Green	0.27	0.44	0.44	0.27	0.44	0.00	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1795	3544	109	1795	3582	1598	2776	0	1598	899	0	1598
Grp Volume(v), veh/h	94	704	735	30	1289	0	303	0	508	9	0	32
Grp Sat Flow(s),veh/h/ln	1795	1791	1862	1795	1791	1598	1388	0	1598	899	0	1598
Q Serve(g_s), s	4.0	36.2	36.3	1.2	31.5	0.0	10.5	0.0	0.3	0.9	0.0	1.7
Cycle Q Clear(g_c), s	4.0	36.2	36.3	1.2	31.5	0.0	12.3	0.0	0.3	0.9	0.0	1.7
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	482	792	824	478	1576		530	0	675	212	0	250
V/C Ratio(X)	0.19	0.89	0.89	0.06	0.82		0.57	0.00	0.75	0.04	0.00	0.13
Avail Cap(c_a), veh/h	482	844	877	478	2013		610	0	721	238	0	296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	25.6	25.7	27.4	24.5	0.0	41.6	0.0	24.4	36.0	0.0	36.3
Incr Delay (d2), s/veh	0.1	10.6	10.4	0.1	4.8	0.0	1.0	0.0	4.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	17.0	17.7	0.5	13.8	0.0	3.6	0.0	10.4	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	36.2	36.1	27.4	29.3	0.0	42.6	0.0	28.6	36.0	0.0	36.6
LnGrp LOS	C	D	D	C	C		D	A	C	D	A	D
Approach Vol, veh/h		1533			1319	A		811			41	
Approach Delay, s/veh		35.7			29.3			33.8			36.4	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.1	48.7		20.1	31.4	48.5		20.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.9	47.1		18.5	11.8	56.2		18.5				
Max Q Clear Time (g_c+I1), s	3.2	38.3		3.7	6.0	33.5		14.3				
Green Ext Time (p_c), s	0.0	5.9		0.1	0.1	10.5		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	508	1364	105	982	311	255	74	148	301	526
v/c Ratio	0.96	0.95	0.73	0.83	0.74	0.33	0.15	0.74	0.76	0.92
Control Delay	58.0	30.2	74.3	37.5	54.2	33.5	0.7	65.0	49.7	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	30.2	74.3	37.5	54.2	33.5	0.7	65.0	49.7	39.9
Queue Length 50th (ft)	~182	~181	67	298	100	70	0	92	175	147
Queue Length 95th (ft)	m#269	#584	#157	#390	#148	106	0	#180	269	#345
Internal Link Dist (ft)		353		673		608			523	
Turn Bay Length (ft)	295		235		140		130	225		
Base Capacity (vph)	530	1432	144	1182	431	857	508	212	442	600
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	0.96	0.95	0.73	0.83	0.72	0.30	0.15	0.70	0.68	0.88

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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	880	416	100	779	154	295	242	70	141	286	500
Future Volume (veh/h)	483	880	416	100	779	154	295	242	70	141	286	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	508	926	0	105	820	162	311	255	74	148	301	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	769	1627		132	912	180	380	690	308	179	345	
Arrive On Green	0.22	0.45	0.00	0.07	0.31	0.31	0.11	0.19	0.19	0.10	0.18	0.00
Sat Flow, veh/h	3483	3676	0	1795	2973	587	3483	3582	1598	1795	1885	1598
Grp Volume(v), veh/h	508	926	0	105	494	488	311	255	74	148	301	0
Grp Sat Flow(s),veh/h/ln	1742	1791	0	1795	1791	1770	1742	1791	1598	1795	1885	1598
Q Serve(g_s), s	13.3	19.0	0.0	5.8	26.4	26.4	8.7	6.2	3.9	8.1	15.5	0.0
Cycle Q Clear(g_c), s	13.3	19.0	0.0	5.8	26.4	26.4	8.7	6.2	3.9	8.1	15.5	0.0
Prop In Lane	1.00		0.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	769	1627		132	549	543	380	690	308	179	345	
V/C Ratio(X)	0.66	0.57		0.80	0.90	0.90	0.82	0.37	0.24	0.83	0.87	
Avail Cap(c_a), veh/h	769	1627		135	584	577	432	860	383	214	443	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.5	20.1	0.0	45.6	33.2	33.2	43.6	35.1	34.2	44.2	39.7	0.0
Incr Delay (d2), s/veh	2.1	1.5	0.0	27.1	20.2	20.4	10.5	0.3	0.4	19.7	14.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	8.0	0.0	3.5	14.1	14.0	4.2	2.7	1.5	4.4	8.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	21.5	0.0	72.7	53.4	53.6	54.1	35.4	34.6	63.9	53.8	0.0
LnGrp LOS	D	C		E	D	D	D	D	C	E	D	
Approach Vol, veh/h		1434	A		1087			640			449	A
Approach Delay, s/veh		27.2			55.3			44.4			57.1	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	49.9	15.4	22.8	26.6	35.2	14.5	23.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	38.6	12.4	23.5	13.5	32.6	11.9	24.0
Max Q Clear Time (g_c+I1), s	7.8	21.0	10.7	17.5	15.3	28.4	10.1	8.2
Green Ext Time (p_c), s	0.0	6.3	0.2	0.8	0.0	2.3	0.1	1.5

Intersection Summary

HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

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

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	741	100	897
v/c Ratio	0.53	0.32	0.18	0.63
Control Delay	25.5	7.7	3.5	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.5	7.7	3.5	7.3
Queue Length 50th (ft)	32	79	9	150
Queue Length 95th (ft)	79	138	25	325
Internal Link Dist (ft)	2642	1037		1110
Turn Bay Length (ft)			60	
Base Capacity (vph)	724	2291	565	1434
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.32	0.18	0.63

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	62	61	637	52	93	834	
Future Volume (veh/h)	62	61	637	52	93	834	
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	1900	1900	1885	1885	1885	1885	
Adj Flow Rate, veh/h	67	66	685	56	100	897	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	0	0	1	1	1	1	
Cap, veh/h	86	84	2219	181	606	1459	
Arrive On Green	0.10	0.10	0.66	0.66	0.06	0.77	
Sat Flow, veh/h	846	834	3447	274	1795	1885	
Grp Volume(v), veh/h	134	0	366	375	100	897	
Grp Sat Flow(s),veh/h/ln	1693	0	1791	1835	1795	1885	
Q Serve(g_s), s	6.2	0.0	6.9	7.0	1.2	16.4	
Cycle Q Clear(g_c), s	6.2	0.0	6.9	7.0	1.2	16.4	
Prop In Lane	0.50	0.49		0.15	1.00		
Lane Grp Cap(c), veh/h	171	0	1185	1215	606	1459	
V/C Ratio(X)	0.78	0.00	0.31	0.31	0.17	0.61	
Avail Cap(c_a), veh/h	677	0	1185	1215	652	1459	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.76	0.76	1.00	1.00	
Uniform Delay (d), s/veh	35.1	0.0	5.8	5.8	3.4	3.9	
Incr Delay (d2), s/veh	7.5	0.0	0.5	0.5	0.1	1.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.2	2.2	0.3	4.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	42.6	0.0	6.3	6.3	3.5	5.9	
LnGrp LOS	D	A	A	A	A	A	
Approach Vol, veh/h	134		741			997	
Approach Delay, s/veh	42.6		6.3			5.6	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.0	57.9				66.9	13.1
Change Period (Y+Rc), s	4.5	5.0				5.0	5.0
Max Green Setting (Gmax), s	6.5	27.0				38.0	32.0
Max Q Clear Time (g_c+I1), s	3.2	9.0				18.4	8.2
Green Ext Time (p_c), s	0.1	4.3				6.7	0.4

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	165	62	25	441	54	575	169
v/c Ratio	0.53	0.31	0.19	0.61	0.27	0.58	0.20
Control Delay	36.5	22.1	42.6	24.0	38.4	18.2	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	22.1	42.6	24.0	38.4	18.2	6.9
Queue Length 50th (ft)	66	9	11	162	23	158	14
Queue Length 95th (ft)	149	49	41	311	67	389	62
Internal Link Dist (ft)	560	1033		1337		1037	
Turn Bay Length (ft)			30		70		60
Base Capacity (vph)	713	683	129	840	467	1149	983
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	0.23	0.09	0.19	0.53	0.12	0.50	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	10	17	10	10	42	25	427	10	53	569	167
Future Volume (veh/h)	137	10	17	10	10	42	25	427	10	53	569	167
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		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	138	10	17	10	10	42	25	431	10	54	575	169
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	209	15	26	19	19	79	52	599	14	173	742	625
Arrive On Green	0.14	0.14	0.14	0.07	0.07	0.07	0.03	0.33	0.33	0.10	0.39	0.39
Sat Flow, veh/h	1483	107	183	267	267	1120	1795	1835	43	1795	1885	1587
Grp Volume(v), veh/h	165	0	0	62	0	0	25	0	441	54	575	169
Grp Sat Flow(s),veh/h/ln	1773	0	0	1654	0	0	1795	0	1877	1795	1885	1587
Q Serve(g_s), s	4.6	0.0	0.0	1.9	0.0	0.0	0.7	0.0	10.7	1.5	13.8	3.8
Cycle Q Clear(g_c), s	4.6	0.0	0.0	1.9	0.0	0.0	0.7	0.0	10.7	1.5	13.8	3.8
Prop In Lane	0.84		0.10	0.16		0.68	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	250	0	0	116	0	0	52	0	613	173	742	625
V/C Ratio(X)	0.66	0.00	0.00	0.53	0.00	0.00	0.48	0.00	0.72	0.31	0.77	0.27
Avail Cap(c_a), veh/h	939	0	0	859	0	0	173	0	1030	622	1524	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	23.3	0.0	0.0	24.8	0.0	15.4	21.9	13.7	10.7
Incr Delay (d2), s/veh	2.9	0.0	0.0	3.8	0.0	0.0	6.6	0.0	1.6	1.0	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.8	0.0	0.0	0.4	0.0	4.1	0.6	5.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	0.0	27.1	0.0	0.0	31.4	0.0	17.0	22.9	15.5	10.9
LnGrp LOS	C	A	A	C	A	A	C	A	B	C	B	B
Approach Vol, veh/h		165			62			466			798	
Approach Delay, s/veh		24.1			27.1			17.8			15.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	22.0		11.8	6.5	25.5		8.2				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	5.0	28.5		27.5	5.0	42.0		27.0				
Max Q Clear Time (g_c+I1), s	3.5	12.7		6.6	2.7	15.8		3.9				
Green Ext Time (p_c), s	0.1	2.4		0.9	0.0	4.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			17.4									
HCM 6th LOS			B									



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	39	199	194	15	291	291	325	307
v/c Ratio	0.29	0.59	0.43	0.12	0.51	0.42	0.78	0.15
Control Delay	30.7	35.1	7.1	38.7	26.9	5.4	43.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	35.1	7.1	38.7	26.9	5.4	43.9	9.6
Queue Length 50th (ft)	10	89	0	7	116	0	148	31
Queue Length 95th (ft)	42	152	47	27	216	58	#320	80
Internal Link Dist (ft)	284	314			712			1337
Turn Bay Length (ft)							120	
Base Capacity (vph)	135	674	709	123	574	690	421	2067
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.30	0.27	0.12	0.51	0.42	0.77	0.15

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 (veh/h)	10	10	16	175	10	180	14	271	271	302	265	20
Future Volume (veh/h)	10	10	16	175	10	180	14	271	271	302	265	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	11	11	17	188	11	194	15	291	291	325	285	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	18	18	28	297	17	276	32	587	495	372	1684	129
Arrive On Green	0.04	0.04	0.04	0.17	0.17	0.17	0.02	0.31	0.31	0.21	0.50	0.50
Sat Flow, veh/h	484	484	748	1701	100	1584	1795	1885	1590	1795	3364	258
Grp Volume(v), veh/h	39	0	0	199	0	194	15	291	291	325	151	156
Grp Sat Flow(s),veh/h/ln	1715	0	0	1800	0	1584	1795	1885	1590	1795	1791	1831
Q Serve(g_s), s	1.6	0.0	0.0	7.2	0.0	8.1	0.6	8.9	10.9	12.4	3.2	3.3
Cycle Q Clear(g_c), s	1.6	0.0	0.0	7.2	0.0	8.1	0.6	8.9	10.9	12.4	3.2	3.3
Prop In Lane	0.28		0.44	0.94		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	65	0	0	314	0	276	32	587	495	372	897	917
V/C Ratio(X)	0.60	0.00	0.00	0.63	0.00	0.70	0.46	0.50	0.59	0.87	0.17	0.17
Avail Cap(c_a), veh/h	121	0	0	688	0	606	127	587	495	432	897	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	0.0	27.1	0.0	27.4	34.3	19.8	20.5	27.1	9.6	9.6
Incr Delay (d2), s/veh	8.6	0.0	0.0	2.1	0.0	3.2	9.9	3.0	5.0	16.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.2	0.0	3.2	0.3	3.9	4.2	6.6	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	0.0	0.0	29.2	0.0	30.7	44.3	22.8	25.5	43.1	10.0	10.0
LnGrp LOS	D	A	A	C	A	C	D	C	C	D	B	B
Approach Vol, veh/h		39			393			597			632	
Approach Delay, s/veh		42.0			29.9			24.6			27.0	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.6	27.0		7.2	6.3	40.3		16.8				
Change Period (Y+Rc), s	5.0	5.0		4.5	5.0	5.0		4.5				
Max Green Setting (Gmax), s	17.0	22.0		5.0	5.0	34.0		27.0				
Max Q Clear Time (g_c+I1), s	14.4	12.9		3.6	2.6	5.3		10.1				
Green Ext Time (p_c), s	0.3	1.8		0.0	0.0	1.7		1.7				

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Intersection has too many lanes per leg.
HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	331	253	150	225	210	245
Future Vol, veh/h	331	253	150	225	210	245
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	341	261	155	232	216	253
Number of Lanes	1	1	1	2	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	23.8	13.5	16.8
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	113	113	331	253	210	245
LT Vol	150	0	0	331	0	0	0
Through Vol	0	113	113	0	0	210	0
RT Vol	0	0	0	0	253	0	245
Lane Flow Rate	155	116	116	341	261	216	253
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.362	0.255	0.198	0.744	0.481	0.466	0.493
Departure Headway (Hd)	8.42	7.906	6.141	7.854	6.64	7.751	7.03
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	455	583	461	543	465	513
Service Time	6.167	5.653	3.888	5.598	4.384	5.498	4.776
HCM Lane V/C Ratio	0.363	0.255	0.199	0.74	0.481	0.465	0.493
HCM Control Delay	15.9	13.4	10.4	30.2	15.4	17.1	16.5
HCM Lane LOS	C	B	B	D	C	C	C
HCM 95th-tile Q	1.6	1	0.7	6.1	2.6	2.4	2.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	316	20	0	0	0	0	400	53
Future Volume (vph)	0	0	0	0	316	20	0	0	0	0	400	53
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
Hourly flow rate (vph)	0	0	0	0	343	22	0	0	0	0	435	58

Direction, Lane #	WB 1	WB 2	SB 1
Volume Total (vph)	343	22	493
Volume Left (vph)	0	0	0
Volume Right (vph)	0	22	58
Hadj (s)	0.02	-0.58	-0.05
Departure Headway (s)	5.2	3.2	4.8
Degree Utilization, x	0.49	0.02	0.66
Capacity (veh/h)	658	1121	722
Control Delay (s)	13.1	6.3	16.5
Approach Delay (s)	12.7		16.5
Approach LOS	B		C

Intersection Summary				
Delay		14.9		
Level of Service		B		
Intersection Capacity Utilization		47.6%	ICU Level of Service	A
Analysis Period (min)		15		

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	316	20	0	0	0	0	400	53
Future Vol, veh/h	0	0	0	0	316	20	0	0	0	0	400	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	0	0	343	22	0	0	0	0	435	58
Number of Lanes	0	0	0	0	1	1	0	0	0	0	1	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	2
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	15.1	17.3
HCM LOS	C	C

Lane	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	0%	88%
Vol Right, %	0%	100%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	316	20	453
LT Vol	0	0	0
Through Vol	316	0	400
RT Vol	0	20	53
Lane Flow Rate	343	22	492
Geometry Grp	7	7	2
Degree of Util (X)	0.557	0.031	0.666
Departure Headway (Hd)	5.833	5.125	4.87
Convergence, Y/N	Yes	Yes	Yes
Cap	622	703	734
Service Time	3.533	2.825	2.954
HCM Lane V/C Ratio	0.551	0.031	0.67
HCM Control Delay	15.6	8	17.3
HCM Lane LOS	C	A	C
HCM 95th-tile Q	3.4	0.1	5.1

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	483	775	278	541	141	424	1199	795	461
v/c Ratio	0.27	0.88	0.73	0.49	0.53	0.70	0.82	0.91	0.91	0.46
Control Delay	58.3	75.2	50.7	45.6	8.8	81.6	73.9	34.2	67.4	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	58.3	75.2	50.7	45.6	8.8	81.6	73.9	34.2	67.4	41.2
Queue Length 50th (ft)	65	234	354	225	116	135	212	320	389	177
Queue Length 95th (ft)	118	#326	431	319	205	207	275	#442	#498	241
Internal Link Dist (ft)		521		1372			611			680
Turn Bay Length (ft)	115		515		115	165		290	305	
Base Capacity (vph)	290	577	1073	582	1043	255	575	1336	922	1033
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	0.26	0.84	0.72	0.48	0.52	0.55	0.74	0.90	0.86	0.45

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 (veh/h)	73	356	113	752	270	525	137	411	1163	771	325	122
Future Volume (veh/h)	73	356	113	752	270	525	137	411	1163	771	325	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	367	116	775	278	541	141	424	1199	795	335	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	280	417	130	996	539	852	166	590	1267	863	799	295
Arrive On Green	0.16	0.16	0.16	0.29	0.29	0.29	0.09	0.16	0.16	0.25	0.31	0.31
Sat Flow, veh/h	1795	2677	834	3483	1885	1594	1795	3582	2812	3483	2560	946
Grp Volume(v), veh/h	75	244	239	775	278	541	141	424	1199	795	233	228
Grp Sat Flow(s),veh/h/ln	1795	1791	1720	1742	1885	1594	1795	1791	1406	1742	1791	1715
Q Serve(g_s), s	5.2	18.7	19.2	28.8	17.4	33.7	10.9	15.8	23.2	31.3	14.4	14.9
Cycle Q Clear(g_c), s	5.2	18.7	19.2	28.8	17.4	33.7	10.9	15.8	23.2	31.3	14.4	14.9
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	280	279	268	996	539	852	166	590	1267	863	559	535
V/C Ratio(X)	0.27	0.87	0.89	0.78	0.52	0.64	0.85	0.72	0.95	0.92	0.42	0.43
Avail Cap(c_a), veh/h	298	298	286	1104	597	901	263	590	1267	948	559	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	58.0	58.3	46.2	42.1	23.2	62.9	55.7	27.6	51.6	38.3	38.4
Incr Delay (d2), s/veh	0.5	22.7	26.7	3.3	0.8	1.4	13.8	4.2	14.3	13.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.3	10.4	12.7	8.1	12.5	5.5	7.3	23.8	15.3	6.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	80.7	85.0	49.4	42.9	24.5	76.7	59.9	41.9	64.9	38.8	38.9
LnGrp LOS	D	F	F	D	D	C	E	E	D	E	D	D
Approach Vol, veh/h		558			1594			1764			1256	
Approach Delay, s/veh		78.8			39.8			49.0			55.3	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	29.0		26.5	18.8	49.7		45.6				
Change Period (Y+Rc), s	* 4.7	5.8		4.6	5.8	* 5.8		5.4				
Max Green Setting (Gmax), s	* 8	23.2		23.4	20.6	* 41		44.6				
Max Q Clear Time (g_c+I1), s	3.3	25.2		21.2	12.9	16.9		35.7				
Green Ext Time (p_c), s	1.5	0.0		0.7	0.2	2.9		4.5				

Intersection Summary		
HCM 6th Ctrl Delay	50.9	
HCM 6th LOS	D	

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	1177	684	140	879	170	445	385	219	559
v/c Ratio	0.72	0.93	0.79	0.88	0.74	0.27	0.87	0.49	0.86	0.73
Control Delay	52.3	43.1	19.4	89.7	32.8	5.2	58.5	29.9	70.5	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	43.1	19.4	89.7	32.8	5.2	58.5	29.9	70.5	37.4
Queue Length 50th (ft)	83	346	146	83	240	0	134	92	128	150
Queue Length 95th (ft)	#148	#543	#356	#209	346	47	#241	135	#280	206
Internal Link Dist (ft)		1510			1609			962		896
Turn Bay Length (ft)	140			80			150		110	
Base Capacity (vph)	399	1271	869	160	1189	638	511	1047	256	1029
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	0.70	0.93	0.79	0.88	0.74	0.27	0.87	0.37	0.86	0.54

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 (veh/h)	270	1130	657	134	844	163	427	276	93	210	407	130
Future Volume (veh/h)	270	1130	657	134	844	163	427	276	93	210	407	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	281	1177	684	140	879	170	445	288	97	219	424	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	357	1284	809	164	1245	554	514	558	184	253	546	172
Arrive On Green	0.10	0.36	0.36	0.09	0.35	0.35	0.15	0.21	0.21	0.14	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1795	3582	1595	3483	2646	873	1795	2676	844
Grp Volume(v), veh/h	281	1177	684	140	879	170	445	193	192	219	282	277
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1595	1742	1791	1728	1795	1791	1729
Q Serve(g_s), s	7.2	28.5	13.4	7.0	19.3	7.1	11.3	8.7	9.0	10.8	13.5	13.8
Cycle Q Clear(g_c), s	7.2	28.5	13.4	7.0	19.3	7.1	11.3	8.7	9.0	10.8	13.5	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		0.49
Lane Grp Cap(c), veh/h	357	1284	809	164	1245	554	514	377	364	253	366	353
V/C Ratio(X)	0.79	0.92	0.85	0.85	0.71	0.31	0.87	0.51	0.53	0.86	0.77	0.78
Avail Cap(c_a), veh/h	410	1302	817	164	1245	554	526	540	521	263	533	514
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	39.8	27.8	8.0	40.6	25.6	21.6	37.8	31.7	31.8	38.1	34.1	34.2
Incr Delay (d2), s/veh	8.7	10.3	8.1	32.8	1.8	0.3	13.9	1.1	1.2	24.0	4.2	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	13.1	5.5	4.5	8.0	2.5	5.6	3.7	3.7	6.3	6.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	38.1	16.1	73.4	27.5	21.9	51.7	32.8	33.0	62.1	38.4	39.1
LnGrp LOS	D	D	B	E	C	C	D	C	C	E	D	D
Approach Vol, veh/h		2142			1189			830			778	
Approach Delay, s/veh		32.4			32.1			43.0			45.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	37.1	17.9	23.0	13.8	36.1	17.3	23.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.3	33.0	13.7	27.0	10.7	30.6	13.3	27.4
Max Q Clear Time (g_c+I1), s	9.0	30.5	13.3	15.8	9.2	21.3	12.8	11.0
Green Ext Time (p_c), s	0.0	2.0	0.1	2.4	0.2	4.2	0.0	1.9

Intersection Summary

HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Appendix C: Freeway LOS Calculation Sheets

Existing AM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	1940	146
Peak Hour Factor (PHF)	0.90	0.83
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2328	187
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.10

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.468
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2328	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	1794	427
Peak Hour Factor (PHF)	0.90	0.91
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2153	498
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.60	0.27

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.353
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2153	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2651	Average Density (D), pc/mi/ln	22.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2221	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	1332
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2221	756
Peak Hour Factor (PHF)	0.90	0.84
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	2863	918
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.49

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.534
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2863	Ramp Junction Speed (S), mi/h	53.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.8
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1465	323
Peak Hour Factor (PHF)	0.90	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1758	347
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.40	0.18

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	16.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1758	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1142	394
Peak Hour Factor (PHF)	0.90	0.73
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1370	545
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.43	0.29

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.321
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1370	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1915	Average Density (D), pc/mi/ln	16.3
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1536	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	922
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1536	890
Peak Hour Factor (PHF)	0.90	0.85
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1843	1100
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.59

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.550
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1843	Ramp Junction Speed (S), mi/h	53.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.4
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	646	260
Peak Hour Factor (PHF)	0.78	0.78
Total Trucks, %	18.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847
Flow Rate (v_i), pc/h	978	394
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.31	0.21

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	978	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1372	Average Density (D), pc/mi/ln	11.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	906	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.78	Flow Rate (v_P), pc/h/ln	686
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	850	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	544
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.24
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	850	248
Peak Hour Factor (PHF)	0.93	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1088	311
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.25	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.479
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1088	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	9.9
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

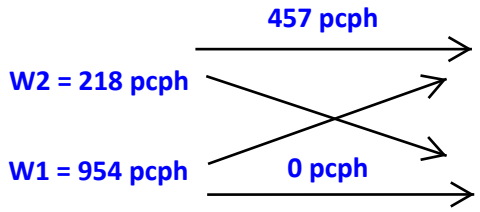
Volume (vph)	892 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	954 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	384 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	457 pcph



V = 1629 pcph
V_w = 1172 pcph
R = 0.19
W1 = 954 pcph
W2 = 218 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Existing AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = A

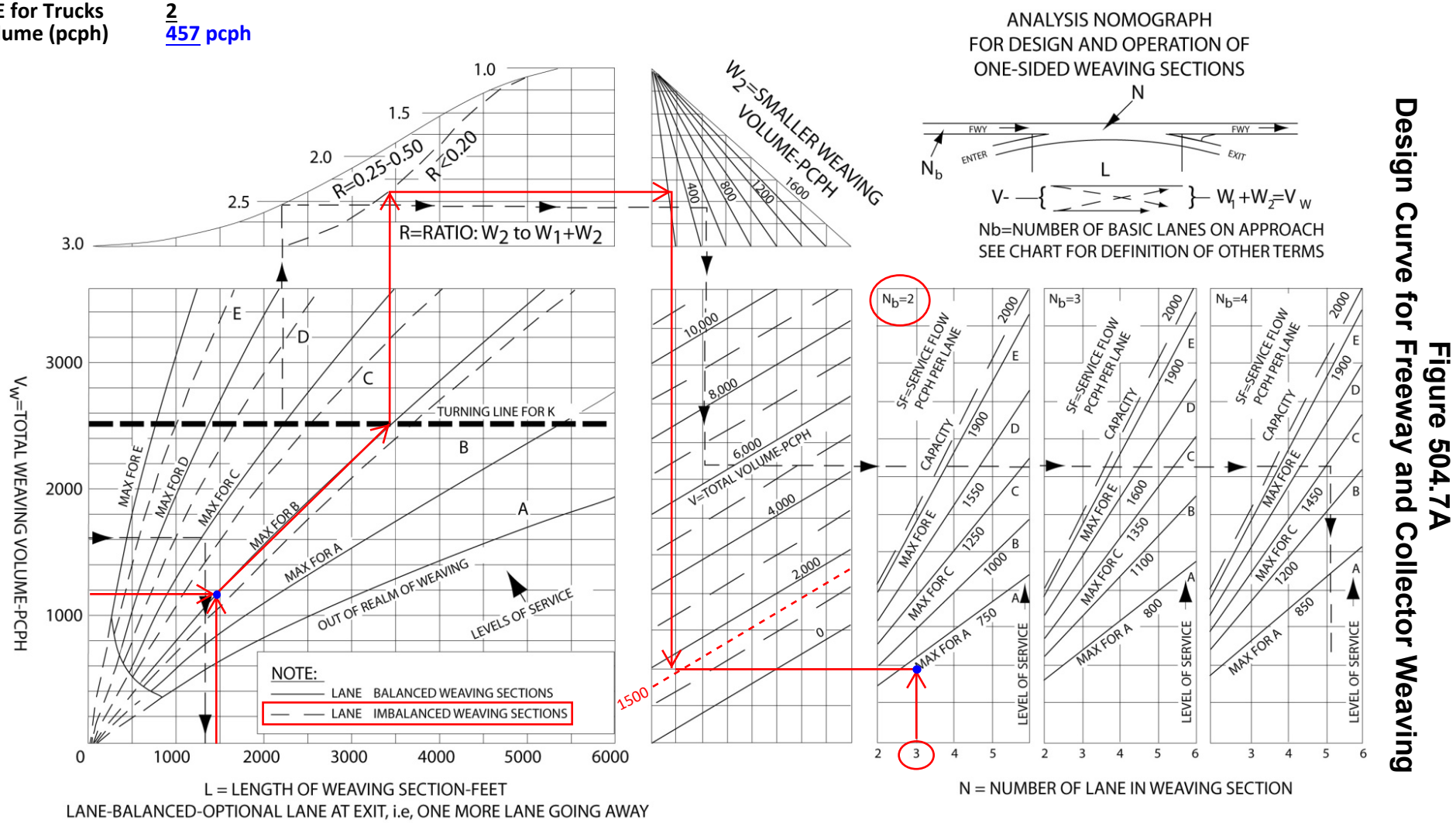


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1276	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	741
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1276	298
Peak Hour Factor (PHF)	0.93	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1482	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.325
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1482	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1805	Average Density (D), pc/mi/ln	15.4
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1574	93
Peak Hour Factor (PHF)	0.93	0.82
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1828	119
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.06

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.462
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1828	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	1830	1190
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2125	1334
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.78	0.71

