Technical Memorandum No. 4

March 13, 2019

To:	Lily Toy City of Redding Planning Division	Project:	Dignity Mercy Medical Center Redding North State Pavilion
From:	Russ Wenham, PE, TE, PTOE Zach Stinger, EIT	Ref/Job No.:	11145024
CC:	J. Lofton Moore, Dignity Health Bruce Grove, SHN	File No.:	C1966MEM008
Subject:	Traffic Impacts at Intersections No. 8 and No. 10 for: • Existing General Plan Project Alternative • Reduced Intensity Project Alternative		

1. Introduction

Dignity Health has retained GHD to prepare a Technical Memorandum detailing the traffic impacts at the intersections of Hartnell Avenue & Cobblestone Shopping Center (Intersection No. 8) and Hartnell Avenue & Cypress Avenue (Intersection No. 10) for the following two alternatives:

- Existing General Plan and Zoning
- Reduced Intensity Project

Both alternatives were analyzed for the following scenarios:

- *Existing Plus Project*
- *Year 2040 Plus Project*

The alternatives will be compared to the *Existing No Project* and *Year 2040 No Project* conditions presented in the Dignity Mercy Medical Center Redding North State Pavilion Traffic Impact Analysis Report (dated October 2018), herein "TIAR" to determine traffic impacts.

2. Level of Service

2.1 General LOS Methodologies

Refer to the TIAR.

2.2 Intersection LOS Methodologies

Refer to the TIAR.

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2.3 LOS Guidelines and Policies

Refer to the TIAR.

3. Alternative Descriptions

3.1 Existing General Plan and Zoning Project Alternative Description

Under the *Existing General Plan and Zoning Alternative*, the existing General Plan land use classifications and zoning designations are assumed to have been developed at the proposed project site. The land-development assumptions for this alternative have been identified by the City of Redding as representative of the type of development that could potentially develop under current land-use designations. The *Existing General Plan and Zoning Alternative* contains the following developments:

- Two Restaurants totaling 10,800 square feet
- 19,248 square feet of office space
- 5,568 square feet of retail space
- 22,770 square feet of general commercial
- 76,230 square feet of general office

3.1.1 Existing General Plan and Zoning Trip Generation

Trip generation was developed using the Institute of Transportation Engineers (ITE) *Trip Generation Manual 9th Edition*. Table 3.1 presents the trip generation rates for AM and PM peak hours for the *Existing General Plan and Zoning Alternative*.

Table 3.1 Existing General Plan and Zoning Project Trip Generation

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Restaurants (932)	ksf	127.15	10.81	55%	45%	9.85	60%	40%
General Office Building (710)	ksf	19.50	2.66	88%	12%	5.20	17%	83%
Shopping Center (820)	ksf	42.70	0.96	62%	38%	3.71	48%	52%
General Plan and Zoning	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Restaurants	10.8	1,373	117	64	53	106	63	43
Office Space	19.2	375	51	45	6	100	17	83
Retail Space	5.6	238	5	3	2	21	10	11
General Commercial	22.8	972	22	14	8	84	40	44
To Office			-13	-6	-7	-10	-9	-1
General Office	76.2	1,068	154	136	18	164	28	136
To Shopping Center			-13	-7	-6	-10	-1	-9
Net New Project Trips		**4,027**	**323**	**249**	**74**	**455**	**148**	**307**

Notes:
1. 1 ksf = 1,000 square feet
2. Trip rates based on ITE Trip Generation Manual 9th edition fitted-curve equations or average rates

As presented in Table 3.1, the *Existing General Plan and Zoning Alternative* is projected to generate up to approximately 323 AM and 455 PM peak hour trips.

3.2 Reduced Intensity Project Alternative

Under the *Reduced Intensity Project Alternative* the square footage of the proposed project would be reduced by 20,000 square feet, leaving an overall project floor area of 109,600 square feet.

3.2.1 Reduced Intensity Project Trip Generation

The trip generation for the *Reduced Intensity Project Alternative* uses the same trip generation as the TIAR. Table 3.2 presents the trip generation rates for AM and PM peak hours for the *Reduced Intensity Project Alternative*.

Table 3.2 Reduced Intensity Project Trip Generation

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Medical-Dental Office Building	ksf	36.13	2.39	79%	21%	2.54	24%	76%
Project Name	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	In	Out	Total	In	Out
Dignity Health Medical Center Reduced Intensity	110	3,974	263	208	55	279	67	212
Net New Project Trips		**3,974**	**263**	**208**	**55**	**279**	**67**	**212**

Notes:
1. 1 ksf = 1,000 square feet
2. Trip rates based on ITE Trip Generation Manual 9th edition average rates for Daily and AM Peak Hour conditions.

As presented in Table 3.2, the *Reduced Intensity Alternative* is projected to generate up to approximately 263 AM and 279 PM peak hour trips.

4. Existing Plus Alternative Projects Conditions

The *Existing Plus Alternative Projects* conditions is the analysis scenario in which traffic impacts associated with the two alternatives are investigated in comparison to the *Existing* conditions scenario.

4.1 Existing Plus Alternative Projects Intersection Operations

Existing Plus Alternative Projects conditions were quantified by superimposing traffic generated by the two alternatives onto *Existing* conditions.

Tables 4.1 and 4.2 presents the *Existing Plus General Plan and Zoning* and *Existing Plus Reduced Intensity Project* intersection LOS conditions, respectively.

Table 4.1 Existing Plus Existing General Plan and Zoning Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	17.9	C	-	**40.2**	**E**	**No**
10	Hartnell Ave & Cypress Ave	Signal	D	31.2	C	-	31.3	C	-

Notes:
1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

Table 4.2 Existing Plus Reduced Intensity Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	17.7	C	-	**36.0**	**E**	**No**
10	Hartnell Ave & Cypress Ave	Signal	D	30.9	C	-	29.0	C	-

Notes:
1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Tables 4.1 and 4.2, the intersection of Hartnell Avenue and Cobblestone Shopping Center (Intersection No. 8) is projected to operate at an unacceptable LOS under both alternatives.

4.2 Existing Plus Alternative Projects Queues

Table 4.3 presents a comparison between the *Existing* and the *Existing Plus General Plan and Zoning* queues for the critical signalized intersection of Hartnell Avenue and Cypress Avenue (Intersection No. 10).

Table 4.4 presents a comparison between the *Existing* and the *Existing Plus Reduced Intensity Project* queues for the critical signalized intersection of Hartnell Avenue and Cypress Avenue (Intersection No. 10).

