Old Highway 5 –Final Recommendations Report

Keck & Wood Project No. 210187

Prepared For:

Cherokee County 1831 GEORGIA

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Prepared by:

Keck+Wood COLLABORATION BY DESIGN

3090 Premiere Parkway, Suite 200, Duluth, GA 30097 | 678-417-4000 | keckwood.com

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1. INTRODUCTION

A corridor study was requested by Cherokee County for the segment of Old Highway 5 between the Cobb County line and River Pointe Parkway in order to help identify locations with operational and/or safety concerns as well as to evaluate the existing pedestrian infrastructure along the route. Utilizing existing traffic count data, recent crash history, and plans for future developments and roadway projects, the corridor was analyzed and solutions were developed to mitigate any operational and/or safety deficiencies that were identified.

The study area consists of the approximately 14-mile-long segment of Old Highway 5 in Cherokee County, beginning at the Cobb County line and ending at River Pointe Parkway, just north of the I-575 interchange in Canton. Old Highway 5 traverses primarily north-south and contains segments within the city limits of Woodstock, Holly Springs, and Canton. The corridor was divided into five segments based on the primary stakeholder for each section of roadway as follows:

1. Cherokee County: Cobb County line to Stockwood Drive (0.49 miles)
2. City of Woodstock: Stockwood Drive to Little River Bridge (2.88 miles)
3. City of Holly Springs: Little River Bridge to Lakeside Drive (4.48 miles)
4. City of Canton: Lakeside Drive to Herndon Lane (2.19 miles)
5. GDOT District 6: Herndon Lane to River Pointe Parkway (4.04 miles)

An overview of the study area is shown in Figure 1.1 while Figure 1.2 depicts the segments as identified above.

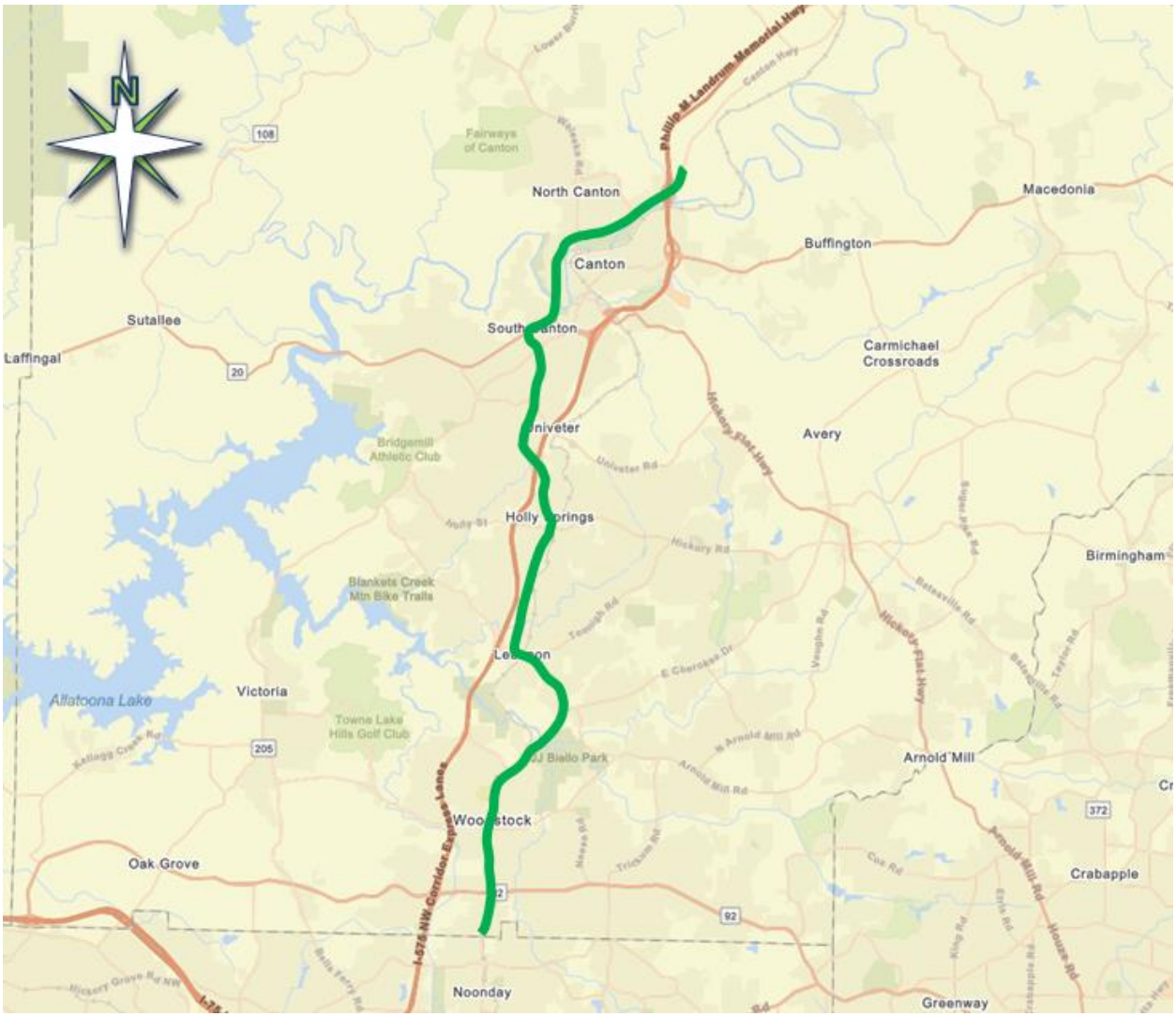


Figure 1.1 - Overview of Study Area

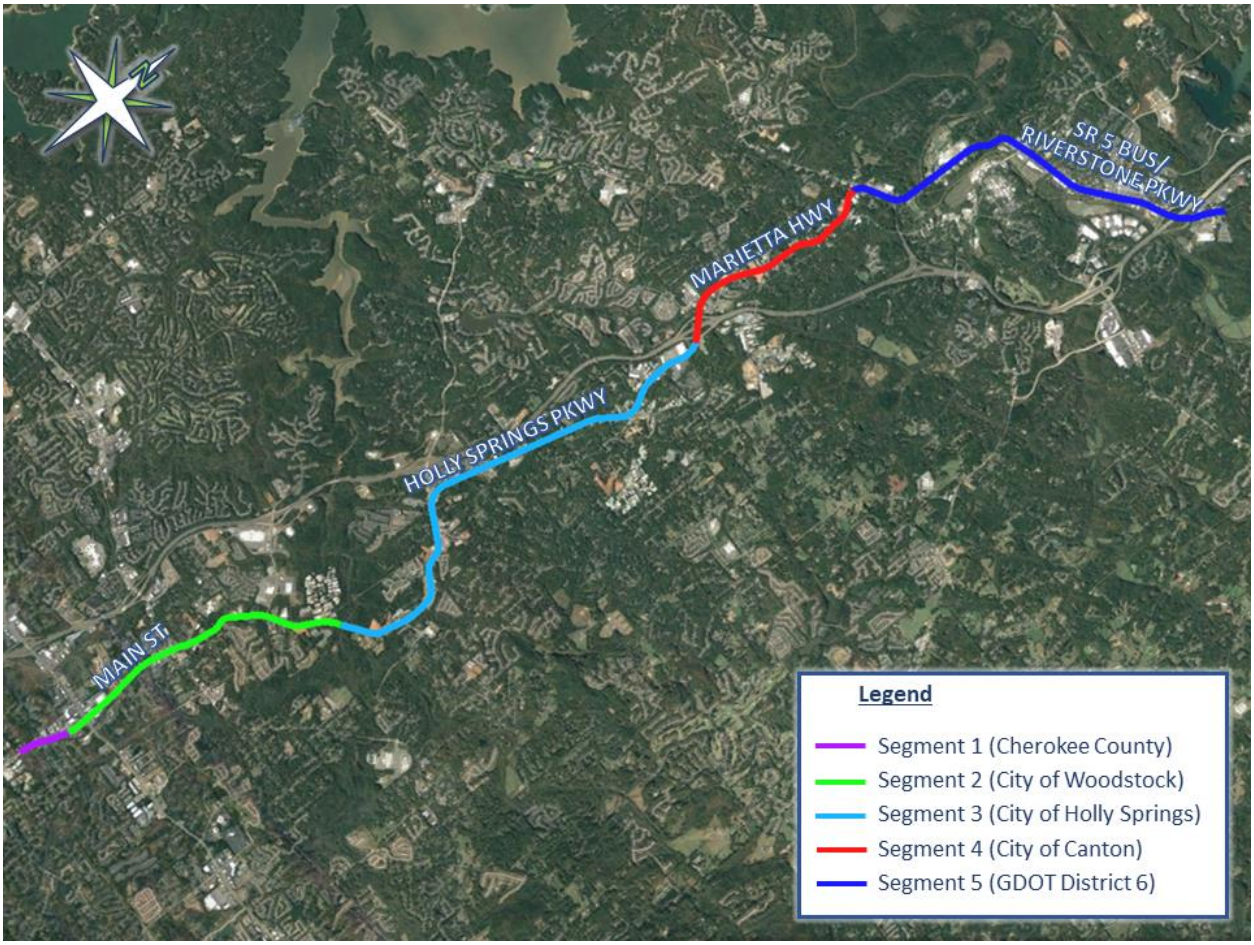


Figure 1.2 - Study Area Breakdown by Primary Stakeholder

2. EXISTING CONDITIONS

An Existing Conditions Report was previously submitted which provided a summary of the data collected for the corridor as well as the results of the operational and safety analyses. The report also included a summary of the existing pedestrian infrastructure along the study corridor. The sections below provide a brief overview of the findings from the Existing Conditions Report.

2.1. Operational Analysis

In order to determine the need for any roadway and/or operational improvements, a capacity analysis was performed for the Existing Conditions based on the methodology outlined in the Highway Capacity Manual (HCM). Synchro 11 was used to analyze all 38 signalized intersections.

The HCM defines level of service (LOS) in terms of the amount of control delay, including initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The LOS categories range from A to F, with different thresholds specified according to the type of stop control at the intersection. The LOS criteria for signalized intersections are listed in Table 2.1.

Table 2.1 – Level of Service Criteria

Level of Service (LOS)	Signalized Control Delay per Vehicle (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Rural, sparsely developed areas have a minimum LOS requirement of C based on rural residents' expectation for relatively uncongested conditions in combination with design flexibility associated with lower right of way costs. The minimum LOS for urban areas is D, reflecting the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The study area is generally well-developed; therefore, an LOS D or higher was considered acceptable.

The analysis results indicated that 7 intersections were operating inadequately (LOS E or F) during the morning and/or evening peak hours while 1 was approaching inadequate LOS (the average delay was within 5 seconds of the LOS E threshold).

- Main Street at SR 92/Alabama Road (intersection #2)
  - LOS E (65.8 sec) during AM peak and LOS F (115.6 sec) during PM peak
- Holly Springs Parkway at East Cherokee Drive (intersection #9)
  - LOS E (55.9 sec) during PM peak
- Holly Springs Parkway at Sixes Road (intersection #13)
  - LOS E (58.7 sec) during PM peak
- Marietta Highway at Prominence Point Parkway/Driveway #3 (intersection #21)
  - LOS F (151.0 sec) during PM peak
- Marietta Highway at Butterworth Road/Univeter Road (intersection #23)
  - LOS F (152.2 sec) during PM peak
- SR 20/Marietta Highway at SR 140/Hickory Flat Highway (intersection #26)
  - LOS F (96.7 sec) during AM peak and LOS F (100.3 sec) during PM peak
- SR 5 Business/SR 140/Marietta Highway/Riverstone Parkway at SR 140/Waleska Road (intersection #28)
  - LOS E (55.7 sec) during AM peak
- Holly Springs Parkway at Holly Street/Hickory Road (intersection #16)
  - LOS D (53.1 sec) during AM peak

The Existing Year capacity analysis results for the morning and evening peak hours for all study intersections are shown in Table 2.2. The intersections showing inadequate operations are highlighted in red and the intersection nearing inadequate LOS is highlighted in yellow. The Synchro reports are included in Appendix A.

Table 2.2 – Existing Year 2021 Capacity Analysis Results

No.	Intersection	Intersection Control	Existing 2021			
			AM Peak		PM Peak	
			LOS	sec/ veh	LOS	sec/ veh
1	Main St at Mauldin Dr	Signalized	A	8.9	A	7.3
2	**Main St at SR 92/Alabama Rd**	**Signalized**	**E**	**65.8**	**F**	**115.6**
3	Main St at Driveway #1 (Woodstock Place)	Signalized	A	4.4	A	9.5
4	Main St at Serenade Ln	Signalized	B	17.6	B	19.5
5	Main St at Dupree Rd	Signalized	C	27.2	C	23.7
6	Main St at Fowler St	Signalized	A	8.9	B	14.0
7	Main St at Arnold Mill Rd	Signalized	D	40.6	D	45.9
8	Main St at Ridgewalk Pkwy	Signalized	C	23.3	C	30.3
9	**Holly Springs Pkwy at E Cherokee Dr**	**Signalized**	**D**	**42.4**	**E**	**55.9**
10	Holly Springs Pkwy at Stoney Creek Pkwy	Signalized	B	12.3	B	10.3
11	Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd	Signalized	C	22.7	B	17.9
12	Holly Springs Pkwy at River Park Blvd	Signalized	B	14.5	B	15.9
13	**Holly Springs Pkwy at Sixes Rd**	**Signalized**	**D**	**39.1**	**E**	**58.7**
14	Holly Springs Pkwy at Driveway #2 (The Home Depot)	Signalized	A	7.0	B	12.2
15	Holly Springs Pkwy at Rabbit Hill Rd	Signalized	A	9.2	A	5.8
16	**Holly Springs Pkwy at Holly St/Hickory Rd**	**Signalized**	**D**	**53.1**	**D**	**43.9**
17	Holly Springs Pkwy at Adam Jenkins Memorial Dr/Pinecrest Rd	Signalized	B	10.5	B	13.2
18	Holly Springs Pkwy at Harbor Creek Pkwy	Signalized	B	17.5	C	20.8
19	Holly Springs Pkwy at I-575 NB Ramps	Signalized	B	14.1	C	22.8
20	Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps	Signalized	B	18.9	B	18.1
21	**Marietta Hwy at Prominence Point Pkwy/Driveway #3 (Kroger)**	**Signalized**	**D**	**36.6**	**F**	**151.0**
22	Marietta Hwy at Ridge Rd	Signalized	C	27.3	C	26.3
23	**Marietta Hwy at Butterworth Rd/Univeter Rd**	**Signalized**	**C**	**29.5**	**F**	**152.2**
24	Marietta Hwy at Bells Ferry Rd/Marietta Rd	Signalized	B	17.8	B	17.4
25	Marietta Hwy at SR 20/Herndon Ln	Signalized	D	43.5	D	38.2
26	**SR 20/Marietta Hwy at SR 140/Hickory Flat Hwy**	**Signalized**	**F**	**96.7**	**F**	**100.3**
27	SR 5 BUS/SR 140/Marietta Hwy at Driveway #4 (Cherokee High School)	Signalized	B	12.9	A	6.5
28	**SR 5 BUS/SR 140/Marietta Hwy/Riverstone Pkwy at SR 140/Waleska Rd**	**Signalized**	**D**	**46.4**	**E**	**55.7**
29	SR 5 BUS/Riverstone Pkwy at Juniper St/Canton Mill Dr	Signalized	A	9.7	B	13.9
30	SR 5 BUS/Riverstone Pkwy at Old Ballground Hwy	Signalized	A	8.9	A	7.6
31	SR 5 BUS/Riverstone Pkwy at Reinhardt College Pkwy	Signalized	B	16.5	C	22.4
32	SR 5 BUS/Riverstone Pkwy at Driveway #5 (Riverstone Plaza)	Signalized	A	1.8	A	7.5
33	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd	Signalized	D	35.6	B	17.5
34	SR 5 BUS/Riverstone Pkwy at Milton Dr/Old Ballground Hwy	Signalized	B	17.3	B	16.2
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	Signalized	D	46.8	C	29.2
36	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps	Signalized	C	33.1	D	47.4
37	SR 5 BUS/Riverstone Pkwy/Ball Ground Hwy at Liberty Blvd/Keith Dr	Signalized	B	12.1	C	22.3
38	SR 5 BUS/Ball Ground Hwy at River Pointe Pkwy	Signalized	A	7.3	A	8.4

A back of queue (BOQ) analysis was performed to determine if any existing queues exceeded the available storage space at any of the study intersections. The 95th percentile BOQ length was calculated for specific movements at each intersection. The queue is expected to be the reported length or shorter 95 percent of the time. The results indicated that 18 of the intersections had 95th percentile BOQ lengths which exceeded the available lane storage or had an approach with queueing that exceeded 1,000 feet. The 95th percentile queue lengths for these intersections are shown in Table 2.3 along with the primary stakeholder for each location.

Table 2.3 – Existing Year 2021 Back of Queue Analysis Results

No.	Intersection	Movement	Existing Storage (feet)	95th Percentile Back of Queue (feet)	
				AM Peak	PM Peak
2	Main St at SR 92/Alabama Rd	Westbound Left	80	273	146
		Westbound Right	175	78	183
		Northbound Left	270	303	425
		Northbound Right	360	101	501
6	Main St at Fowler St	Westbound Right	25	19	49
9	Holly Springs Pkwy at E Cherokee Dr	Eastbound Left	25	26	144
		Westbound Right	265	89	283
10	Holly Springs Pkwy at Stoney Creek Pkwy	Southbound Thru	N/A	1076	215
		Westbound Left	70	81	68
12	Holly Springs Pkwy at River Park Blvd	SB Thru/Right	N/A	1082	534
13	Holly Springs Pkwy at Sixes Rd	Eastbound Left	240	168	374
		Westbound Left	50	74	103
		Northbound Left	295	414	495
16	Holly Springs Pkwy at Holly St/Hickory Rd	Westbound Left	60	304	222
		Southbound Left	330	364	297
18	Holly Springs Pkwy at Harbor Creek Pkwy	Eastbound Left	125	34	126
		Eastbound Right	60	3	74
21	Marietta Hwy at Prominence Point Pkwy/ Driveway #3 (Kroger)	Westbound Left	55	85	226
		Northbound Left	125	306	701
23	Marietta Hwy at Butterworth Rd/Univeter Rd	Eastbound Right	70	147	112
		Northbound Left	245	171	748
		Southbound Left	110	173	204
25	Marietta Hwy at SR 20/Herndon Ln	Eastbound Left	305	412	258
26	SR 20/Marietta Hwy at SR 140/Hickory Flat Hwy	Southbound Left	175	672	857
		Westbound Thru	N/A	953	1145
27	SR 5 BUS/SR 140/Marietta Hwy at Driveway #4 (Cherokee High School)	Northbound Left	160	170	14
28	SR 5 BUS/SR 140/Marietta Hwy/Riverstone Pkwy at SR 140/Waleska Rd	Northbound Left	190	543	711
		Eastbound Left	95	100	131
		Eastbound Right	70	526	349
30	SR 5 BUS/Riverstone Pkwy at Old Ballground Hwy	Westbound Left	60	21	64
31	SR 5 BUS/Riverstone Pkwy at Reinhardt College Pkwy	Northbound Left	185	205	273
34	SR 5 BUS/Riverstone Pkwy at Milton Dr/Old Ballground Hwy	Westbound Left	30	60	79
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	Southbound Left	305	236	415

2.2. Safety and Crash Analysis

Crash data for the study area was obtained from Numetric for the five-year period between 2016 and 2020. A total of 4,330 crashes were reported along the corridor, including 9 fatal crashes, 37 serious injury crashes, 182 minor injury crashes, and 635 possible injury crashes. Using the historical data, the top ten crash locations were selected based on the number of crashes occurring at each intersection. Intersections with upcoming roadway projects within the next five years were excluded from the list. During the analysis process, an additional planned project was identified at the intersection of Main Street and Arnold Mill Road; therefore, the intersection was removed from the top ten list.

Table 2.4 provides a summary of the crashes by severity at the top locations and Table 2.5 summarizes the crashes by manner of collision. Crash diagrams for the top locations are presented in Appendix B.

Table 2.4 – Top Crash Locations by Severity

No.	Intersection	Crashes by Severity					Total	Primary Maintaining Agency
		Fatal Injury Crash (K)	Serious Injury Crash (A)	Minor Injury Crash (B)	Possible Injury Crash (C)	Property Damage Only Crash (O)		
9	Holly Springs Pkwy at E Cherokee Dr	0	0	3	21	119	143	Holly Springs
23	Marietta Hwy at Butterworth Rd/Univeter Rd	1	1	4	22	112	140	Canton
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	0	4	15	24	89	132	GDOT
33	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd	0	1	4	22	101	128	GDOT
13	Holly Springs Pkwy at Sixes Rd	0	0	0	16	103	119	Holly Springs
36	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps	1	1	5	18	88	113	GDOT
20	Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps	0	0	6	18	56	80	Canton
11	Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd	0	1	4	13	57	75	Holly Springs
21	Marietta Hwy at Prominence Point Pkwy/Driveway #3	0	0	3	11	60	74	Canton

Table 2.5 – Top Crash Locations by Manner of Collision

No.	Intersection	Crashes by Manner of Collision						Total	Primary Maintaining Agency
		Angle	Head On	Not a Collision with Motor Vehicle	Rear End	Sideswipe - Opposite Direction	Sideswipe - Same Direction		
9	Holly Springs Pkwy at E Cherokee Dr	19	1	3	114	0	6	143	Holly Springs
23	Marietta Hwy at Butterworth Rd/Univeter Rd	26	0	6	105	0	3	140	Canton
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	58	0	5	57	0	12	132	GDOT
33	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd	68	0	4	33	0	23	128	GDOT
13	Holly Springs Pkwy at Sixes Rd	14	0	3	90	0	12	119	Holly Springs
36	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps	16	0	1	83	1	12	113	GDOT
20	Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps	24	0	2	51	0	3	80	Canton
11	Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd	16	0	2	55	0	2	75	Holly Springs
21	Marietta Hwy at Prominence Point Pkwy/Driveway #3	15	0	3	46	1	9	74	Canton

2.3. Pedestrian Infrastructure

An evaluation of the existing pedestrian infrastructure was completed along the study corridor. The evaluation assessed various elements of the existing pedestrian facilities including connectivity, ADA compliance, and the presence of lighting. A summary of the findings broken down into the five previously-defined segments is presented in Table 2.6.

Table 2.6 – Summary of Existing Pedestrian Infrastructure Evaluation

Gaps in Connectivity		
Location	**Side**	**Segment**
Cherokee County		
Main St	East	Cobb County line to south of Stockwood Dr
City of Woodstock		
Main St	East	Serenade Ln to Fowler St
Main St	East	Arnold Mill Rd to Rope Mill Rd
Main St	West	Linton St to Haney Rd
Main St	West	Ridgewalk Pkwy to Little River Bridge
Main St	East	Morgan's Ace Hardware to Little River Bridge
City of Holly Springs		
Holly Springs Pkwy	East	Little River Bridge to south of Edmondson Ln
Holly Springs Pkwy	West	Little River Bridge to Braswell Ct
Holly Springs Pkwy	East	Seth Ridge Dr to New Park Dr
Holly Springs Pkwy	West	Seth Ridge Dr to south of Riverside Pkwy
Holly Springs Pkwy	East	north of Stoney Creek Pkwy to Riverside Way
Holly Springs Pkwy	West	north of Turner Ln to River Park Blvd
Holly Springs Pkwy	East	Toonigh Rd to River Park Blvd
Holly Springs Pkwy	Both	E Rope Mill Rd to south of Sixes Rd
Holly Springs Pkwy	East	north of Sixes Rd to north of Home Depot
Holly Springs Pkwy	West	Rabbit Hill Rd to Childers Rd
Holly Springs Pkwy	East	north of Rabbit Hill Rd to Fire Training Center
Holly Springs Pkwy	East	Overlook Cir to Childers Rd
Holly Springs Pkwy	Both	Hembridge Dr to I-575 NB Ramps
City of Canton		
Marietta Hwy	East	I-575 NB Ramps to south of Hill Creek Dr
Marietta Hwy	West	I-575 NB Ramps to north of Hill Creek Dr
Marietta Hwy	East	Travis Tritt Ln to north of Ridge Rd
Marietta Hwy	East	south of Goodwin Rd to Univeter Rd
Marietta Hwy	West	Goodwin Rd to south of Inman Dr
Marietta Hwy	West	north of Inman Dr to Univeter Rd
Marietta Hwy	East	Univeter Rd to Heights Pl
Marietta Hwy	West	Univeter Rd to north of Ivey Dr
Marietta Hwy	East	north of Heights Pl to south of SR 20
Marietta Hwy	West	Ridge Pine Dr to south of SR 20
GDOT District 6		
SR 20/Marietta Hwy	East	Herndon Ln to south of Riverside Dr
Riverstone Pkwy	East	Old Ball Ground Hwy to Liberty Blvd
Riverstone Pkwy	West	south of Reinhardt College Pkwy to Riverstone Blvd
Riverstone Pkwy	West	north of Riverstone Blvd to Milton Dr
Riverstone Pkwy	West	Transit Ave to I-575 NB Ramps
Riverstone Pkwy	Both	Liberty Blvd to River Pointe Pkwy

Insufficient Lighting		
Location	**Side**	**Segment**
Cherokee County		
Main St	West	Cobb County line to Stockwood Dr
City of Woodstock		
Main St	West	Stockwood Dr to Fowler St
Main St	West	Rope Mill Rd to Linton St
Pedestrian crossing at E Main ST		
Intersection of Main St and Innovation Way		
Intersection of Main St and Dobbs Rd		
Main St	East	north of Linton St to Haney Rd
Main St	West	Haney Rd to Ridgewalk Pkwy
Main St	East	Belleview Dr to Ridgewalk Pkwy
Main St	East	Johnston Farm Ln to northern Ace Hardware dwy
Main St	West	Bell Pkwy to Waste Management
City of Holly Springs		
Holly Springs Pkwy	West	Edmondson Ln to E Cherokee Dr
Holly Springs Pkwy	East	Automotive Dynamics to E Cherokee Dr
Holly Springs Pkwy	West	Riverside Pkwy to Riverside Way
Holly Springs Pkwy	East	Stoney Creek Pkwy to north of Animal Medical Center
Holly Springs Pkwy	East	south of Fox Creek Dr to Toonigh Rd
Holly Springs Pkwy	West	River Park Blvd to north of railroad bridge
Holly Springs Pkwy	East	River Park Blvd to E Rope Mill Rd
Holly Springs Pkwy	East	southern QT dwy to north of Sherwin Williams dwy
Holly Springs Pkwy	East	Toonigh Creek to Holly Park Ln
Holly Springs Pkwy	East	in front of Cherokee Fire Training Center
City of Canton		
Intersection of Marietta Hwy and Prominence Point Pkwy		
Marietta Hwy	West	Ridge Rd/Canterbury Ridge Pkwy to Goodwin Rd
Marietta Hwy	West	Inman Dr to north of Inman Dr
Intersection of Marietta Hwy and Butterworth Rd/Univeter Rd		
Marietta Hwy	East	south of Funeral Home to Fowler Insurance dwy
Marietta Hwy	West	Pine Ridge Office Park to Ridge Pine Dr
GDOT District 6		
SR 20/Marietta Hwy	Both	south of Herndon Ln to Herndon Ln
Marietta Hwy	West	SR 140/SR 20 to N Etowah Dr/Anderson Ave
Marietta Hwy	East	N Etowah Dr/Anderson Ave to Waleska St
Marietta Hwy	West	Unnamed road at Krystal to Waleska St
Riverstone Pkwy	East	Lakeview Dr to Old Ball Ground Hwy
Riverstone Pkwy	West	Old Ball Ground Hwy to north of Tiffany Ln
Riverstone Pkwy	West	Liberty Blvd to north of Liberty Blvd
Riverstone Pkwy	East	Keith Dr to north of Keith Dr
Riverstone Pkwy	East	south of River Pointe Pkwy to River Pointe Pkwy

Concerns with ADA Compliance		
Location	**Side**	**Segment**
Cherokee County		
Main St	East	north of Meadow Ln to Mauldin Dr
City of Woodstock		
Main St	West	Stockwood Dr to southern Sam's Club driveway
Main St	East	Mauldin Dr to S on Main Dr/Serenade Ln
Intersection of Main St and northern Sam's Club driveway		
Main St	West	Rope Mill Rd to Linton St
Pedestrian crossing at E Main St		
Intersection of Main St and Innovation Way		
Intersection of Main St and Dobbs Rd		
Main St	East	Dobbs Rd to south of Linton St
Main St	East	north of Linton St to Haney Rd
Main St	East	Belleview Dr to Cherokee Co Health Dept
City of Holly Springs		
Holly Springs Pkwy	East	New Park Dr to north of Animal Medical Center
Holly Springs Pkwy	West	Riverside Pkwy to Riverside Way
Holly Springs Pkwy	East	south of Fox Creek Dr to Toonigh Rd
City of Canton		
Intersection of Marietta Hwy and Prominence Point Pkwy		
Intersection of Marietta Hwy and Ridge Rd/Canterbury Ridge Pkwy		
Marietta Hwy	East	Canterbury Ridge Pkwy to Ameris Bank driveway
Intersection of Marietta Hwy and Butterworth Rd/Univeter Rd		
Marietta Hwy	West	Pine Ridge Office Park to Ridge Pine Dr
GDOT District 6		
SR 20/Marietta Hwy	Both	south of Herndon Ln to Herndon Ln
Marietta Hwy	West	SR 140/SR 20 to Fields Cir
Marietta Hwy	West	Haynes Rd to Santia Rd
Marietta Hwy	East	Canton Auto Retailer to Riverside Dr
Intersection of Marietta Hwy and Marshal's Walk		
Marietta Hwy	West	School Dr to Waleska St
Marietta Hwy	East	N Etowah Dr/Anderson Ave to Waleska St
Intersection of Riverstone Pkwy and Juniper St/Lakeview Dr		
Intersection of Riverstone Pkwy and Tiffany Ln		
Riverstone Pkwy	West	Milton Dr/Old Ball Ground Hwy to Transit Ave
Riverstone Pkwy	East	Keith Dr to north of Keith Dr
Riverstone Pkwy	East	south of River Pointe Pkwy to River Pointe Pkwy

3. STAKEHOLDER INFORMATION

Meetings with each stakeholder were held in order to obtain information regarding upcoming projects in the vicinity of the study area which could impact any of the study intersections. Included in the discussions were roadway projects, planned developments, and projects pertaining to pedestrian facilities. Information provided by the different stakeholders is included in Appendix C.