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.357
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2125	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3459	Average Density (D), pc/mi/ln	29.9
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3020	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	1754
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3020	510
Peak Hour Factor (PHF)	0.93	0.89
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3507	608
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.79	0.32

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.506
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3507	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	32.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	AM
Project Description	EX AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2510	92
Peak Hour Factor (PHF)	0.93	0.88
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2915	111
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.69	0.06

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.380
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2915	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3026	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	C		

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Existing PM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2640	114
Peak Hour Factor (PHF)	0.98	0.73
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2800	158
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.63	0.08

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.466
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2800	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	25.4
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2526	755
Peak Hour Factor (PHF)	0.98	0.92
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2679	829
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.79	0.44

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.428
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2679	Ramp Junction Speed (S), mi/h	56.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3508	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	6/14/2018
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3281	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1740
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
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	28.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3281	1337
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	3616	1378
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.73

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.575
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3616	Ramp Junction Speed (S), mi/h	52.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	34.5
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1944	561
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2062	596
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.32

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.505
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2062	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1383	326
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1467	343
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.318
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1467	Ramp Junction Speed (S), mi/h	58.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1810	Average Density (D), pc/mi/ln	15.4
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1709	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	906
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1709	947
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	1813	1016
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.543
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1813	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.0
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	762	249
Peak Hour Factor (PHF)	0.86	0.86
Total Trucks, %	12.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893
Flow Rate (v_i), pc/h	992	324
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.30	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	992	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1316	Average Density (D), pc/mi/ln	11.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1011	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.86	Flow Rate (v_P), pc/h/ln	658
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.7
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1361	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	896
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1361	327
Peak Hour Factor (PHF)	0.92	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1791	421
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.489
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1791	Ramp Junction Speed (S), mi/h	54.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.4
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

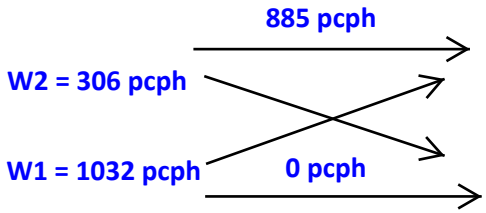
Volume (vph)	992 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1032 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	731 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	885 pcph



V = 2223 pcph
V_w = 1338 pcph
R = 0.23
W1 = 1032 pcph
W2 = 306 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Existing PM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: PM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = B

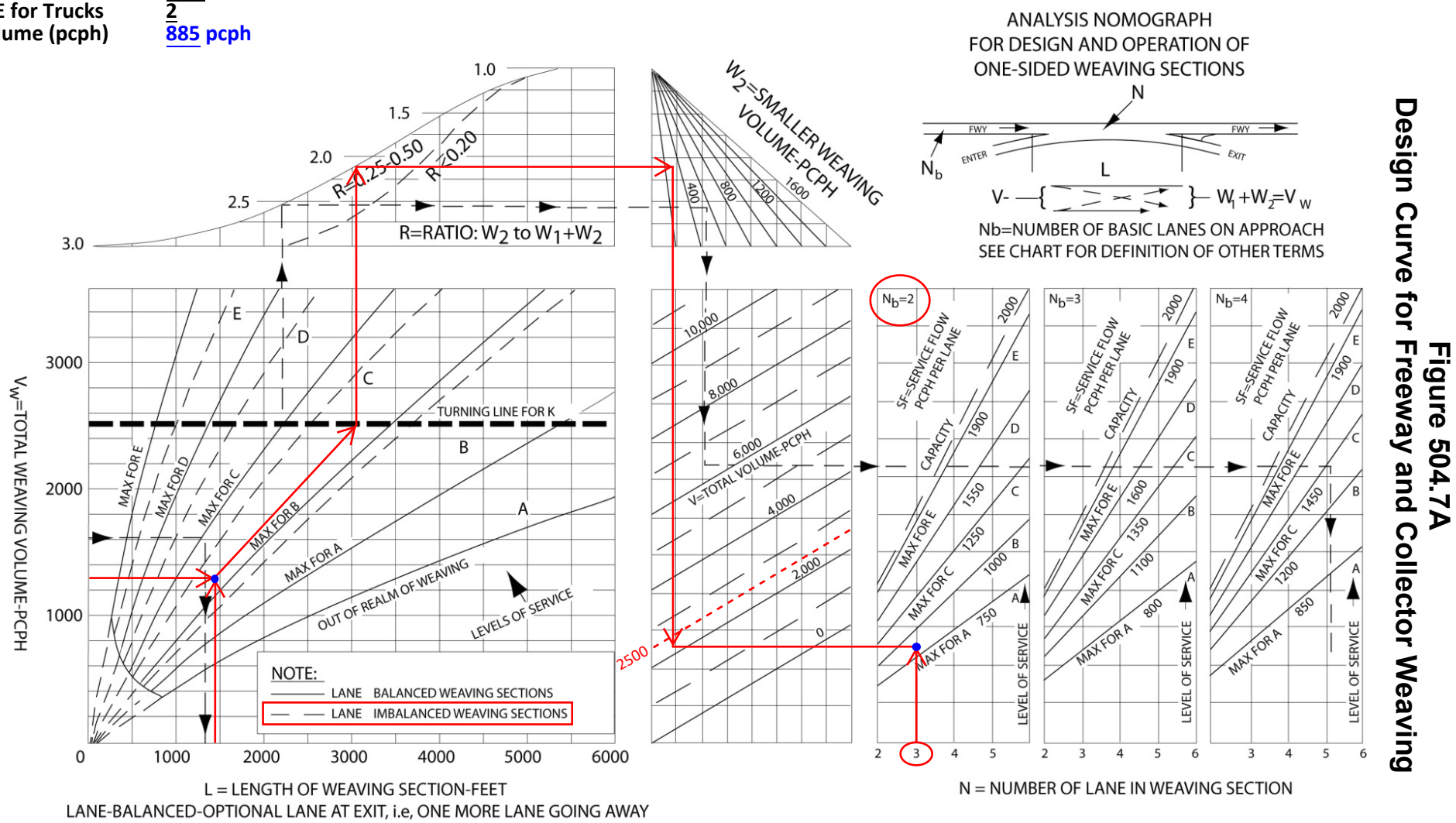


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1723	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	993
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.45
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.8
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1723	205
Peak Hour Factor (PHF)	0.92	0.85
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	1986	244
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.337
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1986	Ramp Junction Speed (S), mi/h	58.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2230	Average Density (D), pc/mi/ln	19.2
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1928	126
Peak Hour Factor (PHF)	0.92	0.77
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2222	165
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.50	0.09

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.466
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2222	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2152	894
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2481	1003
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.79	0.53

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.360
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2481	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3484	Average Density (D), pc/mi/ln	30.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3046	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	1756
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3046	523
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3511	598
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.80	0.32

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.505
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3511	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	32.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2018
Jurisdiction		Time Period Analyzed	PM
Project Description	EX PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2523	146
Peak Hour Factor (PHF)	0.92	0.83
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	2908	181
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.70	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.386
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2908	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3089	Average Density (D), pc/mi/ln	27.1
Level of Service (LOS)	C		

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Existing Plus 1293-Unit Project AM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	1974	146
Peak Hour Factor (PHF)	0.90	0.83
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2369	187
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.468
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2369	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	1828	436
Peak Hour Factor (PHF)	0.90	0.91
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2193	508
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.61	0.27

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.356
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2193	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2701	Average Density (D), pc/mi/ln	23.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2264	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	1358
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2264	799
Peak Hour Factor (PHF)	0.90	0.84
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	2918	971
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.66	0.52

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.539
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2918	Ramp Junction Speed (S), mi/h	53.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.4
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1465	323
Peak Hour Factor (PHF)	0.90	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1758	347
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.40	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	16.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1758	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1142	407
Peak Hour Factor (PHF)	0.90	0.73
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1370	563
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.30

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.321
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1370	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1933	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1549	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	930
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.7
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1549	890
Peak Hour Factor (PHF)	0.90	0.85
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1859	1100
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.59

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.550
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1859	Ramp Junction Speed (S), mi/h	53.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.5
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	659	280	
Peak Hour Factor (PHF)	0.78	0.78	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	997	424	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.32	0.23	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.310
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	997	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1421	Average Density (D), pc/mi/ln	12.1
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	939	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.78	Flow Rate (v_P), pc/h/ln	710
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	865	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	554
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.25
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.3
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	865	259
Peak Hour Factor (PHF)	0.93	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1107	325
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.25	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.481
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1107	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.1
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

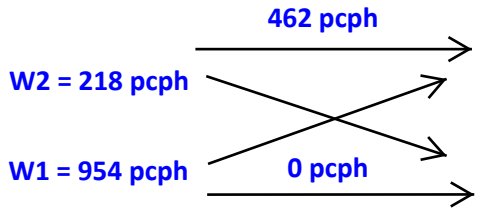
Volume (vph)	892 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	954 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	388 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	462 pcph



V = 1634 pcph
V_w = 1172 pcph
R = 0.19
W1 = 954 pcph
W2 = 218 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Existing Plus 1293 Unit Project AM (US 101 Weave)

On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = A

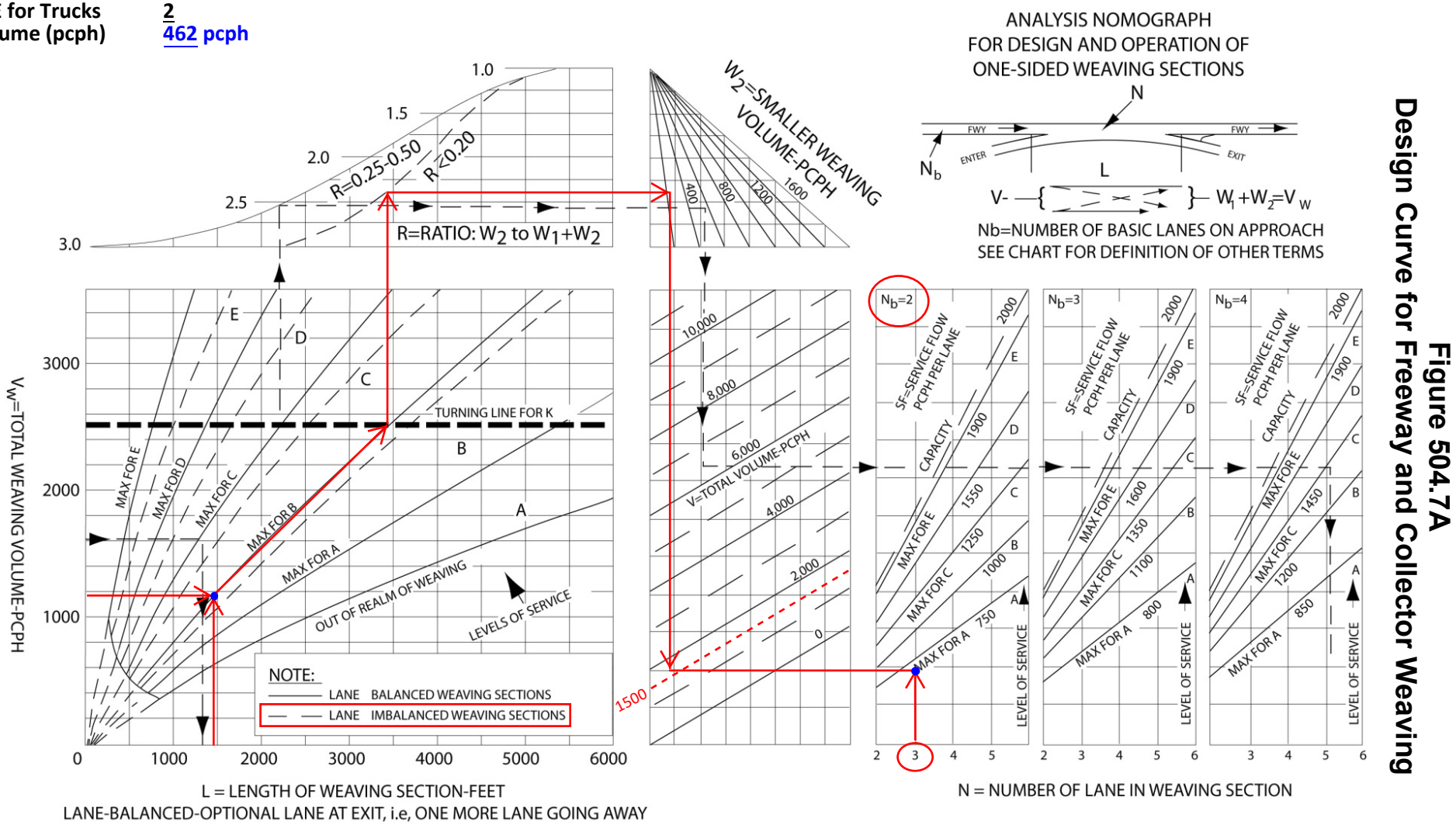


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1280	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	743
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1280	298
Peak Hour Factor (PHF)	0.93	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1486	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.325
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1486	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1809	Average Density (D), pc/mi/ln	15.5
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1578	97
Peak Hour Factor (PHF)	0.93	0.82
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1832	124
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.463
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1832	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	1830	1315
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2125	1475
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.79

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.375
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2125	Ramp Junction Speed (S), mi/h	57.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3600	Average Density (D), pc/mi/ln	31.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3145	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	1826
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3145	536
Peak Hour Factor (PHF)	0.93	0.89
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3652	639
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.83	0.34

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.509
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3652	Ramp Junction Speed (S), mi/h	54.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.8
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293 AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2609	92
Peak Hour Factor (PHF)	0.93	0.88
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3030	111
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.71	0.06

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.390
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3030	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3141	Average Density (D), pc/mi/ln	27.6
Level of Service (LOS)	C		

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Existing Plus 1293-Unit Project PM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2749	114
Peak Hour Factor (PHF)	0.98	0.73
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2916	158
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.66	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.466
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2916	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2635	785
Peak Hour Factor (PHF)	0.98	0.92
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2795	862
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.83	0.46

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	31.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.449
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2795	Ramp Junction Speed (S), mi/h	55.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3657	Average Density (D), pc/mi/ln	32.9
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3420	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1814
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3420	1476
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	3769	1521
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.85	0.81

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	34.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.588
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3769	Ramp Junction Speed (S), mi/h	52.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.2
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1944	561
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2062	596
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.32

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.505
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2062	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1383	335
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1467	352
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.318
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1467	Ramp Junction Speed (S), mi/h	58.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1819	Average Density (D), pc/mi/ln	15.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1718	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	911
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1718	947
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	1822	1016
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.543
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1822	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	771	262
Peak Hour Factor (PHF)	0.86	0.86
Total Trucks, %	12.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893
Flow Rate (v_i), pc/h	1004	341
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.30	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1004	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1345	Average Density (D), pc/mi/ln	11.4
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1033	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.86	Flow Rate (v_P), pc/h/ln	672
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.9
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1411	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	928
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.9
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1411	363
Peak Hour Factor (PHF)	0.92	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1857	468
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.25

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.494
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1857	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

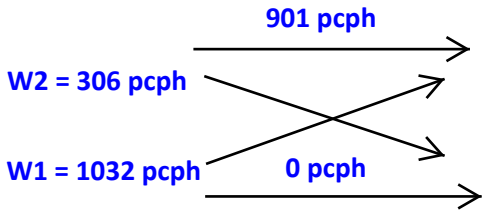
Volume (vph)	992 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1032 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	745 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	901 pcph



L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

V = 2239 pcph

V_w = 1338 pcph

R = 0.23

W1 = 1032 pcph

W2 = 306 pcph

Existing Plus 1293 Unit Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = B

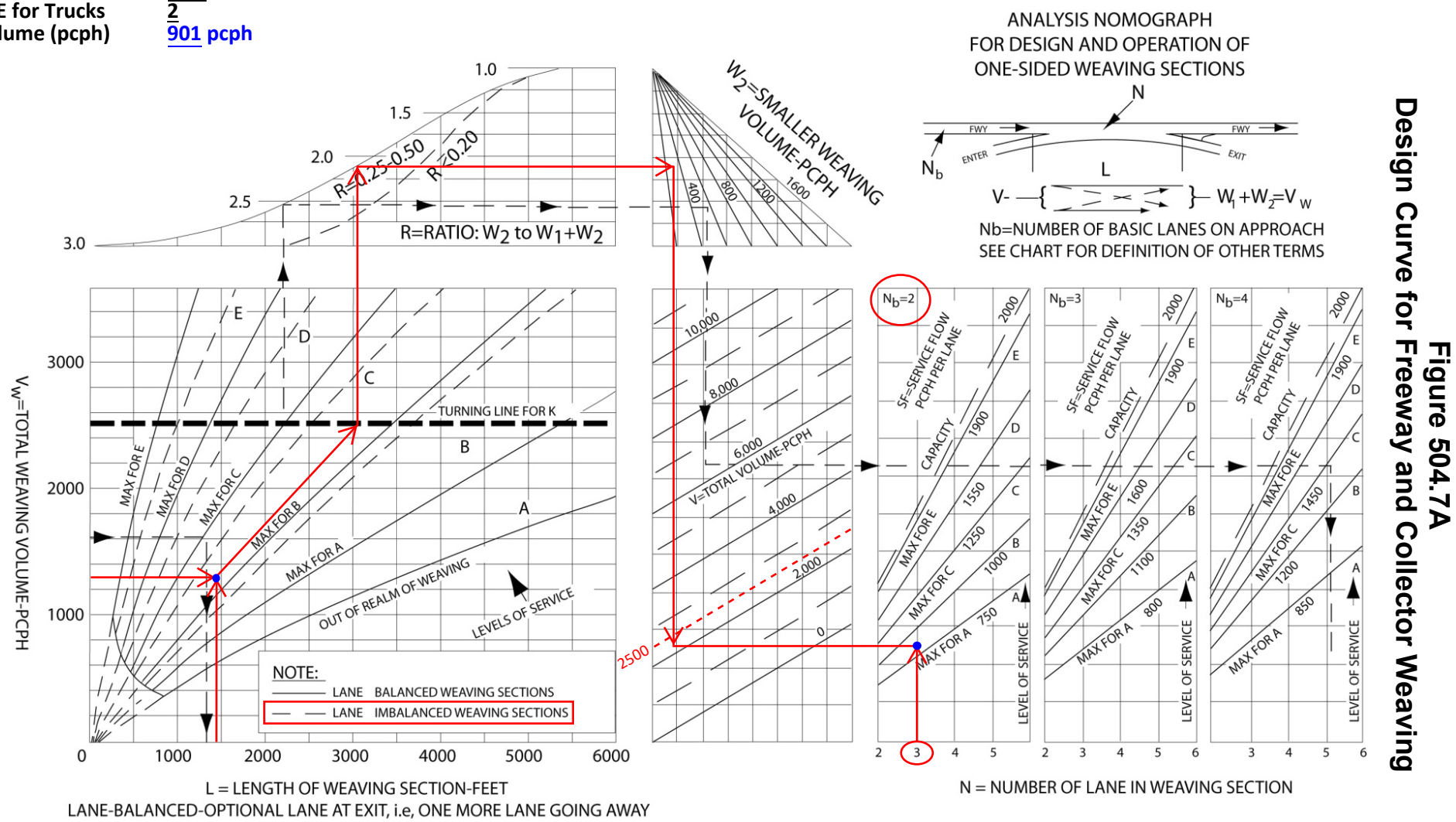


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1737	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	1001
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.45
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1737	205
Peak Hour Factor (PHF)	0.92	0.85
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2002	244
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.338
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2002	Ramp Junction Speed (S), mi/h	58.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2246	Average Density (D), pc/mi/ln	19.3
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors	Freeway	Ramp
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	Freeway	Ramp
Demand Volume (V_i), veh/h	1942	140
Peak Hour Factor (PHF)	0.92	0.77
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2238	184
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.10

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.468
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2238	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors	Freeway	Ramp
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	Freeway	Ramp
Demand Volume (V_i), veh/h	2152	979
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2481	1099
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.81	0.59

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.373
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2481	Ramp Junction Speed (S), mi/h	57.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3580	Average Density (D), pc/mi/ln	31.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3131	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	1804
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
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	29.8
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3131	541
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3609	619
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.33

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.507
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3609	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293 PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2590	146
Peak Hour Factor (PHF)	0.92	0.83
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	2985	181
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.72	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.393
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2985	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3166	Average Density (D), pc/mi/ln	27.8
Level of Service (LOS)	D		

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Existing Plus 1293-Unit and School Project AM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2001	146
Peak Hour Factor (PHF)	0.90	0.83
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2401	187
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.10

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.468
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2401	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	1855	443
Peak Hour Factor (PHF)	0.90	0.91
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2226	516
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.62	0.27

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.359
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2226	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2742	Average Density (D), pc/mi/ln	23.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2298	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	1378
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
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	20.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2298	833
Peak Hour Factor (PHF)	0.90	0.84
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	2962	1012
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.67	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.542
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2962	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.8
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1465	323
Peak Hour Factor (PHF)	0.90	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1758	347
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.40	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	16.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1758	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1142	410
Peak Hour Factor (PHF)	0.90	0.73
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1370	567
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.30

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.321
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1370	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1937	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1552	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.90	Flow Rate (v_P), pc/h/ln	931
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1552	890
Peak Hour Factor (PHF)	0.90	0.85
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1862	1100
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.59

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.550
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1862	Ramp Junction Speed (S), mi/h	53.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	662	284
Peak Hour Factor (PHF)	0.78	0.78
Total Trucks, %	18.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847
Flow Rate (v_i), pc/h	1002	430
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.32	0.23

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	14.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.310
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1002	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1432	Average Density (D), pc/mi/ln	12.2
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	946	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.78	Flow Rate (v_P), pc/h/ln	716
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	878	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	562
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.25
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	878	268
Peak Hour Factor (PHF)	0.93	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1124	336
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.25	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1124	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.3
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

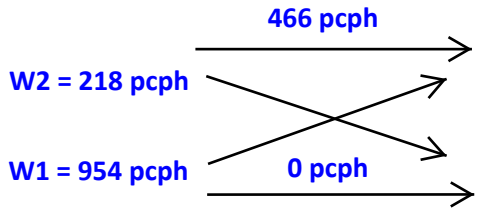
Volume (vph)	892 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	954 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	392 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	466 pcph



V = 1639 pcph
Vw = 1172 pcph
R = 0.19
W1 = 954 pcph
W2 = 218 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Existing Plus 1293 Unit and School Project AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results
Weave LOS = C
Total Volume LOS = A

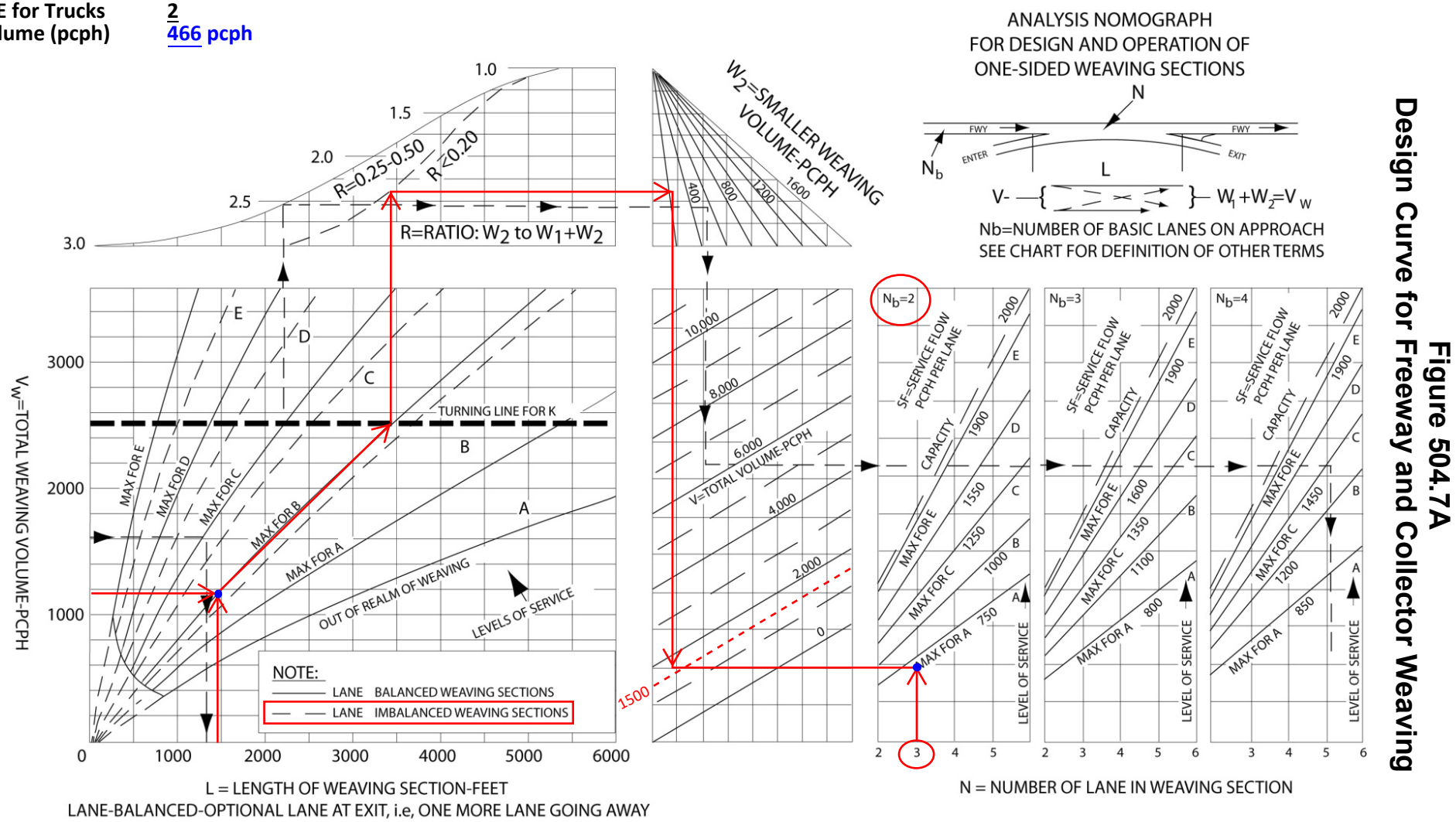


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1284	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	746
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1284	298
Peak Hour Factor (PHF)	0.93	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1491	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.325
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1491	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1814	Average Density (D), pc/mi/ln	15.5
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1582	101
Peak Hour Factor (PHF)	0.93	0.82
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1837	129
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.463
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1837	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	16.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	1830	1345
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2125	1508
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.80

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.380
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2125	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3633	Average Density (D), pc/mi/ln	31.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3175	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.93	Flow Rate (v_P), pc/h/ln	1844
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	59.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3175	542
Peak Hour Factor (PHF)	0.93	0.89
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3687	646
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.84	0.34

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	34.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.510
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3687	Ramp Junction Speed (S), mi/h	54.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	34.1
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	AM
Project Description	EX+1293+School AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2633	92
Peak Hour Factor (PHF)	0.93	0.88
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3057	111
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.72	0.06

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.393
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3057	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3168	Average Density (D), pc/mi/ln	27.8
Level of Service (LOS)	D		

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Existing Plus 1293-Unit and School Project PM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2756	114
Peak Hour Factor (PHF)	0.98	0.73
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2923	158
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.66	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.466
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2923	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2642	786
Peak Hour Factor (PHF)	0.98	0.92
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2802	863
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.83	0.46

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	31.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.450
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2802	Ramp Junction Speed (S), mi/h	55.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3665	Average Density (D), pc/mi/ln	33.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3428	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1818
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3428	1484
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	3777	1530
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.86	0.81

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	35.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.589
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3777	Ramp Junction Speed (S), mi/h	52.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.2
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1944	561
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2062	596
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.32

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.505
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2062	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1383	336
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1467	354
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.319
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1467	Ramp Junction Speed (S), mi/h	58.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1821	Average Density (D), pc/mi/ln	15.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1719	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	912
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1719	947
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	1823	1016
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.41	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.543
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1823	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	772	263
Peak Hour Factor (PHF)	0.86	0.86
Total Trucks, %	12.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893
Flow Rate (v_i), pc/h	1005	342
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.31	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1005	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1347	Average Density (D), pc/mi/ln	11.4
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1035	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.86	Flow Rate (v_P), pc/h/ln	674
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1414	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	930
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.9
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1414	365
Peak Hour Factor (PHF)	0.92	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1861	470
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.42	0.25

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.494
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1861	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

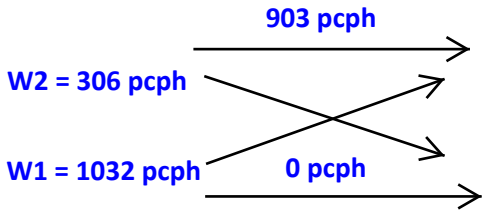
Volume (vph)	992 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1032 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	746 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	903 pcph



L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

V = 2240 pcph

V_w = 1338 pcph

R = 0.23

W1 = 1032 pcph

W2 = 306 pcph

Existing Plus 1293 Unit and School Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = B