Table 4.3 Existing Plus Existing General Plan and Zoning Project 95th Percentile Queue Length

Int. #	Intersection/Approach	Control Type	Existing No Project 95th Percentile Queue (ft)		Existing Plus General Plan & Zoning 95th Percentile Queue (ft)		Available Storage
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
10	***Hartnell Avenue & Cypress Avenue***						
	Westbound Left	Signal	***232***	113	***471***	198	225

Note: ***Bold*** text indicates queues that exceed available storage

Table 4.4 Existing Plus Reduced Intensity Project 95th Percentile Queue Length

Int. #	Intersection/Approach	Control Type	Existing No Project 95th Percentile Queue (ft)		Existing Plus General Plan & Zoning 95th Percentile Queue (ft)		Available Storage
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
10	***Hartnell Avenue & Cypress Avenue***						
	Westbound Left	Signal	***232***	113	***425***	149	225

Note: ***Bold*** text indicates queues that exceed available storage

5. Year 2040 Plus Alternative Projects Conditions

Year 2040 Plus Alternative Projects conditions were simulated by superimposing traffic generated by full build-out of the two alternatives onto the *Year 2040 No Project* traffic volumes.

5.1 Year 2040 Plus Alternative Projects Intersection Operations

Tables 5.1 and 5.2 present the *Year 2040 Plus Existing General Plan and Zoning Project* and the *Year 2040 Plus Reduced Intensity Project* intersection LOS conditions, respectively.

Table 5.1 Year 2040 Plus Existing General Plan and Zoning Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	**29.9**	**D**	**No**	**OVR**	**F**	**Yes**
10	Hartnell Ave & Cypress Ave	Signal	D	35.2	D	-	37.8	D	-

Notes:
1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions
5. OVR = Delay over 300 seconds

Table 5.2 Year 2040 Plus Reduced Intensity Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	**29.6**	**D**	**No**	**OVR**	**F**	**Yes**
10	Hartnell Ave & Cypress Ave	Signal	D	34.4	C	-	35.0	D	-

Notes:
1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions
5. OVR = Delay over 300 seconds

As presented in Tables 5.1 and 5.2, the intersection of Hartnell Avenue and Cobblestone Shopping Center (Intersection No. 8) is projected to operate at an unacceptable LOS under both alternatives.

5.2 Year 2040 Plus Alternative Projects Queues

Table 5.3 presents a comparison between the *Year 2040* and the *Year 2040 Plus Existing General Plan and Zoning* queues for the critical signalized intersection of Hartnell Avenue and Cypress Avenue (Intersection No. 10).

Table 5.4 presents a comparison between the *Year 2040* and the *Year 2040 Plus Reduced Intensity Project* queues for the critical signalized intersection of Hartnell Avenue and Cypress Avenue (Intersection No. 10).

Table 5.3 Year 2040 Plus Existing General Plan and Zoning 95th Percentile Queue Length

Int. #	Intersection/Approach	Control Type	Year 2040 No Project 95th Percentile Queue (ft)		Year 2040 Plus general Plan & Zoning 95th Percentile Queue (ft)		Available Storage
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
10	***Hartnell Avenue & Cypress Avenue***						
	Westbound Left	Signal	***451***	***253***	***728***	***368***	225

Note: ***Bold*** text indicates queues that exceed available storage

Table 5.4 Year 2040 Plus Reduced Intensity Project 95th Percentile Queue Length

Int. #	Intersection/Approach	Control Type	Year 2040 No Project 95th Percentile Queue (ft)		Year 2040 Plus Reduced Project 95th Percentile Queue (ft)		Available Storage
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
10	***Hartnell Avenue & Cypress Avenue***						
	Westbound Left	Signal	***451***	***253***	***682***	***289***	225

Note: ***Bold*** text indicates queues that exceed available storage

6. Project Impacts and Mitigation Measures

This section presents recommended project-related mitigation measures at the study intersections, developed based on the findings from the analyses presented in the prior sections of this report. The mitigations are identical to those presented in the TIAR.

6.1 Impact Significance Criteria

Refer to TIAR.

6.2 Existing Plus Alternatives Impacts

Tables 6.1 and 6.2 presents the intersections that are projected to be significantly impacted by the proposed alternative under *Existing Plus Existing General Plan* and *Zoning and Existing Plus Reduced Intensity Project*, respectively.

Table 6.1 Existing Plus Existing General Plan and Zoning Project Significant Impacts

AM Peak Hour												
#	Intersection	Control Type	Target LOS	Existing LOS	Existing Plus General Plan & Zoning LOS	Existing Delay (D1)	Existing Plus General Plan & Zoning Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**C**	**27.8**	**31.2**	**3.4**	**-**	**0.58**	**19**	**Yes**

PM Peak Hour												
#	Intersection	Control Type	Target LOS	Existing LOS	Existing Plus General Plan & Zoning LOS	Existing Delay (D1)	Existing Plus General Plan & Zoning Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	Hartnell Ave & Cobblestone Shopping Center (Main Dwy)	TWSC	C	D	E	29.5	40.2	10.7	No	0.29	-	No

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal

3. OVR = Intersection delay exceeds 300 seconds.

4. Addition of project traffic results in significant queue spillback. Specifically for Intersection 10 the spillback is for the westbound left.

Table 6.2 Existing Plus Reduced Intensity Project Significant Impacts

AM Peak Hour												
#	Intersection	Control Type	Target LOS	Existing LOS	Existing Plus Reduced Project LOS	Existing Delay (D1)	Existing Plus Reduced Project Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**C**	**27.8**	**30.9**	**3.1**	**-**	**0.57**	**17**	**Yes**

PM Peak Hour												
#	Intersection	Control Type	Target LOS	Existing LOS	Existing Plus Reduced Project LOS	Existing Delay (D1)	Existing Plus Reduced Project Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	Hartnell Ave & Cobblestone Shopping Center (Main Dwy)	TWSC	C	D	E	29.5	36	6.5	No	0.26	-	No

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal

3. OVR = Intersection delay exceeds 300 seconds.

4. Addition of project traffic results in significant queue spillback. Specifically for Intersection 10 the spillback is for the westbound left.

As presented in Tables 6.1 and 6.2, a significant impact occurs at the intersection of Hartnell Avenue and Cypress Avenue (Intersection No. 10) for both alternatives.