3.1. Planned Transportation Improvement Projects

City of Woodstock

- GDOT PI 0018024 is an operational improvement project for the intersection of Main Street and SR 92/Alabama Road which is scheduled to be let in 2024. The project proposes to extend the westbound left turn lane and add a third northbound left turn lane by removing one southbound receiving lane.
- The intersection of Towne Lake Parkway and Mill Street is being converted to a roundabout as part of the "Hub Transformation Project," which is intended to improve traffic flow throughout the entire downtown Woodstock area. The Hub Transformation Project will also convert Mill Street to a two-way roadway.
- The City of Woodstock has plans improve the intersection of Main Street and Dupree Road as Dupree Road will be extended beyond its existing intersection with Main Street. The improvements include adding a left turn lane on the southbound approach on Main Street as well as a right turn lane on the eastbound approach on Dupree Road. The new westbound approach on Dupree Road will also contain a right turn lane and a shared through-left turn lane.
- City of Woodstock has plans to improve the intersection of Main Street and Arnold Mill Road, which will include adding an eastbound left turn lane, modifying the northbound approach to provide a through lane and a shared through/right turn lane, and closing East Main Street south of Arnold Mill Road.
- The Grid Streets program is being implemented by the City of Woodstock as a way to distribute traffic flows throughout the city as opposed to forcing traffic onto major arterials which are often congested.
- The Greenprints Trail System plan was updated in 2021 to include plans to connect the trail system throughout the city. A map was provided which depicts all of the existing, funded, and proposed trails.

City of Holly Springs

- The East Cherokee Drive Project is a sidewalk project that runs from the Publix at the intersection of Holly Springs Parkway and East Cherokee Drive to Riverside Way/Fox Creek Drive. It is scheduled to be constructed in summer of 2022.
- The City has plans to install a traffic signal at the intersection of Holly Springs Parkway and Fox Creek Drive/Turner Lane. The project is expected to go to bid in summer 2022.
- The City of Holly Springs has plans to further expand their City Wide Trail System which would provide connectivity between the residential areas to the many commercial, greenspace, and recreational areas.

City of Canton

- City of Canton's Transportation Master Plan is scheduled to be finished in November 2022.
- The intersection of Marietta Highway/SR 5 Business/Riverstone Parkway and SR 140/Waleska Road was evaluated as part of the TE Study completed for SR 140 in 2019. Proposed short-term improvements for the intersection include completing a signal upgrade, increasing the right turn lane storage on the SR 140/Waleska Road southbound approach, and converting the existing Walgreens driveway to right-in-right-out (RIRO). The long-term improvements include providing dual left turn lanes for the northbound, eastbound, and westbound approaches, installing a second receiving lane on SR 140/Waleska Road northbound, and installing medians to restrict left-turn movements along Marietta Highway/Riverstone Parkway. The interim improvements recommended involve the realignment of Shoal Creek Lane to align with Mary Lane, just north of the subject intersection, which will be completed under GDOT PI 0017789. The project also includes left and right turn lanes and improved medians. Construction funding has been programmed for 2024.
- The Reinhardt College Parkway at SR 140/Waleska Road intersection was also evaluated as part of the TE Study completed for SR 140. The interim improvements include converting the intersection to a continuous green-T as well as converting the intersections with Mill Street and Vandiver Road to RIRO.

The proposed long-term improvement involves converting the intersection to a roundabout. GDOT PI 0017982 is an intersection improvement project at this location, but it is unclear which improvement is being implemented due to a lack of a detailed project description on GeoPI. Construction funding has been programmed for 2023.

- A study is being completed by Atkins to evaluate the need for a mid-block pedestrian crossing with a pedestrian hybrid beacon (PHB) on SR 5 Business/Riverstone Parkway between SR 140/Waleska Road and Hospital Drive. At this time, the PHB warrant has not been met; however, installation of a PHB is being considered by the City although it has not yet been approved.

GDOT District 6

- GDOT PI 0007836 is a widening project for SR 20 between I-75 in Bartow County and I-575 in Cherokee County. Several intersections along the route will be impacted, including the intersections of SR 20 with Marietta Highway and with SR 140/Hickory Flat Highway. The project is scheduled to be let in 2027.

3.2. Planned Developments

Meetings with the stakeholders revealed plans for several developments in the vicinity of the study area. A list of the known developments is provided in Table 3.1.

Table 3.1 – Planned Developments

Development	Location	Type	Size
City of Woodstock			
Bentley Development	Arnold Mill Rd, east of Old Hwy 5	Mixed-Use	237 apartments, 42,000 sqft commercial
Brooks Family Property	SR 92, east of Old Hwy 5	Mixed-Use	79 townhomes, 21,000 sqft commercial
Flatiron Building	between Main St and Rope Mill Rd	Mixed-Use	20 apartments, 4,500 sqft commercial
City of Holly Springs			
Townhomes	east side of Old Hwy 5 near Fire Training Center	Residential	100 townhomes
Townhomes	west side of Old Hwy 5 south of Overlook Cir	Residential	50 townhomes
City of Canton			
Urgent Care and Starbucks	4125 Marietta Hwy (Old RaceTrac)	Mixed-Use	6,000 sqft
Apartments	300 Prominence Point Pkwy	Residential	168 apartments
My Georgia Plumber	3050 Marietta Hwy	Service	10,800 sqft
Office & Retail - 4 buildings	3174 Marietta Hwy	Retail/Office	22,000 sqft
Jackie Moore Ln Apartments	591 Jackie Moore Ln	Residential	252 apartments
Marietta Rd Project	1010 Marietta Rd	Residential	156 townhomes
GDOT District 6*			
The Bluffs	Bluffs Pkwy	Residential	145 townhomes
Hickory Bluffs	Bluffs Pkwy	Residential	433 townhomes
The Cottages at Riverstone	Reservoir Dr, north of Teasley Middle School	Residential	255 houses
Crystal Lagoons	Reinhardt College Pkwy, behind Publix	Residential	200 townhomes
Riverstone Dominium	Bluffs Pkwy, adjacent to school site	Senior Living	251 apartments
Great Sky - Pod 18	Great Sky Pkwy and Reservoir Dr	Residential	72 houses
Great Sky - Pod 15	Sunshower Ridge	Residential	62 houses
Great Sky - Pod 13	Great Sky Pkwy	Residential	92 houses
Great Sky - Pod 14	Great Sky Pkwy	Residential	164 houses
Great Sky - Pod 7	Great Sky Pkwy	Residential	38 houses
Senior Apartments	137 Reinhardt College Pkwy	Senior Living	120 apartments
Retail/Office	950 Old Ball Ground Hwy	Retail/Office	11,500 sqft
Kimberly Crossing	Reinhardt College Pkwy at Elmwood St	Residential	26 houses
Hospital Dr Project	old hospital site on Hospital Dr	Residential	260 apartments, 50 townhomes
Avanta Project	Reinhardt College Pkwy, across from high school site	Residential	270 townhomes
Etowah Mill Apartments	Reformation Pkwy	Residential	280 apartments
Academy & Main Apartments	Academy St and Main St	Residential	250 apartments

**The information pertaining to developments planned for the City of Canton and GDOT District 6 was provided by the City of Canton. The list was then divided based on the geographical location of each development.*

4. FUTURE CONDITIONS

An analysis was completed to evaluate the operations of the corridor in future years under Without Development and With Development conditions. An Opening Year of 2028 was established for the study area based on the anticipated time frame needed for the County to complete the improvements, including the pursuit of funding, completion of design work, as well as project letting and construction. A Design Year of 2048 was established based on the typical 20-year design life of most of the improvements. Growth rates were determined using historical traffic count data as well as population projection data. An additional growth rate was applied to estimate the With Development traffic volumes, which was based on information received from the stakeholders regarding planned developments.

4.1. Future Traffic Volume Development

An opening year of 2028 and a design year of 2048 were established for the study area and growth rates were calculated in order to obtain the projected traffic volumes for the Without Development conditions. Average annual growth rates were determined using adjusted counts from GDOT and Cherokee County population projections.

GDOT currently maintains fourteen count stations along Old Highway 5 within the vicinity of the study area. Raw counts gathered at the stations between 2012 and 2021 were available on the GDOT Traffic Analysis and Data Application (TADA). Counts collected in 2020 were assumed to be misrepresentative of typical volumes due to the impacts to traffic caused by the COVID-19 pandemic. These counts were excluded from the analysis in order to ensure that the calculated growth rates were not incorrectly skewed. The raw counts were adjusted using GDOT's annual, monthly, daily, and axle factors as appropriate. The raw counts are provided in Appendix D, while the applicable traffic factors and adjusted counts are provided in Appendix E and Appendix F, respectively. Using the adjusted TADA counts, linear regression analysis was performed to estimate the Opening Year 2028 and Design Year 2048 volumes at each of the GDOT count stations. The annual growth rate formula was then used to calculate the compounded growth rates per year. Two of the stations showed a rapid decline in volumes resulting in negative growth rates varying from -2.5% to -8.6% per year; these stations were considered outliers and were therefore excluded from the analysis. Another station was excluded because it only had data for two years, one being 2020.

Population projection data from the U.S. Census Bureau, the Governor's Office of Planning and Budget (OPB), and the Atlanta Regional Commission (ARC) was used to determine annual growth rates based on Cherokee County population data.

The growth rates for the study area were calculated by averaging the growth rates from the TADA counts and county population data. Table 4.1 provides a summary of the growth rates by source and the calculations are provided in Appendix G.

Table 4.1 – Compounded Growth Rates: No-Build/Build Without Development

Data Source	Existing Year to 2028	2028 to 2048
GDOT TADA[1]	1.6%	1.2%
U.S. Census Bureau's Annual Resident Population Estimates[2]	1.7%	1.5%
Governor's Office of Planning and Budget County Residential Projections[3]	0.9%	0.8%
Atlanta Regional Commission Forecast Data[4]	1.3%	1.3%
Overall Average Growth Rate	1.4%	1.2%
Applied Annual Growth Rate	**1.5%**	**1.0%**

1 - https://gdottrafficdata.drakewell.com/publicmultinodemap.asp
2 - https://www.census.gov/programs-surveys/popest.html
3 - https://opb.georgia.gov/census-data/population-projections
4 - https://atlantaregional.org/atlanta-region/population-employment-forecasts

An additional growth rate was applied to the existing volumes to determine the With Development traffic volumes. Using information on the various planned developments in each segment, the number of new trips expected to be generated by each development was estimated using the ITE Trip Generation Manual. Since a complete trip generation analysis was not performed as part of this study, pass-by and internal capture trips were not included as

a part of this preliminary analysis. The total number of expected new trips was compared to the Opening Year 2028 estimated average daily traffic along Old Highway 5 for each segment and the percent difference between the two was calculated. The growth anticipated for each segment varied widely, with the Woodstock segment falling near the mid-range. The City of Woodstock's segment is expected to experience an increase in traffic of approximately 20 percent upon completion of all the planned developments. When expressed as an annual growth rate, the 20 percent increase is approximately equal to 3.0 percent per year, which is roughly two times the estimated Without Development growth rate for the study area. The increase calculated for the Woodstock segment was applied to the entire corridor to avoid an over-estimation of volumes resulting from the fact that only a partial trip generation analysis was done. This growth rate was applied to the Opening Year 2028 Without Development volumes in order to obtain the Opening Year 2028 With Development traffic. The Design Year 2048 With Development traffic was determined by applying the annual growth rate of 1 percent to the Opening Year 2028 With Development volumes.

4.2. Operational Analysis (No-Build Conditions)

The top ten intersections which exhibited the highest delay times in the existing conditions were selected for further evaluation. Intersections with upcoming roadway projects within the next five years were excluded from the top ten list. Intersection capacity analysis was performed for the morning and evening peak hours of the Opening Year 2028 and Design Year 2048 in the No-Build With Development and No-Build Without Development conditions. The results are presented in Table 4.2 and the Synchro reports are included in Appendix H.

Table 4.2 – No-Build Capacity Analysis Results

No.	Intersection**	Scenario	Opening Year 2028				Design Year 2048			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh
21	Marietta Hwy at Prominence Point Pkwy/Driveway #3	No-Build: Without Development	D	43.5	F	174.3	E	65.4	F	229.4
		No-Build: With Development	E	63.0	F	222.0	F	101.6	F	307.5
23	Marietta Hwy at Butterworth Rd/Univeter Rd	No-Build: Without Development	C	34.9	F	205.7	F	80.3	F	326.2
		No-Build: With Development	E	74.1	F	312.8	F	150.6	F	470.3
9	Holly Springs Pkwy at E Cherokee Dr	No-Build: Without Development	D	44.5	E	63.8	D	52.3	F	119.0
		No-Build: With Development	D	51.2	F	112.8	E	79.3	F	210.4
13	Holly Springs Pkwy at Sixes Rd	No-Build: Without Development	D	42.8	E	73.4	F	106.1	F	161.6
		No-Build: With Development	F	96.5	F	152.6	F	254.0	F	284.0
16	Holly Springs Pkwy at Holly St/Hickory Rd	No-Build: Without Development	E	73.5	E	55.9	F	118.4	F	103.8
		No-Build: With Development	F	114.3	F	99.9	F	179.2	F	157.2
36*	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps*	No-Build: Without Development	D	43.3	E	69.9	F	80.2	F	164.8
		No-Build: With Development	E	76.2	F	154.7	F	146.1	F	294.1
35*	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps*	No-Build: Without Development	E	63.1	D	51.8	F	131.8	F	119.6
		No-Build: With Development	F	124.6	F	112.9	F	225.8	F	192.5
22*	Marietta Hwy at Ridge Rd*	No-Build: Without Development	D	36.9	D	37.3	E	71.2	F	95.6
		No-Build: With Development	E	66.5	F	89.0	F	131.1	F	192.5
8*	Main St at Ridgewalk Pkwy*	No-Build: Without Development	C	24.3	C	31.3	C	28.6	C	34.2
		No-Build: With Development	C	27.5	C	33.9	D	42.6	D	47.5
33*	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd*	No-Build: Without Development	D	36.5	B	19.1	C	31.7	C	24.4
		No-Build: With Development	C	31.5	C	24.1	D	38.8	C	31.9

**Although the indicated intersections were operating acceptably in the Existing Condition, they were selected for potential mitigation due to the exclusion of higher ranking intersections as a result of planned projects at those locations.*

***All intersections are currently signalized.*

5. PROPOSED IMPROVEMENTS

5.1. Operational Improvements

Potential alternatives for mitigation were explored for each of the top ten intersections identified as having the worst delay times in the Existing Year 2021 conditions, and a capacity analysis was performed at each location for the Build conditions in the Opening Year 2028 and Design Year 2048 using the Without Development and With Development volumes.

The criteria for determining LOS at an intersection were provided in Section 2.1 of this report; however, only the criteria for signalized intersections were listed. Since some of the proposed improvements involve converting the existing intersection to a single or multilane roundabout, it should be noted that the LOS thresholds vary depending on the type of control at an intersection. Based on guidance in the HCM, the LOS criteria for unsignalized intersections are also applicable to roundabouts. These criteria are presented in Table 5.1.

Table 5.1 – LOS Criteria: Roundabouts

Level of Service (LOS)	Roundabouts and Unsignalized Intersections Control Delay per Vehicle (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

The results of the Build condition capacity analysis for the Opening and Design Years in the Without Development scenario are provided in Table 5.2, along with a comparison to the No-Build analysis results. The results and comparison for the With Development scenarios are included in Table 5.3. The capacity analysis reports for the Build condition scenarios are included in Appendix I. The sections that follow provide details pertaining to the analysis results and to each proposed improvement. For the purposes of this study and to maintain consistency throughout the discussions, Old Highway 5 was assumed to be the north-south roadway at all study intersections.

Table 5.2 – Build: Without Development Capacity Analysis Results

No.	Intersection	Analysis Scenario	Opening 2028 Without Dev.				Design 2048 Without Dev.			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh
21	Marietta Hwy at Prominence Point Pkwy/Driveway #3 (Kroger)	No Build without Development	D	43.5	F	174.3	E	65.4	F	229.4
		Build - Alt 1: Dual NB Left Turn Lanes	C	24.0	C	34.2	C	27.7	D	46.1
		% Improvement		*45%*		*80%*		*58%*		*80%*
		Build - Alt 2: Multilane Roundabout	A	6.0	B	10.4	A	6.9	C	18.3
		% Improvement		*86%*		*94%*		*89%*		*92%*
23	Marietta Hwy at Butterworth Rd/ Univeter Rd	No Build without Development	C	34.9	F	205.7	F	80.3	F	326.2
		Build - Alt 1: Single Lane Roundabout w/ Turn Lanes	A	8.8	C	16.6	B	11.1	F	57.0
		% Improvement		*75%*		*92%*		*86%*		*83%*
		Build - Alt 2: Multilane Roundabout	A	9.6	B	12.6	B	11.4	C	19.4
		% Improvement		*72%*		*94%*		*86%*		*94%*
9	Holly Springs Pkwy at E Cherokee Dr	No Build without Development	D	44.5	E	63.8	D	52.3	F	119.0
		Build - Alt 1: Dual NB and WB Right Turn Lanes	D	42.0	D	51.7	D	49.4	E	73.5
		% Improvement		*6%*		*19%*		*6%*		*38%*
13	Holly Springs Pkwy at Sixes Rd	No Build without Development	D	42.8	E	73.4	F	106.1	F	161.6
		Build - Alt 1: Remove EBR, Dual EBL, Free-Flow SBR	C	28.9	D	43.0	C	33.8	D	54.0
		% Improvement		*32%*		*41%*		*68%*		*67%*
16	Holly Springs Pkwy at Holly St/ Hickory Rd	No Build without Development	E	73.5	E	55.9	F	118.4	F	103.8
		Build - Alt 1: Add SB Right Turn Lane	D	42.7	D	41.4	E	57.2	E	61.7
		% Improvement		*42%*		*26%*		*52%*		*41%*
		Build - Alt 2: Dual SB Left Turn Lanes	D	48.5	D	43.1	E	66.8	D	52.4
		% Improvement		*34%*		*23%*		*44%*		*50%*
		Build - Alt 3: Add SBR, Dual SBL, Dual WBR	D	44.4	D	40.9	E	56.1	D	47.5
		% Improvement		*40%*		*27%*		*53%*		*54%*
		Build - Alt 4: Add SBR and Dual SBL	D	44.4	D	40.8	E	55.8	D	47.7
		% Improvement		*40%*		*27%*		*53%*		*54%*
36	SR 5 BUS/ Riverstone Pkwy at I-575 NB Ramps	No Build without Development	D	43.3	E	69.9	F	80.2	F	164.8
		Build - Alt 1: Free-Flow Right Turn from Ramp	C	31.1	D	41.5	E	75.4	F	91.8
		% Improvement		*28%*		*41%*		*6%*		*44%*
35	SR 5 BUS/ Riverstone Pkwy at I-575 SB Ramps	No Build without Development	E	63.1	D	51.8	F	131.8	F	119.6
		Build - Alt 1: Diverging Diamond Interchange (DDI)	F	81.4	E	78.2	F	134.0	F	152.1
		% Improvement		*-29%*		*-51%*		*-2%*		*-27%*
		Build - Alt 2: Dual SB Left Turn Lanes	C	27.2	C	25.5	F	83.2	E	65.2
		% Improvement		*57%*		*51%*		*37%*		*45%*
22	Marietta Hwy at Ridge Rd	No Build without Development	D	36.9	D	37.3	E	71.2	F	95.6
		Build - Alt 1: Add NBT Lane, EBL, and WBL	C	21.1	B	18.6	C	34.5	C	34.4
		% Improvement		*43%*		*50%*		*52%*		*64%*
8	Main St at Ridgewalk Pkwy	No Build without Development	C	24.3	C	31.3	C	28.6	C	34.2
		Build - Alt 1: Multilane Roundabout	A	6.1	A	7.0	A	7.0	A	8.6
		% Improvement		*75%*		*78%*		*76%*		*75%*
		Build - Alt 2: Dual SB Right Turn Lanes	C	20.9	C	24.3	C	24.9	C	26.2
		% Improvement		*14%*		*22%*		*13%*		*23%*
33	SR 5 BUS/ Riverstone Pkwy at Riverstone Blvd	No Build without Development	D	36.5	B	19.1	C	31.7	C	24.4
		Build - Alt 1: Triple EB Left Turn Lanes	C	33.5	B	17.6	C	28.7	C	20.9
		% Improvement		*8%*		*8%*		*9%*		*14%*

Table 5.3 – Build: With Development Capacity Analysis Results

No.	Intersection	Analysis Scenario	Opening 2028 With Development				Design 2048 With Development			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh	LOS	sec/ veh
21	Marietta Hwy at Prominence Point Pkwy/Driveway #3 (Kroger)	No Build with Development	E	63.0	F	222.0	F	101.6	F	307.5
		Build - Alt 1: Dual NB Left Turn Lanes	C	27.3	D	42.3	D	36.2	E	67.6
		% Improvement		*57%*		*81%*		*64%*		*78%*
		Build - Alt 2: Multilane Roundabout	A	7.4	C	20.3	A	9.3	F	59.2
		% Improvement		*88%*		*91%*		*91%*		*81%*
23	Marietta Hwy at Butterworth Rd/ Univeter Rd	No Build with Development	E	74.1	F	312.8	F	150.6	F	470.3
		Build - Alt 1: Single Lane Roundabout w/ Turn Lanes	B	12.2	F	60.7	C	19.4	F	124.0
		% Improvement		*84%*		*81%*		*87%*		*74%*
		Build - Alt 2: Multilane Roundabout	B	12.1	C	21.9	C	16.9	F	56.9
		% Improvement		*84%*		*93%*		*89%*		*88%*
9	Holly Springs Pkwy at E Cherokee Dr	No Build with Development	D	51.2	F	112.8	E	79.3	F	210.4
		Build - Alt 1: Dual NB and WB Right Turn Lanes	D	48.8	E	71.0	F	82.5	F	108.8
		% Improvement		*5%*		*37%*		*-4%*		*48%*
13	Holly Springs Pkwy at Sixes Rd	No Build with Development	F	96.5	F	152.6	F	254.0	F	284.0
		Build - Alt 1: Remove EBR, Dual EBL, Free-Flow SBR	D	35.6	D	53.7	F	86.7	F	93.1
		% Improvement		*63%*		*65%*		*66%*		*67%*
16	Holly Springs Pkwy at Holly St/ Hickory Rd	No Build with Development	F	114.3	F	99.9	F	179.2	F	157.2
		Build - Alt 1: Add SB Right Turn Lane	D	54.2	D	52.6	F	89.8	F	98.6
		% Improvement		*53%*		*47%*		*50%*		*37%*
		Build - Alt 2: Dual SB Left Turn Lanes	E	65.1	D	51.4	F	103.2	F	80.0
		% Improvement		*43%*		*49%*		*42%*		*49%*
		Build - Alt 3: Add SBR, Dual SBL, Dual WBR	D	54.1	D	46.3	F	81.3	E	60.4
		% Improvement		*53%*		*54%*		*55%*		*62%*
		Build - Alt 4: Add SBR and Dual SBL	D	54.4	D	48.8	F	82.2	E	72.1
		% Improvement		*52%*		*51%*		*54%*		*54%*
36	SR 5 BUS/ Riverstone Pkwy at I-575 NB Ramps	No Build with Development	E	76.2	F	154.7	F	146.1	F	294.1
		Build - Alt 1: Free-Flow Right Turn from Ramp	E	56.5	F	92.5	F	139.1	F	154.3
		% Improvement		*26%*		*40%*		*5%*		*48%*
35	SR 5 BUS/ Riverstone Pkwy at I-575 SB Ramps	No Build with Development	F	124.6	F	112.9	F	225.8	F	192.5
		Build - Alt 1: Diverging Diamond Interchange (DDI)	F	111.2	F	118.1	F	232.3	F	251.3
		% Improvement		*11%*		*-5%*		*-3%*		*-31%*
		Build - Alt 2: Dual SB Left Turn Lanes	F	63.2	E	59.4	F	147.8	F	120.5
		% Improvement		*49%*		*47%*		*35%*		*37%*
22	Marietta Hwy at Ridge Rd	No Build with Development	E	66.5	F	89.0	F	131.1	F	192.5
		Build - Alt 1: Add NBT Lane, EBL, and WBL	C	32.7	C	29.9	E	71.6	E	70.3
		% Improvement		*51%*		*66%*		*45%*		*63%*
8	Main St at Ridgewalk Pkwy	No Build with Development	C	27.5	C	33.9	D	42.6	D	47.5
		Build - Alt 1: Multilane Roundabout	A	7.4	A	9.2	A	8.9	B	14.1
		% Improvement		*73%*		*73%*		*79%*		*70%*
		Build - Alt 2: Dual SB Right Turn Lanes	C	23.9	C	25.9	D	37.9	D	35.1
		% Improvement		*13%*		*24%*		*11%*		*26%*
33	SR 5 BUS/ Riverstone Pkwy at Riverstone Blvd	No Build with Development	C	31.5	C	24.1	D	38.8	C	31.9
		Build - Alt 1: Triple EB Left Turn Lanes	C	28.1	C	20.9	C	33.8	C	23.6
		% Improvement		*11%*		*13%*		*13%*		*26%*

Marietta Highway at Prominence Point Parkway/Driveway #3 (Intersection #21)

Marietta Highway at Prominence Point Parkway is a four-legged, signalized intersection with dedicated left turn lanes on all approaches and dedicated right turn lanes on the northbound, southbound, and eastbound approaches. The northbound and southbound approaches on the mainline each consist of two travel lanes. The side streets are both single-lane approaches, but the westbound approach on Prominence Point Parkway contains two departure lanes. The intersection is expected to operate acceptably at LOS D during the morning peak hour of the Opening Year 2028 in the Without Development condition; however, the intersection would be expected to exhibit inadequate operations in all other No-Build scenarios, with the northbound left turn movement experiencing the highest delay times. Potential solutions for mitigation considered for this location include installing an additional northbound left turn lane to provide dual left turns and a multilane roundabout.

To provide the dual left turn lanes, the existing inside southbound receiving lane would be restriped as a northbound left turn lane. The excess pavement on the west side of the roadway would be utilized to shift the southbound traffic over in order to maintain two travel lanes; at the end of the new left turn lane, the southbound lanes would transition back to their existing alignment. The estimated cost of this improvement is $750,000.

The multilane roundabout would consist of two-lane approaches on all four legs as well as right turn bypass lanes. The westbound approach, which is the Kroger driveway, would contain only one departure lane while the remaining approaches would have two. There is guardrail present on all but the northwest corner of the intersection. The vertical grade difference on the southeast corner is significant, which could impact the constructability of a roundabout. The estimated cost of the multilane roundabout is $3,000,000.

Both alternatives would reduce delay and result in acceptable operations in all scenarios except for the evening peak hour in the Design Year under the With Development condition. The multilane roundabout would be expected to provide a greater reduction in delay times and provide an overall higher LOS than the dual northbound left turns.

Marietta Highway at Butterworth Road/Univeter Road (Intersection #23)

Marietta Highway at Butterworth Road/Univeter Road is a four-legged, signalized intersection with dedicated left and right turn lanes on three of the approaches; the southbound approach on Marietta Highway contains a left turn lane and a shared through-right turn lane. The intersection is severely skewed and has channelized right turns on the northbound and southbound approaches. It is expected to operate acceptably in the Opening Year during the morning peak hour in the Without Development condition; however, all other scenarios are expected to exhibit an LOS of E or below. Alternatives for mitigation include a single lane roundabout and a multilane roundabout.

The proposed single lane roundabout would be elliptical in order to better fit within the constraints of the existing intersection. All four approaches would include two entry lanes and a single departure lane. The inner lane on the northbound and southbound approaches on Marietta Highway would be a dedicated left turn lane while the outer lane on the eastbound and westbound approaches would be a dedicated right turn lane. The estimated cost of the single lane roundabout is $1,800,000.

The multilane roundabout would also be elliptical, but would contain two departure lanes on each approach that would transition down to a single lane at a merge point beyond the roundabout. The northbound and southbound approaches would consist of two entry lanes and a right turn bypass lane while the eastbound and westbound approaches would each contain a single approach lane as well as a right turn bypass lane. The estimated cost of the multilane roundabout is $3,000,000.

Both roundabouts would be expected to result in a significant reduction of delay for all scenarios, with the multilane roundabout performing slightly better. It should be noted, however, that there are two fueling stations located at the intersection on the northeast and northwest corners. These properties would be impacted by the conversion to a roundabout and additional environmental documentation would be required to ensure there is no soil contamination on these two sites.

Holly Springs Parkway at East Cherokee Drive (Intersection #9)

Holly Springs Parkway at East Cherokee Drive is a four-legged, signalized intersection. The northbound approach on Holly Springs Parkway contains a single through lane, a left turn lane, a right turn lane, and two receiving lanes. The southbound approach consists of dual left turn lanes, a shared through-right turn lane, and a single departure lane. The westbound approach on East Cherokee Drive contains a left turn lane, a shared through-left turn lane, a right turn lane, and two departure lanes. The eastbound approach is the driveway to the Village Shoppes of East Cherokee shopping center and contain a left turn lane and a shared through-right turn lane. A project was completed at the end of 2017 to increase intersection capacity. This project included widening the westbound approach from two lanes to its current configuration, extending the northbound left turn lane, and converting the southbound right turn lane to a shared through-right turn in order to provide dual left turns. The intersection experiences high volumes on the northbound and westbound right turn movements as well as the southbound and westbound left turn movement during both peak hours. In the Without Development scenario, the intersection is expected to exhibit inadequate operations during the evening peak of the Opening and Design years. In the With Development scenario, it is expected to operate at LOS E or lower during the evening peak hour of the Opening year and both peak hours of the Design year.

The proposed improvement for this location involves providing dual right turn lanes on the northbound and westbound approaches. The existing right turn lanes to the Woodstock KinderCare driveways on Holly Springs Parkway would be extended to create a second northbound receiving lane beyond the intersection. The new lane would then become a drop lane at the northernmost driveway to the KinderCare facility. The estimated cost of providing northbound and westbound dual right turn lanes is $900,000.

The analysis results indicate that this improvement would be expected to reduce delay for all scenarios except the With Development Design Year morning peak hour, which would suffer a slight (3-second) increase in delay.

Holly Springs Parkway at Sixes Road (Intersection #13)

Holly Springs Parkway at Sixes Road is a four-legged, signalized intersection. The southbound approach on Holly Springs Parkway and the eastbound approach on Sixes Road both contain a single through lane with a left turn lane and a right turn lane. The northbound approach contains dual left turn lanes and a shared through-right turn lane. The westbound approach consists of a left turn lane and a shared through-right turn lane. The intersection is expected to exhibit inadequate LOS in all conditions except for the Without Development Opening Year morning peak hour.

The proposed improvement for this intersection is to provide dual left turn lanes on the eastbound approach along Sixes Road and to convert the southbound right turn movement to a free-flow condition. The existing through lane would be restriped to serve as the additional left turn lane and the existing right turn lane would then accommodate a shared through-right turn movement. To alleviate congestion resulting from combining the through and right turn movements, East Rope Mill Lane would be utilized as a slip right turn lane. In order to accomplish this, East Rope Mill Lane would need to be realigned so that it intersects Sixes Road east of the existing intersection with North Rope Mill Road. The estimated cost of this improvement is $1,200,000.

The intersection would be expected to operate acceptably with these improvements during both peak hours in the Without Development Opening and Design Year scenarios as well as the With Development Opening Year scenario. The analysis results indicate an LOS F for the With Development Design Year scenario; however, the intersection would still experience a reduction in delay times of over 50 percent.