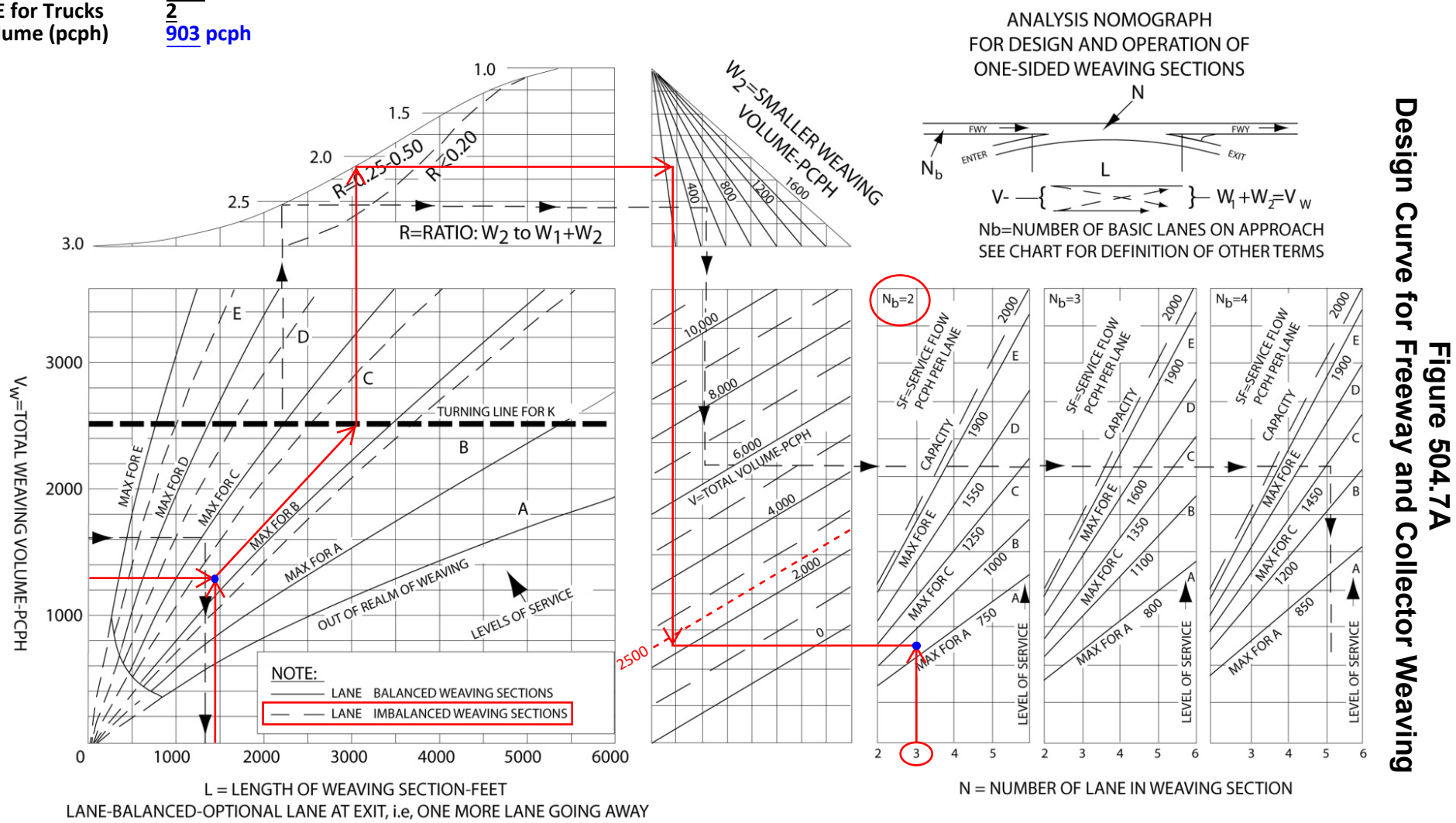


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1738	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	1002
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.45
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1738	205
Peak Hour Factor (PHF)	0.92	0.85
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2003	244
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.338
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2003	Ramp Junction Speed (S), mi/h	58.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2247	Average Density (D), pc/mi/ln	19.3
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1943	141
Peak Hour Factor (PHF)	0.92	0.77
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2240	185
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.468
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2240	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2152	987
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2481	1108
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.81	0.59

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.374
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2481	Ramp Junction Speed (S), mi/h	57.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3589	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3139	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.92	Flow Rate (v_P), pc/h/ln	1809
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
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	29.9
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3139	543
Peak Hour Factor (PHF)	0.92	0.90
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3618	621
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.33

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.507
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3618	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	2019
Jurisdiction		Time Period Analyzed	PM
Project Description	EX+1293+School PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2596	146
Peak Hour Factor (PHF)	0.92	0.83
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	2992	181
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.72	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.393
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2992	Ramp Junction Speed (S), mi/h	56.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3173	Average Density (D), pc/mi/ln	27.9
Level of Service (LOS)	D		

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Near Term AM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2284	250
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2624	282
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.59	0.15

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2624	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	23.9
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2034	461
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2337	520
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.28

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.366
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2337	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2857	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2495	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1433
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
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	21.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2495	849
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3079	922
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.70	0.49

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.534
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3079	Ramp Junction Speed (S), mi/h	53.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	28.8
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1646	342
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1891	368
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.43	0.20

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.485
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1891	Ramp Junction Speed (S), mi/h	54.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.3
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1304	405
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1498	435
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.23

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	17.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.321
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1498	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1933	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1709	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	982
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1709	1017
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1963	1136
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.60

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.554
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1963	Ramp Junction Speed (S), mi/h	52.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	18.6
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	692	287
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	18.00	18.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847
Flow Rate (v_i), pc/h	869	360
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.28	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.307
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	869	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1229	Average Density (D), pc/mi/ln	10.4
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	979	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	615
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.28
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	908	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	575
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	908	264
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1150	331
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.26	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.481
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1150	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.5
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

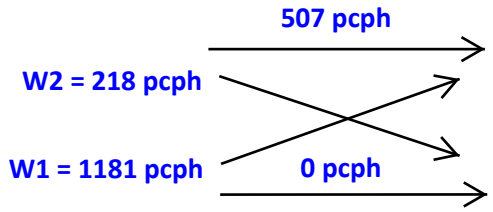
Volume (vph)	1104 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1181 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	426 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	507 pcph



V = 1906 pcph
V_w = 1399 pcph
R = 0.16
W1 = 1181 pcph
W2 = 218 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Near Term AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = A

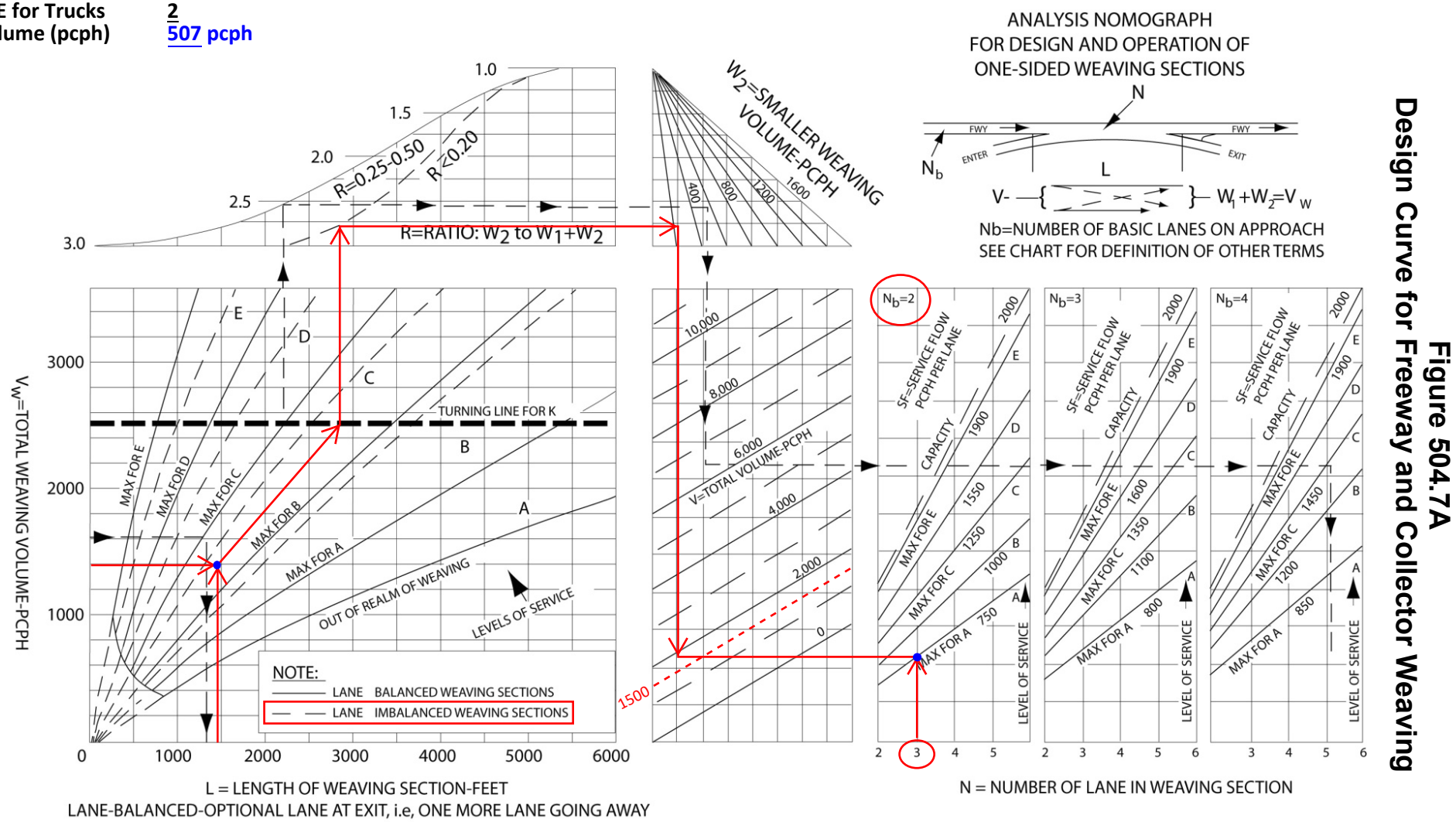


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1530	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	879
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1530	298
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1758	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.332
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1758	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2081	Average Density (D), pc/mi/ln	17.8
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1828	119
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2100	133
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.48	0.07

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.463
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2100	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.0
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2089	1285
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2400	1395
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.86	0.74

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.406
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2400	Ramp Junction Speed (S), mi/h	56.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3795	Average Density (D), pc/mi/ln	33.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3374	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1938
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	57.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3374	640
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3876	722
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.88	0.38

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	35.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.516
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3876	Ramp Junction Speed (S), mi/h	53.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.0
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2734	139
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3141	157
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.75	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.406
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3141	Ramp Junction Speed (S), mi/h	56.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3298	Average Density (D), pc/mi/ln	29.1
Level of Service (LOS)	D		

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Near Term PM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3036	232
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3220	249
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.73	0.13

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.474
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3220	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	29.3
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2804	858
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2974	922
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.88	0.49

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.490
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2974	Ramp Junction Speed (S), mi/h	54.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3896	Average Density (D), pc/mi/ln	35.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3662	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1942
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
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	57.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3662	1474
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4035	1519
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.91	0.81

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	37.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.588
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4035	Ramp Junction Speed (S), mi/h	52.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	38.7
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	2188	578	
Peak Hour Factor (PHF)	0.98	0.95	
Total Trucks, %	4.00	1.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990	
Flow Rate (v_i), pc/h	2321	615	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.53	0.33	

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.507
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2321	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	1610	350	
Peak Hour Factor (PHF)	0.98	0.96	
Total Trucks, %	4.00	1.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990	
Flow Rate (v_i), pc/h	1708	368	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.47	0.20	

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.326
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1708	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2076	Average Density (D), pc/mi/ln	17.7
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1960	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1040
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1960	1140
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2079	1223
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.65

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.561
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2079	Ramp Junction Speed (S), mi/h	52.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.7
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	820	273	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	12.00	12.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893	
Flow Rate (v_i), pc/h	977	325	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.30	0.17	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.308
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	977	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1302	Average Density (D), pc/mi/ln	11.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1093	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	651
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1457	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	938
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1457	346
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1877	446
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.43	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.492
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1877	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.3
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

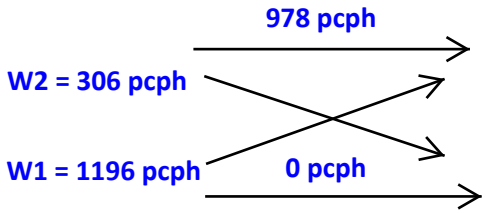
Volume (vph)	1150 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1196 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	808 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	978 pcph



V = 2480 pcph
V_w = 1502 pcph
R = 0.20
W1 = 1196 pcph
W2 = 306 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Near Term PM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: PM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = B

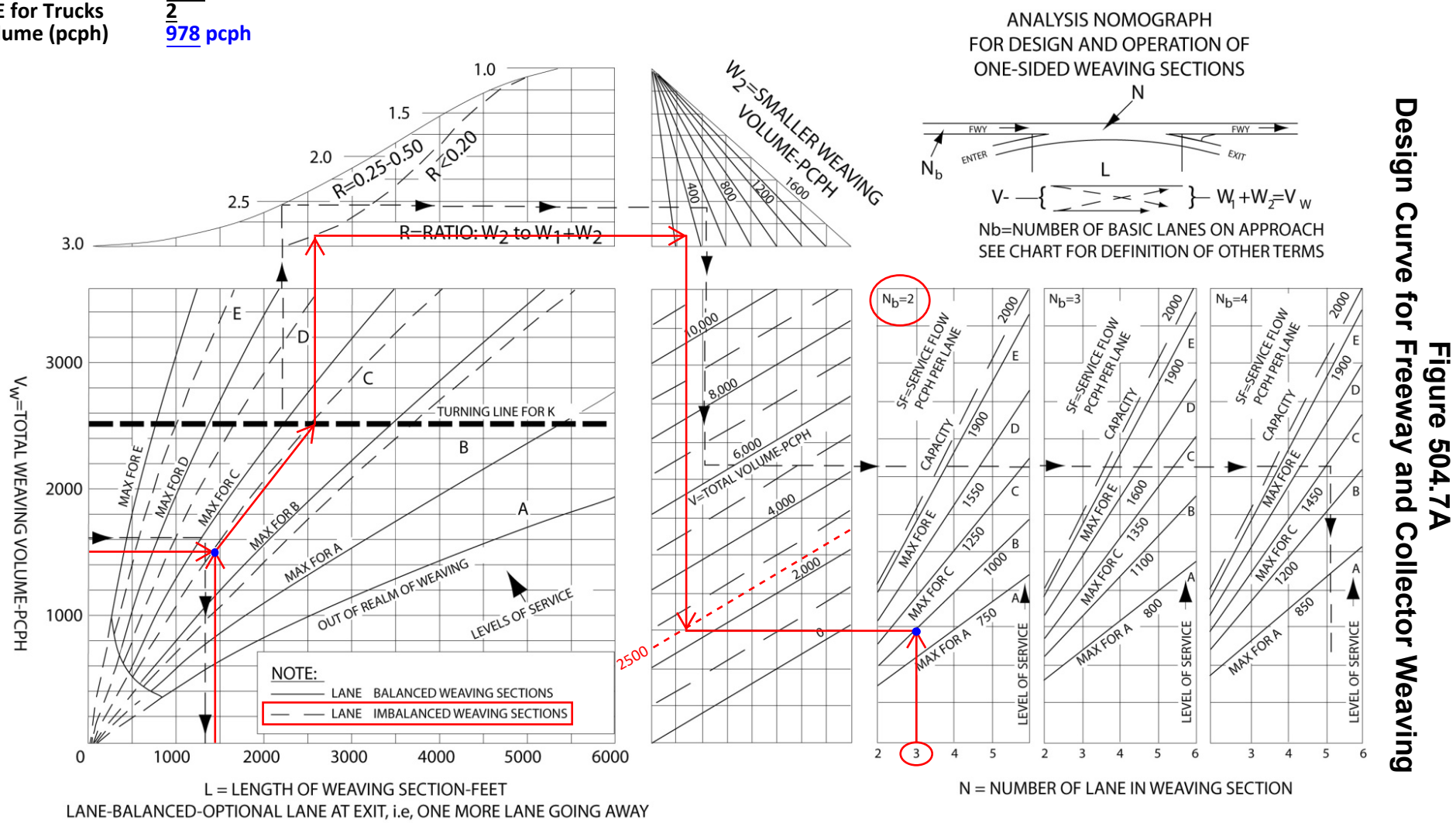


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1958	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1104
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1958	205
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2209	220
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.55	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.345
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2209	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2429	Average Density (D), pc/mi/ln	20.9
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2163	182
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2440	196
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.55	0.10

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.469
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2440	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2373	1011
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2677	1086
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.85	0.58

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.401
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2677	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3763	Average Density (D), pc/mi/ln	33.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3384	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1909
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3384	643
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3818	704
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.87	0.37

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	35.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.515
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3818	Ramp Junction Speed (S), mi/h	53.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	35.4
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2741	211
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3092	231
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.75	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.408
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3092	Ramp Junction Speed (S), mi/h	56.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3323	Average Density (D), pc/mi/ln	29.4
Level of Service (LOS)	D		

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Near Term Plus 1293-Unit Project AM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2318	250
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2663	282
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.60	0.15

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2663	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	24.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2068	470
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2376	530
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.66	0.28

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.369
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2376	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2906	Average Density (D), pc/mi/ln	25.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2538	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1458
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
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	66.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2538	892
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3132	968
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.71	0.52

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.539
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3132	Ramp Junction Speed (S), mi/h	53.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	29.4
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1646	342
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1891	368
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.43	0.20

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.485
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1891	Ramp Junction Speed (S), mi/h	54.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.3
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1304	418
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1498	449
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.322
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1498	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1947	Average Density (D), pc/mi/ln	16.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1722	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	989
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1722	1017
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1978	1136
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.45	0.60

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.554
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1978	Ramp Junction Speed (S), mi/h	52.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	18.7
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	705	307	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	885	386	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.29	0.21	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.308
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	885	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1271	Average Density (D), pc/mi/ln	10.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1012	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	636
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.28
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	923	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	584
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	923	275
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1169	345
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.26	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1169	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.7
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

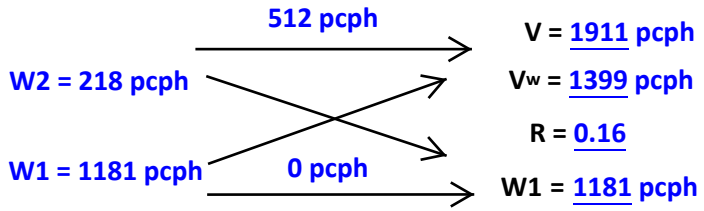
Volume (vph)	1104 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1181 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	430 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	512 pcph



V = 1911 pcph
Vw = 1399 pcph
R = 0.16
W1 = 1181 pcph
W2 = 218 pcph

L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

Near Term Plus 1293 Unit Project AM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: AM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = A

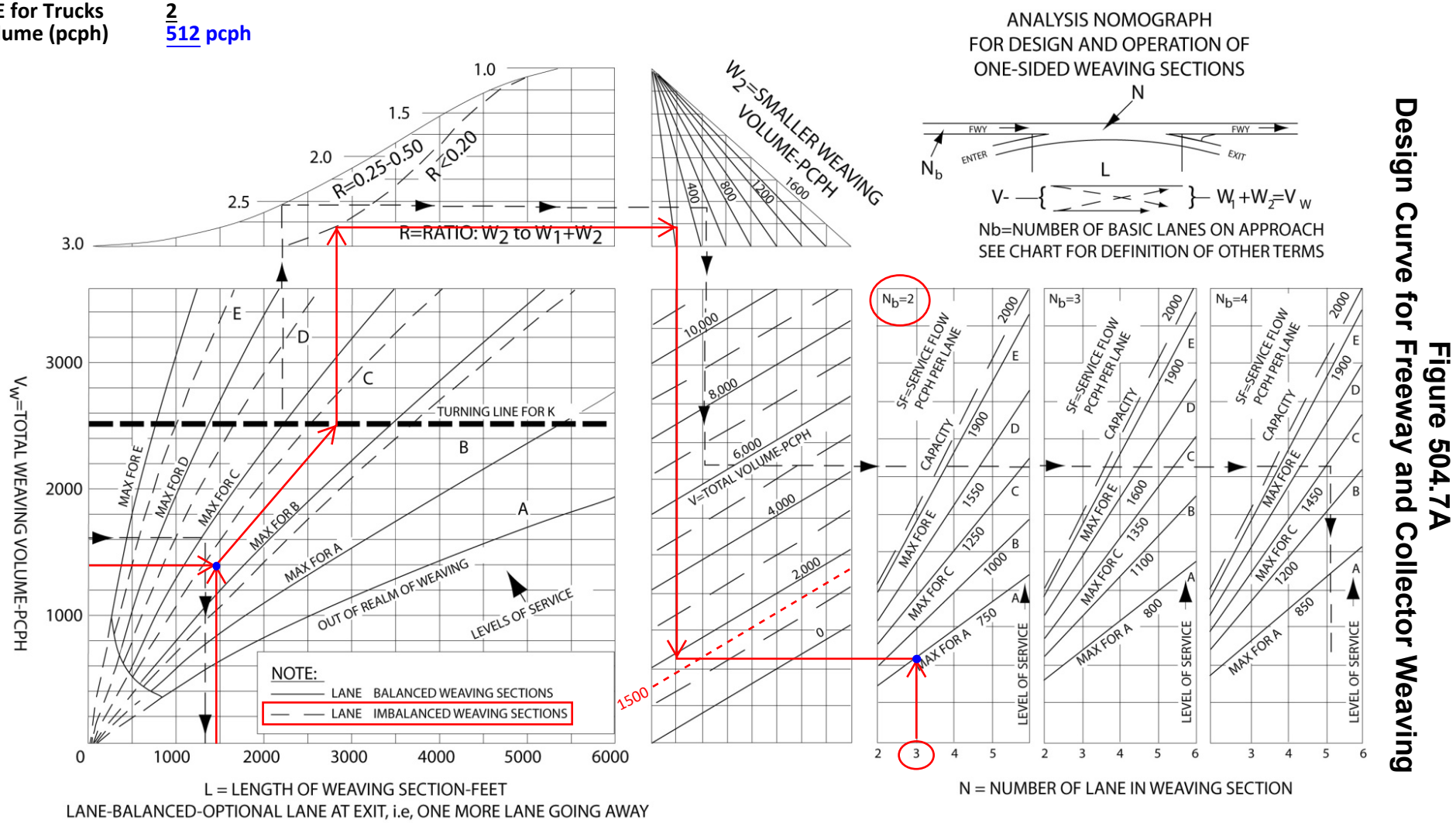


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1534	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	881
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1534	298
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1762	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.332
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1762	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2085	Average Density (D), pc/mi/ln	17.9
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1832	123
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2105	137
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.48	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.464
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2105	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.1
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2089	1410
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2400	1531
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.89	0.82

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.431
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2400	Ramp Junction Speed (S), mi/h	55.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3931	Average Density (D), pc/mi/ln	35.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3499	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2010
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3499	666
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	4020	751
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.91	0.40

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	36.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.519
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4020	Ramp Junction Speed (S), mi/h	53.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	37.4
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293 AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2833	139
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3255	157
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.77	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.418
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3255	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3412	Average Density (D), pc/mi/ln	30.3
Level of Service (LOS)	D		

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Near Term Plus 1293-Unit Project PM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3145	232
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3336	249
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.76	0.13

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.474
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3336	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	30.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2913	888
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3090	954
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.92	0.51

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	34.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.521
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3090	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4044	Average Density (D), pc/mi/ln	37.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3801	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	2016
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3801	1613
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4189	1663
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.95	0.89

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	38.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.601
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	51.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4189	Ramp Junction Speed (S), mi/h	51.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	40.4
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	2188	578
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2321	615
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.33

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.507
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2321	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1610	359
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1708	378
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.20

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.326
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1708	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2086	Average Density (D), pc/mi/ln	17.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1969	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1044
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1969	1140
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2089	1223
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.65

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.561
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2089	Ramp Junction Speed (S), mi/h	52.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	829	286	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	12.00	12.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893	
Flow Rate (v_i), pc/h	988	341	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.30	0.18	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	988	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1329	Average Density (D), pc/mi/ln	11.3
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1115	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	664
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1507	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	970
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1507	382
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1941	492
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.26

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.496
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1941	Ramp Junction Speed (S), mi/h	54.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.9
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

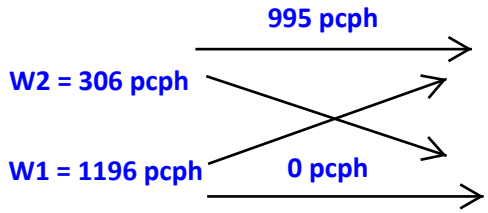
Volume (vph)	1150 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1196 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	822 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	995 pcph



L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

V = 2497 pcph

V_w = 1502 pcph

R = 0.20

W1 = 1196 pcph

W2 = 306 pcph

Near Term Plus 1293 Unit Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = B

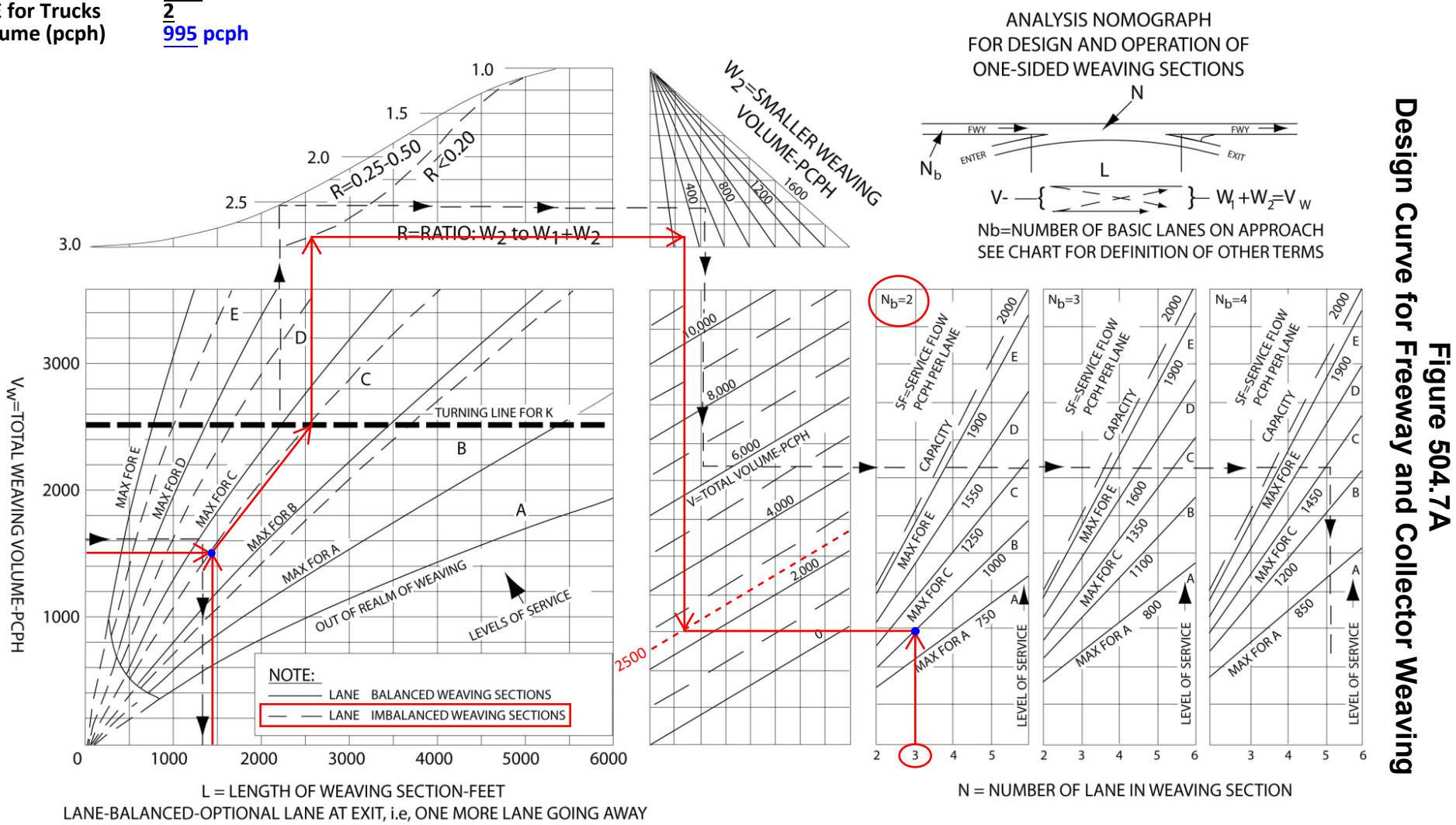


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1972	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1112
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1972	205
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2225	220
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.55	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.346
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2225	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2445	Average Density (D), pc/mi/ln	21.1
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2177	196
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2456	211
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.56	0.11

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.470
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2456	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2373	1096
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2677	1178
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.87	0.63

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.417
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2677	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3855	Average Density (D), pc/mi/ln	34.2
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3469	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1956
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3469	661
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3913	724
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.89	0.39

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	36.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.517
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3913	Ramp Junction Speed (S), mi/h	53.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.4
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293 PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2808	211
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3168	231
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.77	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.417
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3168	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3399	Average Density (D), pc/mi/ln	30.2
Level of Service (LOS)	D		