6.3 Existing Plus Alternative Projects Mitigations

Intersection 10 - Hartnell Avenue and Cypress Avenue

Under the *Existing Plus Existing General Plan and Zoning* conditions, the proposed project creates a significant impact at this intersection due to the projected westbound left queue increase (from approximately 10 to 19 cars) for the AM peak hour. Under the *Existing Plus Reduced Intensity Project* conditions, the projected westbound left queue increases (from approximately 10 to 17 cars) for the AM peak hour. The available storage is for nine (9) cars. The mitigation measure is the same as presented in the TIAR.

6.4 Year 2040 Plus Alternative Projects Impacts

Tables 6.3 and 6.4 presents the intersections that are projected to be significantly impacted by the proposed alternative under *Year 2040 Plus Existing General Plan* and *Zoning and Year 2040 Plus Reduced Intensity Project*, respectively.

Table 6.3 Year 2040 Plus Existing General Plan and Zoning Project Significant Impacts

AM Peak Hour													
#	Intersection	Control Type	Target LOS	Year 2040 LOS	Year 2040 Plus General Plan & Zoning LOS	Year 2040 Delay (D1)	Year 2040 Plus General Plan & Zoning Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	Hartnell Ave & Cobblestone Shopping Center (Main Dwy)	TWSC	C	D	D	27.4	29.9	2.5	No	0.13	-	No
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**D**	**32.4**	**35.2**	**2.8**	**-**	**0.67**	**29**	**Yes**

PM Peak Hour												
#	Intersection	Control Type	Target LOS	Year 2040 LOS	Year 2040 Plus General Plan & Zoning LOS	Year 2040 Delay (D1)	Year 2040 Plus General Plan & Zoning Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	**F**	**F**	**OVR**	**OVR**	**> 5**	**Yes**	**1.96**	**-**	**Yes**
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**D**	**32.6**	**37.8**	**5.2**	**-**	**0.81**	**15**	**Yes**

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal

3. OVR = Intersection delay exceeds 300 seconds.

4. Addition of project traffic results in significant queue spillback. Specifically for Intersection 10 the spillback is for the westbound left.

Table 6.4 Year 2040 Plus Reduced Intensity Project Significant Impacts

AM Peak Hour												
#	Intersection	Control Type	Target LOS	Year 2040 LOS	Year 2040 Plus Reduced Project LOS	Year 2040 Delay (D1)	Year 2040 Plus Reduced Project Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	Hartnell Ave & Cobblestone Shopping Center (Main Dwy)	TWSC	C	D	D	27.4	29.6	2.2	No	0.13	-	No
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**C**	**32.4**	**34.4**	**2.0**	**-**	**0.66**	**27**	**Yes**

PM Peak Hour												
#	Intersection	Control Type	Target LOS	Year 2040 LOS	Year 2040 Plus Reduced Project LOS	Year 2040 Delay (D1)	Year 2040 Plus Reduced Project Delay (D2)	Delay Increase (D2-D1)	Signal Warrant Met?	V/C	95% Queue (veh)	Significant Impact?
8	**Hartnell Ave & Cobblestone Shopping Center (Main Dwy)**	**TWSC**	**C**	**F**	**F**	**OVR**	**OVR**	**> 5**	**Yes**	**1.79**	**-**	**Yes**
10	**Hartnell Ave & Cypress Ave**	**Signal**	**D**	**C**	**D**	**32.6**	**35.0**	**2.4**	**-**	**0.75**	**12**	**Yes**

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal

3. OVR = Intersection delay exceeds 300 seconds.

4. Addition of project traffic results in significant queue spillback. Specifically for Intersection 10 the spillback is for the westbound left.

As presented in Tables 6.3 and 6.4, significant impacts occur at both intersections analyzed in this memorandum for both alternatives.

6.5 Year 2040 Plus Alternative Projects Mitigations

Intersection 8 - Hartnell Avenue and Cobblestone Shopping Center Driveway

Under the *Year 2040 Plus General Plan and Zoning* and *Year 2040 Plus Reduced Intensity Project* conditions, the alternatives create a significant impact by increasing delay by more than five (5) seconds per

vehicle and meeting the peak hour traffic signal warrant at an intersection operating at unacceptable LOS in the “no project” condition. The mitigation measure is the same as presented in the TIAR.

The mitigation is required due to the assumption that the Cobblestone Shopping Center will redevelop to full occupancy. Since the Shopping Center redevelopment is the core event that will trigger the mitigation, the driveway mitigation should be the responsibility of the future Shopping Center redevelopment, and not this project.

Intersection 10 - Hartnell Avenue and Cypress Avenue

Under the *Year 2040 Plus General Plan and Zoning* and *Year 2040 Plus Reduced Intensity Project* conditions, the alternatives create a significant impact at this intersection due to the projected westbound left queue increase for the weekday AM and PM peak hours. The available storage is for nine (9) cars. The mitigation measure is the same as presented in the TIAR.

Appendix

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	3	0	11	8	623	5	22	495	16
Future Vol, veh/h	4	0	3	3	0	11	8	623	5	22	495	16
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	0	3	3	0	12	9	685	5	24	544	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	964	1313	283	1028	1320	347	564	0	0	692	0	0
Stage 1	603	603	-	708	708	-	-	-	-	-	-	-
Stage 2	361	710	-	320	612	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	208	156	711	187	154	646	997	-	-	892	-	-
Stage 1	450	484	-	389	433	-	-	-	-	-	-	-
Stage 2	627	433	-	663	480	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	198	150	710	181	148	645	995	-	-	890	-	-
Mov Cap-2 Maneuver	198	150	-	181	148	-	-	-	-	-	-	-
Stage 1	445	470	-	385	428	-	-	-	-	-	-	-
Stage 2	610	428	-	642	466	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	14	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	995	-	-	287	416	890	-	-
HCM Lane V/C Ratio	0.009	-	-	0.027	0.037	0.027	-	-
HCM Control Delay (s)	8.7	-	-	17.9	14	9.2	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	93	467	425	271	718	50	470	21	147	12	9
Future Volume (vph)	1	93	467	425	271	718	50	470	21	147	12	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1736	4988	1535	1736	4988	1508	3367	1827	1553		1777
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1736	4988	1535	1736	4988	1508	3367	1827	1553		1777
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)	1	112	563	512	327	865	60	566	25	177	14	11
RTOR Reduction (vph)	0	0	0	283	0	0	38	0	0	134	0	0
Lane Group Flow (vph)	0	113	563	229	327	865	22	566	25	43	0	25
Confl. Peds. (#/hr)				2			2					
Confl. Bikes (#/hr)				1			1					
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		11.9	21.2	46.1	28.1	37.4	37.4	24.9	24.9	24.9		11.1
Effective Green, g (s)		11.9	21.2	46.1	28.1	37.4	37.4	24.9	24.9	24.9		11.1
Actuated g/C Ratio		0.12	0.21	0.45	0.27	0.36	0.36	0.24	0.24	0.24		0.11
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		200	1025	686	473	1809	547	813	441	375		191
v/s Ratio Prot		0.07	c0.11	0.08	c0.19	0.17		c0.17	0.01			c0.01
v/s Ratio Perm				0.07			0.01			0.03		
v/c Ratio		0.56	0.55	0.33	0.69	0.48	0.04	0.70	0.06	0.11		0.13
Uniform Delay, d1		43.2	36.7	18.5	33.6	25.3	21.2	35.7	30.1	30.5		41.6
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		2.2	1.0	0.1	4.7	0.4	0.1	2.1	0.0	0.0		0.1
Delay (s)		45.3	37.7	18.6	38.3	25.7	21.3	37.8	30.1	30.5		41.7
Level of Service		D	D	B	D	C	C	D	C	C		D
Approach Delay (s)			30.2			28.8			35.8			41.4
Approach LOS			C			C			D			D