Holly Springs Parkway at Holly Street/Hickory Road (Intersection #16)

Holly Springs Parkway at Holly Street/Hickory Road is a four-legged, signalized intersection. The northbound, eastbound, and westbound approaches all contain a single through lane with a left turn lane and a right turn lane. The southbound approach contains a left turn lane and a shared through-right turn lane. An at-grade rail crossing is located approximately 125 feet east of the intersection on Hickory Road. The intersection is expected to exhibit LOS E or lower in all scenarios with the southbound approach on Holly Springs Parkway experiencing the highest delay times. Potential solutions for mitigation include providing a right turn lane on the southbound approach, providing dual left turn lanes on the southbound approach, providing both a right turn lane and dual left turns on the southbound approach, and providing both of these as well as dual westbound right turn lanes.

The addition of a southbound right turn lane would involve widening the existing roadway along Holly Springs Parkway to provide the exclusive turn lane. The storage length would be restricted to approximately 75 feet in order to avoid widening beyond the local road just north of the intersection. The estimated cost of the southbound right turn lane is $300,000. Another option to improve the southbound right turn movement would be to connect the unnamed local road north of the intersection to the paved turnout located just west of the intersection on Holly Steet so that it could be utilized as a right turn slip lane. According to the Cherokee County online GIS map, the county currently owns the land that would be required to complete this option.

Installing an additional southbound left turn lane would require widening the southbound approach as well as the westbound approach. In addition to acquiring right-of-way, coordination with the railway would likely be required. The estimated total cost of this improvement is $1,000,000.

The third alternative considered for this location included combining the two southbound approach improvements and also installing an additional westbound right turn lane. This alternative would require the most right-of-way and the railway coordination would still be required. The estimated cost of this alternative is $1,500,000.

The final alternative considered for this intersection involved the combination of the two improvements to the southbound approach. As previously mentioned, right-of-way acquisition would be required along the southbound

and westbound approaches. Additionally, impacts to the westbound approach would likely result in the need for railway coordination. The estimated cost of these improvements is $1,250,000.

All of the alternatives would result in a reduction in delay times in all scenarios. The third alternative, which involves the right turn lane and dual left turn lanes on the southbound approach and the dual right turn lanes on the westbound approach, would yield the biggest reduction in delay, but also has the highest estimated cost and impacts to adjacent properties. The first alternative, the southbound right turn lane, has the highest benefit-to-cost ratio.

SR 5 Business/Riverstone Parkway at I-575 NB Ramps (Intersection #36)

SR 5 Business/Riverstone Parkway at the I-575 Northbound Ramps is a signalized intersection with two lanes along SR 5 Business/Riverstone Parkway and three approach lanes on the I-575 northbound exit ramp. A single left turn lane is provided on the northbound approach on SR 5 Business/Riverstone Parkway; dual left turn lanes and a right turn lane are provided on the exit ramp. The intersection is expected to exhibit an LOS of E or lower in all scenarios except during the morning peak hour in the Without Development Opening Year condition, and the I-575 exit ramp is expected to operate at LOS E or worse in all scenarios.

The proposed improvement involves converting the right turn from the I-575 exit ramp to a free-flow condition by extending the northbound right turn lane at the adjacent intersection with Keith Drive back to the ramp intersection. Additional fill would likely be required to complete this extension due to the vertical grade along the side slopes on the northeast corner. The new outer lane would then become a drop lane at Keith Drive. The estimated cost of this improvement is $400,000.

This improvement would result in a reduction of delay for all scenarios, but the intersection is only expected to exhibit an LOS of D or higher in the Without Development Opening Year conditions.

SR 5 Business/Riverstone Parkway at I-575 SB Ramps (Intersection #35)

SR 5 Business/Riverstone Parkway at the I-575 Southbound Ramps is a signalized intersection with two lanes along SR 5 Business/Riverstone Parkway and two approach lanes on the I-575 southbound exit ramp. A right turn lane is provided on the northbound approach along SR 5 Business/Riverstone Parkway; the exit ramp contains a left turn lane and a right turn lane. The analysis results indicate that the intersection will operate acceptably during the evening peak hour of the Opening Year in the Without Development scenario; all other scenarios exhibit LOS E or worse. The southbound left turn movement along SR 5 Business/Riverstone Parkway experiences long queues during the evening peak hour in the Existing Year. Potential improvements for this location include converting to a diverging diamond interchange (DDI) and providing dual southbound left turn lanes.

The DDI alternative resulted in an increase in delay times for all scenarios. Assuming the existing bridge deck would be retained, the estimated cost of the diverging diamond interchange is $5,000,000.

The southbound approach along SR 5 Business/Riverstone Parkway would need to be widened to provide an additional left turn lane. In order to avoid impacts to the bridge deck spanning I-575, the turn lane would need to be no longer than approximately 270 feet. The estimated cost of this improvement is $750,000.

The intersection would be expected to operate acceptably at LOS C with dual southbound left turn lanes during both peak hours in the Opening Year Without Development condition. The results indicate that operations would fall to LOS E or below for all other scenarios; however, the improvement would result in decreased delay times with reductions ranging from 35 percent to 49 percent.

Marietta Highway at Ridge Road/Canterbury Ridge Parkway (Intersection #22)

Marietta Highway at Ridge Road/Canterbury Ridge Parkway is a signalized, four-legged intersection with single-lane approaches and dedicated turn lanes along the mainline. The intersection is expected to exhibit inadequate operations in all scenarios except the Without Development Opening Year conditions.

The proposed improvement involves modifying the northbound approach to provide an additional through lane by converting the existing right turn lane to a shared through-right turn lane. A merge point would be provided north of the intersection just past the Ameris Bank driveway. In addition, dedicated left turn lanes would be installed on both side street approaches. The estimated cost of these improvements is $600,000.

The intersection improvements are expected to result in a significant reduction in delay time and improve operations for all scenarios. Operations in the With Development condition are expected to fall to LOS E in the Design Year, but the reduction in delay times would be 45 percent for the morning peak and 63 percent for the evening peak.

Main Street at Ridgewalk Parkway (Intersection #8)

The intersection of Main Street and Ridgewalk Parkway is signalized with three approaches. The northbound approach along Main Street contains dual left turn lanes and a single through lane. The southbound approach has a through lane and a right turn lane. The eastbound approach on Ridgewalk Parkway consists of dual left turn lanes and a single right turn lane. An intersection improvement project was completed at this location in 2020 which involved providing dual left turn lanes on the eastbound and northbound approaches. This intersection is expected to operate acceptably through all scenarios in the No-Build condition; however, it was selected for improvement as a result of higher ranked locations being removed from the list due to upcoming projects. Potential improvement alternatives include a multilane roundabout and installing an additional southbound right turn lane.

The proposed multilane roundabout would consist of two entry lanes and two departure lanes on each approach. The southbound and eastbound approaches would each have a right turn bypass lane. The estimated cost of the multilane roundabout is $2,000,000.

The southbound approach along Main Street would need to be widened in order to provide dual southbound right turn lanes. Due to the proximity of the train tracks running along the west side of Main Street, the length of the new lane would be restricted to a maximum of approximately 200 feet in order to avoid impacts to the rail bed. The traffic signal phasing would be converted to allow the southbound right turn to operate during an overlap phase to increase the number of vehicles allowed for that movement per cycle. The estimated cost of providing dual southbound right turns is $500,000.

Both alternatives would be expected to improve operations at the intersection. The dual southbound right turn lanes would result in an LOS C in the Without Development scenarios as well as the With Development Opening Year scenarios; LOS D would be exhibited in the With Development Design Year scenarios. The multilane roundabout would provide the most benefit as the intersection would operate at LOS B or better in all scenarios.

SR 5 Business/Riverstone Parkway at Riverstone Boulevard (Intersection #33)

The intersection of SR 5 Business/Riverstone Parkway and Riverstone Boulevard is a signalized, three-legged intersection with three lanes in each direction along the mainline. A left turn lane is provided on the northbound approach and the southbound approach contains a right turn lane. The eastbound approach on Riverstone Boulevard contains dual left turns lanes and a single right turn lane. This intersection is expected to operate acceptably; however, it was selected for improvement as a result of higher ranked locations being removed from the list due to upcoming projects. Although the intersection is expected to operate acceptably through all scenarios in the No-Build condition, the high volume of the eastbound left turn movement is expected to result in an LOS F for the movement by the Design Year in the evening peak hour.

The proposed improvement at this location includes installing an additional left turn lane on the eastbound approach along Riverstone Boulevard by repurposing the existing striped median in order to provide triple left turn lanes. The estimated cost of this improvement is $250,000.

The analysis results indicate that implementing this improvement would reduce intersection delay times in all scenarios with the greater benefit occurring in the With Development conditions.

5.2. Safety Improvements

The top intersections identified for safety improvements in the existing conditions report were further evaluated to look for crash trends and patterns to determine what type of improvement would be best suited for the study intersections. Most of the intersections solicit the need for multiple safety improvements that when implemented together will result in a more effective, overall improvement than if each were to be implemented individually. Safety mitigated alternatives for each intersection are summarized in

Table 5.4 below, along with the number of crashes reported for each. Details on the improvements at each location are provided in the sections that follow.

Table 5.4 – Improvements to Mitigate Safety Concerns

No.	Intersection	Crashes from 2016-2020						Improvement
		K	A	B	C	O	Total	
9	Holly Springs Pkwy at E Cherokee Dr	0	0	3	21	119	143	Minor Safety Improvements: Dynamic Warning Flashers, Resurface Pavement, Signal Timing Adjustments, Supplemental Signal Heads, Elongated Right Turn
23	Marietta Hwy at Butterworth Rd/ Univeter Rd	1	1	4	22	112	140	Minor Safety Improvements: Absence of Access Points, Elongated Right Turns, Protected-Only by TOD, Install FYAs, Improve Street Lighting Convert to Roundabout
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	0	4	15	24	89	132	Minor Safety Improvements: Install FYA, Transverse Rumble Strips, Elongated Right-Turn, Protected-Only by TOD, Clearance Interval Adjustment
33	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd	0	1	4	22	101	128	Minor Safety Improvements: Install FYA, Absence of Access Points, Improve Signal Visibility
13	Holly Springs Pkwy at Sixes Rd	0	0	0	16	103	119	Minor Safety Improvements: Elongated Right Turns, Install Right-Turn Lane
36	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps	1	1	5	18	88	113	Minor Safety Improvements: Install FYA, Supplemental Signal Head, Transverse Rumble Strips, Advance Warning Flashers, Protected-Only by TOD
20	Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps	0	0	6	18	56	80	Minor Safety Improvements: Install Transverse Rumble Strips, Elongated Right Turn, Post-Mounted Delineators
11	Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd	0	1	4	13	57	75	Minor Safety Improvements: Protected-Only by TOD, Elongated Right Turn, Dynamic Warning Flashers
21	Marietta Hwy at Prominence Point Pkwy/ Driveway #3	0	0	3	11	60	74	Minor Safety Improvements: Install Permissive Only FYA (WB), Elongated Right Turns, Physical Channelization of Right Turn Lanes Convert to Roundabout

Holly Springs Parkway at East Cherokee Drive (Intersection #9)

A total of 143 crashes were reported at the intersection of Holly Springs Parkway and East Cherokee Drive during the five-year period between 2016 and 2020. Of the 143 crashes, 80 percent were rear end crashes and 13 percent were angle crashes. The majority of the crashes reported occurred between 2018 and 2020, which coincides with a 2018 intersection improvement project to reconfigure each approach that was completed at the intersection. A combination of safety improvements is recommended for this intersection. Pavement resurfacing and advance warning signs to alert drivers of the lane configuration ahead are recommended for the southbound approach on Holly Springs Parkway. Installing an elongated right turn is recommended to improve the visibility angle for the channelized right turns on the westbound and northbound approaches. The FHWA crash modification factors suggest that implementing an elongated right turn would result in a 44 percent reduction in all crash types (FHWA Clearinghouse Numbers 8428/8429). In addition to the right turn modification, signal timing adjustments are recommended for the northbound approach on Holly Springs Parkway, which include verifying appropriate clearances are used as well as potentially increasing vehicle extension time. Finally, a supplemental signal head is recommended for the eastbound approach to address the sight distance concern presented when exiting the Publix driveway due to the downgrade. The estimated cost associated with these improvements is $400,000.

Marietta Highway at Butterworth Road/Univeter Road (Intersection #23)

A total of 140 crashes were reported at the intersection of Marietta Highway and Butterworth Road/Univeter Road. The intersection has a significant skew, which presents many challenges with respect to sight distance and turning maneuvers. Potential solutions for mitigation include converting the intersection to a roundabout or implementing a combination of intersection improvements. Converting the intersection to a roundabout would result in a 74 percent reduction in fatal and injury crashes and a 35 percent reduction in property damage crashes (FHWA Clearinghouse Numbers 209/212). Conversion to a roundabout was also proposed to mitigate the operational deficiencies at this location; both a single lane and multilane were analyzed. The intersection improvement project would include improved intersection lighting as well as a combination of improvements on each approach.

Improvements for the southbound approach along Marietta Highway include the elimination or reduction of access points, both entering and exiting the intersection, installation of an elongated right turn, and implementation of protected-only signal phasing. Elongated right turns and the implementation of protected-only signal phasing is also proposed for the northbound approach on Marietta Highway. Improvements for the eastbound and westbound approaches on Butterworth Road and Univeter Road include the installation of directional striping for the left turn lanes. The estimated cost for a single lane roundabout is $1,800,000 and that for a multilane roundabout is $3,000,000. The estimated cost associated with the intersection improvements is $500,000.

SR 5 Business/Riverstone Parkway at I-575 SB Ramps (Intersection #35)

A total of 132 crashes were reported at the intersection of SR 5 Business/Riverstone Parkway and the I-575 Southbound Ramps. Just under half (44 percent) of the crashes were angle crashes, 53 of which involved vehicles turning left to access the I-575 southbound entrance ramp and vehicles traveling through the intersection to continue north on SR 5 Business/Riverstone Parkway. This southbound left turn movement is currently controlled by a 5-stack ("doghouse") signal head which is not aligned with the center of the left turn lane. Replacing the signal head with a flashing yellow arrow (FYA) signal head that is properly aligned would increase the signal visibility and potentially reduce the occurrence of crashes involving left-turning vehicles. In addition to the signal head modifications, signal timing adjustments are recommended which include implementing protected-only phasing during peak periods and verifying appropriate clearances are used as well as potentially increasing vehicle extension time. Other improvements proposed to mitigate safety concerns include installing elongated right turns on the eastbound approach along the I-575 exit ramp and the northbound approach along SR 5 Business/Riverstone Parkway as well as installing transverse rumble strips along the exit ramp to reduce approaching speeds. The estimated cost associated with the improvements is $400,000.

SR 5 Business/Riverstone Parkway at Riverstone Blvd (Intersection #33)

A total of 128 crashes were reported at the intersection of SR 5 Business/Riverstone Parkway and Riverstone Boulevard. Of the collisions reported, 68 were angle crashes, 33 were rear end crashes, 23 were sideswipe crashes and 4 were single vehicle crashes. Several angle crashes occurred along the eastbound approach on Riverstone Boulevard at the McDonald's driveway approximately 160 feet west of the intersection. Half of the angle crashes reported involved northbound vehicles turning left onto Riverstone Boulevard and southbound vehicle continuing straight on SR 5 Business/Riverstone Parkway. The proposed improvements for mitigation at this location include closing the McDonald's driveway on Riverstone Boulevard, installing backplates on the signal heads and trimming roadside vegetation to increase visibility of the signals on the eastbound approach, and installing an FYA signal head at a proper alignment for the northbound left turn lane on SR 5 Business/Riverstone Parkway. Additionally, signal timing adjustments are recommended which include verifying appropriate clearances are used as well as potentially increasing vehicle extension time for each approach. The estimated cost of these improvements is $400,000.

Holly Springs Parkway at Sixes Road (Intersection #13)

There was a total of 119 crashes reported at the intersection of Holly Springs Parkway and Sixes Road for the five-year period, with more than 75 percent being rear end crashes. The majority of the rear end crashes were associated with right turn movements on the northbound, southbound, and eastbound approaches. Installing elongated right turns is proposed for the southbound and eastbound approaches in order to improve the visibility angle and therefore increase drivers' comfort level when merging. Several of the rear end crashes on the northbound approach occurred near the driveway to QT/Zaxby's. The installation of a right turn lane at the driveway is proposed in order to reduce the potential for rear end crashes caused by vehicles turning at the driveway. The estimated cost associated with these improvements is $500,000.

SR 5 Business/Riverstone Parkway at I-575 NB Ramps (Intersection #36)

A total of 113 crashes were reported at the intersection of SR 5 Business/Riverstone Parkway and the I-575 Northbound Ramps, including one fatal crash. The majority (73 percent) of the crashes were rear end crashes, followed by angle collisions (14 percent). The crash resulting in a fatality was the result of a northbound vehicle attempting a left turn onto the I-575 entrance ramp and neglecting the yield to the oncoming southbound vehicle on SR 5 Business/Riverstone Parkway. There was a high number of rear end and left angle crashes occurring on the westbound approach along the I-575 exit ramp. The proposed improvements for mitigation at this location include replacing the existing doghouse signal head with an FYA signal head, repositioning the signal heads to be aligned with the lane centerline of each approach, adjusting the signal timings, and installing a supplemental signal head,

advance warning flashers, and transverse rumble strips on the exit ramp. The estimated cost of the improvements is $300,000.

Holly Springs Parkway/Marietta Highway at I-575 SB Ramps (Intersection #20)

A total of 80 crashes were reported at the intersection of Holly Springs Parkway and the I-575 Southbound Ramps. Of the crashes report, the majority (70 percent) were rear end crashes, 33 of which occurred on the westbound approach on the I-575 exit ramp. Approximately 27 percent of the total collisions were angle crashes which occurred near the center of the intersection. Additionally, data associated with the 7 crashes which occurred on the I-575 entrance ramp suggests that entering vehicles were attempting to merge too early. Improvements proposed for this intersection include an elongated right turn and transverse rumble strips along the I-575 exit ramp, post-mounted delineators along the entrance ramp to eliminate early merging, and reducing the clearance distance along the northbound approach on Holly Springs Parkway or implementing signal timing adjustments which include verifying appropriate clearances are used as well as potentially increasing vehicle extension time. The estimated cost of these improvements is $350,000.

Holly Springs Parkway at Misty Hollow Way/Toonigh Road (Intersection #11)

A total of 75 crashes were reported at the intersection of Holly Springs Parkway and Misty Hollow Way/Toonigh Road, with the majority being rear end crashes. The vertical curvature on the northbound approach on Holly Springs Parkway could be inhibiting judgement for drivers attempting to complete a southbound left turn. The improvements for mitigation at this location include converting the southbound left turn phase to be protected-only during the peak periods and elongating the existing channelized right turn on the westbound approach along Toonigh Road to improve the visibility angle. The estimated cost of these improvements is $250,000.

Marietta Highway at Prominence Point Parkway/Driveway #3 (Intersection #21)

A total of 74 crashes were reported during the five-year period at the intersection of Marietta Highway and Prominence Point Parkway/Driveway #3. The most common collision type was rear end crashes (62 percent), while angle crashes made up 20 percent of all collisions. The large width of the intersection could be contributing to the occurrence of both types of crashes. Potential solutions for mitigation at this location include converting the intersection to a multilane roundabout or implementing a combination of intersection improvements. Converting the intersection to a roundabout would result in a 74 percent reduction in fatal and injury crashes and a 35 percent reduction in property damage crashes (FHWA Clearinghouse Numbers 209/212). The intersection improvement project would include replacing the existing permissive-only signals for the driveway on the westbound approach with permissive-only FYA signal heads, providing physical channelization for all right turn lanes and/or installing elongated right turns, and implementing signal timing adjustments which include verifying appropriate clearances are used as well as potentially increasing vehicle extension time. The estimated cost for the multilane roundabout is $2,500,000; the estimated cost of the intersection improvements is $300,000.

5.3. Pedestrian Infrastructure Improvements

Using the data collected during the existing pedestrian infrastructure evaluation and information obtained regarding planned projects and developments within the study area, the top five locations in need of pedestrian improvements were identified. Any locations with planned roadway or pedestrian improvement projects were excluded from further analysis. Additional information on planned projects can be found in Section 3 as well as in Appendix C. A summary of the pedestrian improvements is included in Table 5.5.

Table 5.5 – Pedestrian Infrastructure Improvements

Roadway	Limits	Side	Segment Length
Main St	from Linton St to Haney Rd	west	766 ft
Holly Springs Pkwy	from Seth Ridge Rd to New Park Dr	east	329 ft
	from Seth Ridge Rd to Riverside Pkwy	west	0.28 miles
Marietta Hwy	from Prominence Point Pkwy to Univeter Rd	east	0.71 miles
	from Prominence Point Pkwy to Butterworth Rd	west	0.75 miles
Marietta Hwy	from Univeter Rd to Boling Park	east	2.18 miles
	from Butterworth Rd to Boling Park	west	2.15 miles
SR 5 BUS/Riverstone Pkwy	from Tiffany Ln to Milton Dr	west	0.52 miles

Main Street, between Linton Street and Haney Road

Construct a new sidewalk along the west side of Main Street from a point just north of Linton Street to the existing sidewalk which was recently completed as part of the roundabout project at the intersection of Main Street and Haney Road. This new segment would serve to connect the downtown Woodstock area to the new housing developments as well as the Woodstock Library located just north of Haney Road. It would also provide additional access to the multi-use path located along Main Street, north of the roundabout.

Holly Springs Parkway, between Seth Ridge Drive and Riverside Parkway

Install a new segment of sidewalk along the east side of Holly Springs Parkway to provide connectivity between Seth Ridge Drive and New Park Drive. Also install a segment along the west side of Holly Springs Parkway between Seth Ridge Drive and Riverside Parkway. Additional lighting would also need to be added in order to match the areas located just north and south of the new sidewalk segments. Several planned housing developments are zoned for Johnston Elementary School, which is located just east of Holly Springs Parkway along East Cherokee Drive. Additional pedestrian connectivity in this area would allow students and faculty to safely walk to and from the school.

Marietta Highway, between Prominence Point Parkway and Butterworth Road/Univeter Road

Although there are sections along this segment which contain sidewalks that were installed as part of various developments, there are still connectivity concerns throughout this area. It is recommended that new sidewalks be installed along both sides of Marietta Highway between Prominence Point Parkway and Butterworth Road/Univeter Road as needed to fill the gaps in connectivity throughout the segment. There are two developments planned for the area in addition to the several existing neighborhoods and apartment complexes. During the pedestrian infrastructure evaluation, several individuals were observed walking along the shoulder of this segment of Marietta Highway. This new segment of sidewalk would provide connectivity between the new and existing residential areas and the various shopping areas in the vicinity.

Marietta Highway, between Butterworth Road/Univeter Road and Boling Park

Construct new sidewalk along both sides of Marietta Highway between Butterworth Road/Univeter Road and Boling Park, including along the bridge over Etowah River. Providing sidewalk along this segment would connect multiple residential areas to retail locations, future planned developments, the existing facilities at Boling Park, as well as Cherokee High School.

SR 5 Business/Riverstone Parkway, between Tiffany Lane (Blue Ridge Hills Apartments) and Milton Drive

Install a new sidewalk along the west side of SR 5 Business/Riverstone Parkway from just north of Tiffany Lane to Milton Drive. Providing a sidewalk along this segment would connect the neighborhoods and apartment complexes south of Tiffany Lane to the various retail establishments along SR 5 Business/Riverstone Parkway in the Canton area. There appears to be worn areas in the landscaping adjacent to SR 5 Business/Riverstone Parkway near the intersection with Reinhardt College Parkway, suggesting that pedestrians may already be walking along that area.

6. TRAFFIC SIGNAL TIMING EVALUATIONS

The existing signal timings for the 38 study intersections were evaluated through a variety of sources. During the early stages of this project, GDOT's MaxView server was utilized to obtain the existing signal timing databases from each study intersection along the corridor. These databases were used in assessing the current signal timing operation along the corridor through the Synchro traffic simulation software. Additional field visits were conducted to review the effectiveness of operating plans, to observe traffic patterns, and to identify intersections or segments in need of improvement. Once that was completed, the corridor was analyzed using probe data from the RITIS platform, which aided in the identification of directional speed data and average travel times as well as bottleneck locations and areas with higher congestion. Lastly, detector data from each of the signal cabinets was utilized to measure the performance of each signalized intersection through the ATSPM platform. This data provided insights to arrivals on green for mainline approaches and split failure identification to further identify issues along the system.

Based on all of the data obtained along the Old Highway 5 corridor, the following 5 segments, or subgroups, were identified:

- SR 92 Area: Signals from Mauldin Drive north to Serenade Lane
- Arnold Mill Road Area: Signals from Dupree Road north to Arnold Mill Road
- Sixes Road Area: Signals from East Cherokee Drive north to Home Depot Driveway
- Holly Springs Area: Signals from Pinecrest Road north to Univeter Road
- Riverstone Parkway Area: Signals from Juniper Street north to River Pointe Parkway

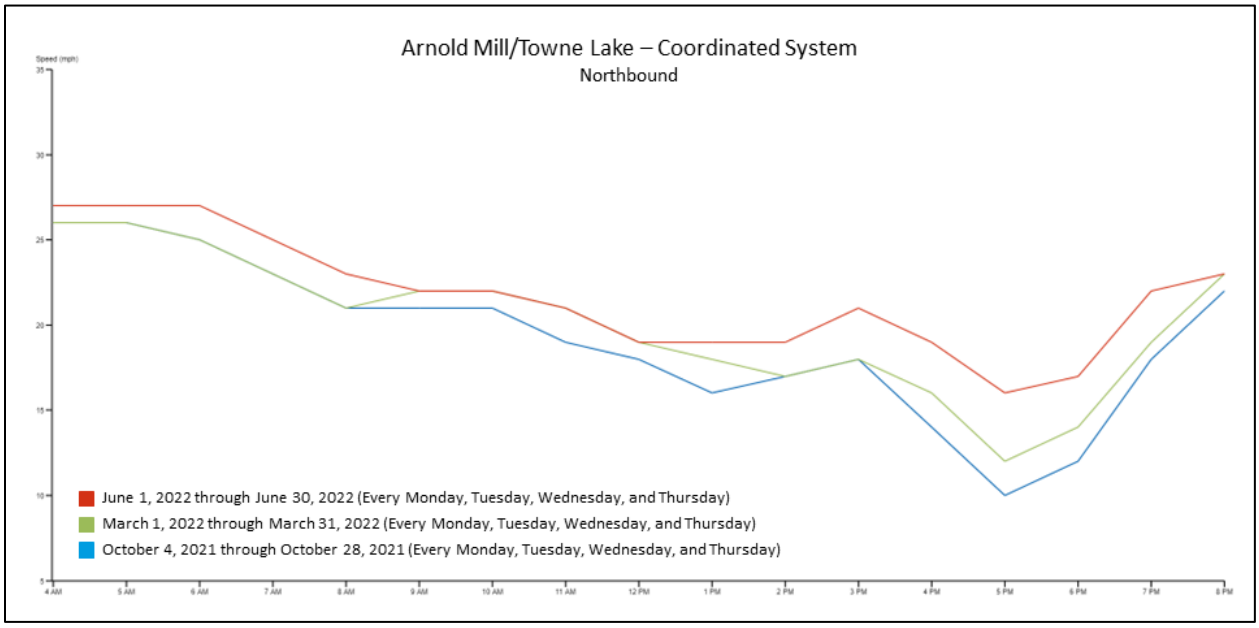
6.1. Existing Traffic Signal Timing

SR 92 Area

For the four signals included within the SR 92 area, no in-depth evaluation was completed. These signals are actively monitored, and the signal timings are actively maintained by one of the GDOT SigOps Metro teams. Since the signal timings for these locations are tied to the SR 92 corridor, it is expected that the SigOps Metro team will continue to make timing adjustments as-needed. It is recommended that the County and/or the City of Woodstock understand who the point of contact is for that project

Arnold Mill Road Area

For the four signals included in the Arnold Mill Road area, signal timings were evaluated to see if improvements could be made to the existing signal timing plans. Based on the average travel speed data obtained from RITIS shown in Figure 6.1, the evening peak period for this segment of Old Highway 5 was identified for further analysis. Heavy northbound traffic during the evening peak period is creating a bottleneck at the intersection of Old Highway 5 and Arnold Mill Road, with long queues extending to the south. Similarly, eastbound traffic approaching from I-575 on Towne Lake Parkway are contributing to the delay and queueing that occur at the intersection. During the evaluation of this segment, and specifically this intersection, it was discovered that there is currently a streetscape project to modify both lane assignments and phasing at the intersection. Based on the overall scope of the project, it was decided to conclude the evaluation process and allow that project to cover the necessary timing adjustments once construction is complete.