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Near Term Plus 1293-Unit and School Project AM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2345	250
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2694	282
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.61	0.15

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2694	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	24.6
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2095	477
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2407	538
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.67	0.29

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.372
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2407	Ramp Junction Speed (S), mi/h	57.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2945	Average Density (D), pc/mi/ln	25.7
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2572	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1478
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
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	66.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2572	926
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3174	1005
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.72	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.542
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3174	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	29.8
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1646	342
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1891	368
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.43	0.20

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.485
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1891	Ramp Junction Speed (S), mi/h	54.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.3
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1304	421
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1498	452
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	18.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.322
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1498	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1950	Average Density (D), pc/mi/ln	16.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1725	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	991
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1725	1017
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	1982	1136
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.45	0.60

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.554
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1982	Ramp Junction Speed (S), mi/h	52.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	18.7
Level of Service (LOS)	B		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	708	311	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	889	391	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.29	0.21	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	12.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.308
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	889	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1280	Average Density (D), pc/mi/ln	10.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1019	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	640
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	936	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	592
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	8.8
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	936	284
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1185	356
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.27	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1185	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.8
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

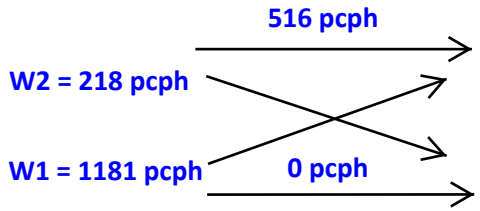
Volume (vph)	1104 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1181 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	218 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	218 pcph

Mainline to Mainline

Volume (vph)	434 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	516 pcph



V = 1916 pcph
Vw = 1399 pcph
R = 0.16
W1 = 1181 pcph
W2 = 218 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Near Term Plus 1293 Unit and School Project AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results
Weave LOS = C
Total Volume LOS = B

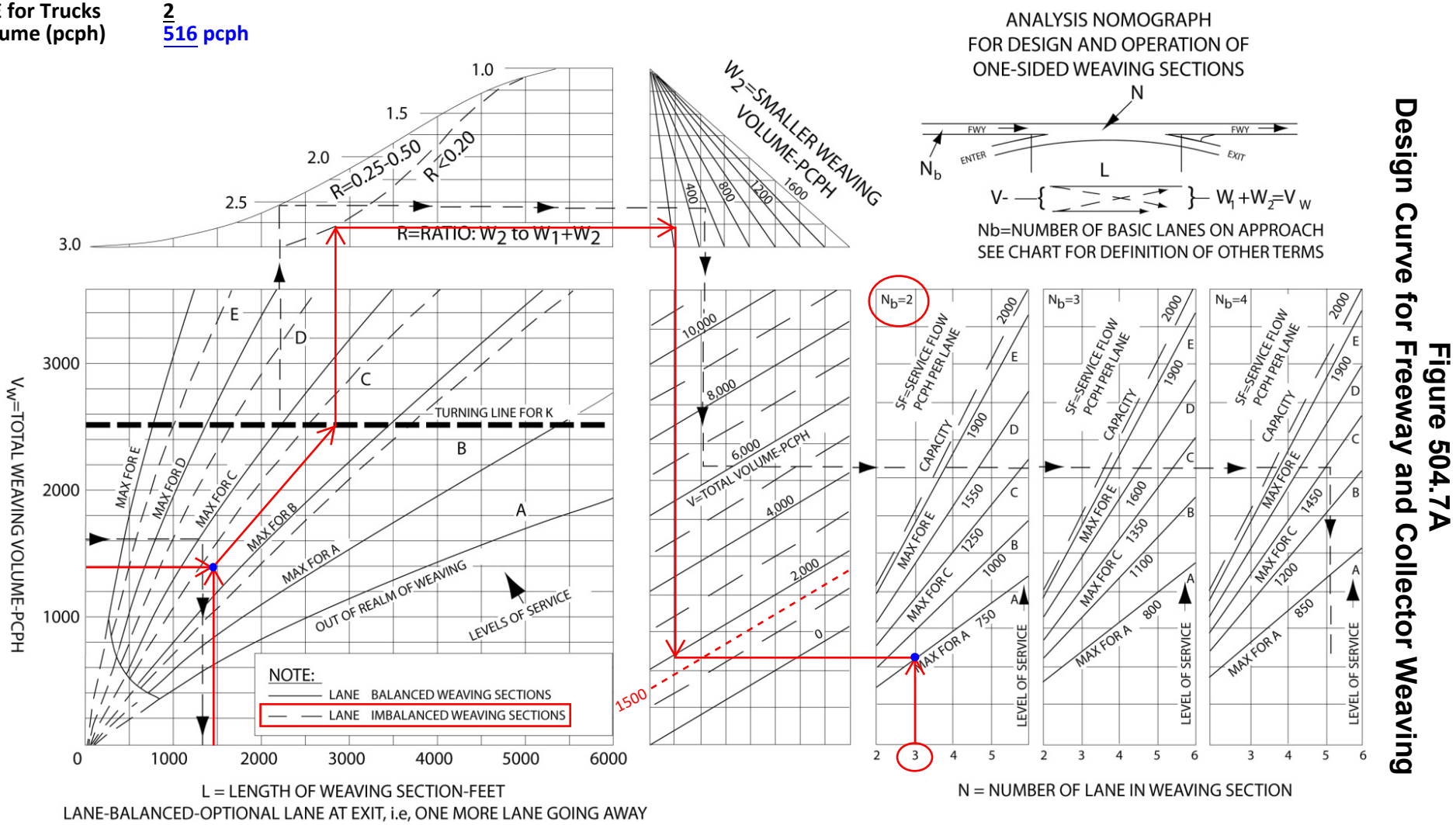


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1538	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	884
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1538	298
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1767	323
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.333
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1767	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2090	Average Density (D), pc/mi/ln	17.9
Level of Service (LOS)	B		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	1836	127
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2109	142
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.48	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.464
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2109	Ramp Junction Speed (S), mi/h	55.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.1
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2089	1440
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2400	1563
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.90	0.83

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.438
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2400	Ramp Junction Speed (S), mi/h	55.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3963	Average Density (D), pc/mi/ln	35.5
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3529	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2027
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
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	36.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3529	672
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	4054	758
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.92	0.40

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	37.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.520
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4054	Ramp Junction Speed (S), mi/h	53.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	37.7
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	NT+1293+School AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2857	139
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3282	157
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.78	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.422
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3282	Ramp Junction Speed (S), mi/h	56.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3439	Average Density (D), pc/mi/ln	30.6
Level of Service (LOS)	D		

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Near Term Plus 1293-Unit and School Project PM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3152	232
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3343	249
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.76	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.474
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3343	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	30.4
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2920	889
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3097	955
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.92	0.51

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	34.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.522
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3097	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4052	Average Density (D), pc/mi/ln	37.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	3809	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	2020
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	3809	1621
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4197	1671
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.95	0.89

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	38.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.602
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	51.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4197	Ramp Junction Speed (S), mi/h	51.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	40.5
Level of Service (LOS)	E		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	2188	578
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2321	615
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.33

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.507
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2321	Ramp Junction Speed (S), mi/h	54.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1610	360
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1708	379
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.20

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.326
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1708	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2087	Average Density (D), pc/mi/ln	17.8
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1970	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1045
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.4
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	1970	1140
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2090	1223
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.47	0.65

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.561
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2090	Ramp Junction Speed (S), mi/h	52.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	19.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	830	287	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	12.00	12.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893	
Flow Rate (v_i), pc/h	989	342	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.30	0.18	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	13.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.309
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	989	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1331	Average Density (D), pc/mi/ln	11.3
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1117	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	666
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	9.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1510	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	972
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1510	384
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	1945	495
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.44	0.26

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	19.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.496
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1945	Ramp Junction Speed (S), mi/h	54.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	17.9
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

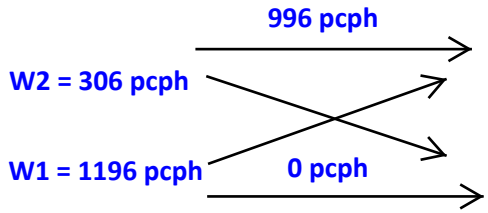
Volume (vph)	1150 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1196 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	303 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	306 pcph

Mainline to Mainline

Volume (vph)	823 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	996 pcph



L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

V = 2498 pcph

V_w = 1502 pcph

R = 0.20

W1 = 1196 pcph

W2 = 306 pcph

Near Term Plus 1293 Unit and School Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = B

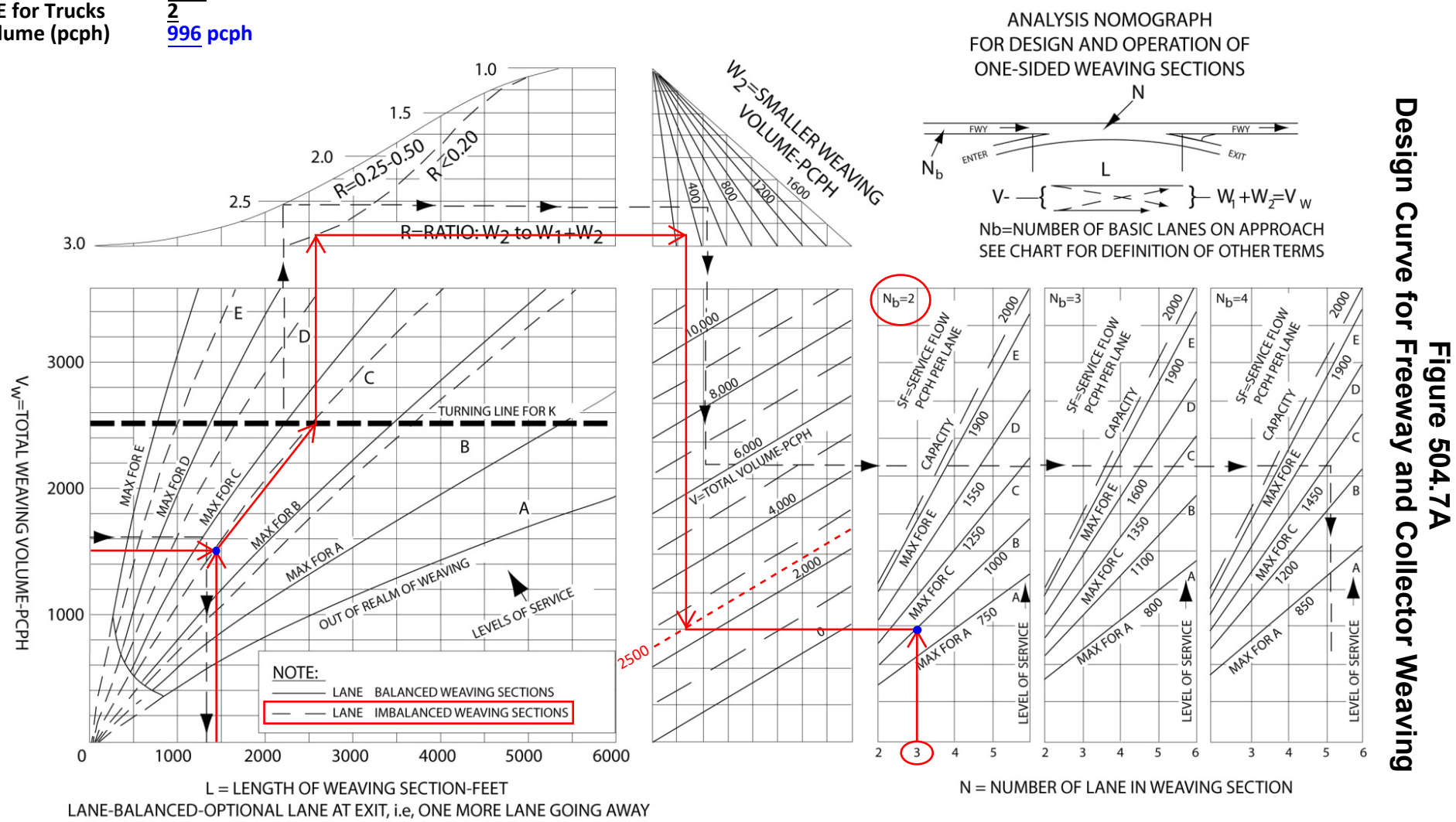


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1973	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1113
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1973	205
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2226	220
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.55	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.346
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2226	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2446	Average Density (D), pc/mi/ln	21.1
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2178	197
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2457	212
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.56	0.11

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	23.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.470
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2457	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.3
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2373	1104
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2677	1186
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.88	0.63

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	26.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.418
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2677	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3863	Average Density (D), pc/mi/ln	34.3
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3477	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1962
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	57.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3477	663
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3923	726
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.89	0.39

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	36.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.517
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3923	Ramp Junction Speed (S), mi/h	53.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.5
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	NT+1293+School PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population	Non-Severe Weather	Non-Severe Weather
Weather Type	No Incident	-
Incident Type	0.950	0.950
Final Speed Adjustment Factor (SAF)	0.939	0.939
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)		

Demand and Capacity

Demand Volume (V_i), veh/h	2814	211
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3175	231
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.77	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	30.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.418
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3175	Ramp Junction Speed (S), mi/h	56.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3406	Average Density (D), pc/mi/ln	30.2
Level of Service (LOS)	D		

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Cumulative AM

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 @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2586	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2971	338
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.67	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2971	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.2
Level of Service (LOS)	C		

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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 @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2286	571
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2626	644
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.74	0.34

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.401
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2626	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3270	Average Density (D), pc/mi/ln	28.8
Level of Service (LOS)	D		

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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 SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2857	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1641
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
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	63.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2857	903
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3526	980
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.80	0.52

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.540
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3526	Ramp Junction Speed (S), mi/h	53.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.1
Level of Service (LOS)	D		

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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 @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	1954	423
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	2245	455
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.492
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2245	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.6
Level of Service (LOS)	C		

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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 @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	1531	480
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1759	516
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.52	0.27

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.332
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1759	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2275	Average Density (D), pc/mi/ln	19.5
Level of Service (LOS)	C		

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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 SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2011	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1155
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2011	1164
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2310	1301
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.52	0.69

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.568
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2310	Ramp Junction Speed (S), mi/h	52.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	C		

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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 @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	847	345	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	1064	433	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.34	0.23	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	14.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.312
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1064	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1497	Average Density (D), pc/mi/ln	12.7
Level of Service (LOS)	B		

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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 SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1192	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	748
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.0
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1115	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	706
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1115	326
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1412	409
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.32	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.488
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1412	Ramp Junction Speed (S), mi/h	54.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	13.0
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

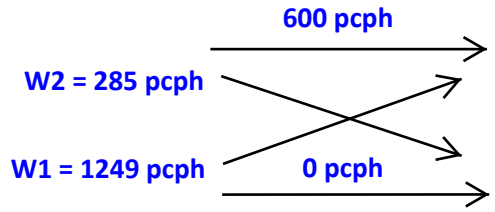
Volume (vph)	1167 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1249 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	285 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	285 pcph

Mainline to Mainline

Volume (vph)	504 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	600 pcph



V = 2133 pcph
V_w = 1534 pcph
R = 0.19
W1 = 1249 pcph
W2 = 285 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Cumulative AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results

Weave LOS = C
Total Volume LOS = B

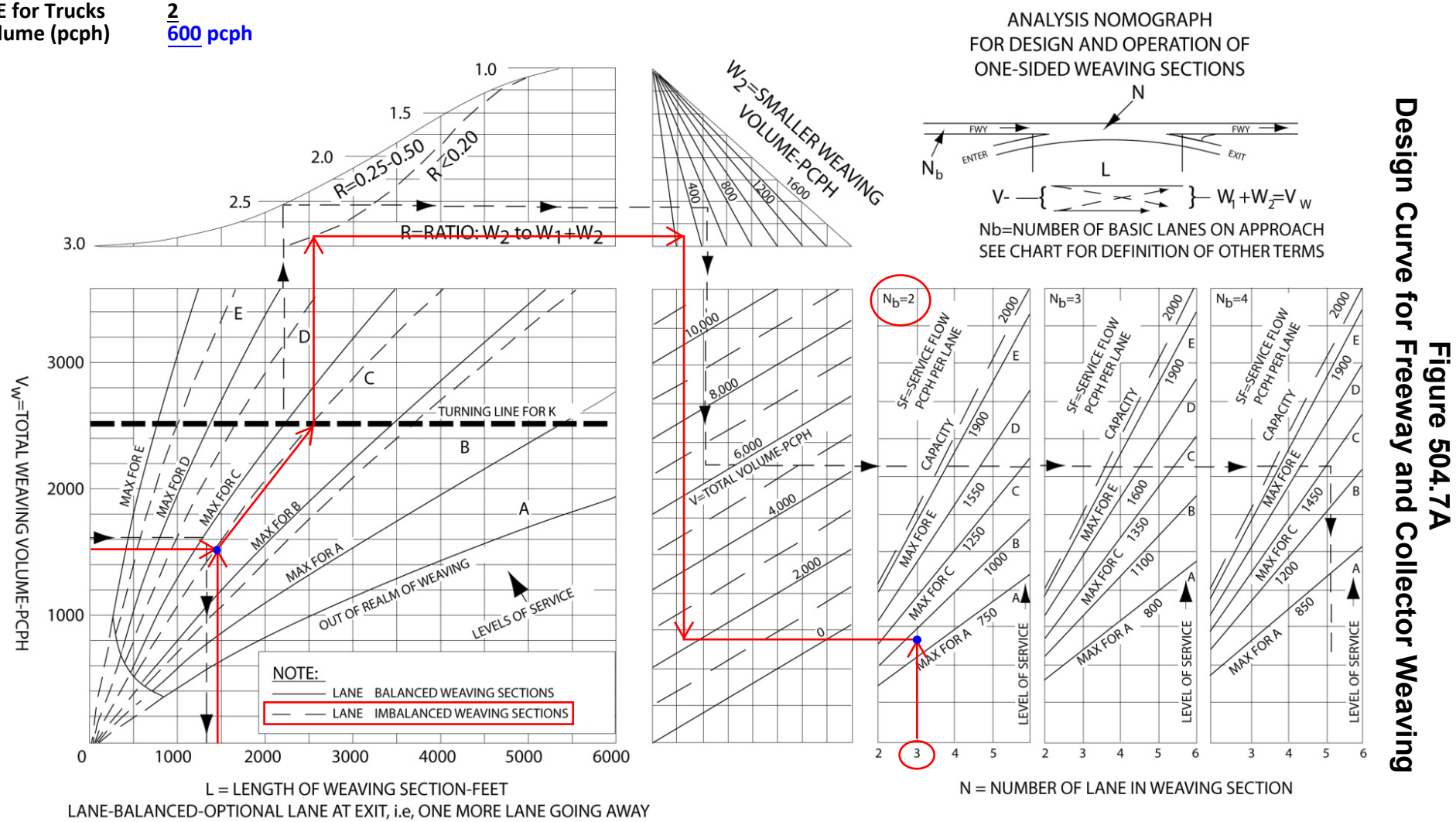


Figure 504.7A
Design Curve for Freeway and Collector Weaving

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 SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1671	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	960
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.3
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1671	390
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1920	423
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.23

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.342
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1920	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2343	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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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 @ Riverside/Pine - SB (#17)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2061	201
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2368	225
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.12

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.472
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2368	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	C		

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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 @ Spring - SB (#18)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2249	1316
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2584	1429
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.91	0.76

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.448
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2584	Ramp Junction Speed (S), mi/h	55.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4013	Average Density (D), pc/mi/ln	36.2
Level of Service (LOS)	C		

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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 SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3565	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2048
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3565	692
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	4096	781
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.93	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	37.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.522
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4096	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	38.1
Level of Service (LOS)	E		

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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 @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2873	200
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3301	226
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.80	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	31.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.433
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3301	Ramp Junction Speed (S), mi/h	55.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3527	Average Density (D), pc/mi/ln	31.5
Level of Service (LOS)	D		

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Cumulative PM

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 @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3375	300
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3580	322
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.81	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.480
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3580	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	32.7
Level of Service (LOS)	D		

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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 @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	3075	1017
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3262	1093
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.99	0.58

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	36.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.602
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	51.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3262	Ramp Junction Speed (S), mi/h	51.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4355	Average Density (D), pc/mi/ln	42.0
Level of Service (LOS)	E		

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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 SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	4092	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	2170
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
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	51.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	4092	1579
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4509	1627
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	1.02	0.87

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	-
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4509	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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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 @ Paso Robles - NB (#5)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	2513	734
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2666	780
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.60	0.42

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.522
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2666	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C		

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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 @ Paso Robles - NB (#6)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1779	460
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1887	484
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.26

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.336
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1887	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2371	Average Density (D), pc/mi/ln	20.3
Level of Service (LOS)	C		

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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 SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2239	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1188
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2239	1239
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2375	1329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.71

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.571
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2375	Ramp Junction Speed (S), mi/h	52.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.6
Level of Service (LOS)	C		

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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 @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	1000	330	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	12.00	12.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893	
Flow Rate (v_i), pc/h	1191	393	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.36	0.21	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.313
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1191	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1584	Average Density (D), pc/mi/ln	13.5
Level of Service (LOS)	B		

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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 SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1330	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	792
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.35
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.7
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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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 SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1791	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1154
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1791	434
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	2307	559
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.52	0.30

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.502
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2307	Ramp Junction Speed (S), mi/h	54.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.3
Level of Service (LOS)	C		

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On-ramp to Mainline (W1)

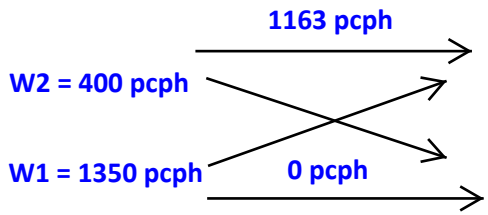
Volume (vph)	1298 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1350 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	396 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	400 pcph

Mainline to Mainline

Volume (vph)	961 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	1163 pcph



V = 2913 pcph
V_w = 1750 pcph
R = 0.23
W1 = 1350 pcph
W2 = 400 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Cumulative PM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: PM
Project: Olsen-Chandler SP

Results

Weave LOS = D
Total Volume LOS = C

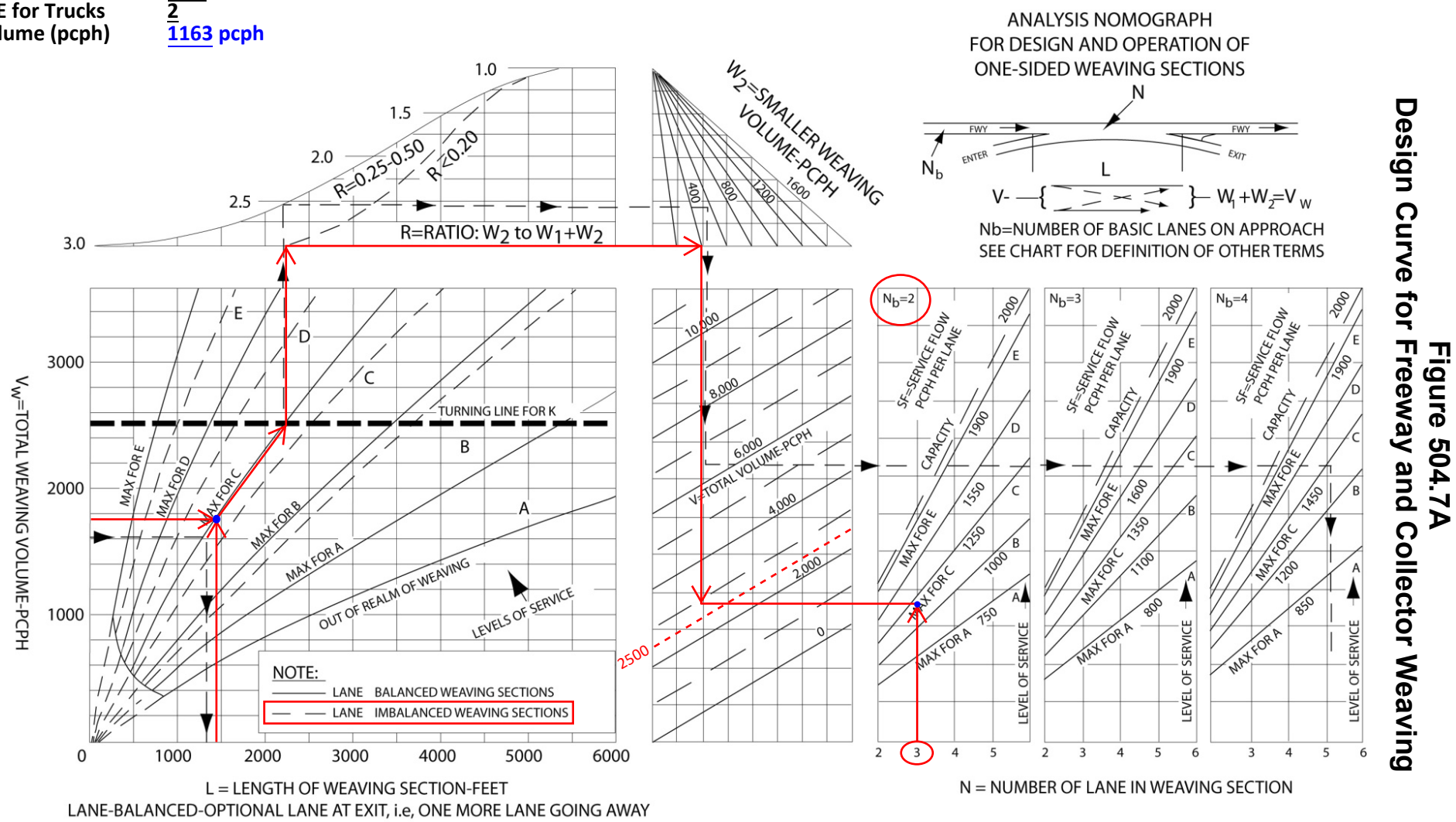


Figure 504.7A
Design Curve for Freeway and Collector Weaving

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 SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	2259	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1274
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	2259	268
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2548	288
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.64	0.15

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.368
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2548	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2836	Average Density (D), pc/mi/ln	24.7
Level of Service (LOS)	C		

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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 @ Riverside/Pine - SB (#17)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2527	328
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2851	352
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.19

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2851	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.1
Level of Service (LOS)	C		

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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 @ Spring - SB (#18)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2599	1106
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2932	1188
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.93	0.63

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.473
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2932	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4120	Average Density (D), pc/mi/ln	37.5
Level of Service (LOS)	D		

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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 SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3705	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2090
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
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	53.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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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 @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3705	703
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	4180	770
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.95	0.41

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	38.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.521
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4180	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	38.9
Level of Service (LOS)	E		

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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 @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	3002	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3387	329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.84	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.460
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3387	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3716	Average Density (D), pc/mi/ln	33.7
Level of Service (LOS)	D		

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Cumulative Plus 1293-Unit Project AM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2613	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3002	338
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.68	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3002	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.4
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2313	582
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2657	657
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.75	0.35

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.405
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2657	Ramp Junction Speed (S), mi/h	56.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3314	Average Density (D), pc/mi/ln	29.3
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2895	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1663
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.2
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2895	941
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3573	1021
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.81	0.54

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.543
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3573	Ramp Junction Speed (S), mi/h	53.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	1954	423
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	2245	455
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.492
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2245	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.6
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	1531	487
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1759	523
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.52	0.28

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.333
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1759	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2282	Average Density (D), pc/mi/ln	19.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2018	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1159
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2018	1164
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2318	1301
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.69

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.568
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2318	Ramp Junction Speed (S), mi/h	52.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	854	358	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	1073	450	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.35	0.24	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	14.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.312
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1073	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1523	Average Density (D), pc/mi/ln	12.9
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1212	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	761
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.2
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1121	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	710
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1121	330
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1420	414
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.32	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.489
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1420	Ramp Junction Speed (S), mi/h	54.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	13.0
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

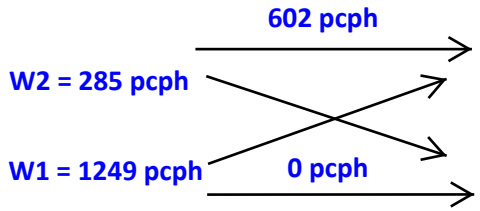
Volume (vph)	1167 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1249 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	285 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	285 pcph

Mainline to Mainline

Volume (vph)	506 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	602 pcph



V = 2136 pcph
V_w = 1534 pcph
R = 0.19
W1 = 1249 pcph
W2 = 285 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Cumulative Plus 1293 Unit Project AM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: AM