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	17.8
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	32
Future Volume (vph)	32
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1526
Flt Permitted	1.00
Satd. Flow (perm)	1526
Peak-hour factor, PHF	0.83
Adj. Flow (vph)	39
RTOR Reduction (vph)	35
Lane Group Flow (vph)	4
Confl. Peds. (#/hr)	4
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.1
Effective Green, g (s)	11.1
Actuated g/C Ratio	0.11
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	164
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.03
Uniform Delay, d1	41.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	41.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

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	20	0	14	6	0	27	9	870	10	18	662	20
Future Vol, veh/h	20	0	14	6	0	27	9	870	10	18	662	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
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	24	0	17	7	0	32	11	1036	12	21	788	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1912	406	1500	1918	524	812	0	0	1048	0	0
Stage 1	842	842	-	1064	1064	-	-	-	-	-	-	-
Stage 2	540	1070	-	436	854	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	103	67	594	84	67	498	810	-	-	660	-	-
Stage 1	325	378	-	238	298	-	-	-	-	-	-	-
Stage 2	494	296	-	569	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	93	64	594	79	64	498	810	-	-	660	-	-
Mov Cap-2 Maneuver	93	64	-	79	64	-	-	-	-	-	-	-
Stage 1	320	366	-	235	294	-	-	-	-	-	-	-
Stage 2	456	292	-	535	361	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.2	21.7	0.1	0.3
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	810	-	-	142	254	660	-	-
HCM Lane V/C Ratio	0.013	-	-	0.285	0.155	0.032	-	-
HCM Control Delay (s)	9.5	-	-	40.2	21.7	10.6	-	-
HCM Lane LOS	A	-	-	E	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0.1	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	42	733	612	146	689	45	572	20	325	69	43
Future Volume (vph)	2	42	733	612	146	689	45	572	20	325	69	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1770	5085	1560	1770	5085	1524	3433	1863	1562		1807
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1770	5085	1560	1770	5085	1524	3433	1863	1562		1807
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)	2	49	862	720	172	811	53	673	24	382	81	51
RTOR Reduction (vph)	0	0	0	289	0	0	34	0	0	272	0	0
Lane Group Flow (vph)	0	51	862	431	172	811	19	673	24	110	0	132
Confl. Peds. (#/hr)				4			4					
Confl. Bikes (#/hr)				2			1			2		
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		6.7	28.6	60.0	17.7	39.6	39.6	31.4	31.4	31.4		13.7
Effective Green, g (s)		6.7	28.6	60.0	17.7	39.6	39.6	31.4	31.4	31.4		13.7
Actuated g/C Ratio		0.06	0.26	0.55	0.16	0.36	0.36	0.29	0.29	0.29		0.13
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		108	1331	857	286	1844	552	987	535	449		226
v/s Ratio Prot		0.03	c0.17	0.14	c0.10	0.16		c0.20	0.01			c0.07
v/s Ratio Perm				0.13			0.01			0.07		
v/c Ratio		0.47	0.65	0.50	0.60	0.44	0.03	0.68	0.04	0.24		0.58
Uniform Delay, d1		49.5	35.8	15.3	42.5	26.4	22.5	34.5	28.1	29.8		45.1
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		1.2	1.5	0.2	4.1	0.3	0.1	1.6	0.0	0.1		2.5
Delay (s)		50.7	37.3	15.5	46.6	26.7	22.5	36.0	28.1	29.9		47.5
Level of Service		D	D	B	D	C	C	D	C	C		D
Approach Delay (s)			28.1			29.8			33.7			45.3
Approach LOS			C			C			C			D

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	109.2	Sum of lost time (s)	17.8
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	146
Future Volume (vph)	146
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	172
RTOR Reduction (vph)	116
Lane Group Flow (vph)	56
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	13.7
Effective Green, g (s)	13.7
Actuated g/C Ratio	0.13
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	198
v/s Ratio Prot	
v/s Ratio Perm	0.04
v/c Ratio	0.28
Uniform Delay, d1	43.3
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	43.6
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	3	0	11	8	609	5	22	492	16
Future Vol, veh/h	4	0	3	3	0	11	8	609	5	22	492	16
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	0	3	3	0	12	9	669	5	24	541	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	953	1294	282	1011	1301	339	561	0	0	676	0	0
Stage 1	600	600	-	692	692	-	-	-	-	-	-	-
Stage 2	353	694	-	319	609	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	212	160	712	192	158	654	999	-	-	905	-	-
Stage 1	452	486	-	398	441	-	-	-	-	-	-	-
Stage 2	634	440	-	664	481	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	154	711	186	152	653	997	-	-	903	-	-
Mov Cap-2 Maneuver	202	154	-	186	152	-	-	-	-	-	-	-
Stage 1	447	472	-	394	436	-	-	-	-	-	-	-
Stage 2	617	435	-	643	467	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	13.8	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	997	-	-	291	425	903	-	-
HCM Lane V/C Ratio	0.009	-	-	0.026	0.036	0.027	-	-
HCM Control Delay (s)	8.6	-	-	17.7	13.8	9.1	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	93	467	413	252	718	50	465	21	138	12	8
Future Volume (vph)	1	93	467	413	252	718	50	465	21	138	12	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1736	4988	1535	1736	4988	1508	3367	1827	1553		1775
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1736	4988	1535	1736	4988	1508	3367	1827	1553		1775
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)	1	112	563	498	304	865	60	560	25	166	14	10
RTOR Reduction (vph)	0	0	0	276	0	0	38	0	0	127	0	0
Lane Group Flow (vph)	0	113	563	222	304	865	22	560	25	39	0	24
Confl. Peds. (#/hr)				2			2					
Confl. Bikes (#/hr)				1			1					
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		11.9	21.3	45.7	28.1	37.5	37.5	24.4	24.4	24.4		11.1
Effective Green, g (s)		11.9	21.3	45.7	28.1	37.5	37.5	24.4	24.4	24.4		11.1
Actuated g/C Ratio		0.12	0.21	0.44	0.27	0.37	0.37	0.24	0.24	0.24		0.11
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		201	1034	683	474	1821	550	799	434	368		191
v/s Ratio Prot		0.07	c0.11	0.08	c0.18	0.17		c0.17	0.01			c0.01
v/s Ratio Perm				0.07			0.01			0.03		
v/c Ratio		0.56	0.54	0.32	0.64	0.48	0.04	0.70	0.06	0.11		0.13
Uniform Delay, d1		42.9	36.4	18.5	32.9	25.0	21.0	35.8	30.3	30.6		41.4
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		2.1	1.0	0.1	3.3	0.4	0.1	2.3	0.0	0.0		0.1
Delay (s)		45.1	37.4	18.6	36.2	25.4	21.1	38.1	30.3	30.7		41.5
Level of Service		D	D	B	D	C	C	D	C	C		D
Approach Delay (s)			30.1			27.9			36.2			41.2
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	0.57		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	17.8
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	32
Future Volume (vph)	32
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1526
Flt Permitted	1.00
Satd. Flow (perm)	1526
Peak-hour factor, PHF	0.83
Adj. Flow (vph)	39
RTOR Reduction (vph)	35
Lane Group Flow (vph)	4
Confl. Peds. (#/hr)	4
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.1
Effective Green, g (s)	11.1
Actuated g/C Ratio	0.11
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	164
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.03
Uniform Delay, d1	41.0
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	41.0
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