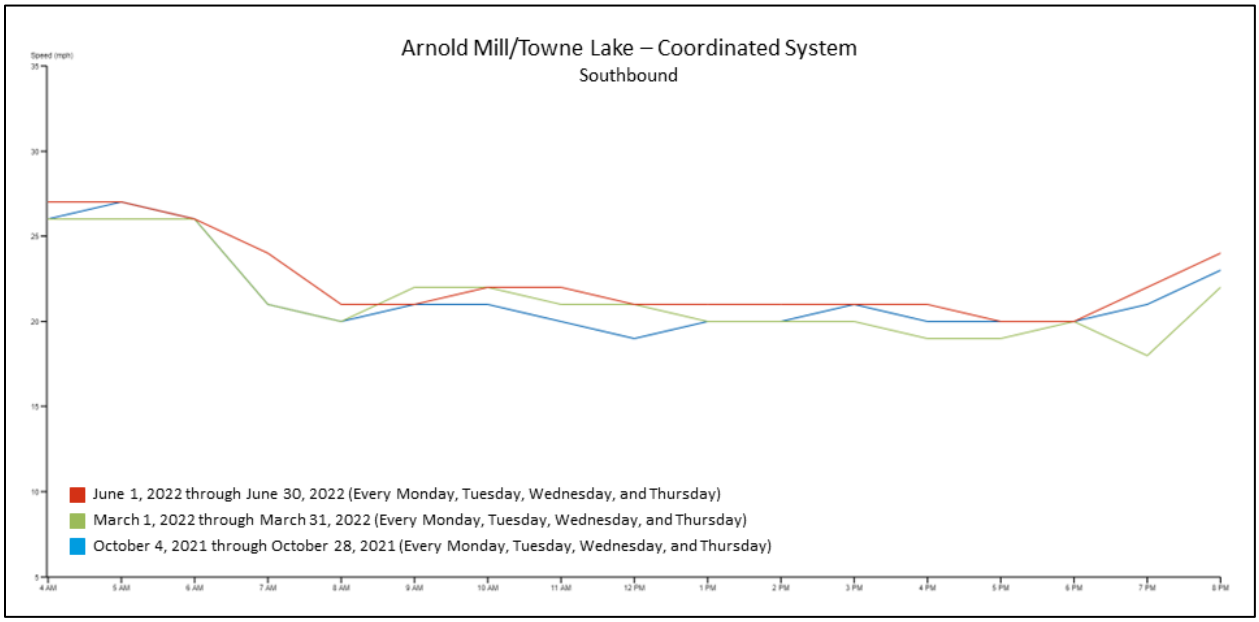
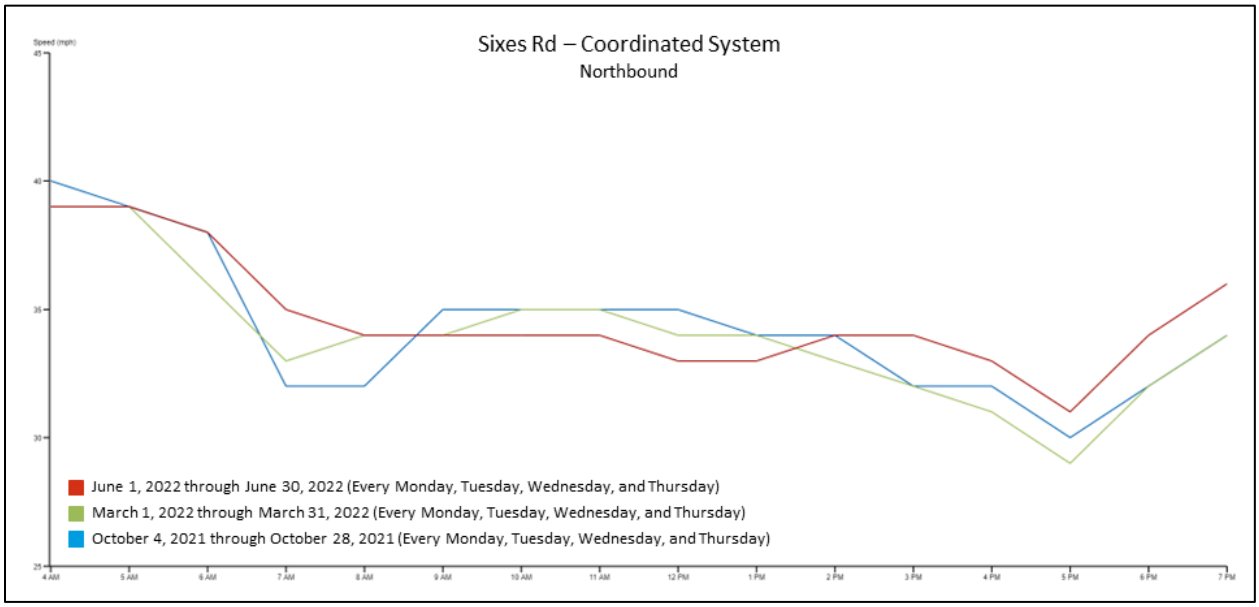


Figure 6.1 – Average Travel Speeds: Arnold Mill Rd Area

Sixes Road Area

For the six signals included in the Sixes Road area, signal timings were evaluated to see if improvements could be made to the existing signal timing plans. Based on the average travel speed data obtained from RITIS shown in Figure 6.2, the morning peak period experiences steep speed reductions in both the northbound and southbound directions along the roadway segment. Heavy northbound left-turn volumes at the Sixes Road intersection and heavy southbound left-turn volumes at the East Cherokee Drive intersection create chokepoints along the corridor, reducing throughput along the mainline in either direction. Additional observations reveal that the current phasing, or ring structure, of several intersections is resulting in an inefficient use of split time. With several heavy movements along the corridor, these extra seconds could provide noticeable reduction in delay and queueing along the roadway. For the evening peak period, the northbound direction of travel experiences the greatest reduction in vehicle speeds. Commuters traveling to and from the I-575 area using Sixes Road create added congestion along this segment. The northbound left-turn onto Sixes Road remains heavy for much of the evening peak period, with increasing volumes on the side street approach of Sixes Road as the evening peak progresses. The current split allocation does not appear to provide enough time for the heavy northbound left-turn movement, causing queues

to spill back into the through lane. Looking at the RITIS data below, this likely occurs most between the 4:30 PM and 5:30 PM time period when northbound speeds reach their lowest points.



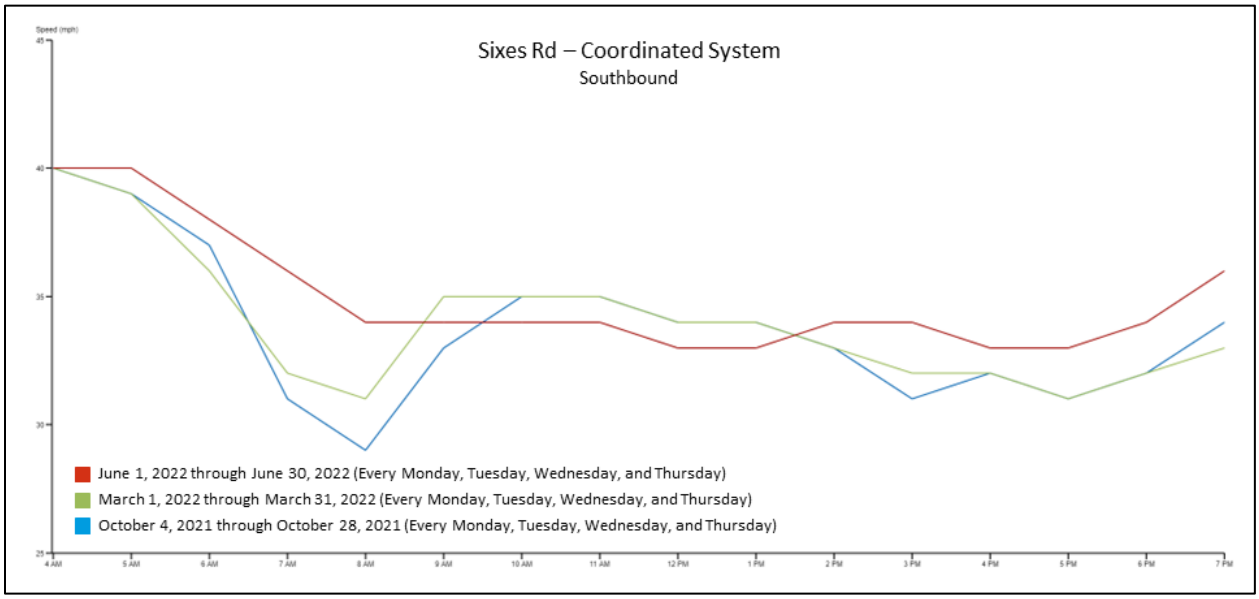
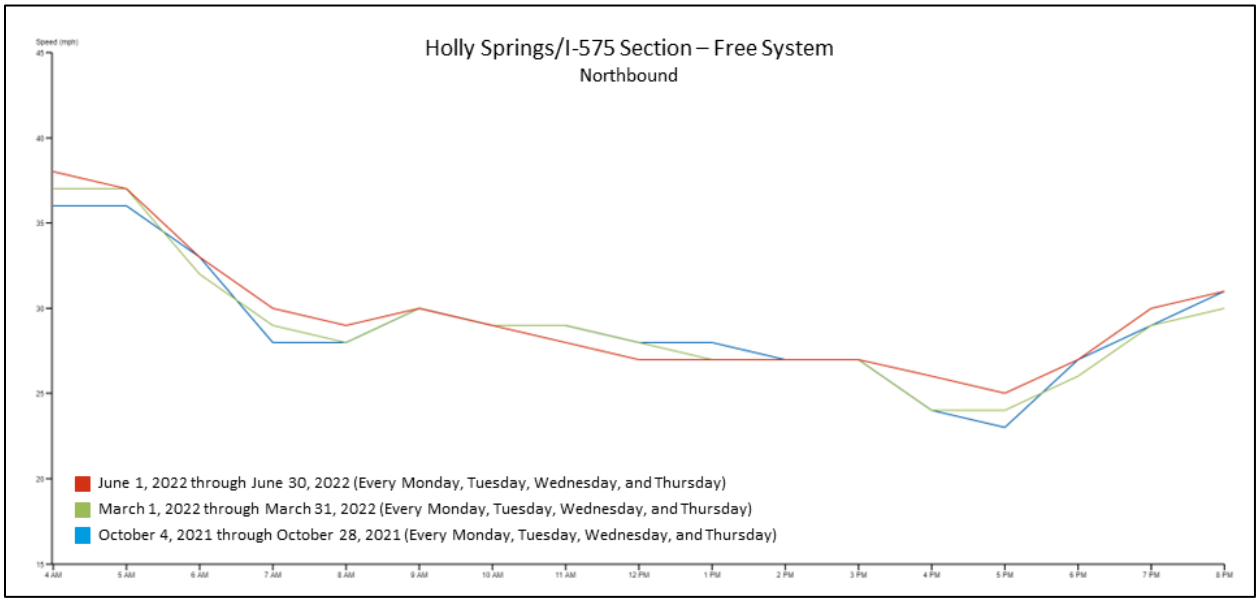


Figure 6.2 – Average Travel Speeds: Sixes Rd Area

Holly Springs Area

For the seven signals included in the Holly Springs area, signal timings were evaluated to see if improvements could be made to the existing signal timing plans. Each of the intersections within this segment are currently operating in free operation at all times of day. Based on the average travel speed data obtained from RITIS shown in Figure 6.3, significant slowdowns occur during both peak periods in the southbound direction. Since the signals do not currently work together to platoon vehicles through this section of the corridor, an accordion effect takes place. Groups of vehicles may get through one signal but then encounter a red light at the next. This constant stop-and-go operation creates long startup times stretching the groups of vehicles further apart. As the peak period goes on, the signals can no longer process all of the vehicles creating excess delay and queueing. Another observation made along this segment was at the I-575 ramp intersections. With both ramp intersections operating independently of one another, there are multiple occasions where vehicles from the exit ramp approach arrive at the next intersection while on red. This operation creates queuing on the bridge throughout the day and is magnified during the peak periods.



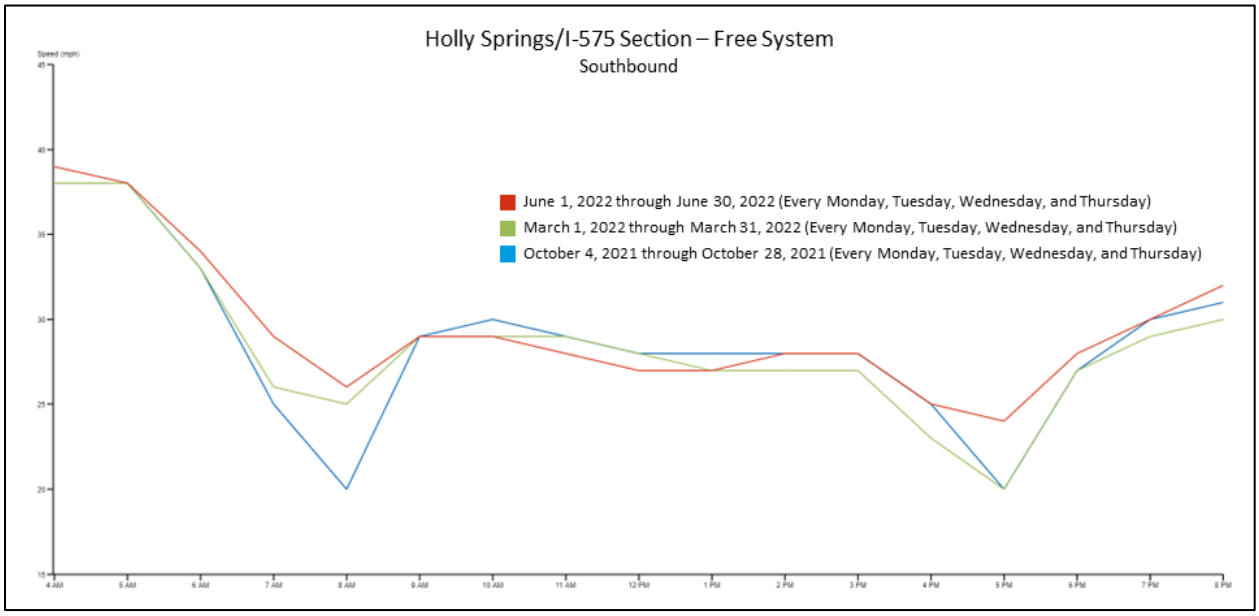
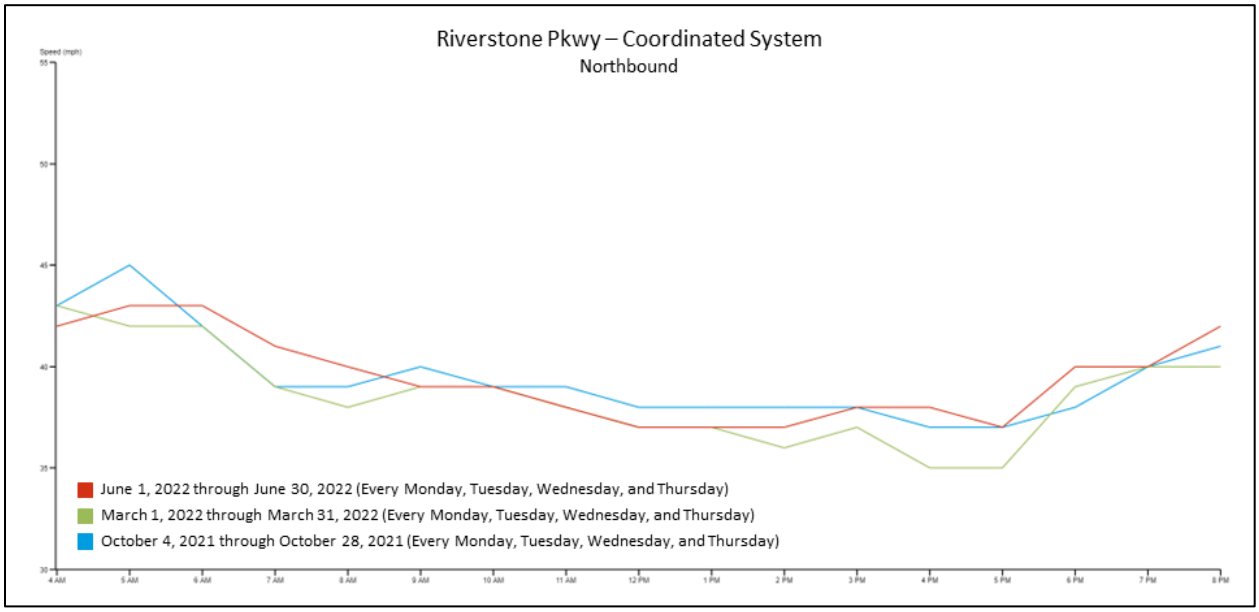


Figure 6.3 – Average Travel Speeds: Holly Springs Area

Riverstone Parkway Area

The last segment that was evaluated was the Riverstone Parkway area, which consists of ten signals on the north end of the study area. Peak congestion for this segment occurs between Reinhardt College Parkway and Keith Drive, with the heaviest volumes stemming from exit ramp traffic at the I-575 intersections. There were three main observations found for this segment that apply to both the morning and evening peak periods. As shown in Figure 6.4, once traffic volumes begin to increase for the morning peak period, they continue to increase throughout the course of the day until the conclusion of the evening peak period. The first observation for this area was focused at the I-575 ramp intersections. For each of the plans evaluated, heavy exit ramp traffic is stopped at the next ramp intersection. Due to the high volumes for each of the exit ramps, these stops create shockwaves along the segment making progression more sluggish. The next observation was based on the phasing, or ring structure, along the segment. Based on observations and the Synchro time space diagram, progression along the corridor could be improved by introducing lead-lag operations along the corridor. While FYA signal heads are not present at all intersections, there are several T-intersections that could operate with lead-lag operations to improve traffic flow. Lastly, observations reveal that it may be beneficial to include Juniper Street, Keith Drive, and River Pointe Parkway

into the coordinated system. Currently these signals run in free operation at all times of day. Additionally, tying the signals to the north into the system could help platoon vehicles through the I-575 ramp area by reducing stops in that section.



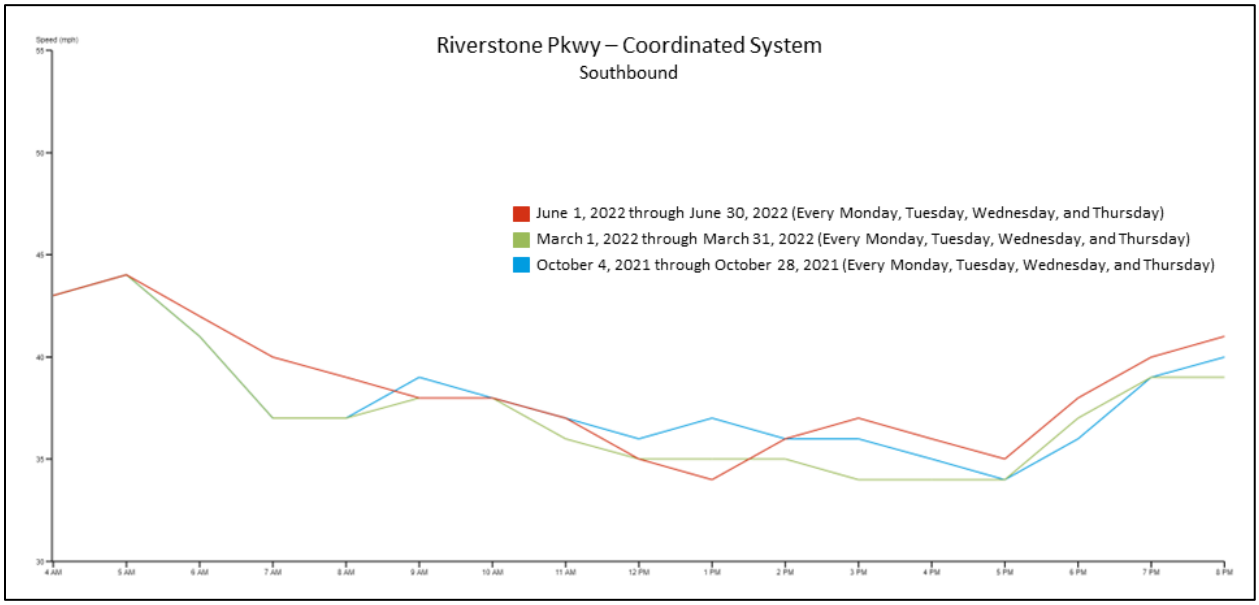


Figure 6.4 – Average Travel Speeds: Riverstone Pkwy Area

6.2. Traffic Signal Timing Recommendations

Based on feedback and information gathered during the evaluation phase, the Sixes Road, Holly Springs, and Riverstone Parkway Areas were selected for further evaluation of potential mitigations. For each segment, the objective of the mitigations was to minimize delay for motorists driving the corridor, improve progression through the corridor, and platoon vehicles at the speed limit to reduce stops. Determining the most adequate cycle length, split, and offset combinations for specific time-of-day plans is necessary to achieve optimal traffic progression.

Sixes Road Area

For the Sixes Road area, the primary focus will be to field fine-tune the existing signal timings for the morning and evening peak periods. Evaluations of the Synchro models and ADT volume data along this segment revealed that

the current cycle lengths are adequate for both peak periods; however, it is expected that both split time and offsets for each of the intersections will be adjusted. Additional recommendations are as follows:

- Implement lead-lag operations at East Cherokee Drive intersection for morning and evening peak periods.
- Flip the sequence, or ring structure, for the side street intersections at East Cherokee Drive so that unused time from the eastbound approach is added to the westbound approach.
- Develop queue-responsive actions to allow East Cherokee Drive to transition from coordinated operation to free operation when delay and queues dictate.
- Develop additional morning and evening peak plans that allow the northbound left turn at Sixes Road to be double-served.
- Implement lead-lag operations at the Toonigh Road intersection for the evening peak period.

Holly Springs Area

For the Holly Springs area, the primary focus will be to implement coordinated signal timing plans for the morning and evening peak periods. A low cycle length plan will also be developed and implemented which can be used for off-peak and overnight time periods to improve operations at the I-575 Ramp intersections. The proposed recommendations are as follows:

- Implement a 130-second cycle length for the morning peak period.
- Implement a 140-second cycle length for the evening peak period.
- Implement lead-lag operations at both I-575 Ramp intersections.
- Implement lead-lag operations at Prominence Point Parkway.
- Implement lead-lag operations at Pinecrest Drive.

Riverstone Parkway Area

For the Riverstone Parkway area, the primary focus will be improving progression around the I-575 Ramp intersections. The existing timing plan for the morning peak period will be field fine-tuned and a new timing plan with a higher cycle length will be implemented for the evening peak period. The proposed recommendations are as follows:

- Implement a 120-second cycle length for the evening peak period.
- Incorporate Juniper Street, Keith Drive, and River Pointe Parkway into the coordinated system.
- Implement lead-lag operations at both I-575 Ramp intersections.
- Evaluate lead-lag operations at other T-intersections along the corridor as needed.
- Flip the sequence, or ring structure, for the side street intersections at Keith Drive so that unused time from the eastbound approach is added to the westbound approach.

7. CONCLUSION

A list of all operational and safety improvements with their estimated construction costs is provided in Table 7.1. The improvements are broken down by the agency of ownership and listed in order of the highest to lowest potential B/C ratio. The B/C ratio calculations for the potential operational improvements at each location are included in Appendix J. The B/C ratio calculations for each proposed safety improvement are presented in Appendix K.

Table 7.1 – Proposed Operational and Safety Improvements with B/C Ratios

No.	Intersection	Improvement	Estimated Cost of Construction	B/C Ratio		
				Operational	Safety	Combined
City of Woodstock						
8	Main St at Ridgewalk Pkwy	Dual SBR	$500,000	4.10		
		Multilane Roundabout	$2,000,000	3.84		
City of Holly Springs						
16	Holly Springs Pkwy at Holly St/Hickory Rd	Add SBR	$300,000	65.83		
		Dual SBL	$1,000,000	19.69		
		Add SBR, Dual SBL	$1,250,000	18.37		
		Add SBR, Dual SBL, Dual WBR	$1,500,000	16.18		
13	Holly Springs Pkwy at Sixes Rd	Remove EBR, Dual EBL, FF SBR	$1,200,000	46.72		
		Minor Safety Improvements	$500,000		6.76	
11	Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd	Minor Safety Improvements	$250,000		30.65	
9	Holly Springs Pkwy at E Cherokee Dr	Dual NBR & WBR	$900,000	16.36		
		Minor Safety Improvements	$400,000		9.25	
City of Canton						
21	Marietta Hwy at Prominence Point Pkwy/ Driveway #3 (Kroger)	Dual NBL	$750,000	67.92		
		Multilane Roundabout	$3,000,000	19.08	1.92	17.71
		Minor Safety Improvements	$300,000		13.14	
23	Marietta Hwy at Butterworth Rd/ Univeter Rd	Minor Safety Improvements	$500,000		63.34	
		Single Lane Roundabout	$1,800,000	36.32	17.42	34.81
		Multilane Roundabout	$3,000,000	24.96	10.45	23.80
22	Marietta Hwy at Ridge Rd	Add NBT, EBL, and WBL	$600,000	30.99		
20	Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps	Minor Safety Improvements	$350,000		27.99	
GDOT District 6						
35	SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps	Minor Safety Improvements	$400,000		83.81	
		Dual SBL	$750,000	40.37		
		DDI	$5,000,000	-1.61		
36	SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps	Free-Flow Right from Ramp	$400,000	61.56		
		Minor Safety Improvements	$300,000		33.07	
33	SR 5 BUS/Riverstone Pkwy at Riverstone Blvd	Minor Safety Improvements	$400,000		23.95	
		Triple EBL	$250,000	8.90		

In addition to operational and safety improvements, evaluations were conducted of the existing pedestrian infrastructure along the corridor as well as the traffic signal timing plans. A list of the recommended locations for the installation of new sidewalk segments is presented in Table 7.2. A summary of the recommended signal timing adjustments is shown in Table 7.3.

Table 7.2 – Proposed Pedestrian Infrastructure Improvements

Proposed Sidewalk Segments
Main St, west side, from Linton St to Haney Rd
Holly Springs Pkwy, east side, from Seth Ridge Rd to New Park Dr
Holly Springs Pkwy, west side, from Seth Ridge Rd to Riverside Pkwy
Marietta Hwy, east side, from Prominence Point Pkwy to Univeter Rd
Marietta Hwy, west side, from Prominence Point Pkwy to Butterworth Rd
Marietta Hwy, east side, from Univeter Rd to Boling Park
Marietta Hwy, west side, from Butterworth Rd to Boling Park
SR 5 BUS/Riverstone Pkwy, west side, from Tiffany Ln to Milton Dr

Table 7.3 – Proposed Signal Timing Recommendations by Area

Sixes Road Area
Lead-lag operations at E Cherokee Dr for AM and PM peak hours
Flip sequence for side street intersections at E Cherokee Dr so that unused time for EB approach is added to WB approach
Develop queue-responsive actions to allow E Cherokee Dr to transition from coordinated operation to free operation when delay dictates
Develop additional AM and PM peak plans that allow the NB left turn at Sixes Rd to be double-served
Lead-lag operations at Toonigh Rd for AM and PM peak hours
Holly Springs Area
Implement 130-sec cycle length for AM peak
Implement 140-sec cycle length for PM peak
Lead-lag operations at both I-575 ramp intersections
Lead-lag operations at Prominence Point Pkwy
Lead-lag operations at Pinecrest Dr
Riverstone Pkwy Area
Implement 120-sec cycle length for PM peak
Incorporate Juniper St, Keith Dr, and River Pointe Pkwy into coordinated system
Lead-lag operations at both I-575 ramp intersections
Evaluate lead-lag operations at other T-intersections along corridor
Flip sequence for side street intersections at Keith Dr so that unused time for EB approach is added to WB approach

APPENDIX A: EXISTING CAPACITY ANALYSIS REPORTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	15	0	12	3	0	3	5	19	716	1	23	15
Future Volume (vph)	15	0	12	3	0	3	5	19	716	1	23	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.93			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1805	1615		1729			1798	4847			1783
Flt Permitted		1.00	1.00		1.00			0.18	1.00			0.35
Satd. Flow (perm)		1900	1615		1772			346	4847			664
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	15	0	12	3	0	3	5	20	738	1	25	15
RTOR Reduction (vph)	0	0	12	0	6	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	15	0	0	0	0	0	25	739	0	0	40
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	7%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		2.8	2.8		2.8			57.6	55.5			59.4
Effective Green, g (s)		2.8	2.8		2.8			57.6	55.5			59.4
Actuated g/C Ratio		0.03	0.03		0.03			0.72	0.69			0.74
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		66	56		62			287	3362			534
v/s Ratio Prot								0.00	0.15			c0.00
v/s Ratio Perm		c0.01	0.00		0.00			0.06				0.05
v/c Ratio		0.23	0.01		0.00			0.09	0.22			0.07
Uniform Delay, d1		37.5	37.3		37.3			3.6	4.4			2.7
Progression Factor		1.00	1.00		1.00			1.00	1.00			1.38
Incremental Delay, d2		1.3	0.0		0.0			0.1	0.2			0.0
Delay (s)		38.8	37.3		37.3			3.7	4.6			3.8
Level of Service		D	D		D			A	A			A
Approach Delay (s)		38.1			37.3				4.5			
Approach LOS		D			D				A			

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1256	5
Future Volume (vph)	1256	5
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3374	1599
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3374	1599
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1295	5
RTOR Reduction (vph)	0	1
Lane Group Flow (vph)	1295	4
Heavy Vehicles (%)	7%	1%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	56.4	56.4
Effective Green, g (s)	56.4	56.4
Actuated g/C Ratio	0.70	0.70
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2378	1127
v/s Ratio Prot	c0.38	
v/s Ratio Perm		0.00
v/c Ratio	0.54	0.00
Uniform Delay, d1	5.7	3.5
Progression Factor	1.84	1.00
Incremental Delay, d2	0.4	0.0
Delay (s)	10.9	3.5
Level of Service	B	A
Approach Delay (s)	10.6	
Approach LOS	B	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	88	1654	522	307	1369	180	364	218	175	290	470
Future Volume (vph)	2	88	1654	522	307	1369	180	364	218	175	290	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Peak-hour factor, PHF	0.92	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)	2	95	1778	561	330	1472	194	391	234	188	312	505
RTOR Reduction (vph)	0	0	0	175	0	0	67	0	0	153	0	0
Lane Group Flow (vph)	0	97	1778	386	330	1472	127	391	234	35	312	505
Heavy Vehicles (%)	2%	2%	22%	9%	0%	13%	0%	5%	1%	1%	0%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		3	8		7	4
Permitted Phases				6			2			8		
Actuated Green, G (s)		7.3	70.8	70.8	16.5	81.0	81.0	19.0	29.4	29.4	12.3	22.4
Effective Green, g (s)		7.3	70.8	70.8	16.5	81.0	81.0	19.0	29.4	29.4	12.3	22.4
Actuated g/C Ratio		0.05	0.44	0.44	0.10	0.51	0.51	0.12	0.18	0.18	0.08	0.14
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0	2.5	3.0	3.0	2.5	3.0
Lane Grp Cap (vph)		156	1881	655	361	2323	817	396	656	293	269	500
v/s Ratio Prot		0.03	c0.42		c0.09	c0.32		c0.12	c0.07		0.09	c0.14
v/s Ratio Perm				0.26			0.08			0.02		
v/c Ratio		0.62	0.95	0.59	0.91	0.63	0.16	0.99	0.36	0.12	1.16	1.01
Uniform Delay, d1		75.0	42.7	33.6	71.0	28.7	21.2	70.4	57.0	54.5	73.8	68.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.64	0.93	0.96
Incremental Delay, d2		6.5	11.3	3.9	26.8	1.3	0.4	41.3	0.3	0.2	104.1	42.0
Delay (s)		81.5	54.1	37.5	97.9	30.0	21.6	111.4	54.8	89.7	173.0	107.7
Level of Service		F	D	D	F	C	C	F	D	F	F	F
Approach Delay (s)			51.3			40.4			90.1			132.3
Approach LOS			D			D			F			F