Project: Olsen-Chandler SP

Results

Weave LOS = C

Total Volume LOS = B

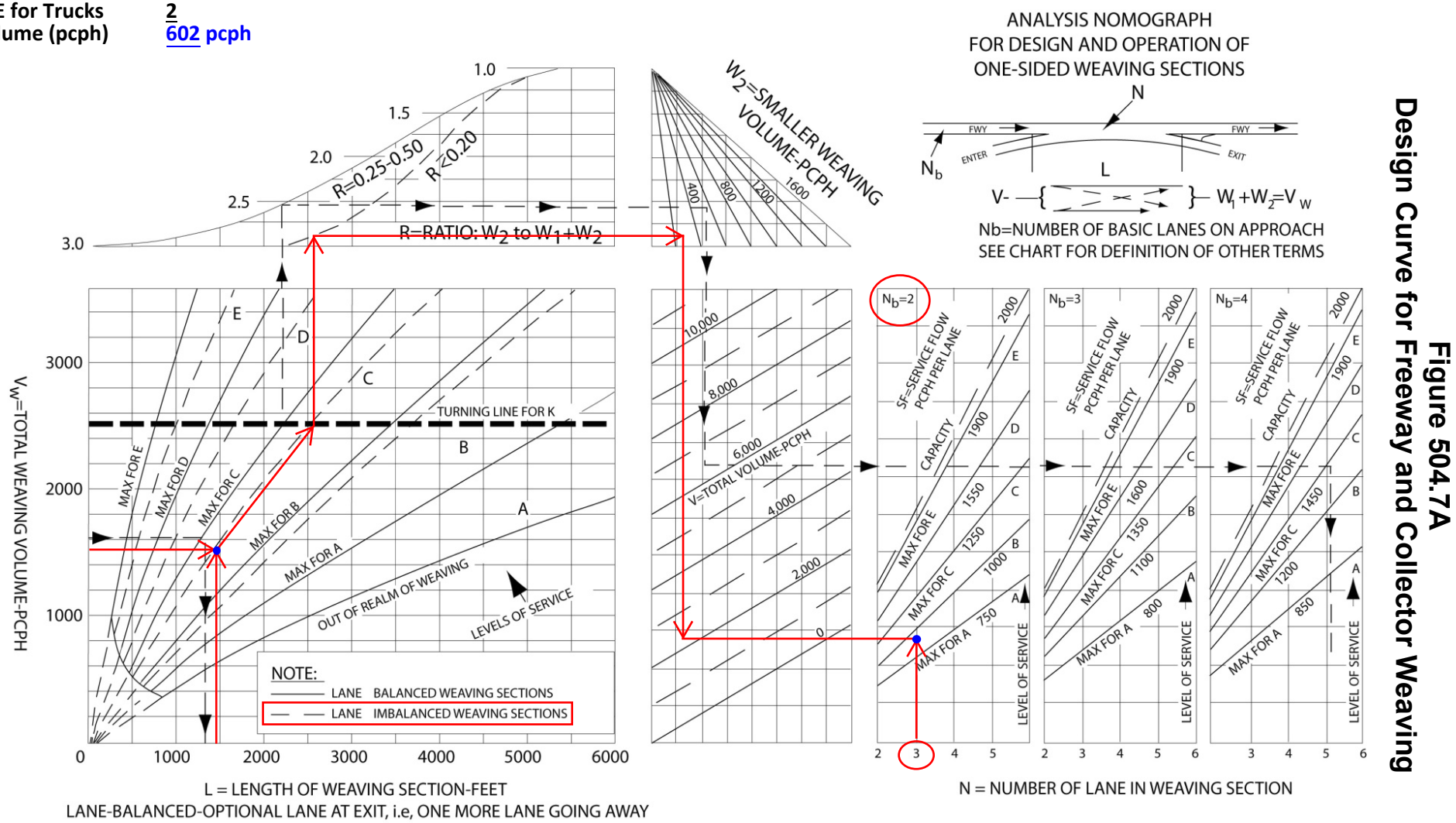


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1673	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	961
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1673	390
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1922	423
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.23

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.342
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1922	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2345	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2063	203
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2370	227
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.472
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2370	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2249	1428
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2584	1550
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.94	0.83

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.476
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2584	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4134	Average Density (D), pc/mi/ln	37.7
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3677	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2112
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.8
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3677	725
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	4224	818
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.96	0.44

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	38.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.525
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4224	Ramp Junction Speed (S), mi/h	53.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	39.4
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293 AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	2949	200
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3388	226
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	31.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.445
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3388	Ramp Junction Speed (S), mi/h	55.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3614	Average Density (D), pc/mi/ln	32.5
Level of Service (LOS)	D		

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Cumulative Plus 1293-Unit Project PM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3463	300
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3673	322
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.83	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.480
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3673	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	3163	1054
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3355	1133
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	1.02	0.60

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	-
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3355	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4488	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	4217	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	2236
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
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	4.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	4217	1704
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4647	1756
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	1.05	0.94

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	-
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4647	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	2513	734
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2666	780
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.60	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.522
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2666	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1779	464
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1887	488
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.26

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.336
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1887	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2375	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2243	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1190
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2243	1239
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2379	1329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.71

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.571
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2379	Ramp Junction Speed (S), mi/h	52.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.7
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
Driver Population		
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 (V_i), veh/h	1004	339	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	12.00	12.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893	
Flow Rate (v_i), pc/h	1196	404	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.36	0.22	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.313
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1196	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1600	Average Density (D), pc/mi/ln	13.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1343	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	800
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1812	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1167
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1812	448
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	2334	577
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.31

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.503
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2334	Ramp Junction Speed (S), mi/h	54.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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On-ramp to Mainline (W1)

Volume (vph)	1298 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1350 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	396 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	400 pcph

Mainline to Mainline

Volume (vph)	968 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	1171 pcph

W2 = 400 pcph

W1 = 1350 pcph

1171 pcph

0 pcph

V = 2921 pcph

V_w = 1750 pcph

R = 0.23

W1 = 1350 pcph

W2 = 400 pcph

L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

Cumulative Plus 1293 Unit Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = D

Total Volume LOS = C

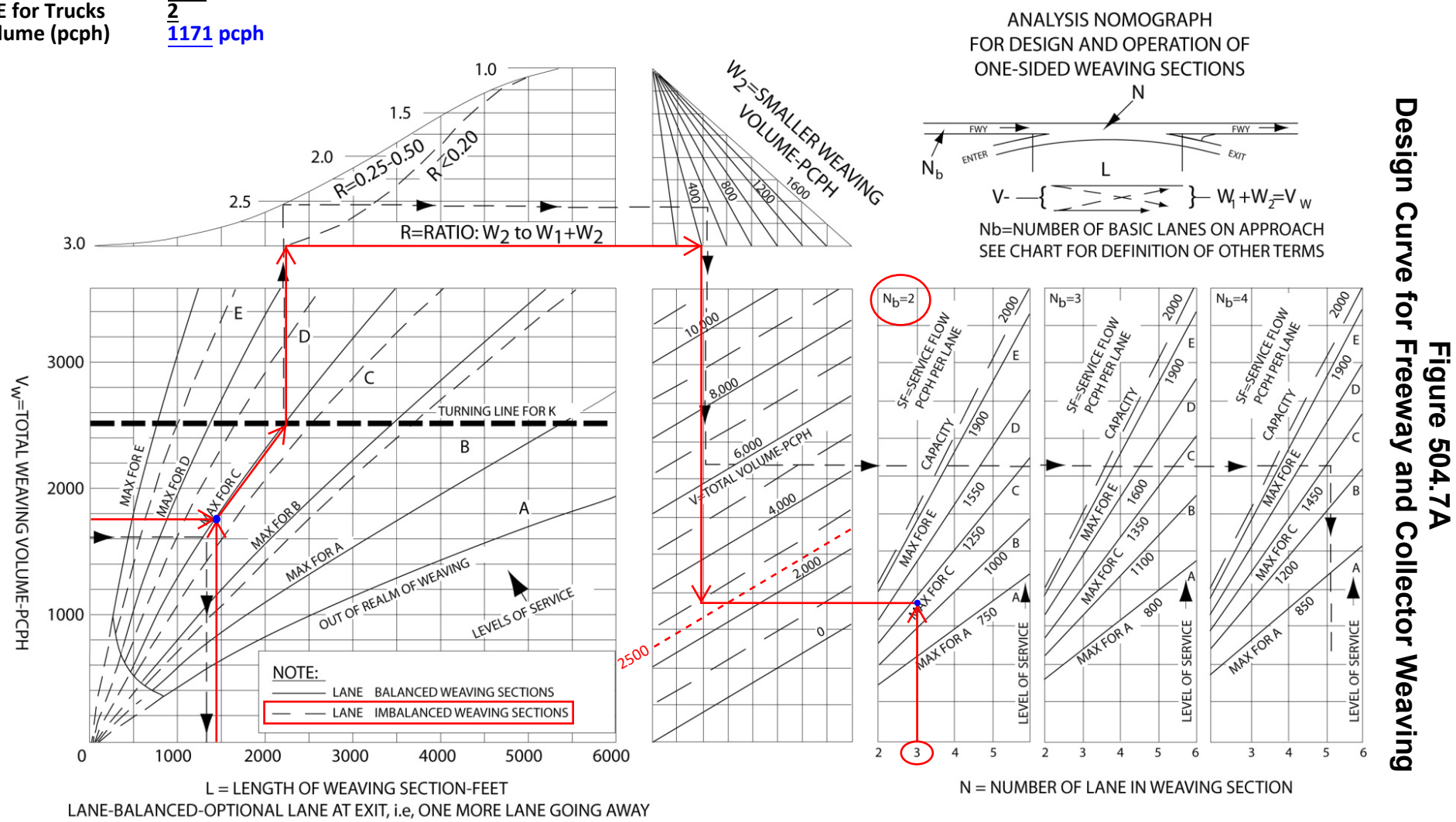


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	2266	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1278
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	2266	268
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2556	288
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.64	0.15

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.368
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2556	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2844	Average Density (D), pc/mi/ln	24.7
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
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 (V_i), veh/h	2534	335
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2859	360
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.484
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2859	Ramp Junction Speed (S), mi/h	54.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
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 (V_i), veh/h	2599	1182
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2932	1270
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.95	0.68

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.4
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.493
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2932	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4202	Average Density (D), pc/mi/ln	38.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3781	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2132
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3781	726
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	4265	795
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.97	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	39.0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.523
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4265	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	39.7
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293 PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	3055	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3446	329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.86	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.470
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3446	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3775	Average Density (D), pc/mi/ln	34.3
Level of Service (LOS)	D		

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Cumulative Plus 1293-Unit and School Project AM

HCS7 Freeway Diverge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	2635	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3027	338
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.69	0.18

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3027	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.7
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information			
Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	2335	591
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	2683	667
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.76	0.36

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.409
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	56.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2683	Ramp Junction Speed (S), mi/h	56.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3350	Average Density (D), pc/mi/ln	29.6
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2926	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1681
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
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	26.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	2926	972
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.862	0.980
Flow Rate (v_i), pc/h	3611	1055
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.56

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.546
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3611	Ramp Junction Speed (S), mi/h	53.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	34.0
Level of Service (LOS)	D		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
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 (V_i), veh/h	1954	423
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	2245	455
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.51	0.24

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.492
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2245	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	20.6
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
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 (V_i), veh/h	1531	488
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	1759	524
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.52	0.28

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	20.6
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.333
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1759	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2283	Average Density (D), pc/mi/ln	19.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2019	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1160
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2019	1164
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2320	1301
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.69

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.568
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2320	Ramp Junction Speed (S), mi/h	52.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.1
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	855	361	
Peak Hour Factor (PHF)	0.94	0.94	
Total Trucks, %	18.00	18.00	
Single-Unit Trucks (SUT), %	-	-	
Tractor-Trailers (TT), %	-	-	
Heavy Vehicle Adjustment Factor (f_{HV})	0.847	0.847	
Flow Rate (v_i), pc/h	1074	453	
Capacity (c), pc/h	4413	1878	
Volume-to-Capacity Ratio (v/c)	0.35	0.24	

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	14.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.312
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1074	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1527	Average Density (D), pc/mi/ln	13.0
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1216	Heavy Vehicle Adjustment Factor (f_{HV})	0.847
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	764
Total Trucks, %	18.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.3
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1127	Heavy Vehicle Adjustment Factor (f_{HV})	0.840
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	714
Total Trucks, %	19.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1127	334
Peak Hour Factor (PHF)	0.94	0.95
Total Trucks, %	19.00	19.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.840	0.840
Flow Rate (v_i), pc/h	1427	419
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.32	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.489
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1427	Ramp Junction Speed (S), mi/h	54.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	13.1
Level of Service (LOS)	B		

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On-ramp to Mainline (W1)

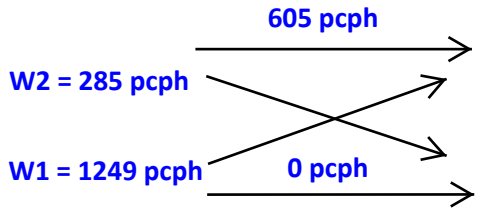
Volume (vph)	1167 vph
Truck %	7%
PCE for Trucks	2
Volume (pcph)	1249 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	285 vph
Truck %	0%
PCE for Trucks	2
Volume (pcph)	285 pcph

Mainline to Mainline

Volume (vph)	508 vph
Truck %	19%
PCE for Trucks	2
Volume (pcph)	605 pcph



V = 2138 pcph
Vw = 1534 pcph
R = 0.19
W1 = 1249 pcph
W2 = 285 pcph

L = 1475 feet
N = 3 lanes
N_b = 2 lanes
Lane Imbalanced

Cumulative Plus 1293 Unit and School Project AM (US 101 Weave)
On Ramp: SR 46E (#13)
Off Ramp: Riverside Ave-17th St (#14)
Direction: South
Peak Hour: AM
Project: Olsen-Chandler SP

Results
Weave LOS = C
Total Volume LOS = B

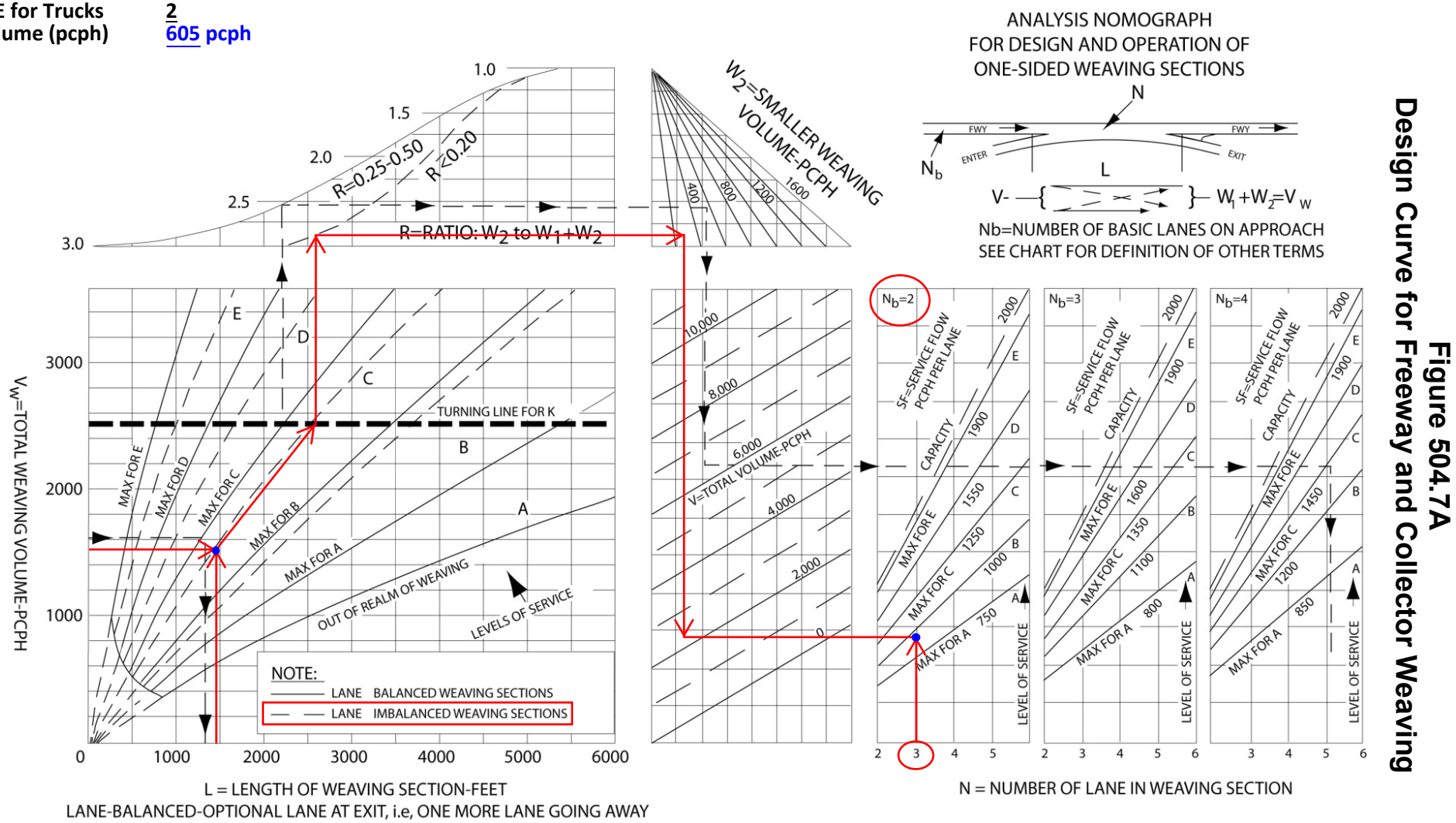


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1675	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	962
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	1675	390
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	1924	423
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.23

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.342
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1924	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2347	Average Density (D), pc/mi/ln	20.2
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2065	205
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.952
Flow Rate (v_i), pc/h	2372	229
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.472
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2372	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2249	1454
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	2584	1578
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.94	0.84

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.483
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2584	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4162	Average Density (D), pc/mi/ln	38.0
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3703	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2127
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3703	732
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	4254	826
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.96	0.44

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	38.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.526
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4254	Ramp Junction Speed (S), mi/h	53.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	39.7
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	AM
Project Description	CM+1293+School AM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Balanced Mix	Balanced Mix
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2971	200
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	8.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.943
Flow Rate (v_i), pc/h	3413	226
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.82	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	31.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.448
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3413	Ramp Junction Speed (S), mi/h	55.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3639	Average Density (D), pc/mi/ln	32.8
Level of Service (LOS)	D		

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Cumulative Plus 1293-Unit and School Project PM

HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ SR 46W - NB (#1)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	235
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 (V_i), veh/h	3468	300
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3679	322
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.83	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	33.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.480
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3679	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.6
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ SR 46W - NB (#2)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	345
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 (V_i), veh/h	3168	1056
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	3360	1135
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	1.02	0.60

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	-
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3360	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4495	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Mainline north of SR 46W - NB (#3)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	4224	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	2240
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
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	4.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ Spring - NB (#4)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	195
Terrain Type	Rolling	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 (V_i), veh/h	4224	1711
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	4655	1764
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	1.05	0.94

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	-
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4655	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ Paso Robles - NB (#5)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	270
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2513	734
Peak Hour Factor (PHF)	0.98	0.95
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	2666	780
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.60	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.522
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2666	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ Paso Robles - NB (#6)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	1779	465
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.990
Flow Rate (v_i), pc/h	1887	489
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.26

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	21.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.336
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1887	Ramp Junction Speed (S), mi/h	58.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2376	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Mainline south of SR 46E - NB (#7)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	2244	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor (PHF)	0.98	Flow Rate (v_P), pc/h/ln	1190
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.6
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ SR 46E - NB (#8)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	225
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 (V_i), veh/h	2244	1239
Peak Hour Factor (PHF)	0.98	0.96
Total Trucks, %	4.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.962	0.971
Flow Rate (v_i), pc/h	2380	1329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.54	0.71

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.571
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	52.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2380	Ramp Junction Speed (S), mi/h	52.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	22.7
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ SR 46E - NB (#9)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	405
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 (V_i), veh/h	1005	340
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	12.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.893	0.893
Flow Rate (v_i), pc/h	1197	405
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.36	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	15.3
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.313
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	1197	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	1602	Average Density (D), pc/mi/ln	13.6
Level of Service (LOS)	B		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Mainline north of SR 46E - NB (#10)		

Geometric Data

Number of Lanes (N), 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	1.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	71.3
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 (V), veh/h	1345	Heavy Vehicle Adjustment Factor (f_{HV})	0.893
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	801
Total Trucks, %	12.00	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2232
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.8
Total Ramp Density Adjustment	4.1	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Mainline north of SR 46E - SB (#11)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	1814	Heavy Vehicle Adjustment Factor (f_{HV})	0.826
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1168
Total Trucks, %	21.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ SR 46E - SB (#12)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	155
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 (V_i), veh/h	1814	449
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	21.00	21.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.826	0.826
Flow Rate (v_i), pc/h	2336	578
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.53	0.31

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	22.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.503
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2336	Ramp Junction Speed (S), mi/h	54.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C		

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On-ramp to Mainline (W1)

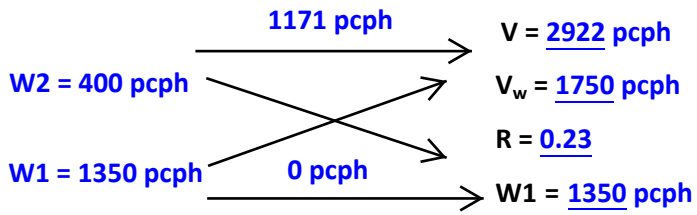
Volume (vph)	1298 vph
Truck %	4%
PCE for Trucks	2
Volume (pcph)	1350 pcph

Mainline to Off-Ramp (W2)

Volume (vph)	396 vph
Truck %	1%
PCE for Trucks	2
Volume (pcph)	400 pcph

Mainline to Mainline

Volume (vph)	969 vph
Truck %	21%
PCE for Trucks	2
Volume (pcph)	1172 pcph



V = 2922 pcph

V_w = 1750 pcph

R = 0.23

W1 = 1350 pcph

W2 = 400 pcph

L = 1475 feet

N = 3 lanes

N_b = 2 lanes

Lane Imbalanced

Cumulative Plus 1293 Unit and School Project PM (US 101 Weave)

On Ramp: SR 46E (#13)

Off Ramp: Riverside Ave-17th St (#14)

Direction: South

Peak Hour: PM

Project: Olsen-Chandler SP

Results

Weave LOS = D

Total Volume LOS = C

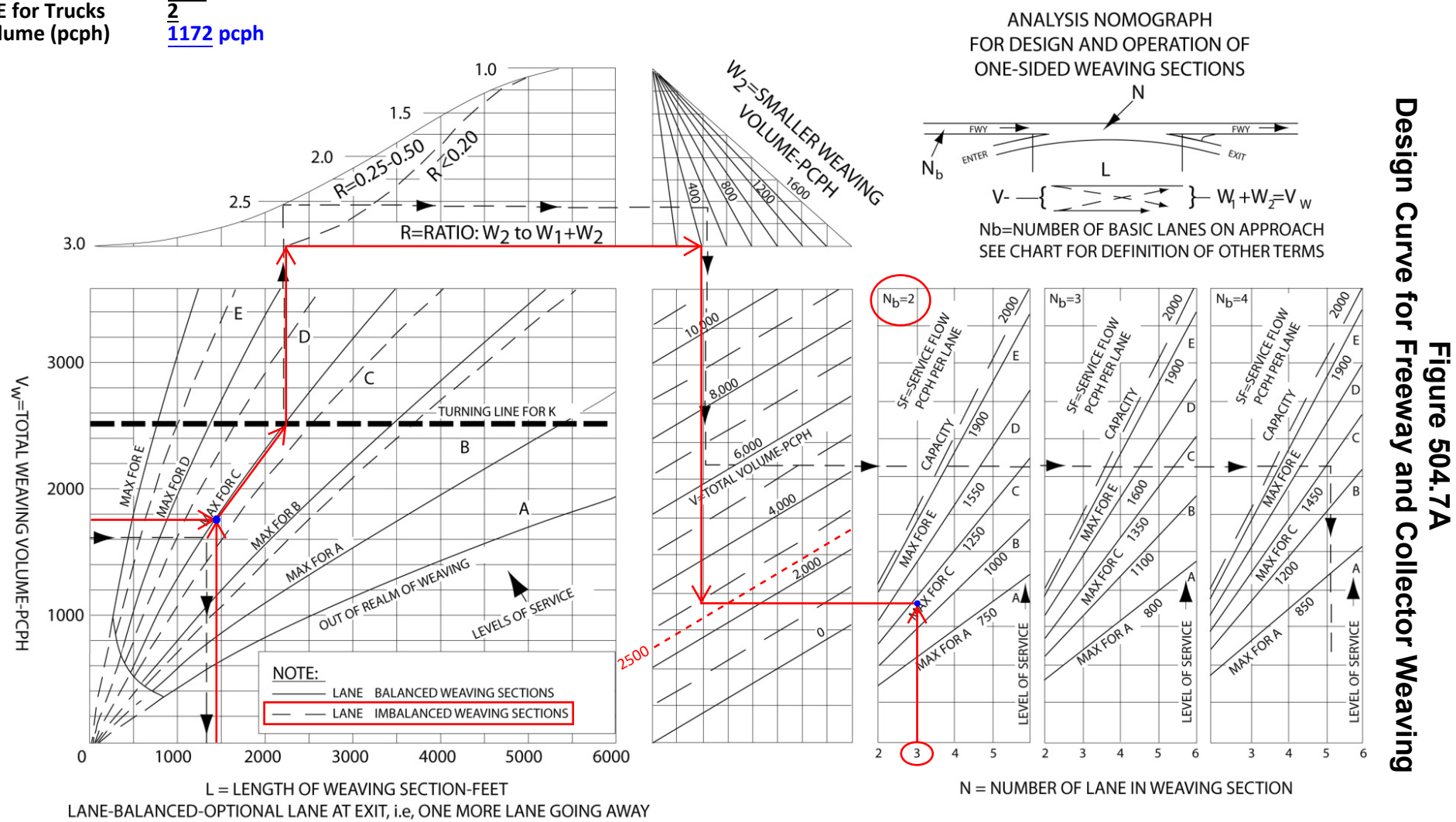


Figure 504.7A
Design Curve for Freeway and Collector Weaving

HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Mainline south of SR 46E - SB (#15)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	2267	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	1278
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ Riverside-17th - SB (#16)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	300
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 (V_i), veh/h	2267	268
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2557	288
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.64	0.15

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	25.7
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.368
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	57.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2557	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2845	Average Density (D), pc/mi/ln	24.7
Level of Service (LOS)	C		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ Riverside/Pine - SB (#17)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2535	336
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2860	361
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.65	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	27.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.484
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2860	Ramp Junction Speed (S), mi/h	54.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.2
Level of Service (LOS)	C		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ Spring - SB (#18)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1330
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

	Freeway	Ramp
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

	Freeway	Ramp
Demand Volume (V_i), veh/h	2599	1190
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.990
Flow Rate (v_i), pc/h	2932	1279
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.95	0.68

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	29.5
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.496
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	2932	Ramp Junction Speed (S), mi/h	54.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4211	Average Density (D), pc/mi/ln	38.8
Level of Service (LOS)	D		

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HCS7 Basic Freeway Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+S PM US 101 Mainline north of SR 46W - SB (#19)		

Geometric Data

Number of Lanes (N), 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	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	70.4
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 (V), veh/h	3789	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor (PHF)	0.94	Flow Rate (v_P), pc/h/ln	2137
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2369
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2224
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.9
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.9		

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HCS7 Freeway Diverge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 Off Ramp @ SR 46W - SB (#20)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	210
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 (V_i), veh/h	3789	728
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	4274	798
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.97	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	39.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.523
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	4274	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	39.8
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	CCTC	Date	
Agency		Analysis Year	
Jurisdiction		Time Period Analyzed	PM
Project Description	CM+1293+School PM US 101 On Ramp @ SR 46W - SB (#21)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	70.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	315
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 (V_i), veh/h	3061	300
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971
Flow Rate (v_i), pc/h	3453	329
Capacity (c), pc/h	4413	1878
Volume-to-Capacity Ratio (v/c)	0.86	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	32.9
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.471
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influence Area Speed (S_R), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	3453	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3782	Average Density (D), pc/mi/ln	34.4
Level of Service (LOS)	D		

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Appendix D: Warrant Analysis Sheets

Existing

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Existing AM

Intersection Information			
Major Street (N/S Road)	Golden Hill Rd	Minor Street (E/W Road)	Union Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	859 vehicles	Total Approach Volume	700 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