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	20	0	14	6	0	27	9	799	10	18	654	20
Future Vol, veh/h	20	0	14	6	0	27	9	799	10	18	654	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
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	24	0	17	7	0	32	11	951	12	21	779	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1331	1818	402	1411	1824	482	803	0	0	963	0	0
Stage 1	833	833	-	979	979	-	-	-	-	-	-	-
Stage 2	498	985	-	432	845	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	113	77	598	98	76	530	817	-	-	711	-	-
Stage 1	329	382	-	268	326	-	-	-	-	-	-	-
Stage 2	523	324	-	572	377	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	103	74	598	92	73	530	817	-	-	711	-	-
Mov Cap-2 Maneuver	103	74	-	92	73	-	-	-	-	-	-	-
Stage 1	325	371	-	265	322	-	-	-	-	-	-	-
Stage 2	485	320	-	540	366	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36	19.7	0.1	0.3
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	156	284	711	-	-
HCM Lane V/C Ratio	0.013	-	-	0.259	0.138	0.03	-	-
HCM Control Delay (s)	9.5	-	-	36	19.7	10.2	-	-
HCM Lane LOS	A	-	-	E	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.5	0.1	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	42	733	590	107	689	45	545	18	283	69	41
Future Volume (vph)	2	42	733	590	107	689	45	545	18	283	69	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1770	5085	1560	1770	5085	1526	3433	1863	1562		1806
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1770	5085	1560	1770	5085	1526	3433	1863	1562		1806
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)	2	49	862	694	126	811	53	641	21	333	81	48
RTOR Reduction (vph)	0	0	0	308	0	0	35	0	0	238	0	0
Lane Group Flow (vph)	0	51	862	386	126	811	18	641	21	95	0	129
Confl. Peds. (#/hr)				4			4					
Confl. Bikes (#/hr)				2			1			2		
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		6.6	27.9	57.1	14.4	35.7	35.7	29.2	29.2	29.2		13.3
Effective Green, g (s)		6.6	27.9	57.1	14.4	35.7	35.7	29.2	29.2	29.2		13.3
Actuated g/C Ratio		0.06	0.27	0.56	0.14	0.35	0.35	0.28	0.28	0.28		0.13
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		113	1382	868	248	1769	530	977	530	444		234
v/s Ratio Prot		0.03	c0.17	0.13	c0.07	0.16		c0.19	0.01			c0.07
v/s Ratio Perm				0.12			0.01			0.06		
v/c Ratio		0.45	0.62	0.44	0.51	0.46	0.03	0.66	0.04	0.21		0.55
Uniform Delay, d1		46.3	32.7	13.4	40.8	26.0	22.1	32.3	26.6	28.0		41.9
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		1.0	1.2	0.1	2.2	0.4	0.1	1.2	0.0	0.1		1.6
Delay (s)		47.3	34.0	13.5	43.0	26.3	22.1	33.5	26.6	28.0		43.4
Level of Service		D	C	B	D	C	C	C	C	C		D
Approach Delay (s)			25.6			28.2			31.5			41.7
Approach LOS			C			C			C			D

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	17.8
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	146
Future Volume (vph)	146
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	172
RTOR Reduction (vph)	119
Lane Group Flow (vph)	53
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	13.3
Effective Green, g (s)	13.3
Actuated g/C Ratio	0.13
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	205
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.26
Uniform Delay, d1	40.2
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	40.4
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