Intersection Summary			
HCM 2000 Control Delay	65.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	166
Future Volume (vph)	166
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	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	0.93
Adj. Flow (vph)	178
RTOR Reduction (vph)	153
Lane Group Flow (vph)	25
Heavy Vehicles (%)	2%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	22.4
Effective Green, g (s)	22.4
Actuated g/C Ratio	0.14
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	221
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.11
Uniform Delay, d1	60.1
Progression Factor	2.17
Incremental Delay, d2	0.2
Delay (s)	130.7
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	19	15	12	13	461	899	42
Future Volume (vph)	19	15	12	13	461	899	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1740			1787	3505	3486	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1740			1787	3505	3486	
Peak-hour factor, PHF	0.97	0.97	0.92	0.97	0.97	0.97	0.97
Adj. Flow (vph)	20	15	13	13	475	927	43
RTOR Reduction (vph)	14	0	0	0	0	3	0
Lane Group Flow (vph)	21	0	0	26	475	967	0
Heavy Vehicles (%)	0%	0%	2%	0%	3%	3%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	3.9			2.8	64.2	55.7	
Effective Green, g (s)	3.9			2.8	64.2	55.7	
Actuated g/C Ratio	0.05			0.03	0.80	0.70	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	84			62	2812	2427	
v/s Ratio Prot	c0.01			c0.01	0.14	c0.28	
v/s Ratio Perm							
v/c Ratio	0.25			0.42	0.17	0.40	
Uniform Delay, d1	36.6			37.8	1.8	5.1	
Progression Factor	1.00			0.83	2.03	0.45	
Incremental Delay, d2	0.7			1.9	0.1	0.4	
Delay (s)	37.3			33.4	3.8	2.7	
Level of Service	D			C	A	A	
Approach Delay (s)	37.3				5.3	2.7	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	5	57	1	36	4	447	26	31	879	7
Future Volume (vph)	7	0	5	57	1	36	4	447	26	31	879	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.94			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1742			1811	1615	1805	1867		1805	1845	1615
Flt Permitted		0.79			0.72	1.00	0.19	1.00		0.44	1.00	1.00
Satd. Flow (perm)		1409			1370	1615	365	1867		831	1845	1615
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)	7	0	5	60	1	38	4	471	27	33	925	7
RTOR Reduction (vph)	0	11	0	0	0	35	0	2	0	0	0	2
Lane Group Flow (vph)	0	1	0	0	61	3	4	496	0	33	925	5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		6.9			7.3	7.3	54.5	51.3		54.5	53.5	53.5
Effective Green, g (s)		6.9			7.3	7.3	54.5	51.3		54.5	53.5	53.5
Actuated g/C Ratio		0.09			0.09	0.09	0.68	0.64		0.68	0.67	0.67
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		121			125	147	266	1197		605	1233	1080
v/s Ratio Prot							0.00	0.27		c0.00	c0.50	
v/s Ratio Perm		0.00			c0.04	0.00	0.01			0.03		0.00
v/c Ratio		0.01			0.49	0.02	0.02	0.41		0.05	0.75	0.00
Uniform Delay, d1		33.4			34.6	33.1	7.0	7.0		4.3	8.8	4.4
Progression Factor		1.00			1.00	1.00	1.21	2.13		1.32	1.53	1.00
Incremental Delay, d2		0.0			1.3	0.0	0.0	1.1		0.0	3.6	0.0
Delay (s)		33.4			35.9	33.1	8.5	16.0		5.6	17.0	4.4
Level of Service		C			D	C	A	B		A	B	A
Approach Delay (s)		33.4			34.8			16.0			16.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	52	286	195	295	631	40
Future Volume (vph)	52	286	195	295	631	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1670		1805	1900	1850	
Flt Permitted	0.99		0.29	1.00	1.00	
Satd. Flow (perm)	1670		543	1900	1850	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	301	205	311	664	42
RTOR Reduction (vph)	159	0	0	0	1	0
Lane Group Flow (vph)	197	0	205	311	705	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	24.0		124.9	124.9	109.6	
Effective Green, g (s)	24.0		124.9	124.9	109.6	
Actuated g/C Ratio	0.15		0.78	0.78	0.68	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	250		503	1483	1267	
v/s Ratio Prot	c0.12		c0.03	0.16	c0.38	
v/s Ratio Perm			0.29			
v/c Ratio	0.79		0.41	0.21	0.56	
Uniform Delay, d1	65.5		8.8	4.6	12.8	
Progression Factor	1.00		2.51	1.87	0.62	
Incremental Delay, d2	15.2		0.2	0.3	1.7	
Delay (s)	80.7		22.2	8.9	9.7	
Level of Service	F		C	A	A	
Approach Delay (s)	80.7			14.2	9.7	
Approach LOS	F			B	A	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	80.6%	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 (vph)	7	12	23	41	5	13	7	294	46	20	607	6
Future Volume (vph)	7	12	23	41	5	13	7	294	46	20	607	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1818	1615	1805	1846		1805	1879	
Flt Permitted		0.93			0.74	1.00	0.40	1.00		0.54	1.00	
Satd. Flow (perm)		1645			1397	1615	753	1846		1033	1879	
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)	8	13	25	44	5	14	8	316	49	22	653	6
RTOR Reduction (vph)	0	23	0	0	0	13	0	2	0	0	0	0
Lane Group Flow (vph)	0	23	0	0	49	1	8	363	0	22	659	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		9.7			9.7	9.7	139.0	139.0		139.0	139.0	
Effective Green, g (s)		9.7			9.7	9.7	139.0	139.0		139.0	139.0	
Actuated g/C Ratio		0.06			0.06	0.06	0.87	0.87		0.87	0.87	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		99			84	97	654	1603		897	1632	
v/s Ratio Prot								0.20			c0.35	
v/s Ratio Perm		0.01			c0.04	0.00	0.01			0.02		
v/c Ratio		0.23			0.58	0.01	0.01	0.23		0.02	0.40	
Uniform Delay, d1		71.6			73.2	70.6	1.4	1.7		1.4	2.1	
Progression Factor		1.00			1.00	1.00	1.38	1.46		0.43	0.29	
Incremental Delay, d2		1.2			9.9	0.0	0.0	0.3		0.0	0.7	
Delay (s)		72.8			83.1	70.7	2.0	2.8		0.6	1.3	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		72.8			80.3			2.8			1.3	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	310	22	81	371	40	47	208	63	85	474	150
Future Volume (vph)	1	310	22	81	371	40	47	208	63	85	474	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1864		1805	1855		1805	1806		1805	1900	1615
Flt Permitted		1.00		0.21	1.00		0.34	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1863		398	1855		655	1806		930	1900	1615
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)	1	330	23	86	395	43	50	221	67	90	504	160
RTOR Reduction (vph)	0	2	0	0	3	0	0	6	0	0	0	70
Lane Group Flow (vph)	0	352	0	86	435	0	50	282	0	90	504	90
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		35.5		53.8	53.8		81.3	76.3		88.1	79.7	79.7
Effective Green, g (s)		35.5		53.8	53.8		81.3	76.3		88.1	79.7	79.7
Actuated g/C Ratio		0.22		0.34	0.34		0.51	0.48		0.55	0.50	0.50
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		413		220	623		368	861		558	946	804
v/s Ratio Prot				0.02	c0.23		0.00	0.16		c0.01	c0.27	
v/s Ratio Perm		c0.19		0.11			0.06			0.08		0.06
v/c Ratio		0.85		0.39	0.70		0.14	0.33		0.16	0.53	0.11
Uniform Delay, d1		59.8		40.2	46.1		21.4	25.9		17.6	27.4	21.3
Progression Factor		1.00		1.00	1.00		1.02	0.89		1.00	1.00	1.00
Incremental Delay, d2		15.7		1.2	3.5		0.1	1.0		0.1	2.1	0.3
Delay (s)		75.4		41.4	49.5		21.9	24.1		17.6	29.6	21.6
Level of Service		E		D	D		C	C		B	C	C
Approach Delay (s)		75.4			48.2			23.8			26.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	428	285	64	200	445	457
Future Volume (vph)	428	285	64	200	445	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	1538
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	1538
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	528	352	79	247	549	564
RTOR Reduction (vph)	0	269	0	0	0	267
Lane Group Flow (vph)	528	83	79	247	549	297
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	23.7	23.7	5.8	64.0	52.7	52.7
Effective Green, g (s)	23.7	23.7	5.8	64.0	52.7	52.7
Actuated g/C Ratio	0.24	0.24	0.06	0.64	0.53	0.53
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	775	375	203	1216	1001	810
v/s Ratio Prot	c0.16	0.05	c0.02	0.13	c0.29	0.19
v/s Ratio Perm						
v/c Ratio	0.68	0.22	0.39	0.20	0.55	0.37
Uniform Delay, d1	34.7	30.7	45.4	7.4	15.7	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.7	0.5	0.4	1.1	0.6
Delay (s)	38.0	31.4	45.9	7.8	16.9	14.5
Level of Service	D	C	D	A	B	B
Approach Delay (s)	35.3			17.1	15.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	20	11	552	21	385	9	155	302	665	478	3
Future Volume (vph)	8	20	11	552	21	385	9	155	302	665	478	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
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)	9	22	12	594	23	414	10	167	325	715	514	3
RTOR Reduction (vph)	0	12	0	0	0	325	0	0	224	0	0	0
Lane Group Flow (vph)	9	22	0	309	308	89	10	167	101	715	517	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	4.9	4.9		27.9	27.9	27.9	1.3	40.3	40.3	31.9	70.3	
Effective Green, g (s)	4.9	4.9		27.9	27.9	27.9	1.3	40.3	40.3	31.9	70.3	
Actuated g/C Ratio	0.04	0.04		0.21	0.21	0.21	0.01	0.31	0.31	0.25	0.54	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	68	67		368	370	343	18	561	490	850	987	
v/s Ratio Prot	0.00	c0.01		c0.18	0.18		0.01	0.09		c0.21	c0.28	
v/s Ratio Perm						0.06			0.06			
v/c Ratio	0.13	0.34		0.84	0.83	0.26	0.56	0.30	0.21	0.84	0.52	
Uniform Delay, d1	60.5	61.0		48.9	48.8	42.5	64.1	34.1	33.1	46.6	19.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.58	
Incremental Delay, d2	0.3	1.1		15.4	14.7	0.4	19.4	0.6	0.4	5.4	1.4	
Delay (s)	60.8	62.0		64.3	63.5	42.9	83.4	34.7	33.5	49.3	12.5	
Level of Service	E	E		E	E	D	F	C	C	D	B	
Approach Delay (s)		61.8			55.5			34.9			33.9	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	69.3%	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 (vph)	22	1	61	45	3	29	31	491	26	7	1040	4
Future Volume (vph)	22	1	61	45	3	29	31	491	26	7	1040	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1618		1805	1631		1805	1900	1615	1805	1900	1615
Flt Permitted	0.73	1.00		0.71	1.00		0.14	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	1395	1618		1354	1631		266	1900	1615	828	1900	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	24	1	67	49	3	32	34	540	29	8	1143	4
RTOR Reduction (vph)	0	62	0	0	30	0	0	0	6	0	0	1
Lane Group Flow (vph)	24	6	0	49	5	0	34	540	23	8	1143	3
Heavy Vehicles (%)	0%	6%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	9.0	9.0		9.0	9.0		102.7	101.4	101.4	102.4	99.6	99.6
Effective Green, g (s)	9.0	9.0		9.0	9.0		102.7	101.4	101.4	102.4	99.6	99.6
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.79	0.78	0.78	0.79	0.77	0.77
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	96	112		93	112		246	1482	1259	659	1455	1237
v/s Ratio Prot		0.00			0.00		c0.00	0.28		0.00	c0.60	
v/s Ratio Perm	0.02			c0.04			0.11		0.01	0.01		0.00
v/c Ratio	0.25	0.05		0.53	0.05		0.14	0.36	0.02	0.01	0.79	0.00
Uniform Delay, d1	57.3	56.5		58.4	56.5		11.9	4.4	3.2	3.1	8.9	3.6
Progression Factor	1.00	1.00		1.00	1.00		0.60	0.54	1.00	0.70	0.80	1.00
Incremental Delay, d2	1.4	0.2		5.3	0.2		0.1	0.6	0.0	0.0	2.9	0.0
Delay (s)	58.7	56.7		63.7	56.7		7.2	3.0	3.2	2.1	10.0	3.6
Level of Service	E	E		E	E		A	A	A	A	B	A
Approach Delay (s)		57.2			60.8			3.3			10.0	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	74.6%	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 (vph)	31	3	16	175	2	344	9	526	80	168	885	17
Future Volume (vph)	31	3	16	175	2	344	9	526	80	168	885	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1762			1810	1568	1805	1845	1615	1787	1789	
Flt Permitted		0.62			0.73	1.00	0.22	1.00	1.00	0.35	1.00	
Satd. Flow (perm)		1132			1380	1568	415	1845	1615	654	1789	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	34	3	18	192	2	378	10	578	88	185	973	19
RTOR Reduction (vph)	0	14	0	0	0	309	0	0	25	0	1	0
Lane Group Flow (vph)	0	41	0	0	194	69	10	578	63	185	991	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	6%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		23.6			23.6	23.6	80.1	80.1	80.1	89.8	94.9	
Effective Green, g (s)		23.6			23.6	23.6	80.1	80.1	80.1	89.8	94.9	
Actuated g/C Ratio		0.18			0.18	0.18	0.62	0.62	0.62	0.69	0.73	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		205			250	284	255	1136	995	536	1305	
v/s Ratio Prot								0.31		0.03	c0.55	
v/s Ratio Perm		0.04			c0.14	0.04	0.02		0.04	0.21		
v/c Ratio		0.20			0.78	0.24	0.04	0.51	0.06	0.35	0.76	
Uniform Delay, d1		45.2			50.7	45.5	9.8	14.0	10.0	8.5	10.6	
Progression Factor		1.00			1.00	1.00	1.39	1.56	2.22	0.70	0.40	
Incremental Delay, d2		0.5			14.0	0.4	0.3	1.6	0.1	0.3	2.9	
Delay (s)		45.7			64.7	46.0	13.9	23.4	22.2	6.2	7.2	
Level of Service		D			E	D	B	C	C	A	A	
Approach Delay (s)		45.7			52.3			23.1			7.1	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	129	114	34	867	956	57
Future Volume (vph)	129	114	34	867	956	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	1792	1769	
Flt Permitted	0.95	1.00	0.16	1.00	1.00	
Satd. Flow (perm)	1805	1615	297	1792	1769	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	134	119	35	903	996	59
RTOR Reduction (vph)	0	106	0	0	1	0
Lane Group Flow (vph)	134	13	35	903	1054	0
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	14.1	14.1	98.5	104.4	95.2	
Effective Green, g (s)	14.1	14.1	98.5	104.4	95.2	
Actuated g/C Ratio	0.11	0.11	0.76	0.80	0.73	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	195	175	263	1439	1295	
v/s Ratio Prot	c0.07		0.00	c0.50	c0.60	
v/s Ratio Perm		0.01	0.10			
v/c Ratio	0.69	0.07	0.13	0.63	0.81	
Uniform Delay, d1	55.8	52.1	11.5	5.1	11.5	
Progression Factor	1.00	1.00	0.63	0.65	0.72	
Incremental Delay, d2	8.0	0.1	0.1	1.8	3.9	
Delay (s)	63.8	52.2	7.3	5.1	12.2	
Level of Service	E	D	A	A	B	
Approach Delay (s)	58.3			5.2	12.2	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	70.5%	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 (vph)	146	51	616	56	72	24	783	211	2	32	341	511
Future Volume (vph)	146	51	616	56	72	24	783	211	2	32	341	511
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1881	1524	1805	1829		3367	1879		1805	1900	1599
Flt Permitted	0.69	1.00	1.00	0.72	1.00		0.95	1.00		0.61	1.00	1.00
Satd. Flow (perm)	1265	1881	1524	1373	1829		3367	1879		1162	1900	1599
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)	152	53	642	58	75	25	816	220	2	33	355	532
RTOR Reduction (vph)	0	0	561	0	10	0	0	0	0	0	0	235
Lane Group Flow (vph)	152	53	81	58	90	0	816	222	0	33	355	297
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	22.8	16.4	16.4	23.0	13.6		48.3	78.5		82.0	34.1	34.1
Effective Green, g (s)	22.8	16.4	16.4	23.0	13.6		48.3	78.5		82.0	34.1	34.1
Actuated g/C Ratio	0.18	0.13	0.13	0.18	0.10		0.37	0.60		0.63	0.26	0.26
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	255	237	192	264	191		1250	1134		750	498	419
v/s Ratio Prot	c0.04	0.03		0.01	0.05		c0.24	0.12		0.00	c0.19	
v/s Ratio Perm	c0.06		c0.05	0.03						0.03		0.19
v/c Ratio	0.60	0.22	0.42	0.22	0.47		0.65	0.20		0.04	0.71	0.71
Uniform Delay, d1	48.5	51.1	52.4	45.5	54.8		33.9	11.6		9.0	43.5	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	0.75		0.30	0.87	0.69
Incremental Delay, d2	2.5	0.2	0.5	0.2	0.7		2.1	0.3		0.0	5.7	6.5
Delay (s)	50.9	51.3	53.0	45.7	55.5		32.2	8.9		2.8	43.8	36.3
Level of Service	D	D	D	D	E		C	A		A	D	D
Approach Delay (s)		52.5			51.9			27.2			38.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	76.6%	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 (vph)	38	0	36	0	0	0	58	323	0	2	848	71
Future Volume (vph)	38	0	36	0	0	0	58	323	0	2	848	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1599				1787	3471		1805	3610	1615
Flt Permitted	0.95		1.00				0.29	1.00		0.54	1.00	1.00
Satd. Flow (perm)	1805		1599				538	3471		1021	3610	1615
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)	42	0	40	0	0	0	64	359	0	2	942	79
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	42	0	2	0	0	0	64	359	0	2	942	60
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	7.5		7.5				104.9	110.9		99.1	99.1	99.1
Effective Green, g (s)	7.5		7.5				104.9	110.9		99.1	99.1	99.1
Actuated g/C Ratio	0.06		0.06				0.81	0.85		0.76	0.76	0.76
Clearance Time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	104		92				489	2961		778	2751	1231
v/s Ratio Prot	c0.02		0.00				0.01	c0.10			c0.26	
v/s Ratio Perm							0.10			0.00		0.04
v/c Ratio	0.40		0.03				0.13	0.12		0.00	0.34	0.05
Uniform Delay, d1	59.1		57.8				2.7	1.6		3.7	5.0	3.8
Progression Factor	1.00		1.00				0.67	0.67		1.00	1.00	1.00
Incremental Delay, d2	2.6		0.1				0.1	0.1		0.0	0.3	0.1
Delay (s)	61.6		57.9				1.9	1.1		3.7	5.3	3.9
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		59.8			0.0			1.2			5.2	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	26	0	86	43	1	14	19	335	7	2	6	792
Future Volume (vph)	26	0	86	43	1	14	19	335	7	2	6	792
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1811	1615	1805	3438	1615		1797	1900
Flt Permitted		0.72	1.00		0.71	1.00	0.22	1.00	1.00		0.53	1.00
Satd. Flow (perm)		1376	1615		1346	1615	419	3438	1615		995	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88
Adj. Flow (vph)	30	0	98	49	1	16	22	381	8	2	7	900
RTOR Reduction (vph)	0	0	87	0	0	14	0	0	3	0	0	0
Lane Group Flow (vph)	0	30	11	0	50	2	22	381	5	0	9	900
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	2%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		6.9	6.9		6.9	6.9	40.1	40.1	40.1		40.1	40.1
Effective Green, g (s)		6.9	6.9		6.9	6.9	40.1	40.1	40.1		40.1	40.1
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.67	0.67	0.67		0.67	0.67
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		158	185		154	185	280	2297	1079		664	1269
v/s Ratio Prot								0.11				c0.47
v/s Ratio Perm		0.02	0.01		c0.04	0.00	0.05		0.00		0.01	
v/c Ratio		0.19	0.06		0.32	0.01	0.08	0.17	0.00		0.01	0.71
Uniform Delay, d1		24.0	23.7		24.4	23.5	3.5	3.7	3.3		3.3	6.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6	0.1		1.2	0.0	0.3	0.1	0.0		0.0	2.3
Delay (s)		24.6	23.8		25.6	23.5	3.7	3.8	3.3		3.3	8.6
Level of Service		C	C		C	C	A	A	A		A	A
Approach Delay (s)		24.0			25.1			3.8				8.5
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	9
RTOR Reduction (vph)	3
Lane Group Flow (vph)	6
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	40.1
Effective Green, g (s)	40.1
Actuated g/C Ratio	0.67
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1079
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	3.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.3
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	208	86	319	119	282	21	164	192	285	403	77
Future Volume (vph)	135	208	86	319	119	282	21	164	192	285	403	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00	1.00	0.44	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	345	1881	1583	806	1851	
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)	147	226	93	347	129	307	23	178	209	310	438	84
RTOR Reduction (vph)	0	0	79	0	0	197	0	0	167	0	6	0
Lane Group Flow (vph)	147	226	14	347	129	110	23	178	42	310	516	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	16.3	16.3	16.3	39.6	39.6	39.6	24.4	22.0	22.0	37.0	29.1	
Effective Green, g (s)	16.3	16.3	16.3	39.6	39.6	39.6	24.4	22.0	22.0	37.0	29.1	
Actuated g/C Ratio	0.15	0.15	0.15	0.36	0.36	0.36	0.22	0.20	0.20	0.33	0.26	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	265	279	237	645	679	539	107	373	314	348	486	
v/s Ratio Prot	0.08	c0.12		c0.19	0.07		0.00	0.09		c0.07	c0.28	
v/s Ratio Perm			0.01			0.07	0.04		0.03	0.22		
v/c Ratio	0.55	0.81	0.06	0.54	0.19	0.20	0.21	0.48	0.13	0.89	1.06	
Uniform Delay, d1	43.8	45.7	40.6	28.3	24.5	24.6	35.6	39.3	36.5	34.2	40.8	
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	2.0	15.8	0.1	3.2	0.6	0.9	0.4	2.7	0.5	23.9	58.3	
Delay (s)	45.8	61.5	40.7	31.5	25.1	25.5	35.9	42.0	37.0	58.1	99.1	
Level of Service	D	E	D	C	C	C	D	D	D	E	F	
Approach Delay (s)		52.4			28.1			39.1			83.8	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	23.5
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 (vph)	18	3	27	69	11	46	20	513	48	46	669	21
Future Volume (vph)	18	3	27	69	11	46	20	513	48	46	669	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1721			1822	1615	1805	3321		1787	1810	1615
Flt Permitted		0.84			0.72	1.00	0.29	1.00		0.40	1.00	1.00
Satd. Flow (perm)		1472			1365	1615	550	3321		760	1810	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	20	3	31	78	12	52	23	583	55	52	760	24
RTOR Reduction (vph)	0	27	0	0	0	45	0	6	0	0	0	9
Lane Group Flow (vph)	0	27	0	0	91	7	23	632	0	52	760	15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	8%	0%	1%	5%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		7.2			8.1	8.1	36.8	26.9		30.1	36.8	36.8
Effective Green, g (s)		7.2			8.1	8.1	36.8	26.9		30.1	36.8	36.8
Actuated g/C Ratio		0.12			0.14	0.14	0.64	0.47		0.52	0.64	0.64
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		183			191	226	350	1548		453	1154	1030
v/s Ratio Prot								0.19		0.01	c0.42	
v/s Ratio Perm		0.02			c0.07	0.00	0.04			0.05		0.01
v/c Ratio		0.15			0.48	0.03	0.07	0.41		0.11	0.66	0.01
Uniform Delay, d1		22.5			22.8	21.4	4.0	10.2		6.8	6.5	3.8
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			0.7	0.0	0.1	0.2		0.0	1.5	0.0
Delay (s)		22.6			23.5	21.4	4.1	10.4		6.8	8.0	3.8
Level of Service		C			C	C	A	B		A	A	A
Approach Delay (s)		22.6			22.8			10.2			7.8	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	20.4
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2	40	59	3	63	56	492	29	25	637	9
Future Volume (vph)	43	2	40	59	3	63	56	492	29	25	637	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1725	1615	1805	1900	1599	1805	3312	1615	1787	3438	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.28	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	1715	1725	1615	1805	1900	1599	533	3312	1615	832	3438	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	49	2	45	67	3	72	64	559	33	28	724	10
RTOR Reduction (vph)	0	0	42	0	0	64	0	0	19	0	0	6
Lane Group Flow (vph)	25	26	3	67	3	8	64	559	14	28	724	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	9%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	5.1	5.1	5.1	8.3	8.3	8.3	35.0	30.0	30.0	29.6	27.3	27.3
Effective Green, g (s)	5.1	5.1	5.1	8.3	8.3	8.3	35.0	30.0	30.0	29.6	27.3	27.3
Actuated g/C Ratio	0.07	0.07	0.07	0.12	0.12	0.12	0.50	0.42	0.42	0.42	0.39	0.39
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	123	124	116	211	223	187	353	1405	685	379	1327	623
v/s Ratio Prot	0.01	c0.02		c0.04	0.00		c0.01	c0.17		0.00	c0.21	
v/s Ratio Perm			0.00			0.01	0.08		0.01	0.03		0.00
v/c Ratio	0.20	0.21	0.03	0.32	0.01	0.05	0.18	0.40	0.02	0.07	0.55	0.01
Uniform Delay, d1	30.9	30.9	30.5	28.6	27.6	27.7	9.8	14.1	11.8	12.1	16.9	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.1	0.6	0.0	0.1	0.2	0.4	0.0	0.1	0.2	0.0
Delay (s)	31.5	31.5	30.6	29.2	27.6	27.8	10.0	14.5	11.8	12.2	17.1	13.4
Level of Service	C	C	C	C	C	C	A	B	B	B	B	B
Approach Delay (s)		31.1			28.5			13.9			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	25.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	292	0	137	0	0	0	0	343	296	222	630	0
Future Volume (vph)	292	0	137	0	0	0	0	343	296	222	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1568					3406	1538	1805	3438	
Flt Permitted	0.95		1.00					1.00	1.00	0.53	1.00	
Satd. Flow (perm)	3433		1568					3406	1538	1007	3438	
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)	317	0	149	0	0	0	0	373	322	241	685	0
RTOR Reduction (vph)	0	0	116	0	0	0	0	0	217	0	0	0
Lane Group Flow (vph)	317	0	33	0	0	0	0	373	105	241	685	0
Heavy Vehicles (%)	2%	0%	3%	2%	2%	2%	0%	6%	5%	0%	5%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	14.3		14.3					21.2	21.2	32.3	37.9	
Effective Green, g (s)	14.3		14.3					21.2	21.2	32.3	37.9	
Actuated g/C Ratio	0.22		0.22					0.33	0.33	0.50	0.58	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	755		344					1110	501	636	2004	
v/s Ratio Prot								0.11		0.06	c0.20	
v/s Ratio Perm	c0.09		0.02						0.07	0.12		
v/c Ratio	0.42		0.10					0.34	0.21	0.38	0.34	
Uniform Delay, d1	21.8		20.2					16.6	15.8	9.5	7.1	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9		0.3					0.6	0.7	0.5	0.3	
Delay (s)	22.7		20.5					17.1	16.5	10.0	7.4	
Level of Service	C		C					B	B	B	A	
Approach Delay (s)		22.0			0.0			16.9			8.1	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	18.4
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 (vph)	0	0	0	294	0	230	135	500	0	0	558	646
Future Volume (vph)	0	0	0	294	0	230	135	500	0	0	558	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1752		1553	1752	3471			3539	1568
Flt Permitted				0.95		1.00	0.39	1.00			1.00	1.00
Satd. Flow (perm)				1752		1553	713	3471			3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.25	0.25	0.96	0.96
Adj. Flow (vph)	0	0	0	306	0	240	141	521	0	0	581	673
RTOR Reduction (vph)	0	0	0	0	0	178	0	0	0	0	0	394
Lane Group Flow (vph)	0	0	0	306	0	62	141	521	0	0	581	279
Heavy Vehicles (%)	2%	2%	2%	3%	0%	4%	3%	4%	0%	0%	2%	3%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				22.5		22.5	45.7	51.7			36.4	36.4
Effective Green, g (s)				22.5		22.5	45.7	51.7			36.4	36.4
Actuated g/C Ratio				0.26		0.26	0.52	0.59			0.42	0.42
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				449		398	481	2046			1468	650
v/s Ratio Prot							0.03	c0.15			0.16	
v/s Ratio Perm				c0.17		0.04	0.12					c0.18
v/c Ratio				0.68		0.15	0.29	0.25			0.40	0.43
Uniform Delay, d1				29.4		25.2	11.0	8.7			18.0	18.3
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				4.6		0.2	0.3	0.2			0.4	1.1
Delay (s)				34.0		25.5	11.4	8.9			18.4	19.4
Level of Service				C		C	B	A			B	B
Approach Delay (s)		0.0			30.2			9.4			18.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	19.5
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 (vph)	96	30	419	63	14	15	203	504	23	13	722	104
Future Volume (vph)	96	30	419	63	14	15	203	504	23	13	722	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	1787	3438	1583	1805	3505	1615
Flt Permitted	0.43	1.00	1.00	0.74	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	816	1881	1599	1400	1881	1615	1787	3438	1583	1805	3505	1615
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)	100	31	436	66	15	16	211	525	24	14	752	108
RTOR Reduction (vph)	0	0	223	0	0	15	0	0	11	0	0	57
Lane Group Flow (vph)	100	31	213	66	15	1	211	525	13	14	752	51
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	22.9	22.9	22.9	8.3	8.3	8.3	9.1	51.8	51.8	1.9	44.6	44.6
Effective Green, g (s)	22.9	22.9	22.9	8.3	8.3	8.3	9.1	51.8	51.8	1.9	44.6	44.6
Actuated g/C Ratio	0.24	0.24	0.24	0.09	0.09	0.09	0.10	0.55	0.55	0.02	0.47	0.47
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	285	455	387	122	165	141	171	1882	866	36	1652	761
v/s Ratio Prot	0.03	0.02			0.01		c0.12	0.15		0.01	c0.21	
v/s Ratio Perm	0.05		c0.13	0.05		0.00			0.01			0.03
v/c Ratio	0.35	0.07	0.55	0.54	0.09	0.01	1.23	0.28	0.02	0.39	0.46	0.07
Uniform Delay, d1	29.0	27.6	31.4	41.3	39.7	39.4	42.8	11.4	9.8	45.8	16.8	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	1.4	3.8	0.2	0.0	145.4	0.4	0.0	18.5	0.9	0.2
Delay (s)	29.7	27.7	32.7	45.1	39.9	39.4	188.2	11.8	9.8	64.3	17.7	13.8
Level of Service	C	C	C	D	D	D	F	B	A	E	B	B
Approach Delay (s)		31.9			43.4			60.7			18.0	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	6	167	37	11	23	97	481	37	14	635	76
Future Volume (vph)	121	6	167	37	11	23	97	481	37	14	635	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1712			1772		1787	1792	1615	1805	1845	1615
Flt Permitted		0.85			0.66		0.20	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)		1479			1197		381	1792	1615	860	1845	1615
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)	129	6	178	39	12	24	103	512	39	15	676	81
RTOR Reduction (vph)	0	47	0	0	17	0	0	0	16	0	0	42
Lane Group Flow (vph)	0	266	0	0	58	0	103	512	23	15	676	39
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		18.5			18.5		60.5	54.1	54.1	46.7	45.2	45.2
Effective Green, g (s)		18.5			18.5		60.5	54.1	54.1	46.7	45.2	45.2
Actuated g/C Ratio		0.20			0.20		0.65	0.58	0.58	0.50	0.49	0.49
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		293			237		344	1041	938	446	895	784
v/s Ratio Prot							c0.02	c0.29		0.00	c0.37	
v/s Ratio Perm		c0.18			0.05		0.17		0.01	0.02		0.02
v/c Ratio		0.91			0.25		0.30	0.49	0.02	0.03	0.76	0.05
Uniform Delay, d1		36.5			31.4		10.6	11.4	8.3	11.7	19.5	12.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		29.5			0.5		0.5	1.7	0.0	0.0	5.9	0.1
Delay (s)		66.0			32.0		11.1	13.1	8.3	11.7	25.3	12.8
Level of Service		E			C		B	B	A	B	C	B
Approach Delay (s)		66.0			32.0			12.5			23.8	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.2%	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 (vph)	21	197	362	125	147	163	200	285	140	187	238	12
Future Volume (vph)	21	197	362	125	147	163	200	285	140	187	238	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1787	1881	1568	1770	1881	1568	1752	1887	
Flt Permitted	0.65	1.00	1.00	0.45	1.00	1.00	0.44	1.00	1.00	0.37	1.00	
Satd. Flow (perm)	1243	1900	1615	851	1881	1568	820	1881	1568	682	1887	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	23	216	398	137	162	179	220	313	154	205	262	13
RTOR Reduction (vph)	0	0	209	0	0	116	0	0	111	0	2	0
Lane Group Flow (vph)	23	216	189	137	162	63	220	313	43	205	273	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	3%	2%	1%	3%	3%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	29.3	26.4	26.4	43.2	33.4	33.4	31.0	22.6	22.6	30.9	22.6	
Effective Green, g (s)	29.3	26.4	26.4	43.2	33.4	33.4	31.0	22.6	22.6	30.9	22.6	
Actuated g/C Ratio	0.31	0.28	0.28	0.45	0.35	0.35	0.32	0.24	0.24	0.32	0.24	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	398	525	446	481	657	548	349	445	371	313	446	
v/s Ratio Prot	0.00	0.11		c0.03	0.09		0.06	c0.17		c0.06	0.14	
v/s Ratio Perm	0.02		c0.12	0.10		0.04	0.15		0.03	0.15		
v/c Ratio	0.06	0.41	0.42	0.28	0.25	0.11	0.63	0.70	0.12	0.65	0.61	
Uniform Delay, d1	23.2	28.2	28.3	16.0	22.1	21.0	25.5	33.4	28.6	25.4	32.5	
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	0.1	1.5	1.8	0.3	0.6	0.3	3.7	5.0	0.1	5.1	2.5	
Delay (s)	23.3	29.7	30.1	16.3	22.7	21.3	29.2	38.4	28.8	30.4	35.0	
Level of Service	C	C	C	B	C	C	C	D	C	C	D	
Approach Delay (s)		29.7			20.3			33.3			33.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	28.3
Intersection Capacity Utilization	66.2%	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 (vph)	347	106	18	14	93	57	6	271	0	52	287	132
Future Volume (vph)	347	106	18	14	93	57	6	271	0	52	287	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810			1803		1805	1776		1805	1810	1553
Flt Permitted		0.68			0.95		0.50	1.00		0.53	1.00	1.00
Satd. Flow (perm)		1268			1715		951	1776		1001	1810	1553
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)	365	112	19	15	98	60	6	285	0	55	302	139
RTOR Reduction (vph)	0	2	0	0	17	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	494	0	0	156	0	6	285	0	55	302	42
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	7%	0%	0%	5%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.7			28.7		17.6	17.6		17.6	17.6	17.6
Effective Green, g (s)		28.7			28.7		17.6	17.6		17.6	17.6	17.6
Actuated g/C Ratio		0.49			0.49		0.30	0.30		0.30	0.30	0.30
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		618			837		284	531		299	541	464
v/s Ratio Prot								0.16			c0.17	
v/s Ratio Perm		c0.39			0.09		0.01			0.05		0.03
v/c Ratio		0.80			0.19		0.02	0.54		0.18	0.56	0.09
Uniform Delay, d1		12.6			8.5		14.5	17.2		15.3	17.3	14.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.7			0.1		0.1	1.9		0.6	2.1	0.2
Delay (s)		20.4			8.6		14.6	19.1		15.9	19.5	15.0
Level of Service		C			A		B	B		B	B	B
Approach Delay (s)		20.4			8.6			19.0			17.8	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	12.5
Intersection Capacity Utilization	81.0%	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 (vph)	888	2	2	11	0	11	0	669	6	7	458	648
Future Volume (vph)	888	2	2	11	0	11	0	669	6	7	458	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1441	1446		1805	0			3435		1805	1810	1417
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.18	1.00	1.00
Satd. Flow (perm)	1441	1446		1805	0			3435		343	1810	1417
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)	945	2	2	12	0	12	0	712	6	7	487	689
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	223
Lane Group Flow (vph)	472	477	0	12	0	0	0	718	0	7	487	466
Heavy Vehicles (%)	19%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	14%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	47.7	47.7		1.0	0.0			26.3		27.2	33.2	33.2
Effective Green, g (s)	47.7	47.7		1.0	0.0			26.3		27.2	33.2	33.2
Actuated g/C Ratio	0.48	0.48		0.01	0.00			0.26		0.27	0.33	0.33
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	690	692		18	0			907		106	603	472
v/s Ratio Prot	0.33	c0.33		c0.01				0.21		0.00	0.27	
v/s Ratio Perm										0.02		c0.33
v/c Ratio	0.68	0.69		0.67	0.00			0.79		0.07	0.81	0.99
Uniform Delay, d1	20.1	20.2		49.1	49.8			34.1		27.4	30.3	33.0
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	4.9	5.0		66.1	0.0			7.0		0.3	11.1	38.6
Delay (s)	25.0	25.2		115.2	49.8			41.1		27.6	41.4	71.6
Level of Service	C	C		F	D			D		C	D	E
Approach Delay (s)		25.1			82.5			41.1			58.9	
Approach LOS		C			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	51	1	405	12	525	3	953	612	354	629	42
Future Volume (vph)	51	51	1	405	12	525	3	953	612	354	629	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1816			1543	1583	1805	3574	1357	1736	3406	1615
Flt Permitted		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1816			1543	1583	1805	3574	1357	1736	3406	1615
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)	54	54	1	431	13	559	3	1014	651	377	669	45
RTOR Reduction (vph)	0	0	0	0	0	234	0	0	219	0	0	22
Lane Group Flow (vph)	0	109	0	0	444	325	3	1014	432	377	669	23
Heavy Vehicles (%)	3%	1%	0%	18%	0%	2%	0%	1%	19%	4%	6%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		16.9			53.6	53.6	1.3	58.6	58.6	46.6	103.7	103.7
Effective Green, g (s)		16.9			53.6	53.6	1.3	58.6	58.6	46.6	103.7	103.7
Actuated g/C Ratio		0.08			0.26	0.26	0.01	0.29	0.29	0.23	0.51	0.51
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		151			408	419	11	1034	392	399	1744	827
v/s Ratio Prot		c0.06			c0.29		0.00	0.28		c0.22	0.20	
v/s Ratio Perm						0.21			c0.32			0.01
v/c Ratio		0.72			1.09	0.78	0.27	0.98	1.10	0.94	0.38	0.03
Uniform Delay, d1		90.5			74.5	68.9	100.1	71.4	72.0	76.7	30.0	24.5
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		15.6			70.4	9.2	13.0	23.5	76.0	31.0	0.3	0.0
Delay (s)		106.1			144.8	78.1	113.1	94.9	148.0	107.7	30.3	24.5
Level of Service		F			F	E	F	F	F	F	C	C
Approach Delay (s)		106.1			107.7			115.6			56.8	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	96.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	202.5	Sum of lost time (s)	27.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	0	49	16	3	3	326	1178	25	7	961	175
Future Volume (vph)	55	0	49	16	3	3	326	1178	25	7	961	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.94			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1733			1800		1805	3505	1615	1805	3374	1615
Flt Permitted		0.82			0.72		0.19	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)		1462			1341		356	3505	1615	339	3374	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	60	0	54	18	3	3	358	1295	27	8	1056	192
RTOR Reduction (vph)	0	93	0	0	3	0	0	0	8	0	0	54
Lane Group Flow (vph)	0	21	0	0	21	0	358	1295	19	8	1056	138
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		9.4			9.4		68.5	67.8	67.8	68.9	48.7	48.7
Effective Green, g (s)		9.4			9.4		68.5	67.8	67.8	68.9	48.7	48.7
Actuated g/C Ratio		0.10			0.10		0.72	0.71	0.71	0.72	0.51	0.51
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)		143			131		555	2485	1145	261	1718	822
v/s Ratio Prot							c0.13	0.37		0.00	0.31	
v/s Ratio Perm		0.01			c0.02		c0.33		0.01	0.02		0.09
v/c Ratio		0.15			0.16		0.65	0.52	0.02	0.03	0.61	0.17
Uniform Delay, d1		39.4			39.5		8.8	6.4	4.1	4.4	16.7	12.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0			0.6		2.6	0.4	0.0	0.0	1.0	0.2
Delay (s)		40.4			40.1		11.4	6.8	4.1	4.4	17.7	12.8
Level of Service		D			D		B	A	A	A	B	B
Approach Delay (s)		40.4			40.1			7.7			16.9	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	201	537	103	165	163	444	698	94	226	503	56
Future Volume (vph)	87	201	537	103	165	163	444	698	94	226	503	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
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	1900	1599	1787	1900	1615	1805	3537		1805	3527	
Flt Permitted	0.59	1.00	1.00	0.46	1.00	1.00	0.19	1.00		0.26	1.00	
Satd. Flow (perm)	1094	1900	1599	875	1900	1615	357	3537		495	3527	
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)	93	214	571	110	176	173	472	743	100	240	535	60
RTOR Reduction (vph)	0	0	238	0	0	130	0	7	0	0	6	0
Lane Group Flow (vph)	93	214	333	110	176	43	472	836	0	240	589	0
Heavy Vehicles (%)	3%	0%	1%	1%	0%	0%	0%	0%	2%	0%	0%	8%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	41.7	31.5	31.5	45.0	33.0	33.0	69.6	47.1		47.5	32.4	
Effective Green, g (s)	41.7	31.5	31.5	45.0	33.0	33.0	69.6	47.1		47.5	32.4	
Actuated g/C Ratio	0.32	0.24	0.24	0.34	0.25	0.25	0.53	0.36		0.36	0.25	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	397	454	382	382	476	404	521	1264		328	867	
v/s Ratio Prot	0.02	0.11		c0.03	0.09		c0.21	0.24		0.08	0.17	
v/s Ratio Perm	0.06		c0.21	0.07		0.03	c0.27			0.18		
v/c Ratio	0.23	0.47	0.87	0.29	0.37	0.11	0.91	0.66		0.73	0.68	
Uniform Delay, d1	32.5	43.0	48.2	30.7	40.8	38.0	30.0	35.6		31.4	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	0.3	1.1	19.5	0.4	0.7	0.2	19.6	2.1		8.2	3.3	
Delay (s)	32.8	44.0	67.7	31.1	41.4	38.2	49.5	37.7		39.5	48.2	
Level of Service	C	D	E	C	D	D	D	D		D	D	
Approach Delay (s)		58.2			37.7			41.9			45.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	131.7	Sum of lost time (s)	26.3
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 (vph)	40	0	52	14	0	14	45	891	12	12	719	24
Future Volume (vph)	40	0	52	14	0	14	45	891	12	12	719	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615			1729		1805	3603		1805	3592	
Flt Permitted	0.74	1.00			0.81		0.30	1.00		0.26	1.00	
Satd. Flow (perm)	1399	1615			1439		566	3603		493	3592	
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)	44	0	58	16	0	16	50	990	13	13	799	27
RTOR Reduction (vph)	0	52	0	0	29	0	0	0	0	0	2	0
Lane Group Flow (vph)	44	6	0	0	3	0	50	1003	0	13	824	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	6.8	6.8			6.8		39.1	35.7		34.9	34.0	
Effective Green, g (s)	6.8	6.8			6.8		39.1	35.7		34.9	34.0	
Actuated g/C Ratio	0.11	0.11			0.11		0.62	0.57		0.56	0.54	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	151	174			155		419	2048		292	1944	
v/s Ratio Prot		0.00					c0.01	c0.28		0.00	0.23	
v/s Ratio Perm	c0.03				0.00		0.07			0.02		
v/c Ratio	0.29	0.04			0.02		0.12	0.49		0.04	0.42	
Uniform Delay, d1	25.8	25.1			25.0		4.8	8.1		6.3	8.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1			0.1		0.1	0.4		0.1	0.3	
Delay (s)	26.9	25.2			25.1		4.9	8.5		6.4	8.9	
Level of Service	C	C			C		A	A		A	A	
Approach Delay (s)		25.9			25.1			8.3			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	19.4
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	0	1	11	0	12	11	894	40	9	19	743
Future Volume (vph)	6	0	1	11	0	12	11	894	40	9	19	743
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1615		1805	1615		1805	5154			1793	3610
Flt Permitted	0.75	1.00		0.76	1.00		0.35	1.00			0.25	1.00
Satd. Flow (perm)	1423	1615		1439	1615		664	5154			464	3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93
Adj. Flow (vph)	6	0	1	12	0	13	12	961	43	10	20	799
RTOR Reduction (vph)	0	1	0	0	10	0	0	4	0	0	0	0
Lane Group Flow (vph)	6	0	0	12	3	0	12	1000	0	0	30	799
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	
Actuated Green, G (s)	23.2	23.2		23.2	23.2		52.7	52.7			56.0	63.1
Effective Green, g (s)	23.2	23.2		23.2	23.2		52.7	52.7			56.0	63.1
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.53	0.53			0.56	0.63
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	330	374		333	374		349	2716			303	2277
v/s Ratio Prot		0.00			0.00			c0.19			0.00	c0.22
v/s Ratio Perm	0.00			c0.01			0.02				0.05	
v/c Ratio	0.02	0.00		0.04	0.01		0.03	0.37			0.10	0.35
Uniform Delay, d1	29.6	29.5		29.7	29.5		11.4	13.9			10.0	8.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			0.17	0.13
Incremental Delay, d2	0.0	0.0		0.2	0.0		0.2	0.4			0.1	0.4
Delay (s)	29.6	29.5		29.9	29.5		11.6	14.3			1.8	1.6
Level of Service	C	C		C	C		B	B			A	A
Approach Delay (s)		29.6			29.7			14.2				1.6
Approach LOS		C			C			B				A