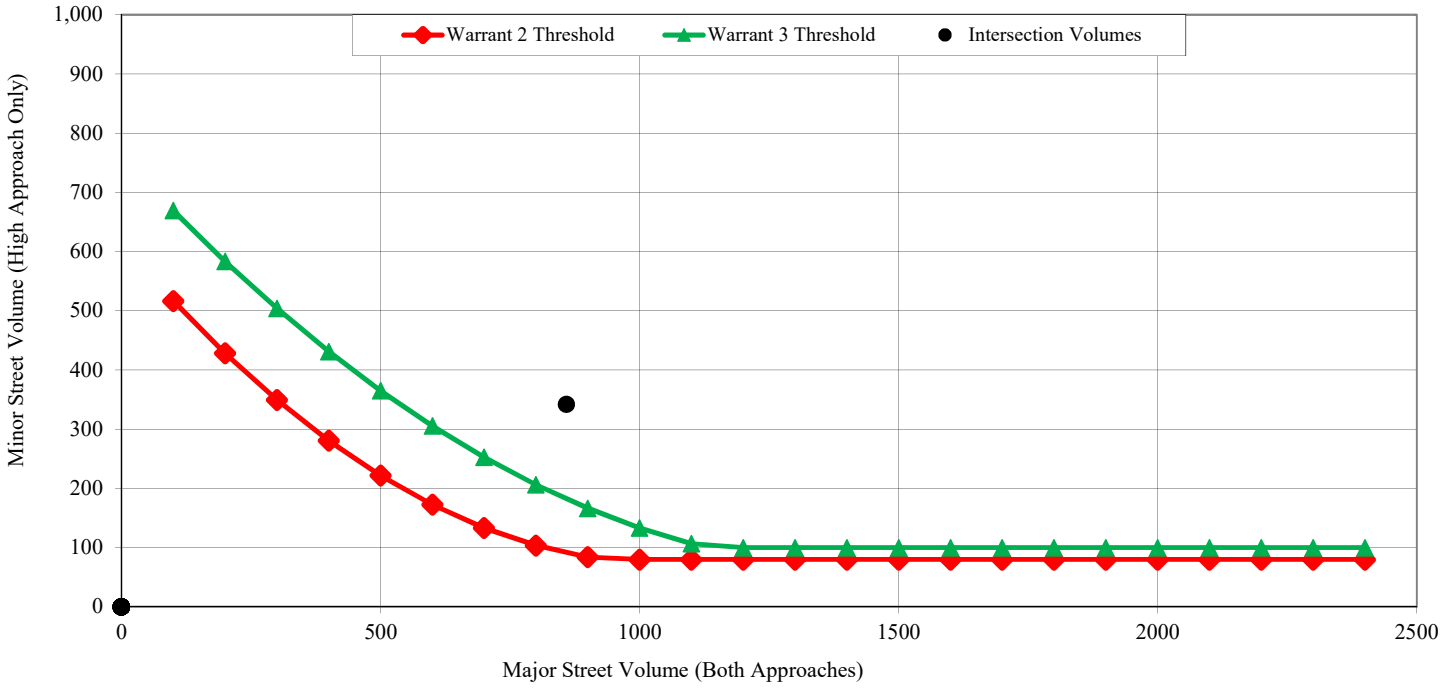
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. 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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1559 total, 408 minor, 6.2 delay	1 hour
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)



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Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Existing PM

Intersection Information			
Major Street (N/S Road)	Golden Hill Rd	Minor Street (E/W Road)	Union Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	960 vehicles	Total Approach Volume	860 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

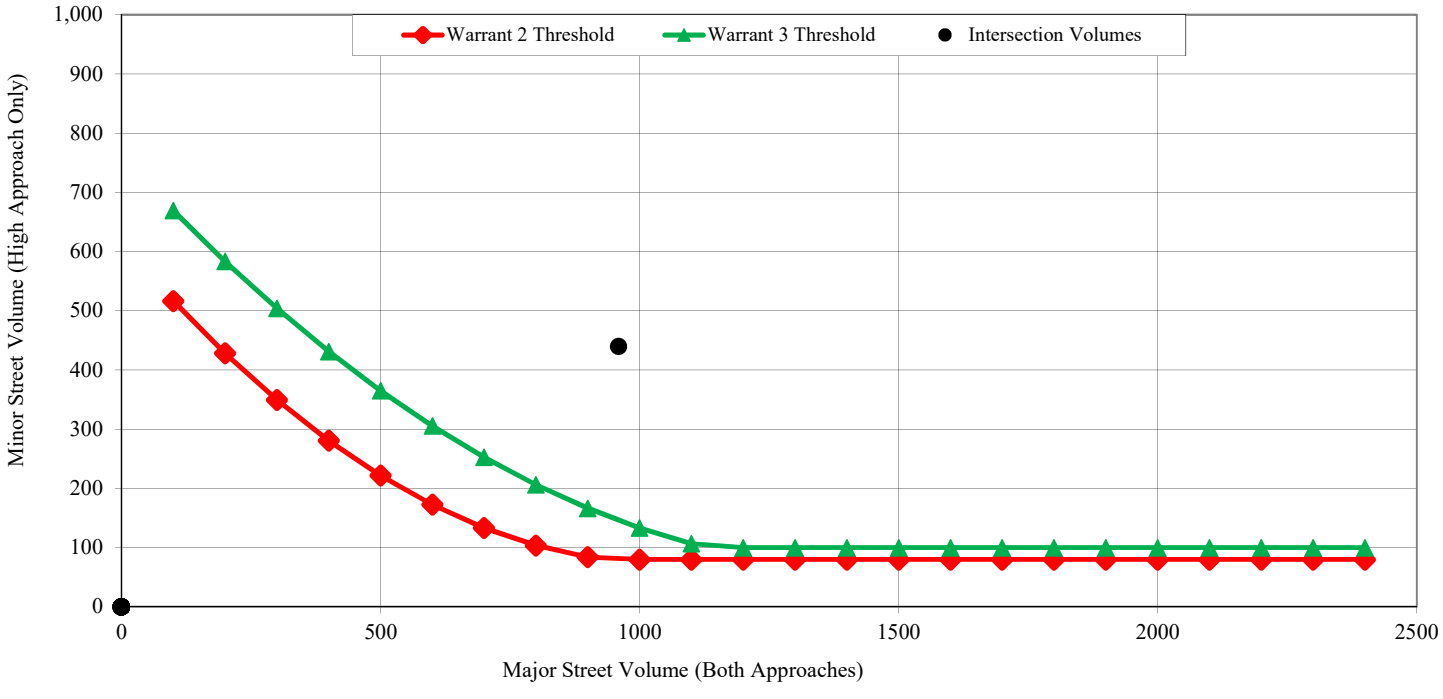
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. 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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1820 total, 537 minor, 9.3 delay	1 hour
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
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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Existing AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1399 vehicles	Total Approach Volume	406 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

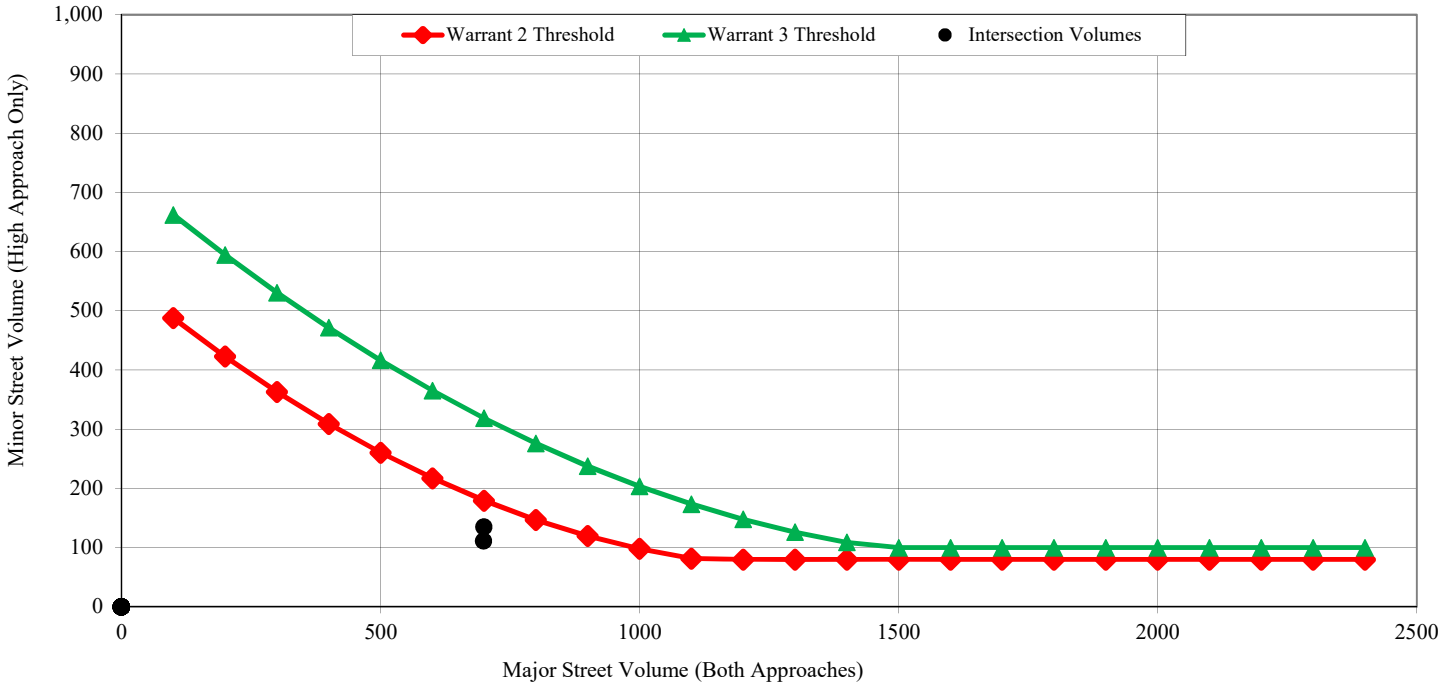
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	1 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	952 total, 135 minor, 1.5 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Existing Plus 1293 Unit Project AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	777 vehicles	Total Approach Volume	254 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

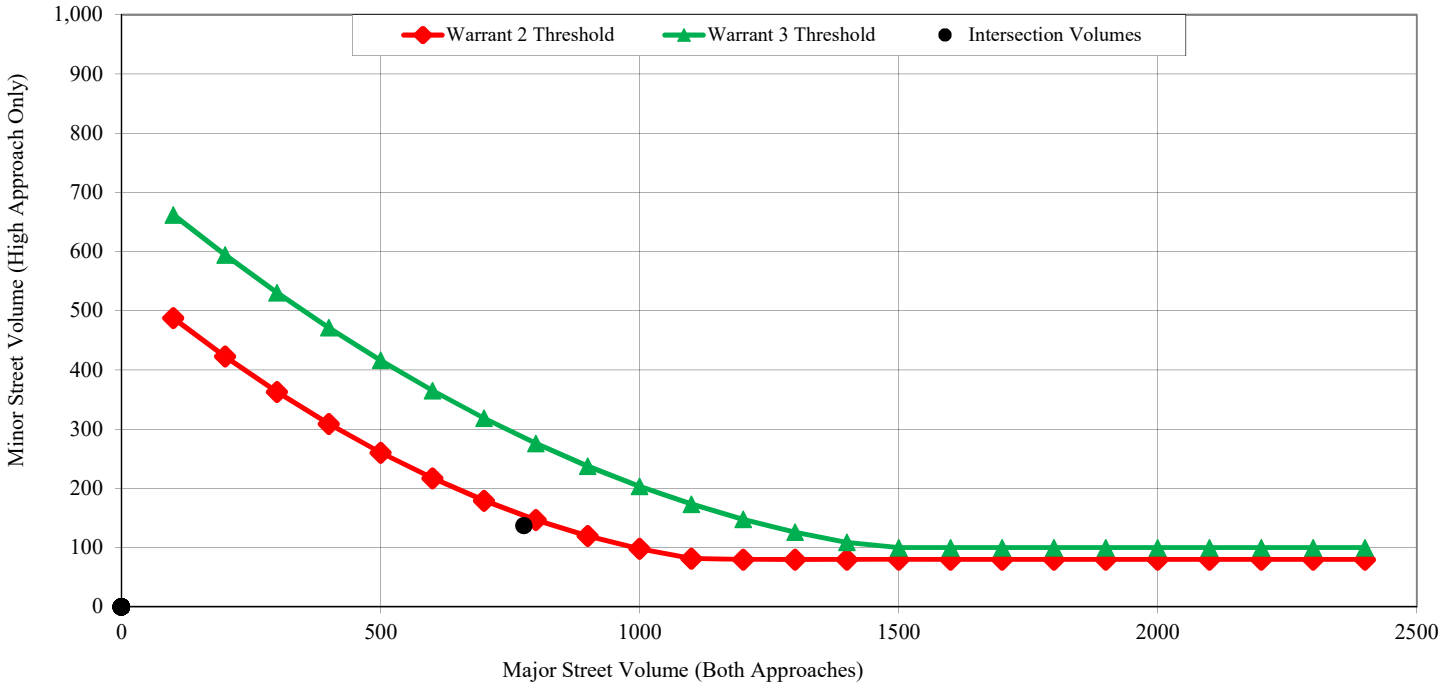
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1031 total, 137 minor, 2.2 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Existing Plus 1293 Unit Project and School AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	805 vehicles	Total Approach Volume	256 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

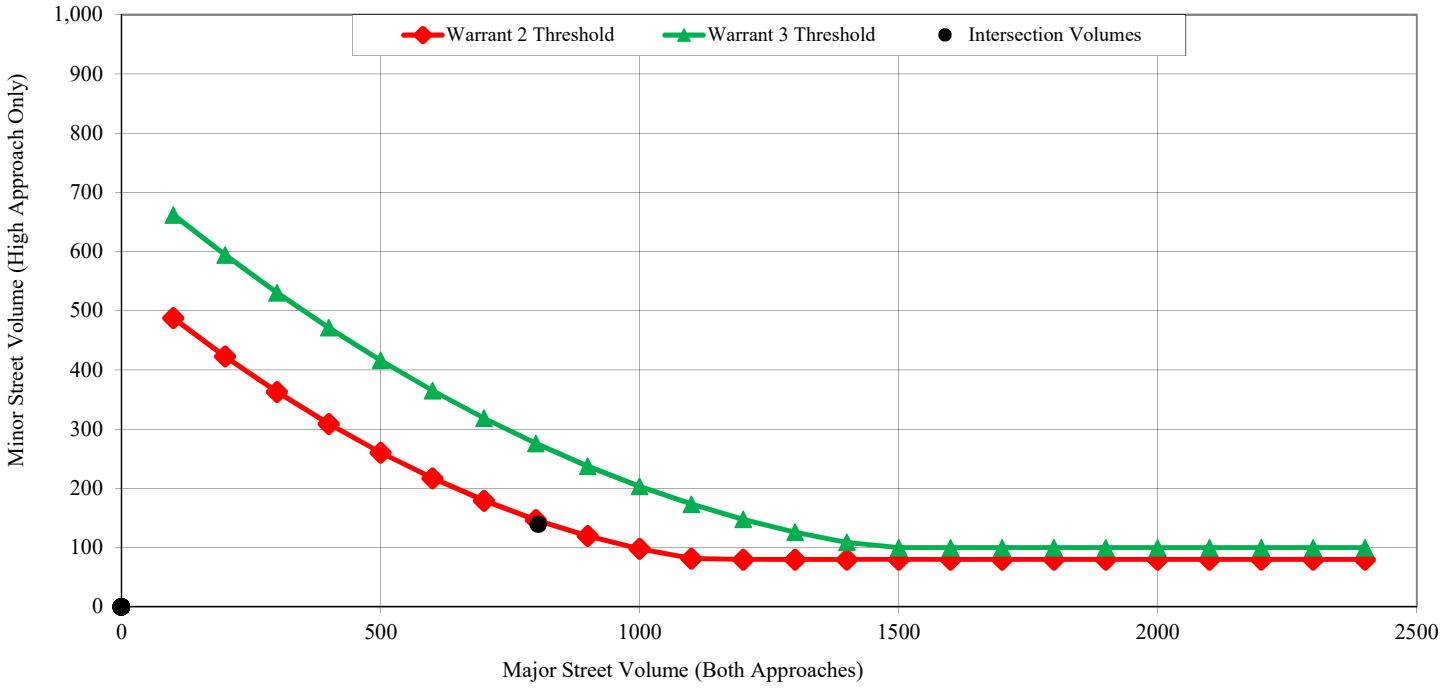
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1061 total, 139 minor, 2.7 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Near Term

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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	2693 vehicles	Total Approach Volume	189 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

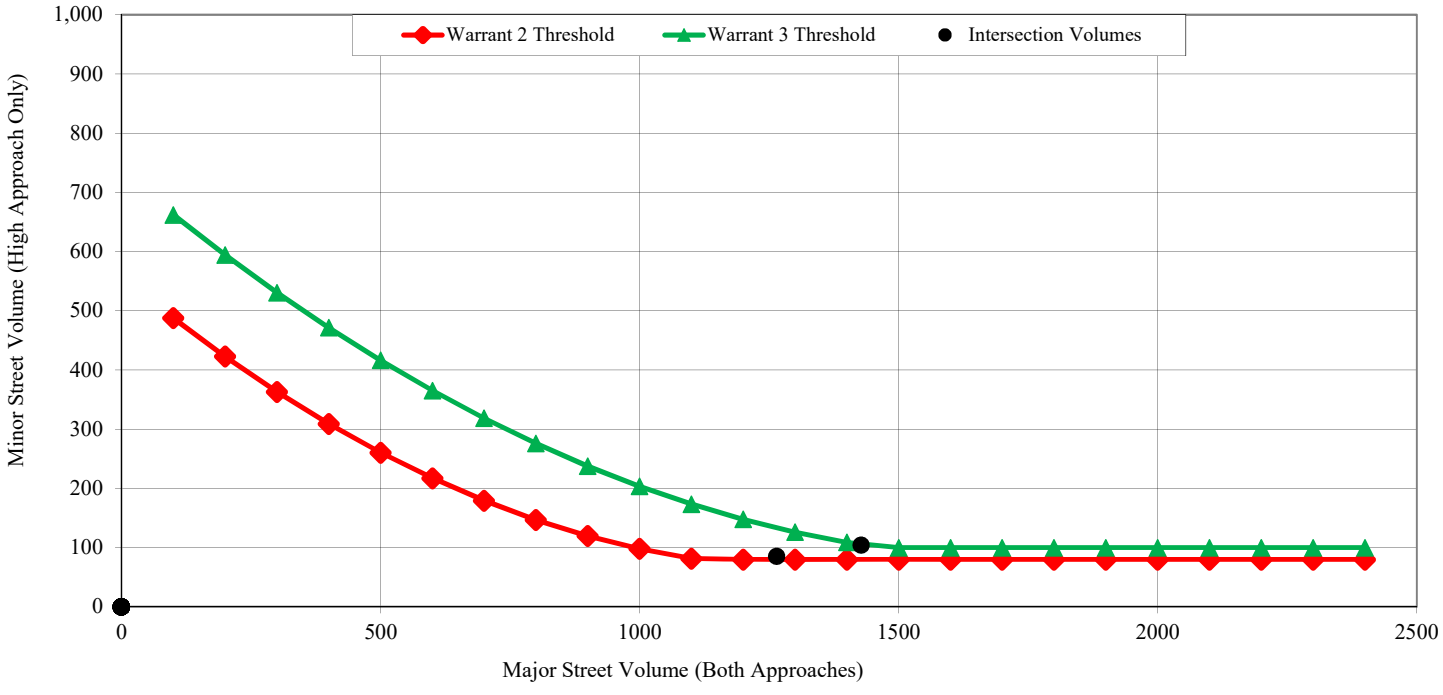
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	2 hours	0 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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**	**Not Satisfied**
Required values reached for	1532 total, 104 minor, 1.5 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1358 vehicles	Total Approach Volume	105 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

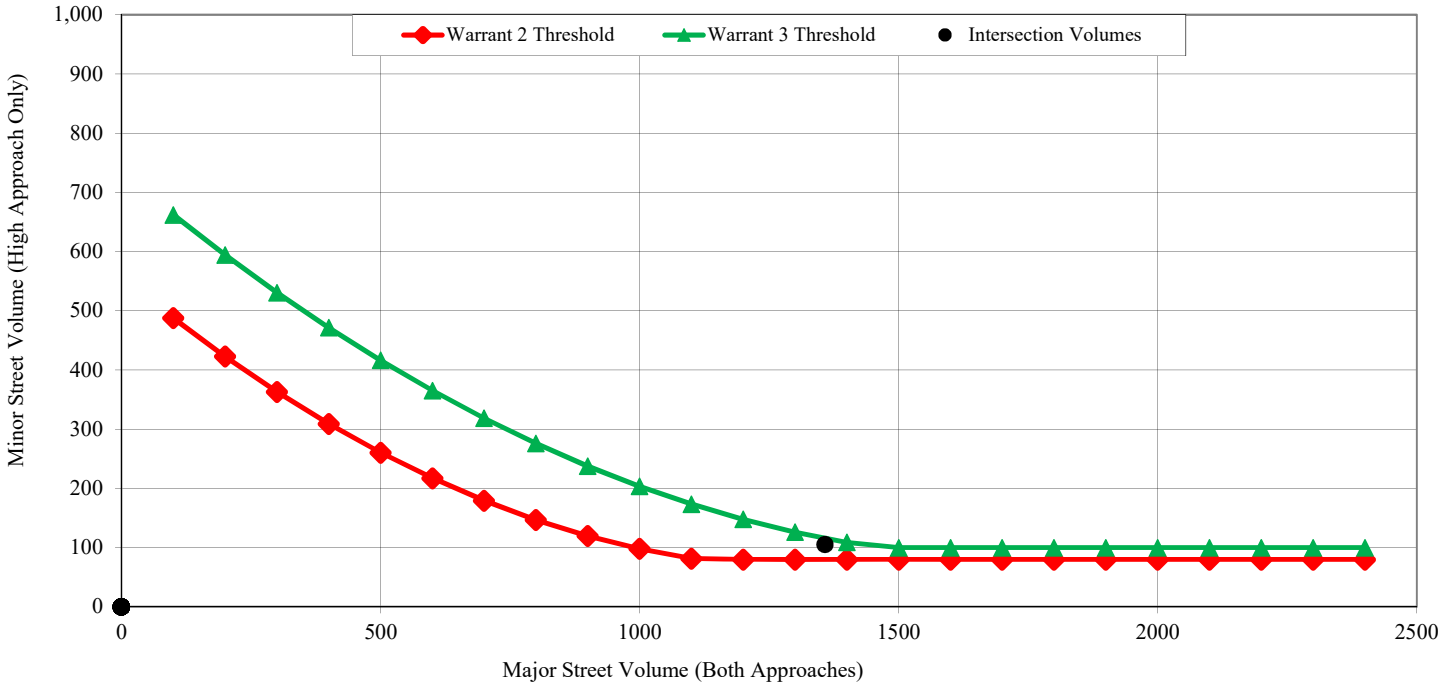
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1463 total, 105 minor, 1.3 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1565 vehicles	Total Approach Volume	118 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

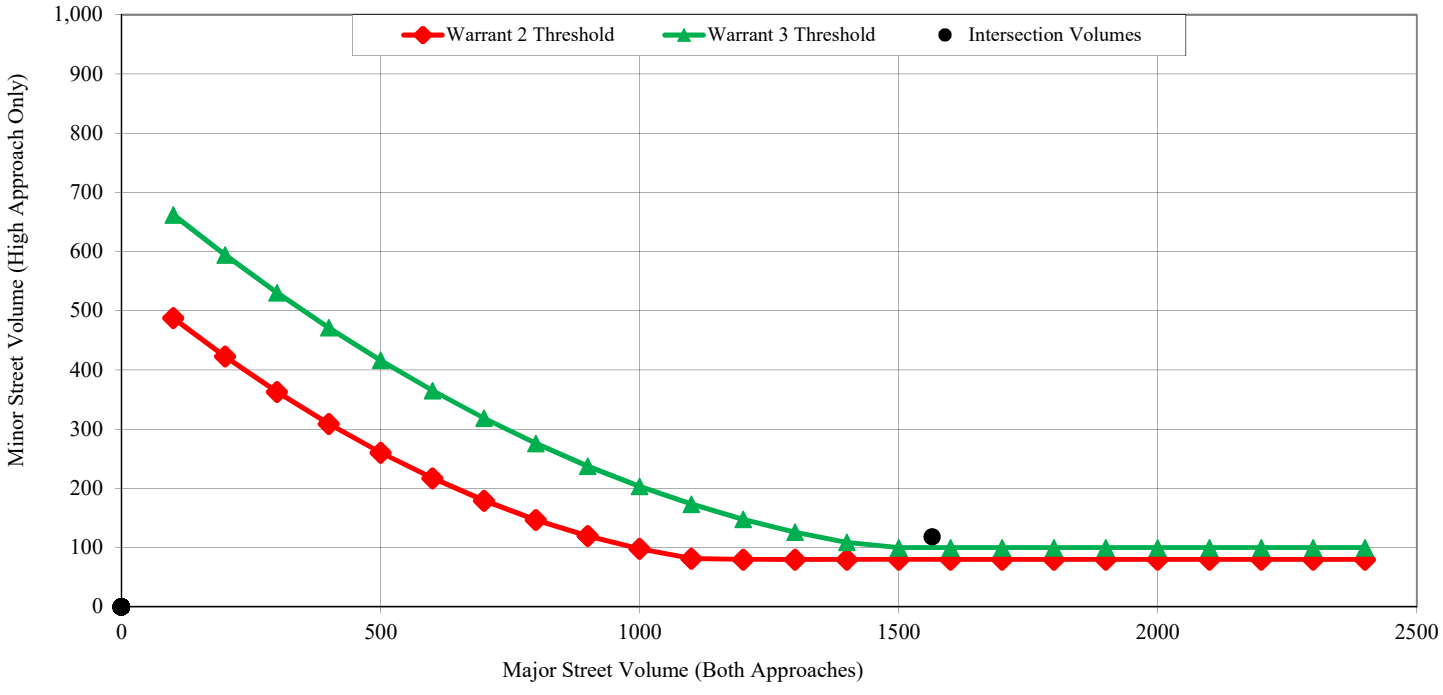
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1683 total, 118 minor, 3.2 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 901 Unit Project PM (Phase 1)

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1524 vehicles	Total Approach Volume	114 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

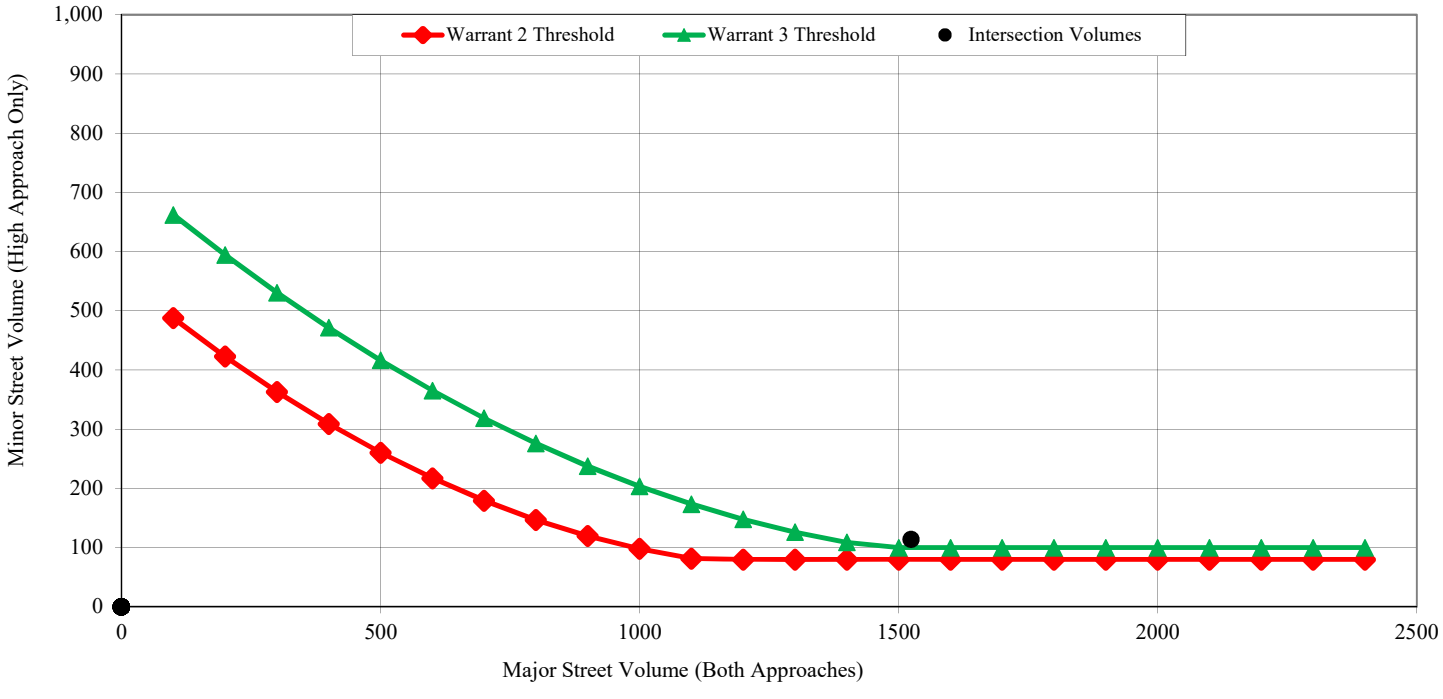
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1638 total, 114 minor, 2.6 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project and School AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1398 vehicles	Total Approach Volume	109 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