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	15	0	5	5	0	15	10	666	15	45	614	50
Future Vol, veh/h	15	0	5	5	0	15	10	666	15	45	614	50
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	0	5	5	0	16	11	724	16	49	667	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1178	1558	363	1188	1577	372	723	0	0	742	0	0
Stage 1	794	794	-	756	756	-	-	-	-	-	-	-
Stage 2	384	764	-	432	821	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	145	110	631	142	107	622	869	-	-	854	-	-
Stage 1	345	396	-	364	412	-	-	-	-	-	-	-
Stage 2	608	408	-	569	384	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	133	102	630	133	99	621	867	-	-	852	-	-
Mov Cap-2 Maneuver	133	102	-	133	99	-	-	-	-	-	-	-
Stage 1	340	372	-	359	406	-	-	-	-	-	-	-
Stage 2	585	402	-	532	361	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.9	16.9	0.1	0.6
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	867	-	-	166	324	852	-	-
HCM Lane V/C Ratio	0.013	-	-	0.131	0.067	0.057	-	-
HCM Control Delay (s)	9.2	-	-	29.9	16.9	9.5	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.2	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	165	600	505	375	855	60	515	26	150	20	15
Future Volume (vph)	5	165	600	505	375	855	60	515	26	150	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1736	4988	1534	1736	4988	1508	3367	1827	1553		1776
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1736	4988	1534	1736	4988	1508	3367	1827	1553		1776
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)	5	179	652	549	408	929	65	560	28	163	22	16
RTOR Reduction (vph)	0	0	0	295	0	0	44	0	0	124	0	0
Lane Group Flow (vph)	0	184	652	254	408	929	21	560	28	39	0	38
Confl. Peds. (#/hr)				2			2					
Confl. Bikes (#/hr)				1			1					
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		16.6	23.6	49.2	28.1	35.1	35.1	25.6	25.6	25.6		11.1
Effective Green, g (s)		16.6	23.6	49.2	28.1	35.1	35.1	25.6	25.6	25.6		11.1
Actuated g/C Ratio		0.16	0.22	0.46	0.26	0.33	0.33	0.24	0.24	0.24		0.10
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		271	1108	710	459	1648	498	811	440	374		185
v/s Ratio Prot		0.11	0.13	0.09	c0.24	c0.19		c0.17	0.02			c0.02
v/s Ratio Perm				0.08			0.01			0.03		
v/c Ratio		0.68	0.59	0.36	0.89	0.56	0.04	0.69	0.06	0.11		0.21
Uniform Delay, d1		42.3	37.0	18.3	37.5	29.3	24.1	36.7	31.1	31.4		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		5.2	1.2	0.1	18.9	0.7	0.1	2.1	0.0	0.0		0.2
Delay (s)		47.5	38.2	18.5	56.5	30.0	24.2	38.8	31.1	31.4		43.7
Level of Service		D	D	B	E	C	C	D	C	C		D
Approach Delay (s)			31.6			37.4			36.9			43.2
Approach LOS			C			D			D			D

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	17.8
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1525
Flt Permitted	1.00
Satd. Flow (perm)	1525
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	54
RTOR Reduction (vph)	48
Lane Group Flow (vph)	6
Confl. Peds. (#/hr)	4
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.1
Effective Green, g (s)	11.1
Actuated g/C Ratio	0.10
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	159
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.04
Uniform Delay, d1	42.7
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	42.8
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	40.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	45	10	0	30	50	1033	15	20	707	150
Future Vol, veh/h	110	0	45	10	0	30	50	1033	15	20	707	150
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	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	0	49	11	0	33	54	1123	16	22	768	163

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1564	2141	466	1667	2214	570	931	0	0	1139	0	0
Stage 1	894	894	-	1239	1239	-	-	-	-	-	-	-
Stage 2	670	1247	-	428	975	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 75	48	543	63	43	465	731	-	-	609	-	-
Stage 1	302	358	-	186	246	-	-	-	-	-	-	-
Stage 2	413	244	-	575	328	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 64	43	543	53	38	465	731	-	-	609	-	-
Mov Cap-2 Maneuver	~ 64	43	-	53	38	-	-	-	-	-	-	-
Stage 1	280	345	-	172	228	-	-	-	-	-	-	-
Stage 2	356	226	-	504	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 551.6	36.2	0.5	0.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	731	-	-	86	158	609	-	-
HCM Lane V/C Ratio	0.074	-	-	1.959	0.275	0.036	-	-
HCM Control Delay (s)	10.3	-	-	$ 551.6	36.2	11.1	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	14.6	1.1	0.1	-	-

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	45	750	671	284	720	45	661	36	476	75	43
Future Volume (vph)	5	45	750	671	284	720	45	661	36	476	75	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1770	5085	1561	1770	5085	1523	3433	1863	1562		1806
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1770	5085	1561	1770	5085	1523	3433	1863	1562		1806
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)	6	53	882	789	334	847	53	778	42	560	88	51
RTOR Reduction (vph)	0	0	0	132	0	0	32	0	0	328	0	0
Lane Group Flow (vph)	0	59	882	657	334	847	21	778	42	232	0	139
Confl. Peds. (#/hr)				4			4					
Confl. Bikes (#/hr)				2			1			2		
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		6.4	27.1	61.0	24.8	45.5	45.5	33.9	33.9	33.9		11.2
Effective Green, g (s)		6.4	27.1	61.0	24.8	45.5	45.5	33.9	33.9	33.9		11.2
Actuated g/C Ratio		0.06	0.24	0.53	0.22	0.40	0.40	0.30	0.30	0.30		0.10
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		98	1200	829	382	2015	603	1013	550	461		176
v/s Ratio Prot		0.03	0.17	c0.23	c0.19	0.17		0.23	0.02			c0.08
v/s Ratio Perm				0.19			0.01			0.15		
v/c Ratio		0.60	0.73	0.79	0.87	0.42	0.03	0.77	0.08	0.50		0.79
Uniform Delay, d1		53.0	40.5	21.8	43.5	25.1	21.2	36.9	29.2	33.5		50.6
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		7.0	2.8	4.9	19.9	0.3	0.0	3.2	0.0	0.3		19.2
Delay (s)		59.9	43.4	26.7	63.3	25.4	21.3	40.1	29.2	33.8		69.8
Level of Service		E	D	C	E	C	C	D	C	C		E
Approach Delay (s)			36.3			35.5			37.2			58.0
Approach LOS			D			D			D			E

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	17.8
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	150
Future Volume (vph)	150
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	176
RTOR Reduction (vph)	128
Lane Group Flow (vph)	48
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.2
Effective Green, g (s)	11.2
Actuated g/C Ratio	0.10
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	154
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.31
Uniform Delay, d1	48.2
Progression Factor	1.00
Incremental Delay, d2	0.4
Delay (s)	48.6
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

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	15	0	5	5	0	15	10	652	15	45	611	50
Future Vol, veh/h	15	0	5	5	0	15	10	652	15	45	611	50
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	0	5	5	0	16	11	709	16	49	664	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1168	1540	361	1171	1559	365	720	0	0	727	0	0
Stage 1	791	791	-	741	741	-	-	-	-	-	-	-
Stage 2	377	749	-	430	818	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	147	113	633	147	110	629	871	-	-	866	-	-
Stage 1	347	397	-	372	419	-	-	-	-	-	-	-
Stage 2	614	415	-	571	386	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	135	105	632	138	102	628	869	-	-	864	-	-
Mov Cap-2 Maneuver	135	105	-	138	102	-	-	-	-	-	-	-
Stage 1	342	374	-	366	413	-	-	-	-	-	-	-
Stage 2	590	409	-	534	363	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.6	16.6	0.1	0.6
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	168	333	864	-	-
HCM Lane V/C Ratio	0.013	-	-	0.129	0.065	0.057	-	-
HCM Control Delay (s)	9.2	-	-	29.6	16.6	9.4	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.2	-	-