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	10
RTOR Reduction (vph)	4
Lane Group Flow (vph)	6
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	63.1
Effective Green, g (s)	63.1
Actuated g/C Ratio	0.63
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1019
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	6.8
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	6.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	478	109	238	682	671	305
Future Volume (vph)	478	109	238	682	671	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1615	1781	5187	5187	1509
Flt Permitted	0.95	1.00	0.27	1.00	1.00	1.00
Satd. Flow (perm)	3303	1615	515	5187	5187	1509
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	543	124	270	775	762	347
RTOR Reduction (vph)	0	98	0	0	0	193
Lane Group Flow (vph)	543	26	270	775	763	154
Confl. Peds. (#/hr)			238			
Heavy Vehicles (%)	6%	0%	0%	0%	0%	7%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	20.6	20.6	65.0	65.0	44.5	44.5
Effective Green, g (s)	20.6	20.6	65.0	65.0	44.5	44.5
Actuated g/C Ratio	0.21	0.21	0.65	0.65	0.44	0.44
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	680	332	491	3371	2308	671
v/s Ratio Prot	c0.16		c0.07	0.15	0.15	
v/s Ratio Perm		0.02	c0.29			0.10
v/c Ratio	0.80	0.08	0.55	0.23	0.33	0.23
Uniform Delay, d1	37.7	32.0	8.3	7.2	18.1	17.2
Progression Factor	1.00	1.00	1.55	1.56	0.23	0.37
Incremental Delay, d2	6.1	0.0	1.5	0.2	0.4	0.8
Delay (s)	43.8	32.1	14.4	11.4	4.6	7.1
Level of Service	D	C	B	B	A	A
Approach Delay (s)	41.6			12.2	5.4	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	11	24	1	42	1117	951	38
Future Volume (vph)	11	24	1	42	1117	951	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.90			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3253			1804	4893	6089	
Flt Permitted	0.98			0.21	1.00	1.00	
Satd. Flow (perm)	3253			396	4893	6089	
Peak-hour factor, PHF	0.90	0.90	0.92	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	27	1	47	1241	1057	42
RTOR Reduction (vph)	26	0	0	0	0	3	0
Lane Group Flow (vph)	13	0	0	48	1241	1096	0
Heavy Vehicles (%)	0%	0%	2%	0%	6%	7%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	4.8			80.9	80.9	70.0	
Effective Green, g (s)	4.8			80.9	80.9	70.0	
Actuated g/C Ratio	0.05			0.81	0.81	0.70	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	156			366	3958	4262	
v/s Ratio Prot	c0.00			0.00	c0.25	0.18	
v/s Ratio Perm				0.10			
v/c Ratio	0.09			0.13	0.31	0.26	
Uniform Delay, d1	45.5			2.2	2.4	5.5	
Progression Factor	1.00			0.05	0.05	0.33	
Incremental Delay, d2	0.1			0.1	0.2	0.1	
Delay (s)	45.6			0.2	0.3	2.0	
Level of Service	D			A	A	A	
Approach Delay (s)	45.6				0.3	2.0	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	1.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	349	111	196	932	878	584
Future Volume (vph)	349	111	196	932	878	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	3467	1615	444	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	397	126	223	1059	998	664
RTOR Reduction (vph)	0	106	0	0	0	293
Lane Group Flow (vph)	397	20	223	1059	998	371
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	15.8	15.8	69.9	69.9	55.8	55.8
Effective Green, g (s)	15.8	15.8	69.9	69.9	55.8	55.8
Actuated g/C Ratio	0.16	0.16	0.70	0.70	0.56	0.56
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	547	255	441	3420	2705	874
v/s Ratio Prot	c0.11		c0.05	0.22	0.21	
v/s Ratio Perm		0.01	c0.31			0.24
v/c Ratio	0.73	0.08	0.51	0.31	0.37	0.42
Uniform Delay, d1	40.0	35.9	5.9	5.8	12.3	12.8
Progression Factor	1.00	1.00	1.00	0.05	1.27	9.69
Incremental Delay, d2	4.0	0.0	0.9	0.2	0.4	1.4
Delay (s)	44.1	35.9	6.7	0.5	16.0	125.4
Level of Service	D	D	A	A	B	F
Approach Delay (s)	42.1			1.6	59.7	
Approach LOS	D			A	E	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	94	3	57	47	1	53	2	64	1064	151	32	109
Future Volume (vph)	94	3	57	47	1	53	2	64	1064	151	32	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.95		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1733		1787	1727	1615		1804	5071			1797
Flt Permitted		0.81		0.65	1.00	1.00		0.14	1.00			0.15
Satd. Flow (perm)		1453		1215	1727	1615		264	5071			286
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91
Adj. Flow (vph)	103	3	63	52	1	58	2	70	1169	166	35	120
RTOR Reduction (vph)	0	24	0	0	0	49	0	0	13	0	0	0
Lane Group Flow (vph)	0	145	0	52	1	9	0	72	1322	0	0	155
Heavy Vehicles (%)	1%	3%	1%	1%	10%	0%	2%	0%	0%	3%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		16.0		16.0	16.0	16.0		61.3	56.3			67.1
Effective Green, g (s)		16.0		16.0	16.0	16.0		61.3	56.3			67.1
Actuated g/C Ratio		0.16		0.16	0.16	0.16		0.61	0.56			0.67
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		232		194	276	258		238	2854			311
v/s Ratio Prot					0.00			0.02	0.26			c0.04
v/s Ratio Perm		c0.10		0.04		0.01		0.17				c0.30
v/c Ratio		0.62		0.27	0.00	0.04		0.30	0.46			0.50
Uniform Delay, d1		39.2		36.9	35.3	35.5		8.3	12.9			7.4
Progression Factor		1.00		1.00	1.00	1.00		1.24	1.13			1.12
Incremental Delay, d2		5.8		0.3	0.0	0.0		0.3	0.3			0.3
Delay (s)		45.0		37.1	35.3	35.5		10.5	14.9			8.6
Level of Service		D		D	D	D		B	B			A
Approach Delay (s)		45.0			36.3				14.6			
Approach LOS		D			D				B			

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1356	20
Future Volume (vph)	1356	20
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5187	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5187	1615
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	1490	22
RTOR Reduction (vph)	0	9
Lane Group Flow (vph)	1490	13
Heavy Vehicles (%)	0%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	59.2	59.2
Effective Green, g (s)	59.2	59.2
Actuated g/C Ratio	0.59	0.59
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	3070	956
v/s Ratio Prot	0.29	
v/s Ratio Perm		0.01
v/c Ratio	0.49	0.01
Uniform Delay, d1	11.7	8.4
Progression Factor	1.36	1.00
Incremental Delay, d2	0.4	0.0
Delay (s)	16.3	8.4
Level of Service	B	A
Approach Delay (s)	15.4	
Approach LOS	B	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	388	0	0	0	0	408	835	409	1129	0
Future Volume (vph)	65	0	388	0	0	0	0	408	835	409	1129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1568					3539	1583	1805	3610	
Flt Permitted	0.95		1.00					1.00	1.00	0.40	1.00	
Satd. Flow (perm)	1805		1568					3539	1583	752	3610	
Peak-hour factor, PHF	0.25	0.88	0.88	0.88	0.88	0.25	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	260	0	441	0	0	0	0	443	908	465	1283	0
RTOR Reduction (vph)	0	0	94	0	0	0	0	0	426	0	0	0
Lane Group Flow (vph)	260	0	347	0	0	0	0	443	482	465	1283	0
Heavy Vehicles (%)	0%	5%	3%	9%	9%	0%	2%	2%	2%	0%	0%	2%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	23.3		23.3					40.7	40.7	64.0	64.0	
Effective Green, g (s)	23.3		23.3					40.7	40.7	64.0	64.0	
Actuated g/C Ratio	0.23		0.23					0.41	0.41	0.64	0.64	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	420		365					1440	644	646	2310	
v/s Ratio Prot								0.13		c0.11	0.36	
v/s Ratio Perm	0.14		c0.22						0.30	c0.35		
v/c Ratio	0.62		0.95					0.31	0.75	0.72	0.56	
Uniform Delay, d1	34.4		37.8					20.1	25.3	9.7	10.1	
Progression Factor	1.00		1.00					1.54	4.06	1.44	1.15	
Incremental Delay, d2	2.3		33.8					0.5	7.1	2.0	0.6	
Delay (s)	36.7		71.6					31.5	109.8	16.0	12.2	
Level of Service	D		E					C	F	B	B	
Approach Delay (s)		58.6			0.0			84.1			13.2	
Approach LOS		E			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	781	0	392	186	287	0	0	757	23
Future Volume (vph)	0	0	0	781	0	392	186	287	0	0	757	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.20	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	369	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	868	0	436	207	319	0	0	841	26
RTOR Reduction (vph)	0	0	0	0	0	314	0	0	0	0	0	15
Lane Group Flow (vph)	0	0	0	868	0	122	207	319	0	0	841	11
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				28.0		28.0	59.6	59.6			41.7	41.7
Effective Green, g (s)				28.0		28.0	59.6	59.6			41.7	41.7
Actuated g/C Ratio				0.28		0.28	0.60	0.60			0.42	0.42
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				916		430	361	2109			1381	673
v/s Ratio Prot							c0.06	0.09			c0.25	
v/s Ratio Perm				c0.27		0.08	0.28					0.01
v/c Ratio				0.95		0.28	0.57	0.15			0.61	0.02
Uniform Delay, d1				35.3		28.2	12.3	9.0			22.8	17.1
Progression Factor				1.00		1.00	2.15	1.13			1.00	1.00
Incremental Delay, d2				18.2		0.4	1.3	0.1			2.0	0.0
Delay (s)				53.4		28.5	27.8	10.3			24.8	17.2
Level of Service				D		C	C	B			C	B
Approach Delay (s)		0.0			45.1			17.2			24.6	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	3	40	87	5	18	111	415	153	20	653	25
Future Volume (vph)	9	3	40	87	5	18	111	415	153	20	653	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1755	1615	1665	1682	1615	1787	3406	1615	1787	3438	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.33	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1715	1755	1615	1665	1682	1615	623	3406	1615	929	3438	1615
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)	10	3	43	94	5	19	119	446	165	22	702	27
RTOR Reduction (vph)	0	0	42	0	0	18	0	0	56	0	0	10
Lane Group Flow (vph)	6	7	1	50	49	1	119	446	109	22	702	17
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	1%	6%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	2.3	2.3	2.3	6.8	6.8	6.8	73.1	66.5	66.5	63.9	61.9	61.9
Effective Green, g (s)	2.3	2.3	2.3	6.8	6.8	6.8	73.1	66.5	66.5	63.9	61.9	61.9
Actuated g/C Ratio	0.02	0.02	0.02	0.07	0.07	0.07	0.73	0.66	0.66	0.63	0.61	0.61
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	39	40	36	112	113	109	528	2249	1066	606	2113	992
v/s Ratio Prot	0.00	c0.00		c0.03	0.03		c0.01	c0.13		0.00	c0.20	
v/s Ratio Perm			0.00			0.00	0.15		0.07	0.02		0.01
v/c Ratio	0.15	0.17	0.03	0.45	0.43	0.01	0.23	0.20	0.10	0.04	0.33	0.02
Uniform Delay, d1	48.2	48.3	48.1	45.1	45.1	43.8	4.6	6.7	6.2	6.8	9.4	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.5	0.2	1.0	1.0	0.0	0.1	0.2	0.2	0.0	0.4	0.0
Delay (s)	49.6	49.8	48.3	46.2	46.1	43.8	4.6	6.9	6.4	6.8	9.8	7.6
Level of Service	D	D	D	D	D	D	A	A	A	A	A	A
Approach Delay (s)		48.6			45.8			6.4			9.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	23.1
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	2	40	29	1	32	46	374	22	25	629	18
Future Volume (vph)	18	2	40	29	1	32	46	374	22	25	629	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1817	1615	1805	1900	1599		1764	1615		1745	1599
Flt Permitted		0.80	1.00	0.83	1.00	1.00		0.88	1.00		0.97	1.00
Satd. Flow (perm)		1511	1615	1583	1900	1599		1567	1615		1705	1599
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)	20	2	44	32	1	36	51	416	24	28	699	20
RTOR Reduction (vph)	0	0	41	0	0	33	0	0	6	0	0	5
Lane Group Flow (vph)	0	22	3	32	1	3	0	467	18	0	727	15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	8%	0%	0%	9%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		4.8	4.8	4.8	4.8	4.8		50.9	50.9		50.9	50.9
Effective Green, g (s)		4.8	4.8	4.8	4.8	4.8		50.9	50.9		50.9	50.9
Actuated g/C Ratio		0.07	0.07	0.07	0.07	0.07		0.75	0.75		0.75	0.75
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		107	114	112	134	113		1178	1214		1281	1202
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.01	0.00	c0.02		0.00		0.30	0.01		c0.43	0.01
v/c Ratio		0.21	0.03	0.29	0.01	0.02		0.40	0.01		0.57	0.01
Uniform Delay, d1		29.7	29.3	29.8	29.2	29.3		3.0	2.1		3.6	2.1
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.1	1.4	0.0	0.1		1.0	0.0		1.8	0.0
Delay (s)		30.6	29.4	31.2	29.3	29.3		4.0	2.1		5.5	2.1
Level of Service		C	C	C	C	C		A	A		A	A
Approach Delay (s)		29.8			30.2			3.9			5.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	64	0	28	11	0	15	7	52	1354	7	6	6
Future Volume (vph)	64	0	28	11	0	15	7	52	1354	7	6	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.92			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1770	1553		1713			1805	5132			1805
Flt Permitted		0.74	1.00		0.84			0.22	1.00			0.17
Satd. Flow (perm)		1378	1553		1463			425	5132			324
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	67	0	29	11	0	16	8	54	1410	7	7	6
RTOR Reduction (vph)	0	0	26	0	25	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	67	3	0	2	0	0	62	1417	0	0	13
Heavy Vehicles (%)	2%	0%	4%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		7.4	7.4		7.4			57.5	52.9			50.3
Effective Green, g (s)		7.4	7.4		7.4			57.5	52.9			50.3
Actuated g/C Ratio		0.09	0.09		0.09			0.72	0.66			0.63
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		127	143		135			384	3393			222
v/s Ratio Prot								c0.01	c0.28			0.00
v/s Ratio Perm		c0.05	0.00		0.00			0.11				0.04
v/c Ratio		0.53	0.02		0.02			0.16	0.42			0.06
Uniform Delay, d1		34.6	33.0		33.0			4.1	6.3			5.6
Progression Factor		1.00	1.00		1.00			1.00	1.00			0.71
Incremental Delay, d2		3.0	0.0		0.0			0.1	0.4			0.0
Delay (s)		37.6	33.0		33.0			4.2	6.7			4.0
Level of Service		D	C		C			A	A			A
Approach Delay (s)		36.2			33.0				6.6			
Approach LOS		D			C				A			

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	974	25
Future Volume (vph)	974	25
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1615
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1015	26
RTOR Reduction (vph)	0	10
Lane Group Flow (vph)	1015	16
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	49.3	49.3
Effective Green, g (s)	49.3	49.3
Actuated g/C Ratio	0.62	0.62
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2180	995
v/s Ratio Prot	c0.29	
v/s Ratio Perm		0.01
v/c Ratio	0.47	0.02
Uniform Delay, d1	8.3	5.9
Progression Factor	0.53	1.00
Incremental Delay, d2	0.6	0.0
Delay (s)	4.9	6.0
Level of Service	A	A
Approach Delay (s)	4.9	
Approach LOS	A	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	15	121	1429	502	187	1550	324	1	509	495	434	4
Future Volume (vph)	15	121	1429	502	187	1550	324	1	509	495	434	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.95	1.00	
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3440	5085	1583	3400	5085	1599		3467	3574	1599	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3440	5085	1583	3400	5085	1599		3467	3574	1599	
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)	15	125	1473	518	193	1598	334	1	525	510	447	4
RTOR Reduction (vph)	0	0	0	210	0	0	104	0	0	0	152	0
Lane Group Flow (vph)	0	140	1473	308	193	1598	230	0	526	510	295	0
Heavy Vehicles (%)	0%	2%	2%	2%	3%	2%	1%	0%	1%	1%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	1	1	6		5	2		3	3	8		7
Permitted Phases				6			2				8	
Actuated Green, G (s)		11.4	68.6	68.6	14.1	72.3	72.3		25.0	32.0	32.0	
Effective Green, g (s)		11.4	68.6	68.6	14.1	72.3	72.3		25.0	32.0	32.0	
Actuated g/C Ratio		0.07	0.43	0.43	0.09	0.45	0.45		0.16	0.20	0.20	
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0		2.5	3.0	3.0	
Lane Grp Cap (vph)		245	2180	678	299	2297	722		541	714	319	
v/s Ratio Prot		0.04	c0.29		0.06	c0.31			c0.15	0.14		
v/s Ratio Perm				0.19			0.14				c0.18	
v/c Ratio		0.57	0.68	0.45	0.65	0.70	0.32		0.97	0.71	0.92	
Uniform Delay, d1		71.9	36.8	32.4	70.5	35.1	28.1		67.2	59.7	62.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.05	1.00	0.98	
Incremental Delay, d2		2.6	1.7	2.2	4.2	1.8	1.2		30.6	3.2	30.3	
Delay (s)		74.6	38.5	34.6	74.7	36.8	29.2		100.8	62.8	92.1	
Level of Service		E	D	C	E	D	C		F	E	F	
Approach Delay (s)			39.9			39.1				85.1		
Approach LOS			D			D				F		