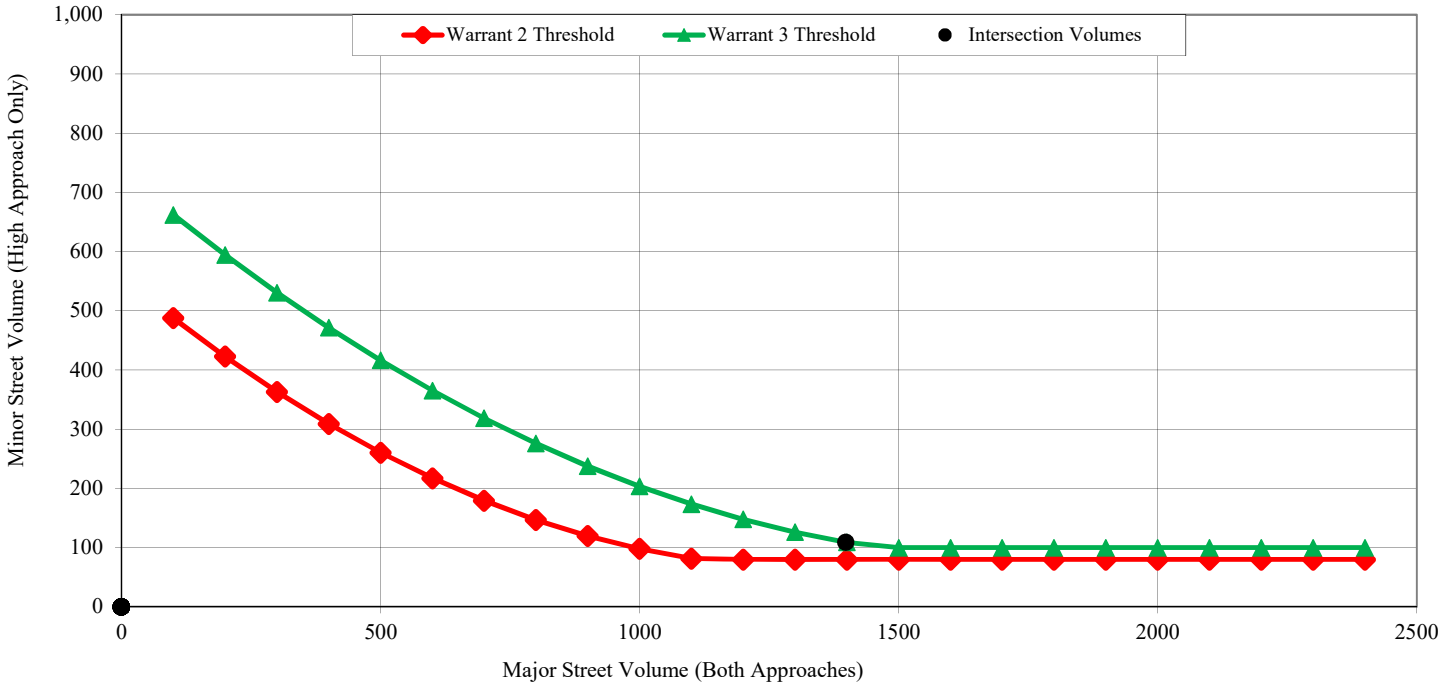
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1507 total, 109 minor, 1.6 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	2125 vehicles	Total Approach Volume	426 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

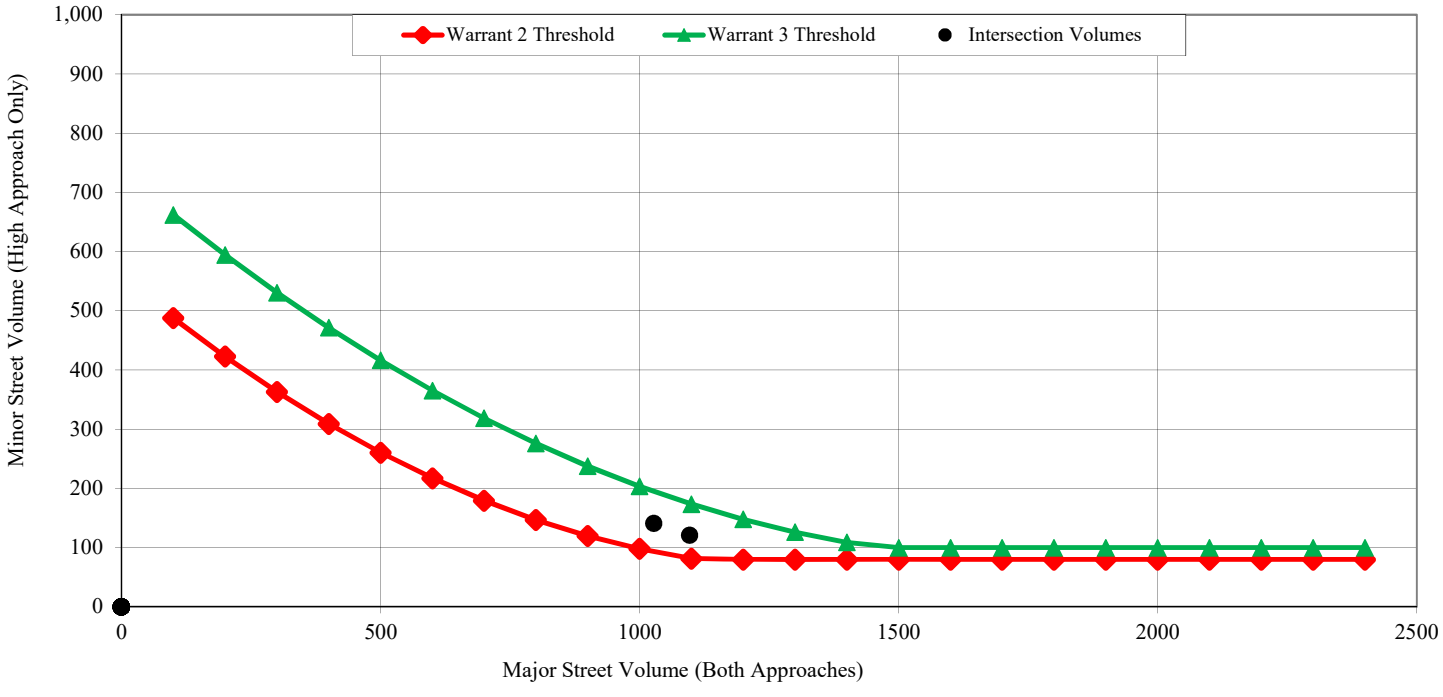
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	2 hours	2 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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**	**Not Satisfied**
Required values reached for	1290 total, 141 minor, 4.8 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	2125 vehicles	Total Approach Volume	426 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

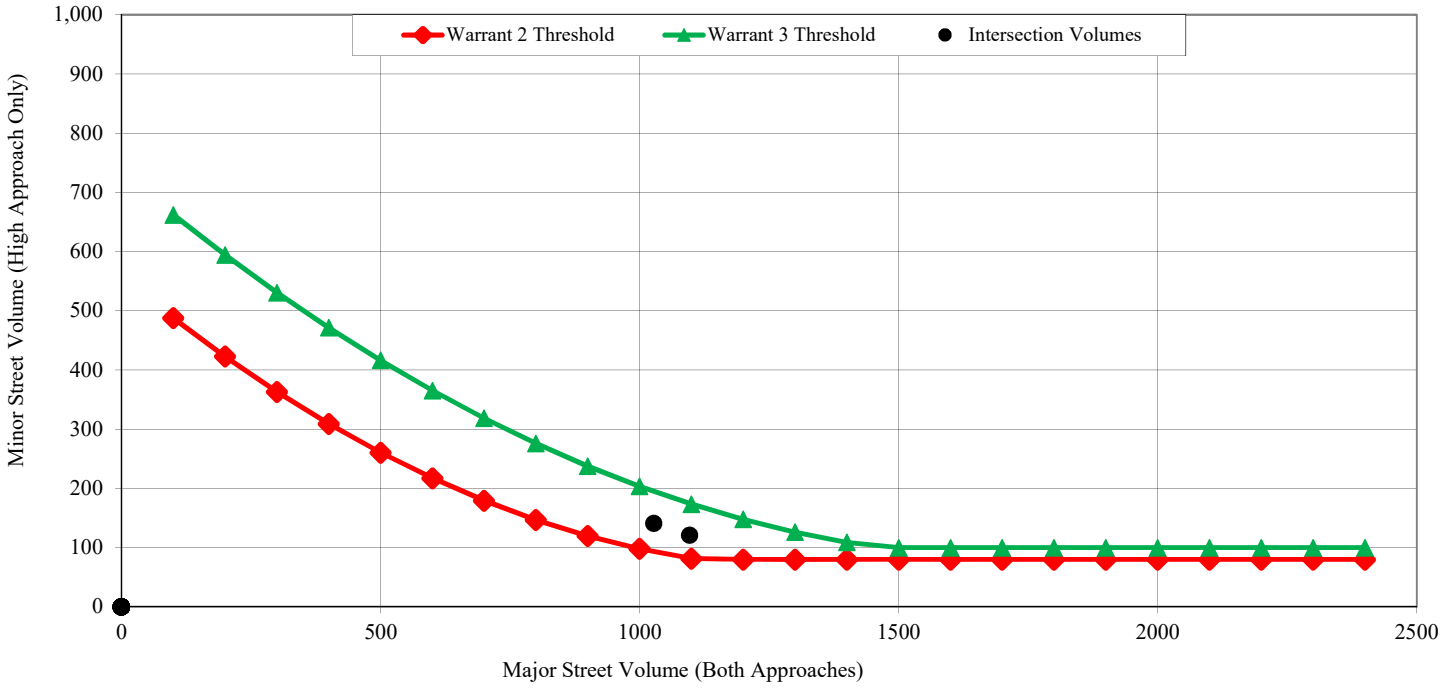
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	2 hours	2 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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**	**Not Satisfied**
Required values reached for	1261 total, 121 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1194 vehicles	Total Approach Volume	173 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

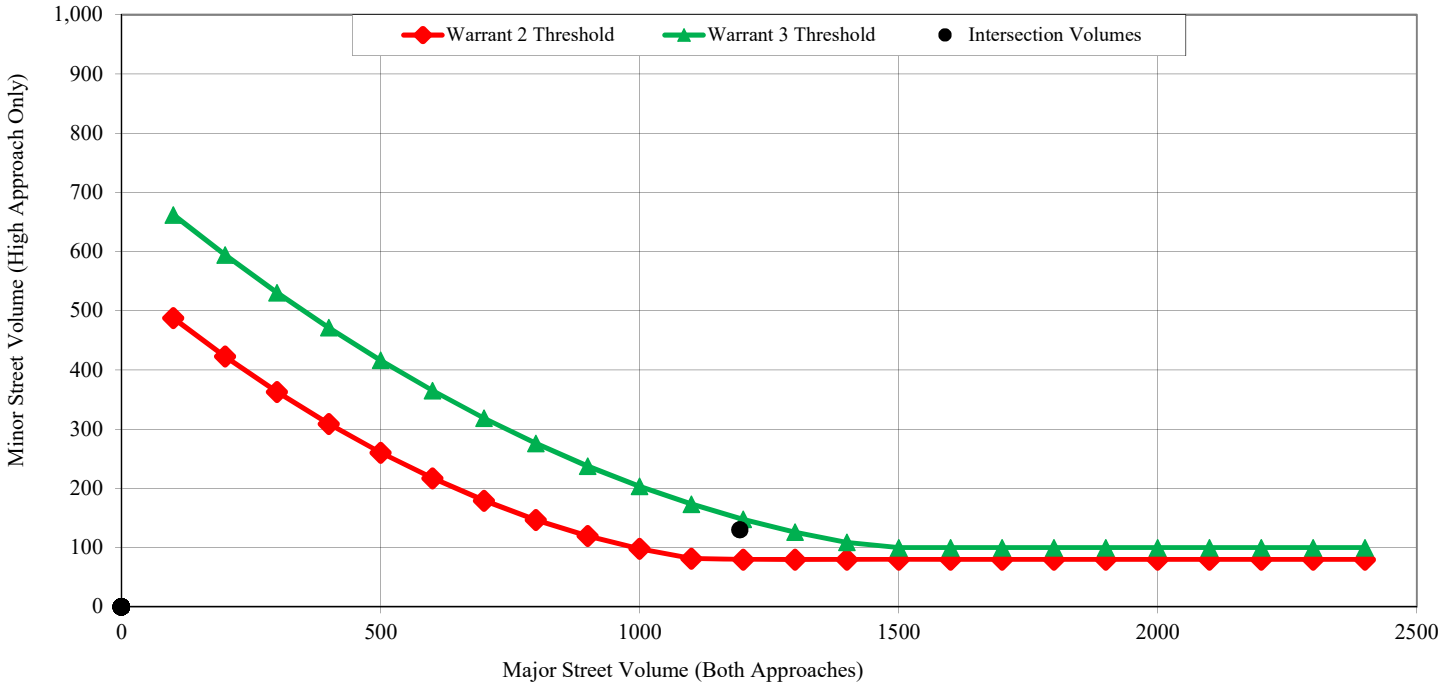
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1367 total, 130 minor, 2.9 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project and School PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1203 vehicles	Total Approach Volume	174 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

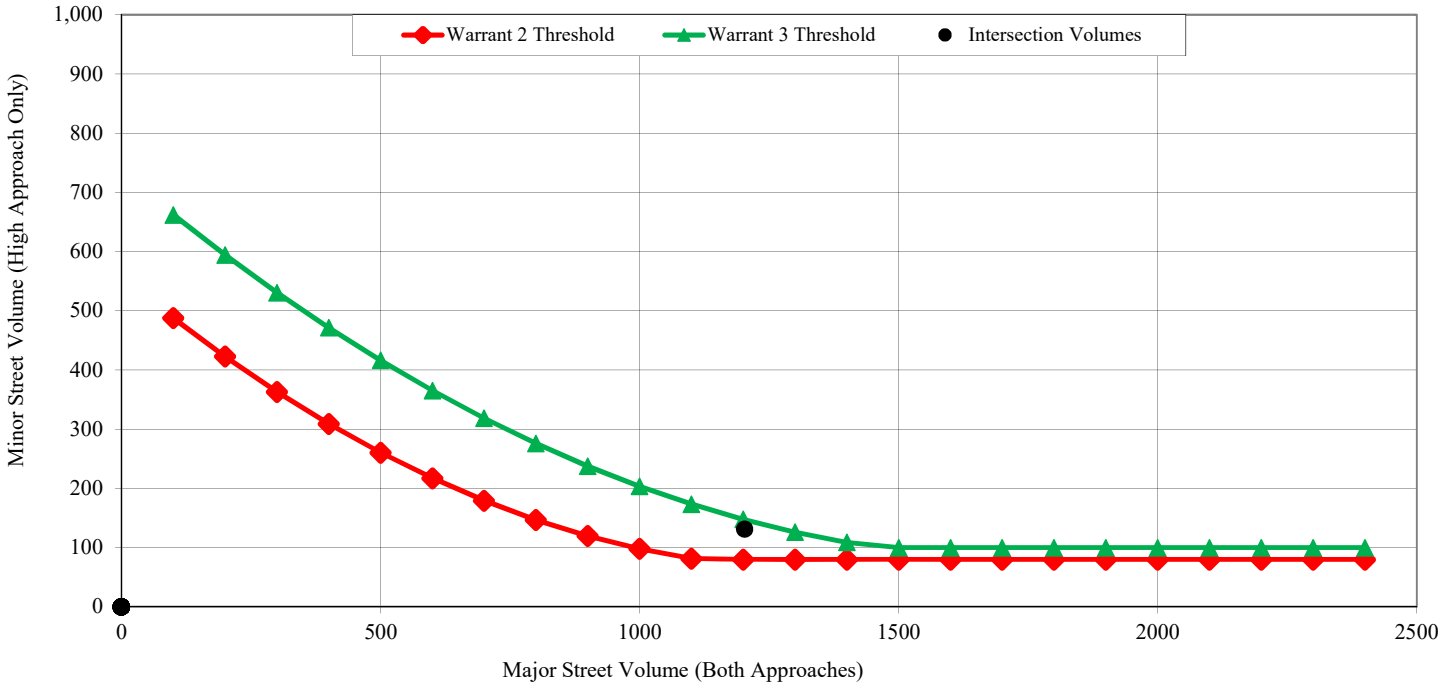
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1377 total, 131 minor, 3.1 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Meadowlark Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	840 vehicles	Total Approach Volume	633 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

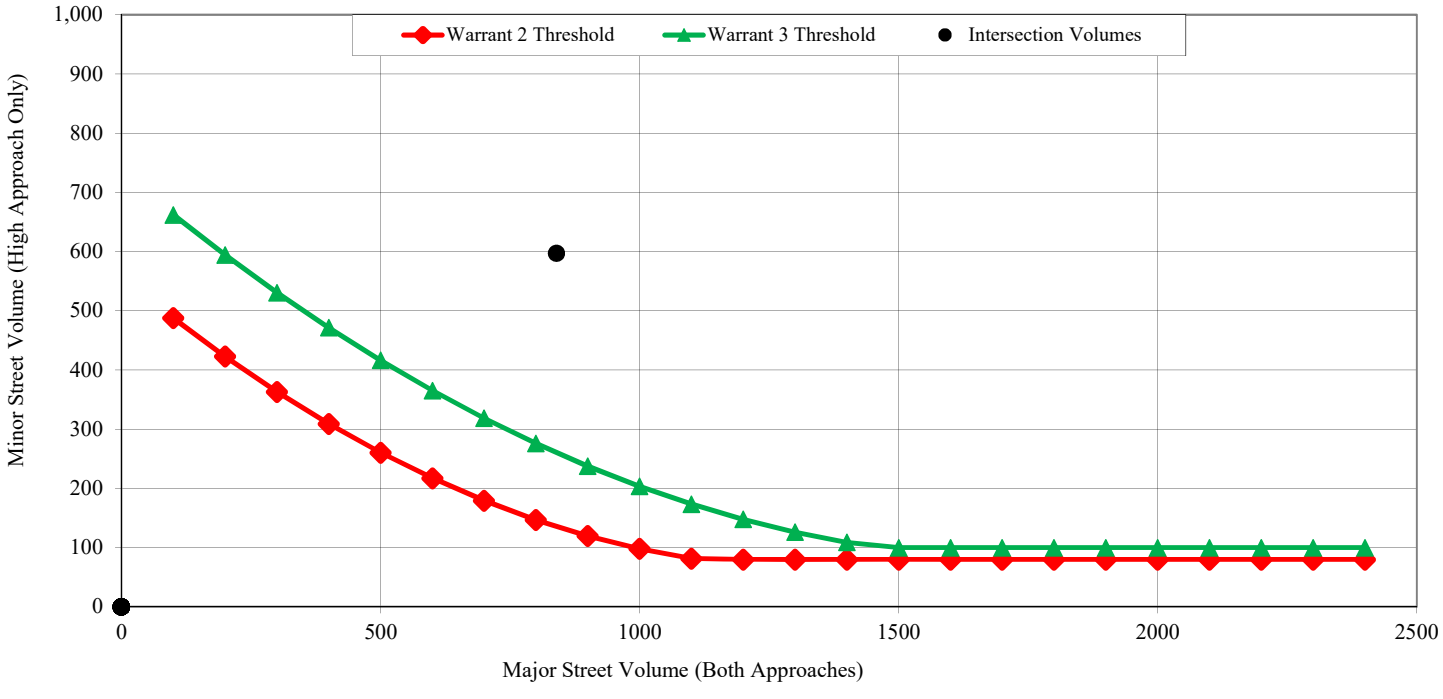
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1473 total, 597 minor, 19 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 901 Unit Project AM (Phase 1)

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Meadowlark Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	827 vehicles	Total Approach Volume	596 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

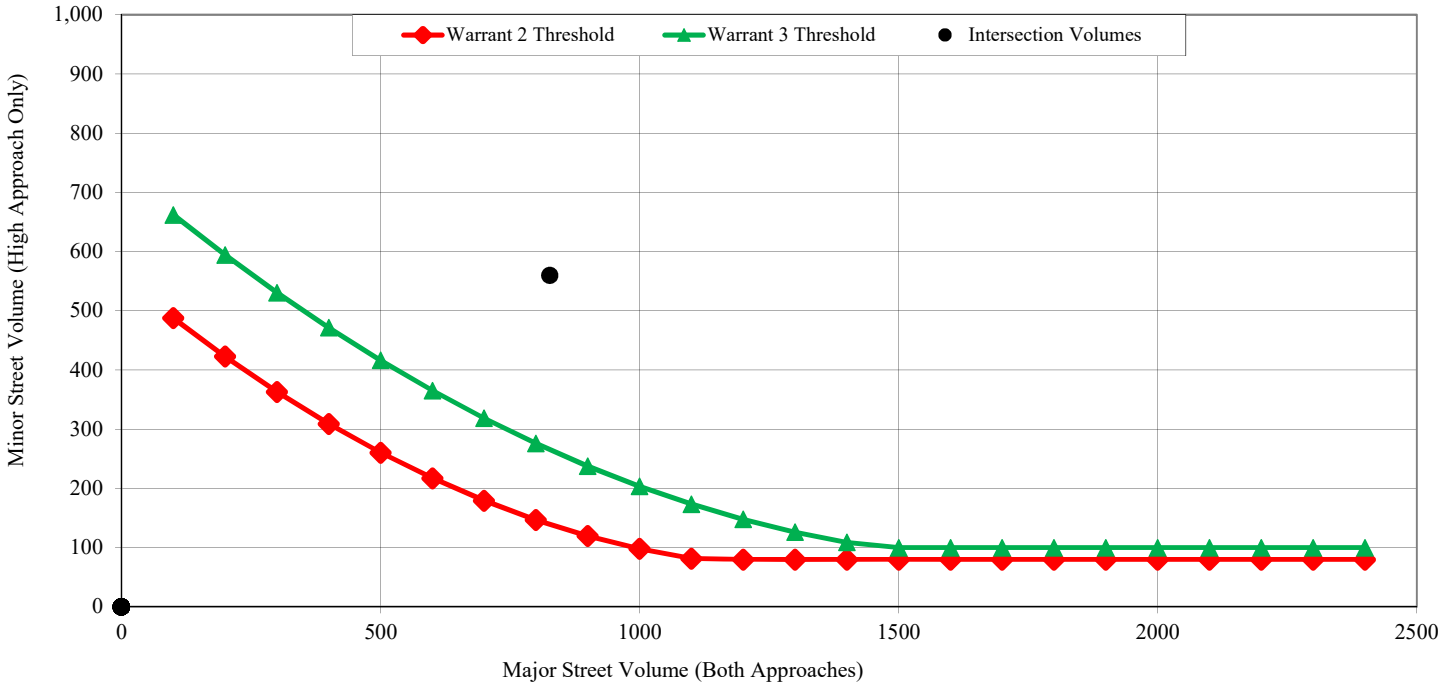
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1423 total, 560 minor, 13.3 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project + S AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Meadowlark Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1123 vehicles	Total Approach Volume	410 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

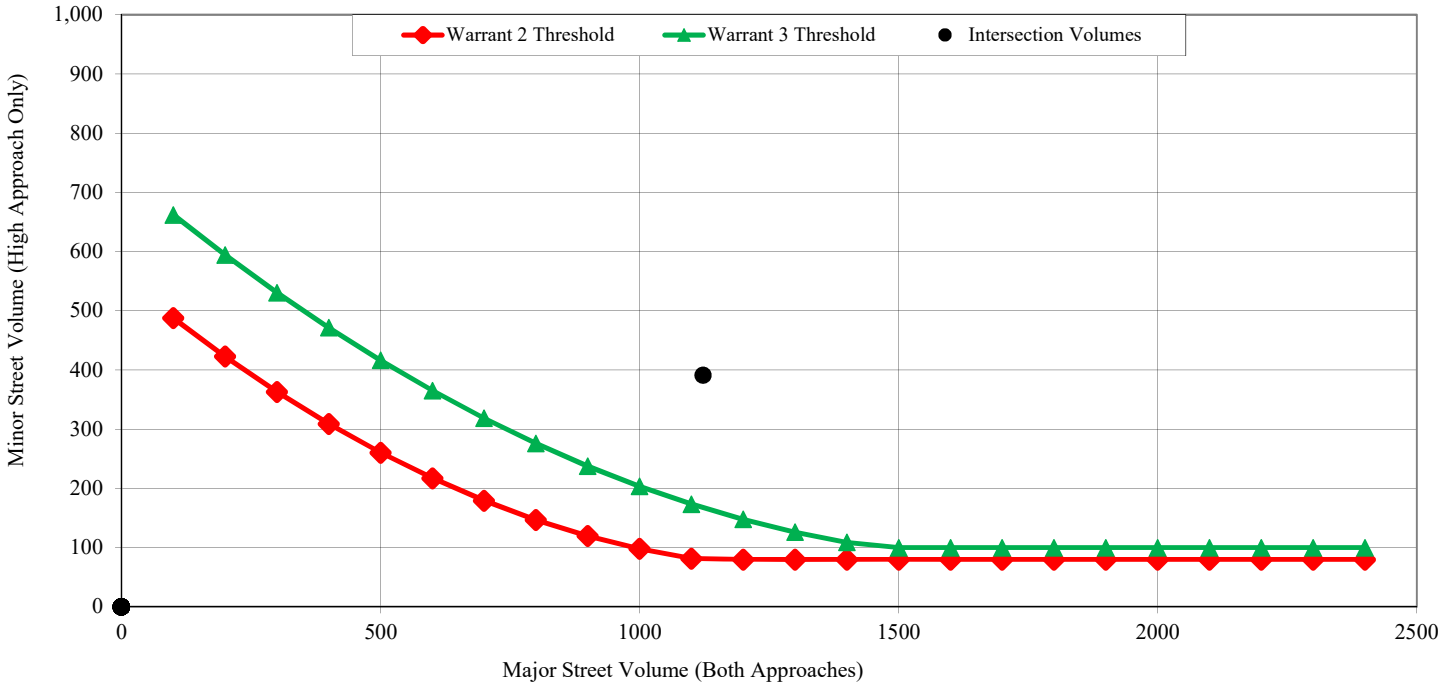
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1533 total, 391 minor, 3.9 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 1293 Unit Project PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Charolais Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	782 vehicles	Total Approach Volume	588 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

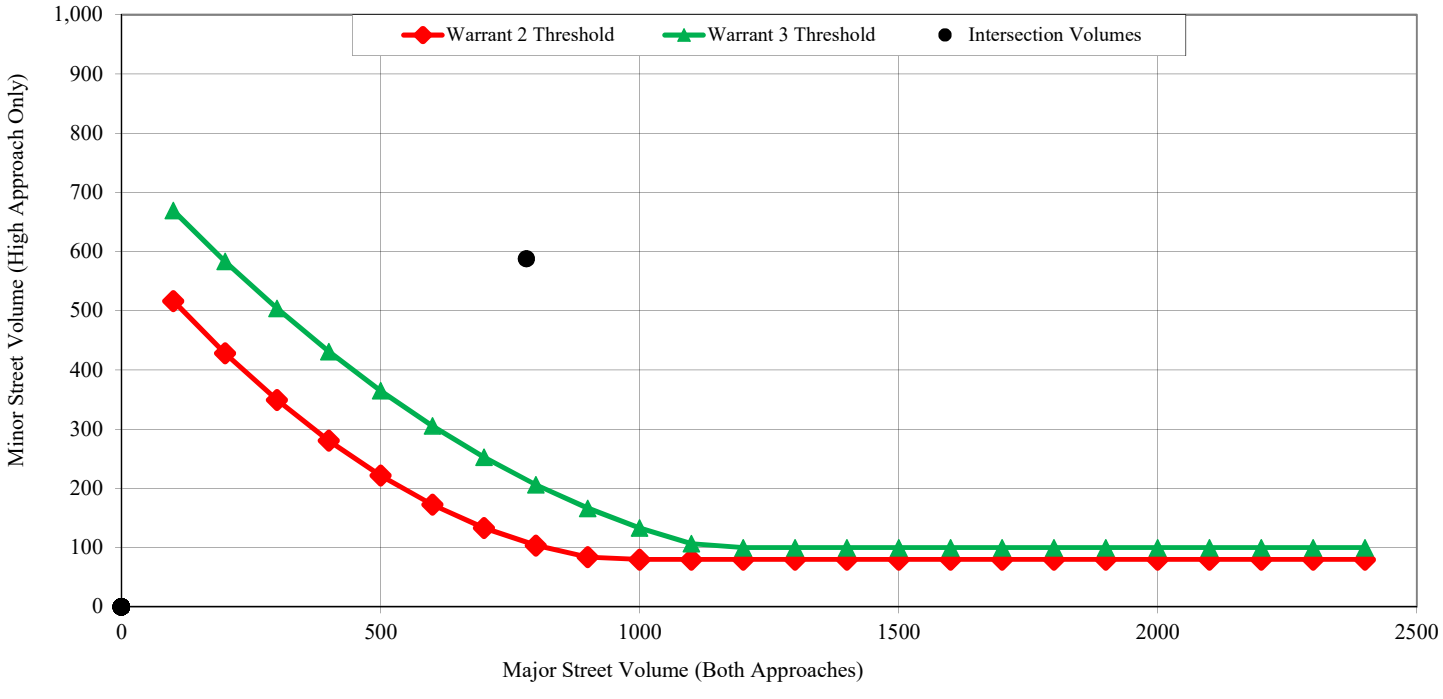
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. 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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1370 total, 588 minor, 6.6 delay	1 hour
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)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Near Term Plus 901 Unit Project PM (Phase 1)

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Charolais Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	769 vehicles	Total Approach Volume	566 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