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	165	600	493	356	855	60	510	26	141	20	14
Future Volume (vph)	5	165	600	493	356	855	60	510	26	141	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1736	4988	1534	1736	4988	1508	3367	1827	1553		1774
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1736	4988	1534	1736	4988	1508	3367	1827	1553		1774
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)	5	179	652	536	387	929	65	554	28	153	22	15
RTOR Reduction (vph)	0	0	0	288	0	0	43	0	0	116	0	0
Lane Group Flow (vph)	0	184	652	248	387	929	22	554	28	37	0	37
Confl. Peds. (#/hr)				2			2					
Confl. Bikes (#/hr)				1			1					
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		16.6	23.6	49.0	28.1	35.1	35.1	25.4	25.4	25.4		11.1
Effective Green, g (s)		16.6	23.6	49.0	28.1	35.1	35.1	25.4	25.4	25.4		11.1
Actuated g/C Ratio		0.16	0.22	0.46	0.27	0.33	0.33	0.24	0.24	0.24		0.10
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		271	1110	709	460	1651	499	806	437	372		185
v/s Ratio Prot		0.11	0.13	0.08	c0.22	c0.19		c0.16	0.02			c0.02
v/s Ratio Perm				0.08			0.01			0.02		
v/c Ratio		0.68	0.59	0.35	0.84	0.56	0.04	0.69	0.06	0.10		0.20
Uniform Delay, d1		42.2	36.8	18.3	36.8	29.1	24.1	36.7	31.1	31.4		43.4
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		5.2	1.2	0.1	13.5	0.7	0.1	2.0	0.0	0.0		0.2
Delay (s)		47.4	38.1	18.4	50.4	29.8	24.1	38.6	31.1	31.4		43.6
Level of Service		D	D	B	D	C	C	D	C	C		D
Approach Delay (s)			31.6			35.3			36.9			43.0
Approach LOS			C			D			D			D

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1525
Flt Permitted	1.00
Satd. Flow (perm)	1525
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	54
RTOR Reduction (vph)	48
Lane Group Flow (vph)	6
Confl. Peds. (#/hr)	4
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.1
Effective Green, g (s)	11.1
Actuated g/C Ratio	0.10
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	159
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.04
Uniform Delay, d1	42.6
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	42.7
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	35.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	45	10	0	30	50	962	15	20	699	150
Future Vol, veh/h	110	0	45	10	0	30	50	962	15	20	699	150
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	-	-	-	-	-	-	175	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	0	49	11	0	33	54	1046	16	22	760	163

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1517	2056	462	1586	2129	531	923	0	0	1062	0	0
Stage 1	886	886	-	1162	1162	-	-	-	-	-	-	-
Stage 2	631	1170	-	424	967	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 82	55	547	73	49	493	736	-	-	652	-	-
Stage 1	306	361	-	207	267	-	-	-	-	-	-	-
Stage 2	436	265	-	578	331	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 70	49	547	61	44	493	736	-	-	652	-	-
Mov Cap-2 Maneuver	~ 70	49	-	61	44	-	-	-	-	-	-	-
Stage 1	284	349	-	192	248	-	-	-	-	-	-	-
Stage 2	377	246	-	509	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 471.9	31.6	0.5	0.2
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	736	-	-	94	178	652	-	-
HCM Lane V/C Ratio	0.074	-	-	1.792	0.244	0.033	-	-
HCM Control Delay (s)	10.3	-	-	$ 471.9	31.6	10.7	-	-
HCM Lane LOS	B	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	13.9	0.9	0.1	-	-

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	45	750	649	245	720	45	634	34	434	75	41
Future Volume (vph)	5	45	750	649	245	720	45	634	34	434	75	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Lane Util. Factor		1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.96	1.00	1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (prot)		1770	5085	1561	1770	5085	1524	3433	1863	1562		1804
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97
Satd. Flow (perm)		1770	5085	1561	1770	5085	1524	3433	1863	1562		1804
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)	6	53	882	764	288	847	53	746	40	511	88	48
RTOR Reduction (vph)	0	0	0	150	0	0	32	0	0	329	0	0
Lane Group Flow (vph)	0	59	882	614	288	847	21	746	40	182	0	136
Confl. Peds. (#/hr)				4			4					
Confl. Bikes (#/hr)				2			1			2		
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	5	5	2	3	1	6		3	3		4	4
Permitted Phases				2			6			3		
Actuated Green, G (s)		6.4	26.7	59.1	22.7	43.0	43.0	32.4	32.4	32.4		11.3
Effective Green, g (s)		6.4	26.7	59.1	22.7	43.0	43.0	32.4	32.4	32.4		11.3
Actuated g/C Ratio		0.06	0.24	0.53	0.20	0.39	0.39	0.29	0.29	0.29		0.10
Clearance Time (s)		3.5	5.0	4.8	3.5	5.0	5.0	4.8	4.8	4.8		4.5
Vehicle Extension (s)		2.0	4.9	2.0	4.0	4.9	4.9	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		102	1224	831	362	1971	590	1002	544	456		183
v/s Ratio Prot		0.03	0.17	c0.22	c0.16	0.17		c0.22	0.02			c0.08
v/s Ratio Perm				0.18			0.01			0.12		
v/c Ratio		0.58	0.72	0.74	0.80	0.43	0.03	0.74	0.07	0.40		0.74
Uniform Delay, d1		50.9	38.7	19.9	41.9	24.9	21.1	35.5	28.4	31.4		48.4
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		4.9	2.6	3.0	12.1	0.3	0.0	2.7	0.0	0.2		13.3
Delay (s)		55.8	41.2	22.9	54.0	25.2	21.1	38.2	28.4	31.7		61.7
Level of Service		E	D	C	D	C	C	D	C	C		E
Approach Delay (s)			33.5			32.0			35.3			53.1
Approach LOS			C			C			D			D