Intersection Summary			
HCM 2000 Control Delay	115.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	272	321	164
Future Volume (vph)	272	321	164
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.7	7.6	7.6
Lane Util. Factor	0.97	0.95	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3502	3539	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3502	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	280	331	169
RTOR Reduction (vph)	0	0	147
Lane Group Flow (vph)	284	331	22
Heavy Vehicles (%)	0%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Actuated Green, G (s)	14.3	21.0	21.0
Effective Green, g (s)	14.3	21.0	21.0
Actuated g/C Ratio	0.09	0.13	0.13
Clearance Time (s)	7.7	7.6	7.6
Vehicle Extension (s)	2.5	3.0	3.0
Lane Grp Cap (vph)	312	464	207
v/s Ratio Prot	0.08	0.09	
v/s Ratio Perm			0.01
v/c Ratio	0.91	0.71	0.11
Uniform Delay, d1	72.2	66.6	61.2
Progression Factor	0.95	1.00	39.47
Incremental Delay, d2	28.2	4.9	0.2
Delay (s)	96.5	71.3	2417.2
Level of Service	F	E	F
Approach Delay (s)		586.1	
Approach LOS		F	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	62	56	48	57	839	657	50
Future Volume (vph)	62	56	48	57	839	657	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1733			1805	3574	3539	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1733			1805	3574	3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	64	58	49	59	865	677	52
RTOR Reduction (vph)	44	0	0	0	0	6	0
Lane Group Flow (vph)	78	0	0	108	865	723	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	7.2			7.2	60.9	48.0	
Effective Green, g (s)	7.2			7.2	60.9	48.0	
Actuated g/C Ratio	0.09			0.09	0.76	0.60	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	155			162	2720	2123	
v/s Ratio Prot	c0.05			c0.06	0.24	c0.20	
v/s Ratio Perm							
v/c Ratio	0.51			0.67	0.32	0.34	
Uniform Delay, d1	34.7			35.2	3.0	8.0	
Progression Factor	1.00			0.77	2.00	0.61	
Incremental Delay, d2	1.1			6.7	0.3	0.4	
Delay (s)	35.8			33.9	6.3	5.3	
Level of Service	D			C	A	A	
Approach Delay (s)	35.8				9.3	5.3	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	8	35	3	64	14	811	74	33	664	2
Future Volume (vph)	12	1	8	35	3	64	14	811	74	33	664	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1752			1816	1583	1805	1859		1805	1881	1615
Flt Permitted		0.80			0.73	1.00	0.34	1.00		0.20	1.00	1.00
Satd. Flow (perm)		1445			1382	1583	655	1859		385	1881	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	12	1	8	35	3	65	14	819	75	33	671	2
RTOR Reduction (vph)	0	7	0	0	0	60	0	3	0	0	0	1
Lane Group Flow (vph)	0	14	0	0	38	5	14	891	0	33	671	1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		5.6			6.0	6.0	55.8	52.7		55.8	54.8	54.8
Effective Green, g (s)		5.6			6.0	6.0	55.8	52.7		55.8	54.8	54.8
Actuated g/C Ratio		0.07			0.08	0.08	0.70	0.66		0.70	0.68	0.68
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		101			103	118	471	1224		323	1288	1106
v/s Ratio Prot							0.00	c0.48		c0.00	0.36	
v/s Ratio Perm		0.01			c0.03	0.00	0.02			0.07		0.00
v/c Ratio		0.13			0.37	0.04	0.03	0.73		0.10	0.52	0.00
Uniform Delay, d1		34.9			35.2	34.3	4.2	9.0		6.5	6.2	4.0
Progression Factor		1.00			1.00	1.00	1.28	2.60		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.0	0.1	0.0	3.7		0.1	1.5	0.0
Delay (s)		35.2			36.2	34.4	5.3	26.9		6.6	7.7	4.0
Level of Service		D			D	C	A	C		A	A	A
Approach Delay (s)		35.2			35.1			26.6			7.6	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	47	250	354	533	449	72
Future Volume (vph)	47	250	354	533	449	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.98	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1643		1787	1863	1849	
Flt Permitted	0.99		0.38	1.00	1.00	
Satd. Flow (perm)	1643		707	1863	1849	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	48	258	365	549	463	74
RTOR Reduction (vph)	128	0	0	0	2	0
Lane Group Flow (vph)	178	0	365	549	535	0
Heavy Vehicles (%)	0%	2%	1%	2%	1%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	24.6		144.3	144.3	122.2	
Effective Green, g (s)	24.6		144.3	144.3	122.2	
Actuated g/C Ratio	0.14		0.80	0.80	0.68	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	224		668	1493	1255	
v/s Ratio Prot	c0.11		c0.05	0.29	0.29	
v/s Ratio Perm			c0.39			
v/c Ratio	0.80		0.55	0.37	0.43	
Uniform Delay, d1	75.3		7.2	5.0	13.1	
Progression Factor	1.00		1.00	1.00	0.96	
Incremental Delay, d2	17.6		0.5	0.7	1.0	
Delay (s)	92.9		7.8	5.7	13.6	
Level of Service	F		A	A	B	
Approach Delay (s)	92.9			6.5	13.6	
Approach LOS	F			A	B	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	79.2%	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 (vph)	10	24	31	54	13	30	9	474	97	41	436	18
Future Volume (vph)	10	24	31	54	13	30	9	474	97	41	436	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1827	1615	1805	1836		1805	1866	
Flt Permitted		0.94			0.59	1.00	0.48	1.00		0.41	1.00	
Satd. Flow (perm)		1678			1125	1615	905	1836		787	1866	
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)	11	26	33	57	14	32	10	504	103	44	464	19
RTOR Reduction (vph)	0	20	0	0	0	20	0	2	0	0	0	0
Lane Group Flow (vph)	0	50	0	0	71	12	10	605	0	44	483	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		14.8			14.8	14.8	153.9	153.9		153.9	153.9	
Effective Green, g (s)		14.8			14.8	14.8	153.9	153.9		153.9	153.9	
Actuated g/C Ratio		0.08			0.08	0.08	0.86	0.86		0.86	0.86	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		137			92	132	773	1569		672	1595	
v/s Ratio Prot								c0.33			0.26	
v/s Ratio Perm		0.03			c0.06	0.01	0.01			0.06		
v/c Ratio		0.36			0.77	0.09	0.01	0.39		0.07	0.30	
Uniform Delay, d1		78.1			80.9	76.4	1.9	2.8		2.0	2.6	
Progression Factor		1.00			1.00	1.00	0.84	0.68		0.52	0.42	
Incremental Delay, d2		1.6			32.1	0.3	0.0	0.7		0.2	0.5	
Delay (s)		79.8			113.1	76.7	1.6	2.6		1.2	1.5	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		79.8			101.8			2.6			1.5	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	322	19	66	371	64	94	398	94	104	360	182
Future Volume (vph)	0	322	19	66	371	64	94	398	94	104	360	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1868		1770	1834		1787	1831		1770	1881	1615
Flt Permitted		1.00		0.15	1.00		0.45	1.00		0.35	1.00	1.00
Satd. Flow (perm)		1868		277	1834		853	1831		649	1881	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	332	20	68	382	66	97	410	97	107	371	188
RTOR Reduction (vph)	0	2	0	0	4	0	0	4	0	0	0	76
Lane Group Flow (vph)	0	350	0	68	444	0	97	503	0	107	371	112
Heavy Vehicles (%)	0%	1%	0%	2%	1%	3%	1%	1%	0%	2%	1%	0%
Turn Type		NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		38.6		53.6	53.6		105.2	96.5		104.6	96.2	96.2
Effective Green, g (s)		38.6		53.6	53.6		105.2	96.5		104.6	96.2	96.2
Actuated g/C Ratio		0.21		0.30	0.30		0.58	0.54		0.58	0.53	0.53
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		400		136	546		543	981		429	1005	863
v/s Ratio Prot		c0.19		0.02	c0.24		0.01	c0.27		c0.01	0.20	
v/s Ratio Perm				0.13			0.10			0.13		0.07
v/c Ratio		0.88		0.50	0.81		0.18	0.51		0.25	0.37	0.13
Uniform Delay, d1		68.4		49.7	58.6		17.2	26.7		18.9	24.3	21.0
Progression Factor		1.00		1.00	1.00		1.13	1.13		1.00	1.00	1.00
Incremental Delay, d2		18.9		3.0	9.1		0.1	1.8		0.1	1.0	0.3
Delay (s)		87.3		52.6	67.7		19.5	32.1		19.1	25.3	21.3
Level of Service		F		D	E		B	C		B	C	C
Approach Delay (s)		87.3			65.7			30.1			23.2	
Approach LOS		F			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	693	203	206	313	294	623
Future Volume (vph)	693	203	206	313	294	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	745	218	222	337	316	670
RTOR Reduction (vph)	0	153	0	0	0	369
Lane Group Flow (vph)	745	65	222	337	316	302
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	35.7	35.7	12.5	72.0	54.0	54.0
Effective Green, g (s)	35.7	35.7	12.5	72.0	54.0	54.0
Actuated g/C Ratio	0.30	0.30	0.10	0.60	0.45	0.45
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1031	475	361	1117	846	705
v/s Ratio Prot	c0.21	0.04	c0.06	0.18	0.17	c0.19
v/s Ratio Perm						
v/c Ratio	0.72	0.14	0.61	0.30	0.37	0.43
Uniform Delay, d1	37.7	30.9	51.4	11.7	21.8	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.3	2.3	0.7	0.6	0.9
Delay (s)	40.9	31.1	53.7	12.4	22.4	23.4
Level of Service	D	C	D	B	C	C
Approach Delay (s)	38.7			28.8	23.1	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	56.0%	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 (vph)	88	115	36	428	126	580	79	325	567	483	277	14
Future Volume (vph)	88	115	36	428	126	580	79	325	567	483	277	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
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)	91	119	37	441	130	598	81	335	585	498	286	14
RTOR Reduction (vph)	0	8	0	0	0	387	0	0	372	0	1	0
Lane Group Flow (vph)	91	148	0	282	289	211	81	335	213	498	299	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	15.5	15.5		30.5	30.5	30.5	10.7	54.7	54.7	24.3	67.7	
Effective Green, g (s)	15.5	15.5		30.5	30.5	30.5	10.7	54.7	54.7	24.3	67.7	
Actuated g/C Ratio	0.10	0.10		0.20	0.20	0.20	0.07	0.36	0.36	0.16	0.45	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	186	187		341	353	325	128	685	583	561	835	
v/s Ratio Prot	0.05	c0.08		c0.17	0.17		0.04	c0.18		c0.14	0.16	
v/s Ratio Perm						0.13			0.13			
v/c Ratio	0.49	0.79		0.83	0.82	0.65	0.63	0.49	0.37	0.89	0.36	
Uniform Delay, d1	63.5	65.7		57.2	57.1	54.8	67.7	36.8	34.9	61.5	26.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	
Incremental Delay, d2	0.7	18.8		15.1	13.7	4.4	7.3	2.5	1.8	14.5	1.1	
Delay (s)	64.3	84.5		72.3	70.8	59.3	75.0	39.3	36.7	71.8	26.3	
Level of Service	E	F		E	E	E	E	D	D	E	C	
Approach Delay (s)		77.0			65.3			40.7			54.7	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	4	48	32	2	24	56	902	35	36	694	8
Future Volume (vph)	14	4	48	32	2	24	56	902	35	36	694	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	1370		1805	1592		1444	1881	1615	1752	1881	1583
Flt Permitted	0.74	1.00		0.72	1.00		0.34	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1301	1370		1371	1592		522	1881	1615	452	1881	1583
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)	15	4	50	33	2	25	58	940	36	38	723	8
RTOR Reduction (vph)	0	47	0	0	24	0	0	0	7	0	0	2
Lane Group Flow (vph)	15	7	0	33	3	0	58	940	29	38	723	6
Heavy Vehicles (%)	8%	0%	21%	0%	0%	3%	25%	1%	0%	3%	1%	2%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	8.1	8.1		8.1	8.1		123.6	119.1	119.1	123.3	119.1	119.1
Effective Green, g (s)	8.1	8.1		8.1	8.1		123.6	119.1	119.1	123.3	119.1	119.1
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.82	0.79	0.79	0.82	0.79	0.79
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	70	73		74	85		457	1493	1282	407	1493	1256
v/s Ratio Prot		0.00			0.00		c0.00	c0.50		0.00	0.38	
v/s Ratio Perm	0.01			c0.02			0.10		0.02	0.07		0.00
v/c Ratio	0.21	0.09		0.45	0.04		0.13	0.63	0.02	0.09	0.48	0.01
Uniform Delay, d1	67.9	67.5		68.8	67.3		3.2	6.4	3.2	5.1	5.2	3.2
Progression Factor	1.00	1.00		1.00	1.00		0.46	0.78	0.07	1.21	1.04	1.00
Incremental Delay, d2	1.5	0.5		4.2	0.2		0.0	1.5	0.0	0.0	0.9	0.0
Delay (s)	69.4	68.0		73.0	67.5		1.5	6.5	0.3	6.2	6.3	3.2
Level of Service	E	E		E	E		A	A	A	A	A	A
Approach Delay (s)		68.3			70.5			6.0			6.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	66.6%	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 (vph)	16	5	7	110	7	214	8	860	101	242	849	21
Future Volume (vph)	16	5	7	110	7	214	8	860	101	242	849	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1725			1783	1615	1805	1881	1583	1752	1857	
Flt Permitted		0.77			0.72	1.00	0.33	1.00	1.00	0.20	1.00	
Satd. Flow (perm)		1366			1341	1615	635	1881	1583	361	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	16	5	7	112	7	218	8	878	103	247	866	21
RTOR Reduction (vph)	0	6	0	0	0	193	0	0	19	0	1	0
Lane Group Flow (vph)	0	22	0	0	119	25	8	878	84	247	886	0
Heavy Vehicles (%)	0%	0%	14%	1%	14%	0%	0%	1%	2%	3%	2%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		17.0			17.0	17.0	99.8	99.8	99.8	116.4	121.5	
Effective Green, g (s)		17.0			17.0	17.0	99.8	99.8	99.8	116.4	121.5	
Actuated g/C Ratio		0.11			0.11	0.11	0.67	0.67	0.67	0.78	0.81	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		154			151	183	422	1251	1053	434	1504	
v/s Ratio Prot								c0.47		0.06	c0.48	
v/s Ratio Perm		0.02			c0.09	0.02	0.01		0.05	0.38		
v/c Ratio		0.14			0.79	0.14	0.02	0.70	0.08	0.57	0.59	
Uniform Delay, d1		59.9			64.7	59.9	8.5	15.8	8.9	14.1	5.2	
Progression Factor		1.00			1.00	1.00	0.96	0.65	0.84	1.54	0.14	
Incremental Delay, d2		0.4			23.2	0.3	0.1	2.7	0.1	0.9	0.9	
Delay (s)		60.3			88.0	60.2	8.2	12.9	7.6	22.7	1.6	
Level of Service		E			F	E	A	B	A	C	A	
Approach Delay (s)		60.3			70.0			12.3			6.2	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	99	81	103	987	1031	111
Future Volume (vph)	99	81	103	987	1031	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1568	1787	1881	1842	
Flt Permitted	0.95	1.00	0.09	1.00	1.00	
Satd. Flow (perm)	1770	1568	178	1881	1842	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	103	84	107	1028	1074	116
RTOR Reduction (vph)	0	77	0	0	2	0
Lane Group Flow (vph)	103	7	107	1028	1188	0
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	12.3	12.3	120.3	126.2	111.2	
Effective Green, g (s)	12.3	12.3	120.3	126.2	111.2	
Actuated g/C Ratio	0.08	0.08	0.80	0.84	0.74	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	145	128	240	1582	1365	
v/s Ratio Prot	c0.06		0.03	c0.55	c0.64	
v/s Ratio Perm		0.00	0.33			
v/c Ratio	0.71	0.05	0.45	0.65	0.87	
Uniform Delay, d1	67.1	63.5	42.4	4.2	14.1	
Progression Factor	1.00	1.00	0.75	0.81	0.69	
Incremental Delay, d2	13.0	0.1	0.4	1.6	5.2	
Delay (s)	80.2	63.6	32.3	5.0	15.0	
Level of Service	F	E	C	A	B	
Approach Delay (s)	72.7			7.5	15.0	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	87.9%	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 (vph)	314	99	706	82	67	30	702	373	11	40	354	215
Future Volume (vph)	314	99	706	82	67	30	702	373	11	40	354	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1599	1805	1787		3467	1873		1805	1881	1583
Flt Permitted	0.59	1.00	1.00	0.68	1.00		0.95	1.00		0.44	1.00	1.00
Satd. Flow (perm)	1106	1863	1599	1284	1787		3467	1873		832	1881	1583
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)	331	104	743	86	71	32	739	393	12	42	373	226
RTOR Reduction (vph)	0	0	512	0	11	0	0	0	0	0	0	147
Lane Group Flow (vph)	331	104	231	86	92	0	739	405	0	42	373	79
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	37.6	28.1	28.1	37.8	11.0		35.3	82.2		87.2	52.3	52.3
Effective Green, g (s)	37.6	28.1	28.1	37.8	11.0		35.3	82.2		87.2	52.3	52.3
Actuated g/C Ratio	0.25	0.19	0.19	0.25	0.07		0.24	0.55		0.58	0.35	0.35
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	394	349	299	357	131		815	1026		516	655	551
v/s Ratio Prot	c0.15	0.06		0.02	0.05		c0.21	0.22		0.00	c0.20	
v/s Ratio Perm	0.06		c0.14	0.05						0.04		0.05
v/c Ratio	0.84	0.30	0.77	0.24	0.70		0.91	0.39		0.08	0.57	0.14
Uniform Delay, d1	51.8	52.5	57.9	44.1	67.9		55.8	19.5		14.1	39.7	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	0.78		1.52	1.00	3.44
Incremental Delay, d2	14.3	0.2	10.7	0.1	13.0		11.0	0.9		0.0	3.5	0.5
Delay (s)	66.1	52.6	68.7	44.2	80.8		60.8	16.1		21.5	43.2	115.7
Level of Service	E	D	E	D	F		E	B		C	D	F
Approach Delay (s)		66.5			64.2			45.0			67.3	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	0	82	0	0	0	41	676	0	1	527	69
Future Volume (vph)	93	0	82	0	0	0	41	676	0	1	527	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1615				1805	3574		1805	3539	1615
Flt Permitted	0.95		1.00				0.43	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1805		1615				825	3574		713	3539	1615
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)	100	0	88	0	0	0	44	727	0	1	567	74
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	0	0	0	18
Lane Group Flow (vph)	100	0	8	0	0	0	44	727	0	1	567	56
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	13.6		13.6				118.4	124.8		113.3	113.3	113.3
Effective Green, g (s)	13.6		13.6				118.4	124.8		113.3	113.3	113.3
Actuated g/C Ratio	0.09		0.09				0.79	0.83		0.76	0.76	0.76
Clearance Time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	163		146				684	2973		538	2673	1219
v/s Ratio Prot	c0.06		0.00				0.00	c0.20			0.16	
v/s Ratio Perm							0.05			0.00		0.03
v/c Ratio	0.61		0.05				0.06	0.24		0.00	0.21	0.05
Uniform Delay, d1	65.7		62.3				3.4	2.7		4.5	5.3	4.7
Progression Factor	1.00		1.00				1.31	1.52		1.00	1.00	1.00
Incremental Delay, d2	6.7		0.2				0.0	0.2		0.0	0.2	0.1
Delay (s)	72.4		62.5				4.5	4.2		4.5	5.5	4.7
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		67.7			0.0			4.2			5.4	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.6
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	0	64	22	0	8	94	631	44	2	14	511
Future Volume (vph)	14	0	64	22	0	8	94	631	44	2	14	511
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1805	1442	1805	3539	1568		1805	1863
Flt Permitted		0.89	1.00		0.89	1.00	0.45	1.00	1.00		0.40	1.00
Satd. Flow (perm)		1689	1615		1689	1442	850	3539	1568		759	1863
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)	15	0	67	23	0	8	99	664	46	2	15	538
RTOR Reduction (vph)	0	0	60	0	0	7	0	0	18	0	0	0
Lane Group Flow (vph)	0	15	7	0	23	1	99	664	28	0	17	538
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	2%	3%	0%	0%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		4.5	4.5		4.5	4.5	27.4	27.4	27.4		27.4	27.4
Effective Green, g (s)		4.5	4.5		4.5	4.5	27.4	27.4	27.4		27.4	27.4
Actuated g/C Ratio		0.10	0.10		0.10	0.10	0.61	0.61	0.61		0.61	0.61
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		169	161		169	144	518	2159	956		463	1136
v/s Ratio Prot								0.19				c0.29
v/s Ratio Perm		0.01	0.00		c0.01	0.00	0.12		0.02		0.02	
v/c Ratio		0.09	0.04		0.14	0.01	0.19	0.31	0.03		0.04	0.47
Uniform Delay, d1		18.3	18.3		18.4	18.2	3.9	4.2	3.5		3.5	4.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.1		0.4	0.0	0.4	0.2	0.0		0.1	0.7
Delay (s)		18.6	18.4		18.8	18.2	4.2	4.4	3.5		3.6	5.5
Level of Service		B	B		B	B	A	A	A		A	A
Approach Delay (s)		18.4			18.6			4.3				5.3
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	21
Future Volume (vph)	21
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	22
RTOR Reduction (vph)	9
Lane Group Flow (vph)	13
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	27.4
Effective Green, g (s)	27.4
Actuated g/C Ratio	0.61
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	985
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	3.4
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.5
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	162	65	250	222	410	76	294	285	258	233	140
Future Volume (vph)	128	162	65	250	222	410	76	294	285	258	233	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.24	1.00	1.00	0.27	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	450	1881	1583	509	1793	
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)	132	167	67	258	229	423	78	303	294	266	240	144
RTOR Reduction (vph)	0	0	58	0	0	264	0	0	231	0	18	0
Lane Group Flow (vph)	132	167	9	258	229	159	78	303	63	266	366	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	14.3	14.3	14.3	39.5	39.5	39.5	30.2	23.8	23.8	36.2	26.9	
Effective Green, g (s)	14.3	14.3	14.3	39.5	39.5	39.5	30.2	23.8	23.8	36.2	26.9	
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.36	0.36	0.27	0.22	0.22	0.33	0.24	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	229	238	201	639	666	566	199	405	341	273	436	
v/s Ratio Prot	0.07	c0.09		c0.14	0.12		0.02	0.16		c0.08	0.20	
v/s Ratio Perm			0.01			0.10	0.08		0.04	c0.24		
v/c Ratio	0.58	0.70	0.04	0.40	0.34	0.28	0.39	0.75	0.19	0.97	0.84	
Uniform Delay, d1	45.2	46.0	42.1	26.6	26.0	25.3	31.3	40.5	35.4	34.6	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	2.9	8.4	0.1	1.9	1.4	1.2	0.5	9.8	0.7	47.2	15.2	
Delay (s)	48.1	54.4	42.1	28.5	27.4	26.5	31.8	50.3	36.1	81.7	54.9	
Level of Service	D	D	D	C	C	C	C	D	D	F	D	
Approach Delay (s)		49.9			27.3			42.0			65.9	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	23	53	62	11	92	29	733	70	139	516	39
Future Volume (vph)	68	23	53	62	11	92	29	733	70	139	516	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1717			1822	1583	1752	3499		1787	1863	1568
Flt Permitted		0.81			0.74	1.00	0.42	1.00		0.27	1.00	1.00
Satd. Flow (perm)		1428			1400	1583	779	3499		514	1863	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	69	23	54	63	11	94	30	748	71	142	527	40
RTOR Reduction (vph)	0	24	0	0	0	76	0	8	0	0	0	16
Lane Group Flow (vph)	0	122	0	0	74	18	30	811	0	142	527	24
Heavy Vehicles (%)	2%	4%	3%	0%	0%	2%	3%	2%	0%	1%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		10.9			11.8	11.8	35.5	23.6		28.8	35.5	35.5
Effective Green, g (s)		10.9			11.8	11.8	35.5	23.6		28.8	35.5	35.5
Actuated g/C Ratio		0.18			0.20	0.20	0.59	0.39		0.48	0.59	0.59
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		258			274	310	460	1373		356	1100	926
v/s Ratio Prot								c0.23		0.03	c0.28	
v/s Ratio Perm		c0.09			0.05	0.01	0.04			0.16		0.02
v/c Ratio		0.47			0.27	0.06	0.07	0.59		0.40	0.48	0.03
Uniform Delay, d1		22.0			20.5	19.6	5.2	14.4		9.1	7.0	5.1
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5			0.2	0.0	0.1	0.8		0.3	0.5	0.0
Delay (s)		22.5			20.7	19.7	5.3	15.2		9.4	7.5	5.1
Level of Service		C			C	B	A	B		A	A	A
Approach Delay (s)		22.5			20.1			14.9			7.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	20.4
Intersection Capacity Utilization	71.5%	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 (vph)	213	10	144	21	9	28	141	712	40	75	529	52
Future Volume (vph)	213	10	144	21	9	28	141	712	40	75	529	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1698	1710	1615	1719	1900	1509	1787	3539	1538	1805	3505	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.37	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	1698	1710	1615	1719	1900	1509	695	3539	1538	601	3505	1615
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)	222	10	150	22	9	29	147	742	42	78	551	54
RTOR Reduction (vph)	0	0	100	0	0	27	0	0	25	0	0	34
Lane Group Flow (vph)	115	117	50	22	9	2	147	742	17	78	551	20
Heavy Vehicles (%)	1%	0%	0%	5%	0%	7%	1%	2%	5%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	11.6	11.6	11.6	5.0	5.0	5.0	40.0	31.3	31.3	35.2	28.9	28.9
Effective Green, g (s)	11.6	11.6	11.6	5.0	5.0	5.0	40.0	31.3	31.3	35.2	28.9	28.9
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.06	0.51	0.40	0.40	0.44	0.36	0.36
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	248	250	236	108	119	95	470	1398	607	362	1278	589
v/s Ratio Prot	0.07	c0.07		c0.01	0.00		c0.03	c0.21		0.02	0.16	
v/s Ratio Perm			0.03			0.00	0.12		0.01	0.08		0.01
v/c Ratio	0.46	0.47	0.21	0.20	0.08	0.02	0.31	0.53	0.03	0.22	0.43	0.03
Uniform Delay, d1	31.0	31.0	29.8	35.2	34.9	34.8	10.8	18.3	14.6	12.9	19.0	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.0	0.3	0.7	0.2	0.1	0.3	0.7	0.0	0.2	0.1	0.0
Delay (s)	32.0	32.0	30.1	35.9	35.1	34.9	11.1	19.0	14.7	13.1	19.0	16.2
Level of Service	C	C	C	D	D	C	B	B	B	B	B	B
Approach Delay (s)		31.2			35.3			17.6			18.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	25.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	671	0	287	0	0	0	0	665	386	213	616	0
Future Volume (vph)	671	0	287	0	0	0	0	665	386	213	616	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467		1583					3574	1568	1805	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.33	1.00	
Satd. Flow (perm)	3467		1583					3574	1568	621	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.25	0.25	0.25	0.25	0.96	0.96	0.96	0.96	0.25
Adj. Flow (vph)	699	0	299	0	0	0	0	693	402	222	642	0
RTOR Reduction (vph)	0	0	233	0	0	0	0	0	227	0	0	0
Lane Group Flow (vph)	699	0	66	0	0	0	0	693	175	222	642	0
Heavy Vehicles (%)	1%	0%	2%	0%	0%	0%	0%	1%	3%	0%	2%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.9		18.9					37.0	37.0	47.8	53.4	
Effective Green, g (s)	18.9		18.9					37.0	37.0	47.8	53.4	
Actuated g/C Ratio	0.22		0.22					0.43	0.43	0.56	0.63	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	769		351					1553	681	499	2220	
v/s Ratio Prot								c0.19		c0.06	0.18	
v/s Ratio Perm	c0.20		0.04						0.11	0.19		
v/c Ratio	0.91		0.19					0.45	0.26	0.44	0.29	
Uniform Delay, d1	32.3		26.9					16.9	15.3	9.6	7.2	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.6		0.6					0.7	0.6	0.9	0.2	
Delay (s)	47.8		27.5					17.5	15.9	10.5	7.4	
Level of Service	D		C					B	B	B	A	
Approach Delay (s)		41.8			0.0			16.9			8.2	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.1	Sum of lost time (s)	18.4
Intersection Capacity Utilization	70.2%	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 (vph)	0	0	0	236	0	310	174	1162	0	0	593	461
Future Volume (vph)	0	0	0	236	0	310	174	1162	0	0	593	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1615	1787	3574			3574	1583
Flt Permitted				0.95		1.00	0.35	1.00			1.00	1.00
Satd. Flow (perm)				1770		1615	660	3574			3574	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.94	0.94	0.94	0.94	0.94	0.25	0.25	0.94	0.94
Adj. Flow (vph)	0	0	0	251	0	330	185	1236	0	0	631	490
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	0	0	0	295
Lane Group Flow (vph)	0	0	0	251	0	270	185	1236	0	0	631	195
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				21.7		21.7	44.5	50.5			34.1	34.1
Effective Green, g (s)				21.7		21.7	44.5	50.5			34.1	34.1
Actuated g/C Ratio				0.25		0.25	0.52	0.59			0.40	0.40
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				448		408	479	2106			1422	629
v/s Ratio Prot							0.05	c0.35			0.18	
v/s Ratio Perm				0.14		c0.17	0.15					0.12
v/c Ratio				0.56		0.66	0.39	0.59			0.44	0.31
Uniform Delay, d1				27.8		28.7	11.2	11.1			18.9	17.7
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				1.9		4.4	0.5	0.7			0.5	0.7
Delay (s)				29.8		33.1	11.8	11.8			19.4	18.4
Level of Service				C		C	B	B			B	B
Approach Delay (s)		0.0			31.7			11.8			19.0	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	19.5
Intersection Capacity Utilization	70.2%	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 (vph)	218	77	380	134	101	44	445	956	71	36	540	214
Future Volume (vph)	218	77	380	134	101	44	445	956	71	36	540	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	1805	3574	1615	1805	3539	1599
Flt Permitted	0.41	1.00	1.00	0.70	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	777	1900	1615	1338	1900	1615	1805	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	229	81	400	141	106	46	468	1006	75	38	568	225
RTOR Reduction (vph)	0	0	266	0	0	42	0	0	41	0	0	127
Lane Group Flow (vph)	229	81	134	141	106	4	468	1006	34	38	568	98
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	28.5	28.5	28.5	9.0	9.0	9.0	9.0	45.2	45.2	6.8	43.0	43.0
Effective Green, g (s)	28.5	28.5	28.5	9.0	9.0	9.0	9.0	45.2	45.2	6.8	43.0	43.0
Actuated g/C Ratio	0.29	0.29	0.29	0.09	0.09	0.09	0.09	0.46	0.46	0.07	0.44	0.44
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	363	549	467	122	173	147	164	1640	741	124	1544	698
v/s Ratio Prot	c0.09	0.04			0.06		c0.26	c0.28		0.02	0.16	
v/s Ratio Perm	0.10		0.08	c0.11		0.00			0.02			0.06
v/c Ratio	0.63	0.15	0.29	1.16	0.61	0.03	2.85	0.61	0.05	0.31	0.37	0.14
Uniform Delay, d1	28.8	26.0	27.1	44.8	43.1	40.8	44.8	20.1	14.7	43.6	18.6	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	0.2	129.4	5.4	0.1	850.7	1.7	0.1	3.9	0.7	0.4
Delay (s)	32.3	26.1	27.4	174.1	48.5	40.8	895.5	21.8	14.9	47.5	19.3	17.1
Level of Service	C	C	C	F	D	D	F	C	B	D	B	B
Approach Delay (s)		28.8			107.7			285.4			20.0	
Approach LOS		C			F			F			B	