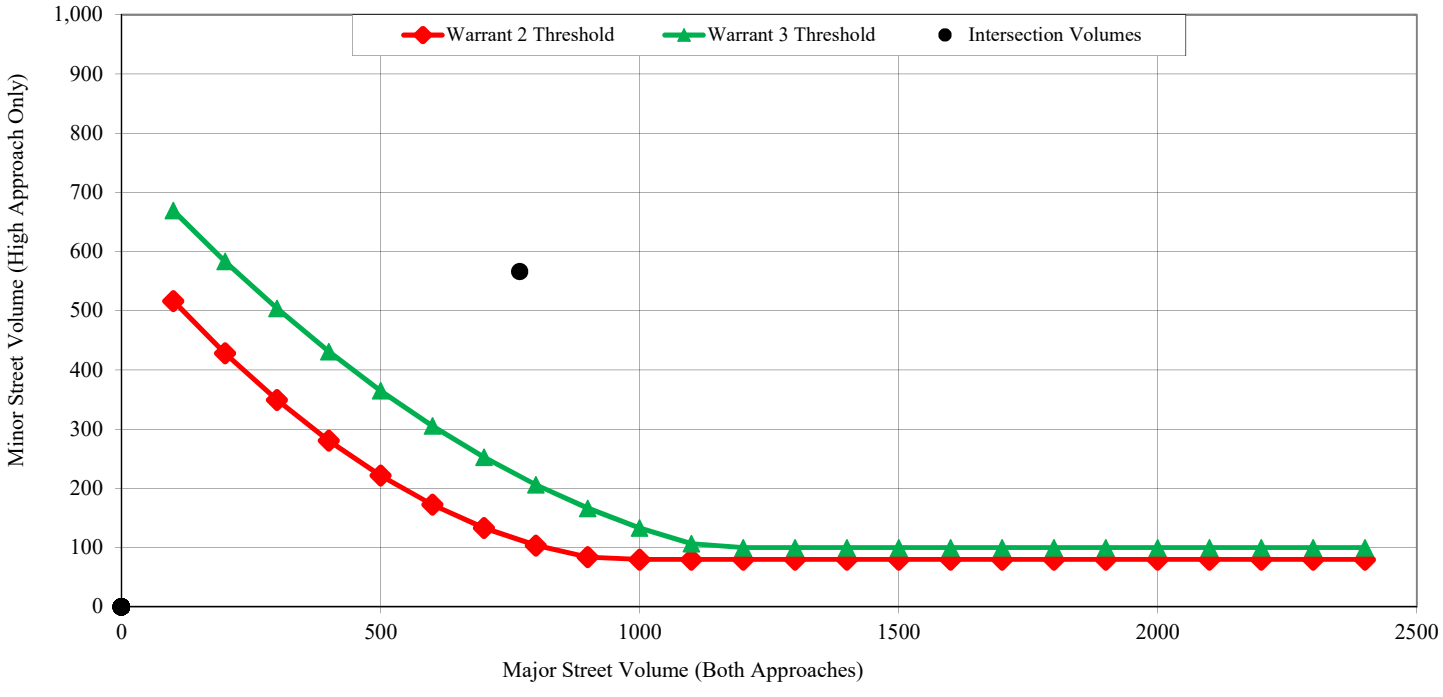
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. 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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1335 total, 566 minor, 5.3 delay	1 hour
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)



Cumulative

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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1328 vehicles	Total Approach Volume	87 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

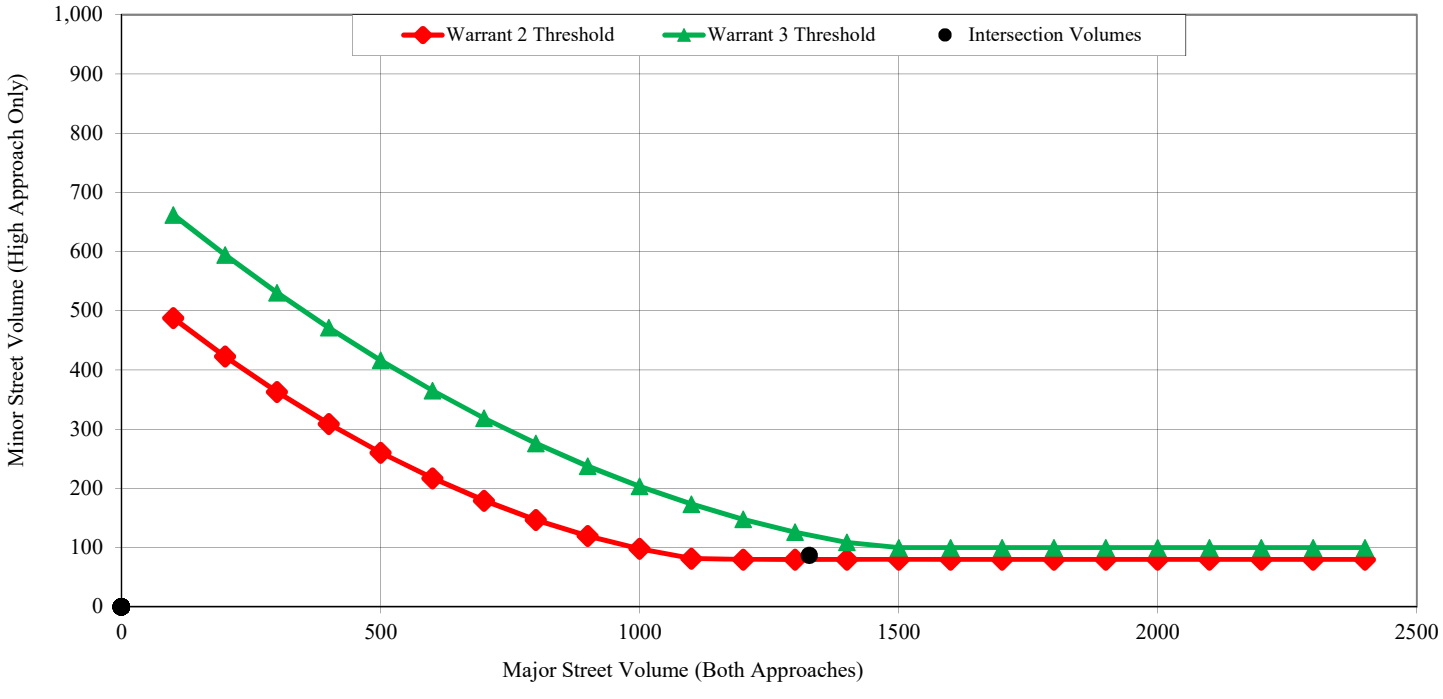
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1415 total, 87 minor, 0.9 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1538 vehicles	Total Approach Volume	112 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

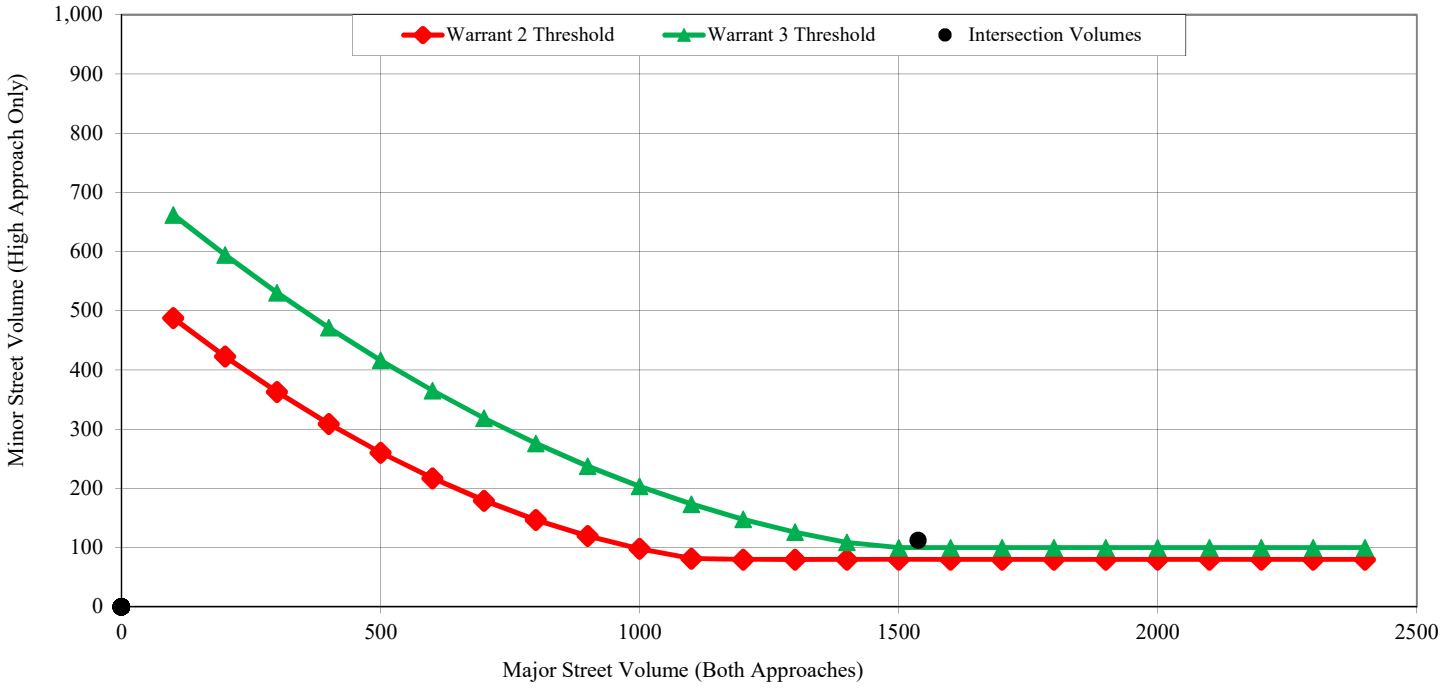
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1650 total, 112 minor, 2.8 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative Plus 1293 Unit Project AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1376 vehicles	Total Approach Volume	101 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

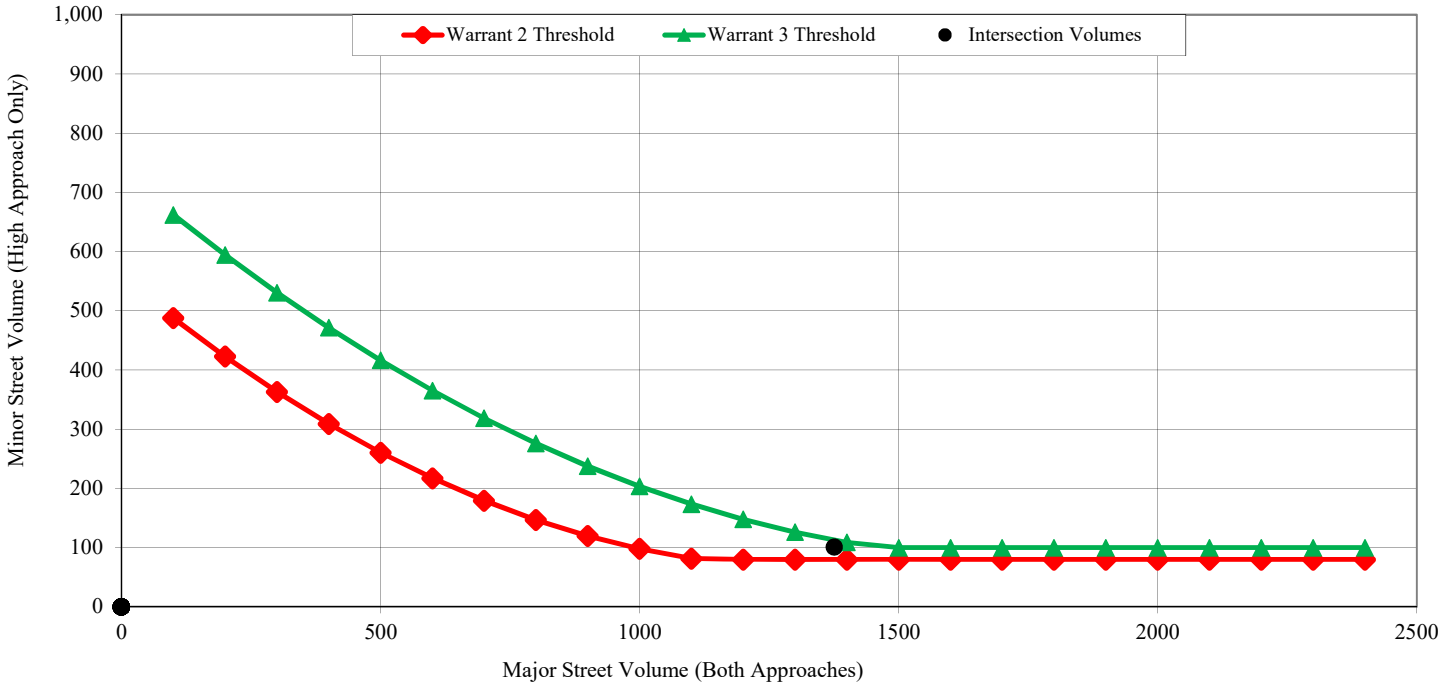
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1477 total, 101 minor, 1.4 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative Plus 1293 Unit Project and School AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Scott St
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1396 vehicles	Total Approach Volume	103 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

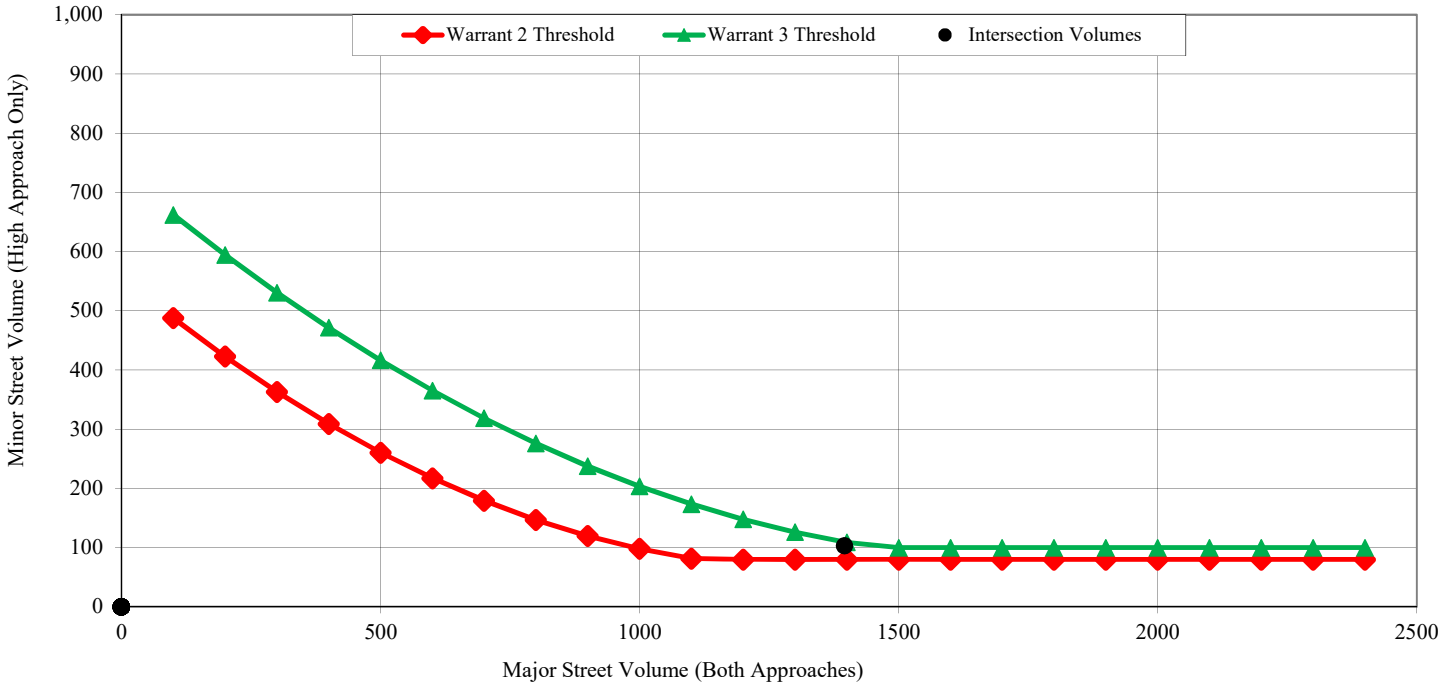
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	1 hour	0 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1499 total, 103 minor, 1.5 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1046 vehicles	Total Approach Volume	323 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

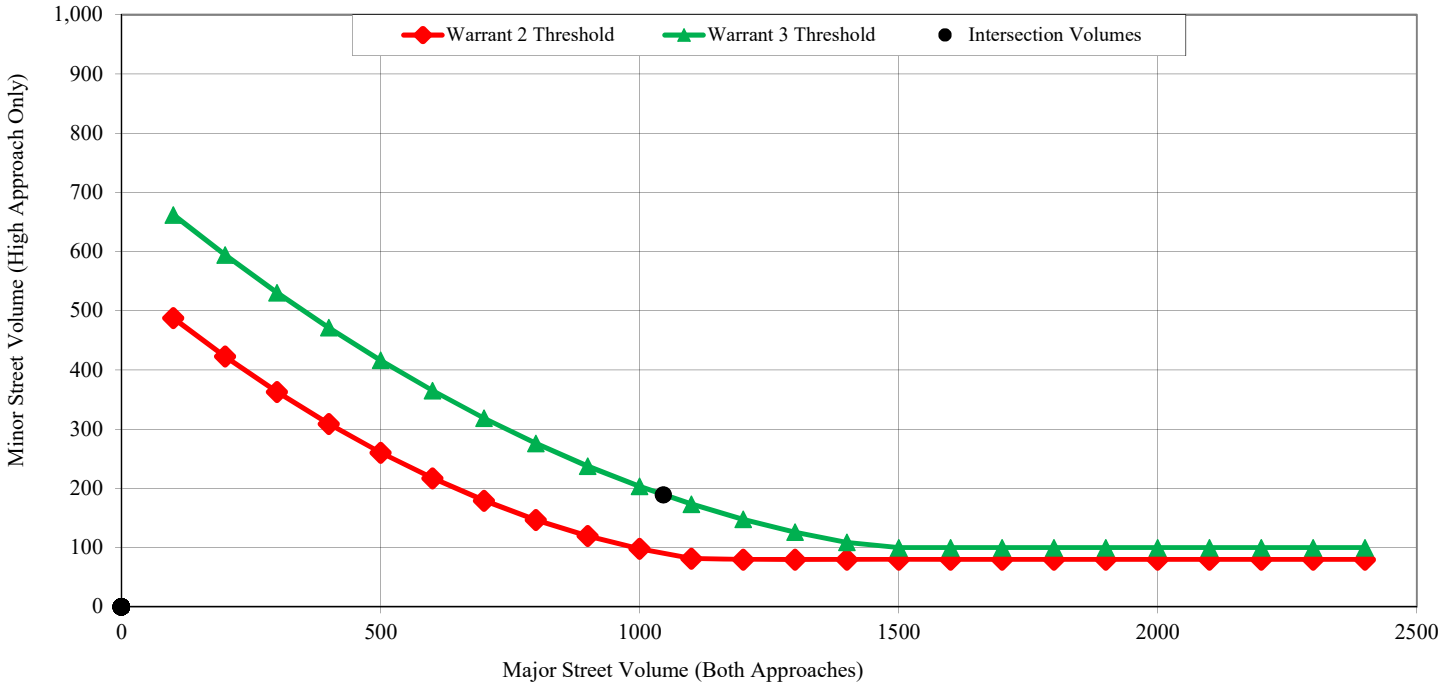
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Not Satisfied**
Required values reached for	1369 total, 189 minor, 15.7 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)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Stoney Creek Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	1195 vehicles	Total Approach Volume	216 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

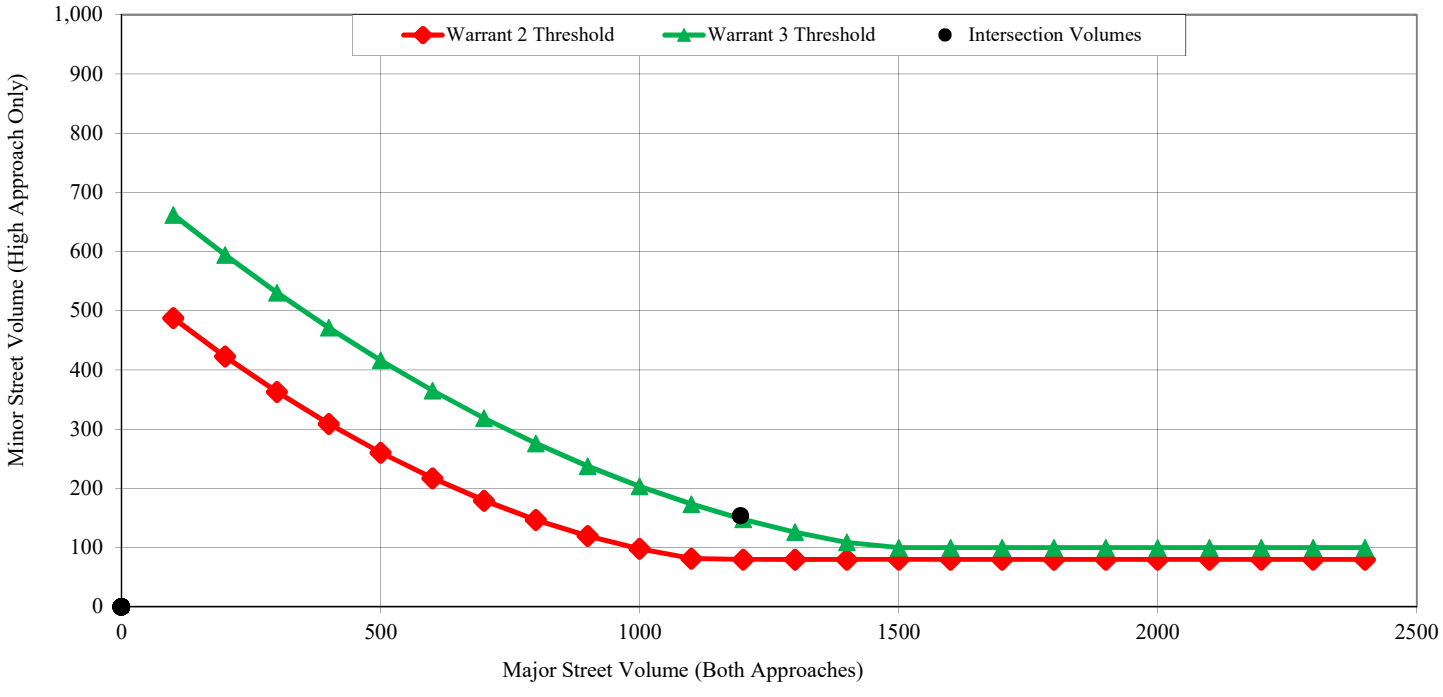
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1411 total, 154 minor, 5.2 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative AM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Meadowlark Rd
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	839 vehicles	Total Approach Volume	534 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

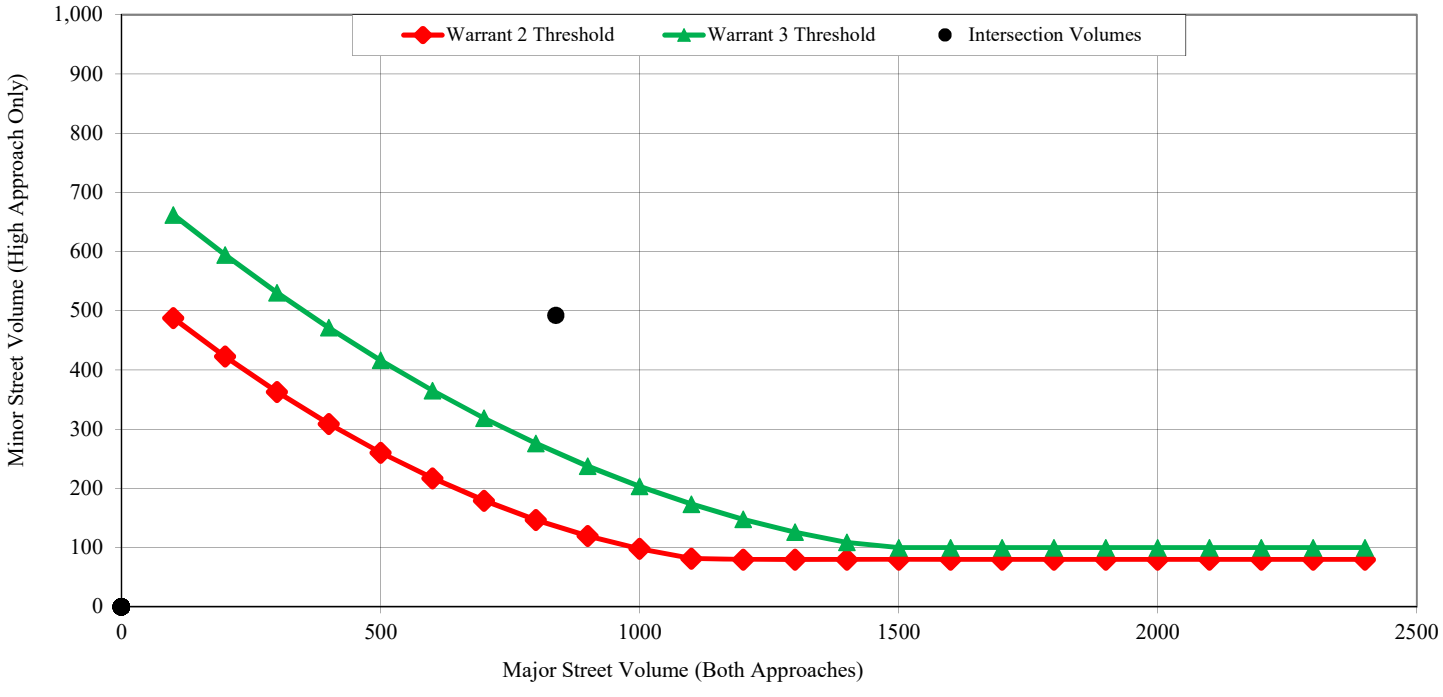
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1373 total, 492 minor, 7.7 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



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Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative Plus 1293 Unit Project PM

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Charolais Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	826 vehicles	Total Approach Volume	580 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

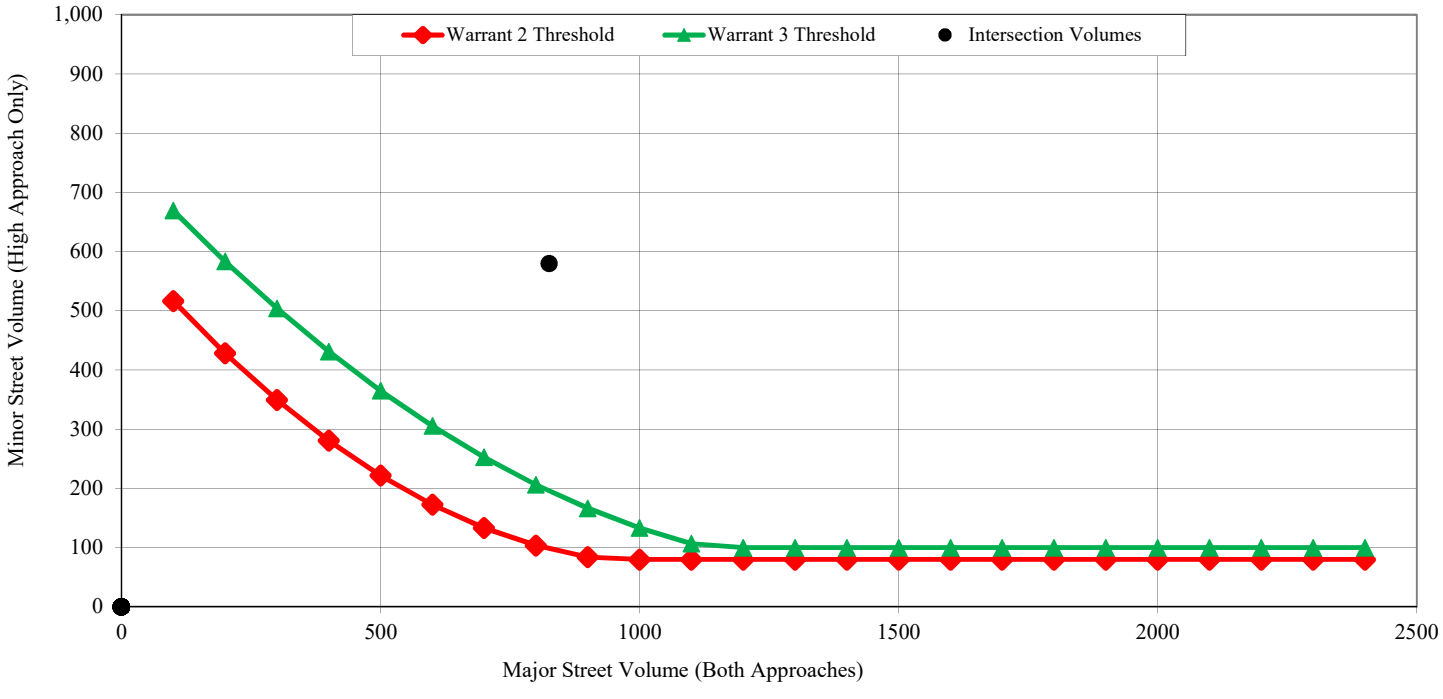
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. 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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1406 total, 580 minor, 6.7 delay	1 hour
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	Olsen-Chandler SP
Project/File #	2019_131
Scenario	Cumulative Plus 901 Unit Project PM (Phase 1)

Intersection Information			
Major Street (N/S Road)	Creston Rd	Minor Street (E/W Road)	Charolais Rd
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	816 vehicles	Total Approach Volume	563 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 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	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (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	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Satisfied**
Required values reached for	1379 total, 563 minor, 5.6 delay	1 hour
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)