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	17.8
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	150
Future Volume (vph)	150
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	176
RTOR Reduction (vph)	129
Lane Group Flow (vph)	47
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	11.3
Effective Green, g (s)	11.3
Actuated g/C Ratio	0.10
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	161
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.29
Uniform Delay, d1	46.1
Progression Factor	1.00
Incremental Delay, d2	0.4
Delay (s)	46.5
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	113	563	512	327	865	60	566	25	177	25	39
v/c Ratio	0.56	0.55	0.53	0.69	0.48	0.10	0.70	0.06	0.35	0.10	0.13
Control Delay	59.3	40.6	3.7	47.0	30.2	7.6	42.4	35.3	7.8	43.7	1.0
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	59.3	40.6	3.7	47.0	30.2	7.6	42.4	35.3	7.8	43.7	1.0
Queue Length 50th (ft)	68	117	0	185	153	0	165	12	0	15	0
Queue Length 95th (ft)	154	198	33	#471	289	25	294	42	46	42	0
Internal Link Dist (ft)		704			423			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	384	2056	1097	473	2313	732	1221	662	676	742	691
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	0.27	0.47	0.69	0.37	0.08	0.46	0.04	0.26	0.03	0.06

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	51	862	720	172	811	53	673	24	382	132	172
v/c Ratio	0.37	0.67	0.63	0.60	0.44	0.09	0.68	0.04	0.53	0.58	0.54
Control Delay	60.8	40.4	4.7	53.8	28.6	4.6	39.9	32.6	6.6	58.7	21.2
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	60.8	40.4	4.7	53.8	28.6	4.6	39.9	32.6	6.6	58.7	21.2
Queue Length 50th (ft)	35	204	22	115	167	0	207	12	0	90	25
Queue Length 95th (ft)	81	272	69	198	217	17	324	37	58	165	89
Internal Link Dist (ft)		709			410			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	359	1923	1181	443	2198	691	1142	620	774	692	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	0.14	0.45	0.61	0.39	0.37	0.08	0.59	0.04	0.49	0.19	0.25

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	113	563	498	304	865	60	560	25	166	24	39
v/c Ratio	0.56	0.55	0.52	0.64	0.47	0.10	0.70	0.06	0.33	0.10	0.13
Control Delay	59.1	40.4	3.6	45.0	30.1	7.6	42.6	35.3	7.9	43.6	1.0
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	59.1	40.4	3.6	45.0	30.1	7.6	42.6	35.3	7.9	43.6	1.0
Queue Length 50th (ft)	68	117	0	169	153	0	163	12	0	14	0
Queue Length 95th (ft)	154	198	33	#425	289	25	291	42	45	40	0
Internal Link Dist (ft)		704			423			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	387	2070	1094	477	2329	736	1229	667	672	746	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	0.29	0.27	0.46	0.64	0.37	0.08	0.46	0.04	0.25	0.03	0.06

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	51	862	694	126	811	53	641	21	333	129	172
v/c Ratio	0.35	0.64	0.59	0.50	0.46	0.09	0.65	0.04	0.49	0.55	0.53
Control Delay	56.7	37.1	3.2	51.2	28.5	4.9	36.9	30.2	6.3	54.5	19.3
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	56.7	37.1	3.2	51.2	28.5	4.9	36.9	30.2	6.3	54.5	19.3
Queue Length 50th (ft)	32	185	0	77	156	0	182	10	0	81	21
Queue Length 95th (ft)	77	257	31	149	216	18	287	32	54	154	83
Internal Link Dist (ft)		709			410			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	383	2052	1231	473	2308	722	1219	661	769	738	728
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	0.13	0.42	0.56	0.27	0.35	0.07	0.53	0.03	0.43	0.17	0.24

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	184	652	549	408	929	65	560	28	163	38	54
v/c Ratio	0.68	0.59	0.55	0.89	0.56	0.12	0.69	0.06	0.33	0.16	0.19
Control Delay	59.3	40.9	3.6	63.5	34.5	9.0	43.4	36.4	8.0	46.4	2.5
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	59.3	40.9	3.6	63.5	34.5	9.0	43.4	36.4	8.0	46.4	2.5
Queue Length 50th (ft)	113	142	0	259	189	0	169	14	0	23	0
Queue Length 95th (ft)	#281	252	59	#728	353	37	327	50	60	62	6
Internal Link Dist (ft)		704			423			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	373	1994	1118	459	2243	711	1184	642	652	718	673
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	0.33	0.49	0.89	0.41	0.09	0.47	0.04	0.25	0.05	0.08

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	59	882	789	334	847	53	778	42	560	139	176
v/c Ratio	0.47	0.75	0.82	0.87	0.42	0.08	0.76	0.08	0.71	0.79	0.62
Control Delay	66.1	46.3	21.2	67.2	26.7	1.6	42.6	30.4	12.3	81.5	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	66.1	46.3	21.2	67.2	26.7	1.6	42.6	30.4	12.3	81.5	23.9
Queue Length 50th (ft)	45	233	292	250	175	0	280	23	55	107	25
Queue Length 95th (ft)	85	265	400	#368	202	6	327	48	146	#196	86
Internal Link Dist (ft)		709			410			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	142	1258	988	414	2047	665	1098	596	815	183	288
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	0.70	0.80	0.81	0.41	0.08	0.71	0.07	0.69	0.76	0.61

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	184	652	536	387	929	65	554	28	153	37	54
v/c Ratio	0.68	0.59	0.54	0.84	0.56	0.12	0.68	0.06	0.31	0.16	0.19
Control Delay	59.2	40.8	3.6	58.1	34.5	9.0	43.3	36.4	8.2	46.3	2.5
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	59.2	40.8	3.6	58.1	34.5	9.0	43.3	36.4	8.2	46.3	2.5
Queue Length 50th (ft)	113	141	0	241	189	0	166	14	0	23	0
Queue Length 95th (ft)	#281	252	59	#682	353	37	324	50	59	61	6
Internal Link Dist (ft)		704			423			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	373	1998	1113	460	2248	713	1187	644	646	719	674
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	0.33	0.48	0.84	0.41	0.09	0.47	0.04	0.24	0.05	0.08

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	59	882	764	288	847	53	746	40	511	136	176
v/c Ratio	0.45	0.74	0.78	0.79	0.43	0.08	0.74	0.07	0.65	0.74	0.60
Control Delay	64.2	44.5	16.9	59.3	26.6	1.6	40.8	30.1	9.0	74.6	22.9
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	64.2	44.5	16.9	59.3	26.6	1.6	40.8	30.1	9.0	74.6	22.9
Queue Length 50th (ft)	44	230	234	209	175	0	261	22	25	104	23
Queue Length 95th (ft)	85	265	339	289	202	6	311	46	95	#191	84
Internal Link Dist (ft)		709			410			109		232	
Turn Bay Length (ft)	530		235	225		35			30		60
Base Capacity (vph)	148	1311	1027	431	2126	687	1144	621	830	191	296
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	0.67	0.74	0.67	0.40	0.08	0.65	0.06	0.62	0.71	0.59

Intersection Summary

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