Intersection Summary			
HCM 2000 Control Delay	151.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	24.0
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 (vph)	88	7	106	35	5	19	199	973	46	16	649	94
Future Volume (vph)	88	7	106	35	5	19	199	973	46	16	649	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1696			1735		1805	1863	1568	1805	1863	1583
Flt Permitted		0.83			0.66		0.20	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1437			1187		377	1863	1568	166	1863	1583
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)	92	7	110	36	5	20	207	1014	48	17	676	98
RTOR Reduction (vph)	0	41	0	0	17	0	0	0	19	0	0	50
Lane Group Flow (vph)	0	168	0	0	44	0	207	1014	29	17	676	48
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		15.0			15.0		66.2	56.7	56.7	48.7	45.7	45.7
Effective Green, g (s)		15.0			15.0		66.2	56.7	56.7	48.7	45.7	45.7
Actuated g/C Ratio		0.16			0.16		0.71	0.61	0.61	0.52	0.49	0.49
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		230			190		418	1127	948	138	908	772
v/s Ratio Prot							c0.05	c0.54		0.00	0.36	
v/s Ratio Perm		c0.12			0.04		0.30		0.02	0.06		0.03
v/c Ratio		0.73			0.23		0.50	0.90	0.03	0.12	0.74	0.06
Uniform Delay, d1		37.4			34.3		10.6	16.0	7.4	16.6	19.3	12.7
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		11.0			0.6		0.9	11.4	0.1	0.4	5.5	0.2
Delay (s)		48.4			35.0		11.6	27.5	7.5	17.0	24.8	12.8
Level of Service		D			C		B	C	A	B	C	B
Approach Delay (s)		48.4			35.0			24.1			23.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	93.7	Sum of lost time (s)	23.0
Intersection Capacity Utilization	86.7%	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 (vph)	18	212	262	125	243	171	532	423	125	187	372	20
Future Volume (vph)	18	212	262	125	243	171	532	423	125	187	372	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1626	1881	1568	1736	1881	1583	1787	1863	1524	1752	1863	
Flt Permitted	0.60	1.00	1.00	0.43	1.00	1.00	0.21	1.00	1.00	0.18	1.00	
Satd. Flow (perm)	1028	1881	1568	791	1881	1583	386	1863	1524	325	1863	
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)	19	223	276	132	256	180	560	445	132	197	392	21
RTOR Reduction (vph)	0	0	143	0	0	104	0	0	100	0	2	0
Lane Group Flow (vph)	19	223	133	132	256	76	560	445	32	197	411	0
Heavy Vehicles (%)	11%	1%	3%	4%	1%	2%	1%	2%	6%	3%	1%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	27.6	24.6	24.6	41.4	31.5	31.5	31.0	22.7	22.7	30.9	22.7	
Effective Green, g (s)	27.6	24.6	24.6	41.4	31.5	31.5	31.0	22.7	22.7	30.9	22.7	
Actuated g/C Ratio	0.29	0.26	0.26	0.44	0.34	0.34	0.33	0.24	0.24	0.33	0.24	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	321	493	411	449	632	532	251	451	369	232	451	
v/s Ratio Prot	0.00	c0.12		c0.03	c0.14		c0.20	0.24		0.07	0.22	
v/s Ratio Perm	0.02		0.08	0.10		0.05	c0.54		0.02	0.21		
v/c Ratio	0.06	0.45	0.32	0.29	0.41	0.14	2.23	0.99	0.09	0.85	0.91	
Uniform Delay, d1	23.6	28.9	27.8	16.3	23.9	21.7	28.2	35.3	27.5	25.4	34.5	
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	0.1	1.9	1.3	0.4	1.2	0.3	566.7	38.5	0.1	24.5	22.6	
Delay (s)	23.7	30.8	29.1	16.7	25.1	22.0	594.9	73.9	27.6	49.9	57.1	
Level of Service	C	C	C	B	C	C	F	E	C	D	E	
Approach Delay (s)		29.6			22.2			325.1			54.8	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	152.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	93.7	Sum of lost time (s)	28.3
Intersection Capacity Utilization	93.2%	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 (vph)	203	96	18	16	154	106	26	405	1	53	326	125
Future Volume (vph)	203	96	18	16	154	106	26	405	1	53	326	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799			1787		1671	1862		1736	1881	1615
Flt Permitted		0.64			0.97		0.43	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1191			1736		760	1862		587	1881	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	231	109	20	18	175	120	30	460	1	60	370	142
RTOR Reduction (vph)	0	2	0	0	22	0	0	0	0	0	0	91
Lane Group Flow (vph)	0	358	0	0	291	0	30	461	0	60	370	51
Heavy Vehicles (%)	1%	3%	0%	0%	1%	0%	8%	2%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.8			28.8		23.2	23.2		23.2	23.2	23.2
Effective Green, g (s)		28.8			28.8		23.2	23.2		23.2	23.2	23.2
Actuated g/C Ratio		0.45			0.45		0.36	0.36		0.36	0.36	0.36
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		531			775		273	669		211	676	580
v/s Ratio Prot								c0.25			0.20	
v/s Ratio Perm		c0.30			0.17		0.04			0.10		0.03
v/c Ratio		0.67			0.38		0.11	0.69		0.28	0.55	0.09
Uniform Delay, d1		14.1			11.9		13.8	17.6		14.7	16.5	13.7
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.7			0.4		0.4	3.8		1.6	1.6	0.1
Delay (s)		17.8			12.3		14.1	21.4		16.3	18.1	13.8
Level of Service		B			B		B	C		B	B	B
Approach Delay (s)		17.8			12.3			20.9			16.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	85.1%	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 (vph)	624	1	3	9	0	16	0	697	17	23	492	873
Future Volume (vph)	624	1	3	9	0	16	0	697	17	23	492	873
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	1592		1805	0			3562		1805	1881	1553
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.23	1.00	1.00
Satd. Flow (perm)	1588	1592		1805	0			3562		437	1881	1553
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)	643	1	3	9	0	16	0	719	18	24	507	900
RTOR Reduction (vph)	0	0	0	0	16	0	0	1	0	0	0	246
Lane Group Flow (vph)	321	326	0	9	0	0	0	736	0	24	507	654
Heavy Vehicles (%)	8%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	4%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	29.6	29.6		1.1	0.0			25.8		28.0	34.0	34.0
Effective Green, g (s)	29.6	29.6		1.1	0.0			25.8		28.0	34.0	34.0
Actuated g/C Ratio	0.36	0.36		0.01	0.00			0.31		0.34	0.41	0.41
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	570	571		24	0			1115		185	776	640
v/s Ratio Prot	0.20	c0.20		c0.00				0.21		0.00	0.27	
v/s Ratio Perm										0.04		c0.42
v/c Ratio	0.56	0.57		0.38	0.00			0.66		0.13	0.65	1.02
Uniform Delay, d1	21.2	21.3		40.3	41.2			24.5		18.8	19.5	24.2
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.2	3.3		9.6	0.0			3.1		0.3	4.3	41.2
Delay (s)	24.4	24.6		49.9	41.2			27.6		19.1	23.7	65.4
Level of Service	C	C		D	D			C		B	C	E
Approach Delay (s)		24.5			44.3			27.6			49.8	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	61	15	446	32	564	14	696	627	398	781	45
Future Volume (vph)	67	61	15	446	32	564	14	696	627	398	781	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830			1731	1599	1805	3574	1538	1770	3574	1615
Flt Permitted		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830			1731	1599	1805	3574	1538	1770	3574	1615
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)	74	68	17	496	36	627	16	773	697	442	868	50
RTOR Reduction (vph)	0	2	0	0	0	222	0	0	318	0	0	25
Lane Group Flow (vph)	0	157	0	0	532	405	16	773	379	442	868	25
Heavy Vehicles (%)	0%	0%	0%	5%	3%	1%	0%	1%	5%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		20.8			53.4	53.4	5.0	55.9	55.9	53.0	103.7	103.7
Effective Green, g (s)		20.8			53.4	53.4	5.0	55.9	55.9	53.0	103.7	103.7
Actuated g/C Ratio		0.10			0.25	0.25	0.02	0.27	0.27	0.25	0.49	0.49
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		181			440	406	42	951	409	446	1765	797
v/s Ratio Prot		c0.09			c0.31		0.01	0.22		c0.25	0.24	
v/s Ratio Perm						0.25			c0.25			0.02
v/c Ratio		0.87			1.21	1.00	0.38	0.81	0.93	0.99	0.49	0.03
Uniform Delay, d1		93.2			78.2	78.2	100.9	72.1	75.0	78.2	35.5	27.3
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		32.8			113.7	43.6	5.7	6.2	28.2	40.1	0.5	0.0
Delay (s)		126.0			191.9	121.8	106.6	78.3	103.3	118.3	36.0	27.3
Level of Service		F			F	F	F	E	F	F	D	C
Approach Delay (s)		126.0			154.0			90.3			62.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	100.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	209.9	Sum of lost time (s)	27.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	35	4	0	0	63	1260	4	0	1185	22
Future Volume (vph)	21	0	35	4	0	0	63	1260	4	0	1185	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frt		0.92			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.98			0.95		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1676			1805		1805	3574	1615		3574	1615
Flt Permitted		0.88			0.72		0.19	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1494			1369		360	3574	1615		3574	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	21	0	35	4	0	0	64	1273	4	0	1197	22
RTOR Reduction (vph)	0	52	0	0	0	0	0	0	1	0	0	8
Lane Group Flow (vph)	0	4	0	0	4	0	64	1273	3	0	1197	14
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		6.2			6.2		54.0	59.6	59.6		49.1	49.1
Effective Green, g (s)		6.2			6.2		54.0	59.6	59.6		49.1	49.1
Actuated g/C Ratio		0.08			0.08		0.69	0.77	0.77		0.63	0.63
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		118			108		340	2734	1235		2252	1017
v/s Ratio Prot							0.01	c0.36			c0.33	
v/s Ratio Perm		c0.00			0.00		0.12		0.00			0.01
v/c Ratio		0.04			0.04		0.19	0.47	0.00		0.53	0.01
Uniform Delay, d1		33.1			33.1		4.5	3.3	2.2		8.0	5.4
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3			0.1		0.3	0.3	0.0		0.4	0.0
Delay (s)		33.4			33.2		4.8	3.6	2.2		8.4	5.4
Level of Service		C			C		A	A	A		A	A
Approach Delay (s)		33.4			33.2			3.7			8.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	17.7
Intersection Capacity Utilization	60.9%	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 (vph)	119	200	411	149	304	347	453	713	115	289	647	158
Future Volume (vph)	119	200	411	149	304	347	453	713	115	289	647	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
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)	1770	1863	1583	1770	1863	1615	1770	3530		1805	3504	
Flt Permitted	0.26	1.00	1.00	0.42	1.00	1.00	0.09	1.00		0.24	1.00	
Satd. Flow (perm)	481	1863	1583	781	1863	1615	162	3530		463	3504	
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)	127	213	437	159	323	369	482	759	122	307	688	168
RTOR Reduction (vph)	0	0	191	0	0	288	0	8	0	0	14	0
Lane Group Flow (vph)	127	213	246	159	323	81	482	873	0	307	842	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	0%	2%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	41.7	29.2	29.2	45.4	30.9	30.9	79.1	54.0		56.7	39.0	
Effective Green, g (s)	41.7	29.2	29.2	45.4	30.9	30.9	79.1	54.0		56.7	39.0	
Actuated g/C Ratio	0.29	0.21	0.21	0.32	0.22	0.22	0.56	0.38		0.40	0.28	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	255	384	326	352	407	352	468	1348		353	966	
v/s Ratio Prot	0.04	0.11		c0.05	c0.17		c0.24	0.25		0.11	0.24	
v/s Ratio Perm	0.10		0.16	0.10		0.05	c0.33			0.24		
v/c Ratio	0.50	0.55	0.75	0.45	0.79	0.23	1.03	0.65		0.87	0.87	
Uniform Delay, d1	38.9	50.3	52.7	36.2	52.2	45.5	44.6	35.9		31.2	48.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	2.1	10.1	0.9	10.8	0.5	49.5	1.8		19.8	9.8	
Delay (s)	40.4	52.4	62.8	37.2	63.0	45.9	94.1	37.7		51.0	58.6	
Level of Service	D	D	E	D	E	D	F	D		D	E	
Approach Delay (s)		56.3			50.8			57.6			56.6	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	55.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	26.3
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 (vph)	78	0	146	50	2	18	107	1027	45	41	898	49
Future Volume (vph)	78	0	146	50	2	18	107	1027	45	41	898	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1615			1734		1787	3587		1805	3582	
Flt Permitted	0.71	1.00			0.69		0.21	1.00		0.19	1.00	
Satd. Flow (perm)	1332	1615			1239		401	3587		352	3582	
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)	84	0	157	54	2	19	115	1104	48	44	966	53
RTOR Reduction (vph)	0	133	0	0	11	0	0	2	0	0	4	0
Lane Group Flow (vph)	84	24	0	0	64	0	115	1150	0	44	1015	0
Heavy Vehicles (%)	1%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	11.1	11.1			11.1		45.6	40.1		42.4	38.9	
Effective Green, g (s)	11.1	11.1			11.1		45.6	40.1		42.4	38.9	
Actuated g/C Ratio	0.15	0.15			0.15		0.62	0.54		0.57	0.52	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	199	241			185		349	1941		270	1880	
v/s Ratio Prot		0.01					c0.02	c0.32		0.01	0.28	
v/s Ratio Perm	c0.06				0.05		0.18			0.09		
v/c Ratio	0.42	0.10			0.35		0.33	0.59		0.16	0.54	
Uniform Delay, d1	28.6	27.2			28.2		6.7	11.5		7.6	11.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.2			1.1		0.6	0.7		0.3	0.5	
Delay (s)	30.0	27.4			29.4		7.2	12.2		7.9	12.2	
Level of Service	C	C			C		A	B		A	B	
Approach Delay (s)		28.3			29.4			11.8			12.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	19.4
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	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1	20	37	0	27	18	1078	27	53	26	931
Future Volume (vph)	20	1	20	37	0	27	18	1078	27	53	26	931
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.86		1.00	0.85		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1627		1805	1509		1805	5163			1758	3610
Flt Permitted	0.74	1.00		0.74	1.00		0.29	1.00			0.22	1.00
Satd. Flow (perm)	1403	1627		1410	1509		544	5163			399	3610
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)	22	1	22	40	0	29	19	1159	29	57	28	1001
RTOR Reduction (vph)	0	21	0	0	27	0	0	1	0	0	0	0
Lane Group Flow (vph)	22	2	0	40	2	0	19	1187	0	0	85	1001
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	0%	4%	2%	4%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		custom	D.P+P	NA
Protected Phases		8			4			6			5	
Permitted Phases	4			8			6			5	6	2
Actuated Green, G (s)	7.3	7.3		7.3	7.3		82.2	82.2			86.9	94.0
Effective Green, g (s)	7.3	7.3		7.3	7.3		82.2	82.2			86.9	94.0
Actuated g/C Ratio	0.06	0.06		0.06	0.06		0.71	0.71			0.76	0.82
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	89	103		89	95		388	3690			357	2950
v/s Ratio Prot		0.00			0.00			0.23			0.01	
v/s Ratio Perm	0.02			c0.03			0.03				0.17	c0.28
v/c Ratio	0.25	0.02		0.45	0.02		0.05	0.32			0.24	0.34
Uniform Delay, d1	51.2	50.5		51.9	50.5		4.8	6.1			3.7	2.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.90	1.63
Incremental Delay, d2	0.5	0.0		1.3	0.0		0.1	0.1			0.1	0.3
Delay (s)	51.8	50.5		53.2	50.5		5.0	6.2			7.1	4.6
Level of Service	D	D		D	D		A	A			A	A
Approach Delay (s)		51.1			52.1			6.2				4.7
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	22
Future Volume (vph)	22
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	24
RTOR Reduction (vph)	4
Lane Group Flow (vph)	20
Heavy Vehicles (%)	0%
Turn Type	custom
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	94.0
Effective Green, g (s)	94.0
Actuated g/C Ratio	0.82
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1320
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	1.9
Progression Factor	0.58
Incremental Delay, d2	0.0
Delay (s)	1.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	486	185	325	853	847	399
Future Volume (vph)	486	185	325	853	847	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	1787	5187	5136	1615
Flt Permitted	0.95	1.00	0.22	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	414	5187	5136	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	534	203	357	937	931	438
RTOR Reduction (vph)	0	164	0	0	0	235
Lane Group Flow (vph)	534	39	357	937	931	203
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	22.1	22.1	78.5	78.5	53.4	53.4
Effective Green, g (s)	22.1	22.1	78.5	78.5	53.4	53.4
Actuated g/C Ratio	0.19	0.19	0.68	0.68	0.46	0.46
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	666	307	485	3540	2384	749
v/s Ratio Prot	c0.15		c0.11	0.18	0.18	
v/s Ratio Perm		0.02	c0.39			0.13
v/c Ratio	0.80	0.13	0.74	0.26	0.39	0.27
Uniform Delay, d1	44.4	38.5	10.2	7.1	20.2	18.9
Progression Factor	1.00	1.00	2.67	1.01	0.54	1.43
Incremental Delay, d2	6.5	0.1	6.0	0.2	0.2	0.4
Delay (s)	50.9	38.5	33.3	7.3	11.1	27.5
Level of Service	D	D	C	A	B	C
Approach Delay (s)	47.5			14.5	16.3	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	109	144	5	126	1208	1097	106
Future Volume (vph)	109	144	5	126	1208	1097	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.91			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3301			1805	5136	6392	
Flt Permitted	0.98			0.16	1.00	1.00	
Satd. Flow (perm)	3301			296	5136	6392	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	120	158	5	138	1327	1205	116
RTOR Reduction (vph)	145	0	0	0	0	8	0
Lane Group Flow (vph)	133	0	0	143	1327	1313	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	9.7			91.0	91.0	76.3	
Effective Green, g (s)	9.7			91.0	91.0	76.3	
Actuated g/C Ratio	0.08			0.79	0.79	0.66	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	278			327	4064	4240	
v/s Ratio Prot	c0.04			0.03	c0.26	0.21	
v/s Ratio Perm				c0.32			
v/c Ratio	0.48			0.44	0.33	0.31	
Uniform Delay, d1	50.2			3.7	3.4	8.2	
Progression Factor	1.00			1.97	0.99	0.27	
Incremental Delay, d2	0.5			0.3	0.2	0.1	
Delay (s)	50.7			7.6	3.5	2.3	
Level of Service	D			A	A	A	
Approach Delay (s)	50.7				3.9	2.3	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	555	138	141	1176	1065	567
Future Volume (vph)	555	138	141	1176	1065	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	3467	1583	333	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	617	153	157	1307	1183	630
RTOR Reduction (vph)	0	97	0	0	0	289
Lane Group Flow (vph)	617	56	157	1307	1183	341
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	24.8	24.8	75.9	75.9	62.2	62.2
Effective Green, g (s)	24.8	24.8	75.9	75.9	62.2	62.2
Actuated g/C Ratio	0.22	0.22	0.66	0.66	0.54	0.54
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	747	341	336	3389	2777	864
v/s Ratio Prot	c0.18		c0.04	0.25	0.23	
v/s Ratio Perm		0.04	c0.27			0.21
v/c Ratio	0.83	0.16	0.47	0.39	0.43	0.39
Uniform Delay, d1	43.0	36.7	8.7	8.9	15.8	15.4
Progression Factor	1.00	1.00	0.75	0.60	0.62	1.31
Incremental Delay, d2	7.1	0.1	1.0	0.3	0.4	1.2
Delay (s)	50.1	36.7	7.6	5.6	10.2	21.4
Level of Service	D	D	A	A	B	C
Approach Delay (s)	47.5			5.8	14.1	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	81	4	62	55	6	64	3	58	1557	113	46	68
Future Volume (vph)	81	4	62	55	6	64	3	58	1557	113	46	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.94		1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1730		1805	1624	1583		1805	5087			1759
Flt Permitted		0.82		0.61	1.00	1.00		0.10	1.00			0.07
Satd. Flow (perm)		1466		1168	1624	1583		197	5087			130
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	92	5	70	62	7	73	3	66	1769	128	52	77
RTOR Reduction (vph)	0	26	0	0	0	62	0	0	5	0	0	0
Lane Group Flow (vph)	0	141	0	63	7	11	0	69	1892	0	0	129
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4			8		8	1	6			5	2
Actuated Green, G (s)		17.2		17.2	17.2	17.2		75.2	70.1			80.8
Effective Green, g (s)		17.2		17.2	17.2	17.2		75.2	70.1			80.8
Actuated g/C Ratio		0.15		0.15	0.15	0.15		0.65	0.61			0.70
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		219		174	242	236		200	3100			203
v/s Ratio Prot					0.00			0.02	0.37			c0.04
v/s Ratio Perm		c0.10		0.05		0.01		0.21				c0.40
v/c Ratio		0.65		0.36	0.03	0.05		0.34	0.61			0.64
Uniform Delay, d1		46.0		44.0	41.8	41.9		8.3	14.0			13.3
Progression Factor		1.00		1.00	1.00	1.00		1.13	1.09			1.42
Incremental Delay, d2		7.1		0.5	0.0	0.0		0.3	0.5			3.9
Delay (s)		53.2		44.4	41.8	41.9		9.7	15.8			22.7
Level of Service		D		D	D	D		A	B			C
Approach Delay (s)		53.2			43.0				15.6			
Approach LOS		D			D				B			

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1512	19
Future Volume (vph)	1512	19
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1615
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	1718	22
RTOR Reduction (vph)	0	8
Lane Group Flow (vph)	1718	14
Heavy Vehicles (%)	1%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	72.9	72.9
Effective Green, g (s)	72.9	72.9
Actuated g/C Ratio	0.63	0.63
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	3255	1023
v/s Ratio Prot	0.33	
v/s Ratio Perm		0.01
v/c Ratio	0.53	0.01
Uniform Delay, d1	11.6	7.8
Progression Factor	0.87	1.00
Incremental Delay, d2	0.5	0.0
Delay (s)	10.6	7.8
Level of Service	B	A
Approach Delay (s)	11.4	
Approach LOS	B	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	0	280	0	0	0	0	814	934	429	1365	0
Future Volume (vph)	57	0	280	0	0	0	0	814	934	429	1365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	1752	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.20	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	374	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	62	0	304	0	0	0	0	885	1015	466	1484	0
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	339	0	0	0
Lane Group Flow (vph)	62	0	216	0	0	0	0	885	676	466	1484	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	19.9		19.9					53.3	53.3	82.4	82.4	
Effective Green, g (s)	19.9		19.9					53.3	53.3	82.4	82.4	
Actuated g/C Ratio	0.17		0.17					0.46	0.46	0.72	0.72	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	300		273					1656	733	525	2560	
v/s Ratio Prot								0.25		c0.17	0.42	
v/s Ratio Perm	0.04		c0.14						0.43	c0.47		
v/c Ratio	0.21		0.79					0.53	0.92	0.89	0.58	
Uniform Delay, d1	40.8		45.5					22.0	28.9	19.1	7.9	
Progression Factor	1.00		1.00					0.37	1.42	1.85	1.32	
Incremental Delay, d2	0.2		13.6					0.5	15.4	10.0	0.5	
Delay (s)	41.0		59.1					8.7	56.6	45.4	11.0	
Level of Service	D		E					A	E	D	B	
Approach Delay (s)		56.1			0.0			34.3			19.2	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	875	0	649	324	547	0	0	919	78
Future Volume (vph)	0	0	0	875	0	649	324	547	0	0	919	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	184	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	921	0	683	341	576	0	0	967	82
RTOR Reduction (vph)	0	0	0	0	0	212	0	0	0	0	0	54
Lane Group Flow (vph)	0	0	0	921	0	471	341	576	0	0	967	28
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				35.1		35.1	67.5	67.5			39.1	39.1
Effective Green, g (s)				35.1		35.1	67.5	67.5			39.1	39.1
Actuated g/C Ratio				0.31		0.31	0.59	0.59			0.34	0.34
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		478	392	2097			1215	543
v/s Ratio Prot							c0.16	0.16			0.27	
v/s Ratio Perm				0.27		c0.30	c0.35					0.02
v/c Ratio				0.87		0.99	0.87	0.27			0.80	0.05
Uniform Delay, d1				37.8		39.7	31.5	11.7			34.3	25.5
Progression Factor				1.00		1.00	1.78	1.55			1.00	1.00
Incremental Delay, d2				8.0		37.1	15.8	0.3			4.3	0.1
Delay (s)				45.8		76.8	71.9	18.4			38.6	25.6
Level of Service				D		E	E	B			D	C
Approach Delay (s)		0.0			59.0			38.3			37.6	
Approach LOS		A			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	7	145	342	4	89	55	732	409	58	510	8
Future Volume (vph)	16	7	145	342	4	89	55	732	409	58	510	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1771	1583	1698	1704	1599	1805	3539	1599	1752	3574	1615
Flt Permitted	0.95	0.98	1.00	0.95	0.95	1.00	0.42	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)	1715	1771	1583	1698	1704	1599	796	3539	1599	548	3574	1615
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)	17	8	156	368	4	96	59	787	440	62	548	9
RTOR Reduction (vph)	0	0	150	0	0	82	0	0	203	0	0	4
Lane Group Flow (vph)	12	13	6	188	184	14	59	787	237	62	548	5
Heavy Vehicles (%)	0%	0%	2%	1%	0%	1%	0%	2%	1%	3%	1%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	4.0	4.0	4.0	15.4	15.4	15.4	59.7	55.0	55.0	59.9	55.1	55.1
Effective Green, g (s)	4.0	4.0	4.0	15.4	15.4	15.4	59.7	55.0	55.0	59.9	55.1	55.1
Actuated g/C Ratio	0.04	0.04	0.04	0.15	0.15	0.15	0.58	0.54	0.54	0.59	0.54	0.54
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	67	69	61	255	256	240	510	1902	859	377	1924	869
v/s Ratio Prot	0.01	c0.01		c0.11	0.11		0.01	c0.22		c0.01	0.15	
v/s Ratio Perm			0.00			0.01	0.06		0.15	0.09		0.00
v/c Ratio	0.18	0.19	0.10	0.74	0.72	0.06	0.12	0.41	0.28	0.16	0.28	0.01
Uniform Delay, d1	47.6	47.6	47.4	41.5	41.4	37.2	9.2	14.1	12.8	9.5	12.9	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.0	0.5	9.2	7.8	0.0	0.0	0.7	0.8	0.1	0.4	0.0
Delay (s)	48.5	48.5	47.9	50.7	49.2	37.3	9.3	14.7	13.6	9.6	13.2	10.9
Level of Service	D	D	D	D	D	D	A	B	B	A	B	B
Approach Delay (s)		48.0			47.4			14.1			12.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	102.3	Sum of lost time (s)	23.1
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	3	10	46	2	77	11	777	49	31	520	5
Future Volume (vph)	4	3	10	46	2	77	11	777	49	31	520	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		1847	1615	1770	1900	1553		1862	1583		1870	1615
Flt Permitted		0.82	1.00	0.75	1.00	1.00		0.99	1.00		0.93	1.00
Satd. Flow (perm)		1563	1615	1403	1900	1553		1847	1583		1747	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	4	3	11	51	2	85	12	854	54	34	571	5
RTOR Reduction (vph)	0	0	10	0	0	77	0	0	15	0	0	1
Lane Group Flow (vph)	0	7	1	51	2	8	0	866	39	0	605	4
Heavy Vehicles (%)	0%	0%	0%	2%	0%	4%	0%	2%	2%	7%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		6.8	6.8	6.8	6.8	6.8		50.4	50.4		50.4	50.4
Effective Green, g (s)		6.8	6.8	6.8	6.8	6.8		50.4	50.4		50.4	50.4
Actuated g/C Ratio		0.10	0.10	0.10	0.10	0.10		0.73	0.73		0.73	0.73
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		153	158	137	186	152		1345	1152		1272	1176
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.00	0.00	c0.04		0.01		c0.47	0.02		0.35	0.00
v/c Ratio		0.05	0.01	0.37	0.01	0.05		0.64	0.03		0.48	0.00
Uniform Delay, d1		28.3	28.2	29.2	28.2	28.3		4.8	2.6		3.9	2.6
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0	1.7	0.0	0.2		2.4	0.1		1.3	0.0
Delay (s)		28.4	28.2	30.9	28.2	28.4		7.2	2.7		5.2	2.6
Level of Service		C	C	C	C	C		A	A		A	A
Approach Delay (s)		28.3			29.3			6.9			5.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	15	12	6	25	739	40	1295	5
v/c Ratio	0.11	0.05	0.03	0.07	0.19	0.06	0.45	0.00
Control Delay	35.5	0.4	0.2	2.7	4.1	2.9	9.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	0.4	0.2	2.7	4.1	2.9	9.0	0.0
Queue Length 50th (ft)	7	0	0	1	23	1	17	0
Queue Length 95th (ft)	25	0	0	8	74	m9	m447	m0
Internal Link Dist (ft)	640		765		375		570	
Turn Bay Length (ft)		25		150		125		
Base Capacity (vph)	256	318	339	435	3902	670	2850	1372
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	0.06	0.04	0.02	0.06	0.19	0.06	0.45	0.00

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	97	1778	561	330	1472	194	391	234	188	312	505	178
v/c Ratio	0.62	0.94	0.68	0.92	0.63	0.22	0.99	0.36	0.42	1.16	1.01	0.46
Control Delay	92.4	54.0	19.0	100.6	30.3	7.6	110.7	56.3	13.9	162.0	106.0	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.4	54.0	19.0	100.6	30.3	7.6	110.7	56.3	13.9	162.0	106.0	17.3
Queue Length 50th (ft)	52	646	209	179	403	31	214	115	20	~195	~296	36
Queue Length 95th (ft)	86	#734	353	#273	455	78	#303	160	101	#294	#423	115
Internal Link Dist (ft)		2432			2731			570			775	
Turn Bay Length (ft)	425			80		175	270		360	340		350
Base Capacity (vph)	160	1882	830	361	2322	884	396	656	448	269	500	385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.94	0.68	0.91	0.63	0.22	0.99	0.36	0.42	1.16	1.01	0.46

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.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	35	26	475	970
v/c Ratio	0.24	0.20	0.16	0.35
Control Delay	27.8	31.8	3.6	2.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.8	31.8	3.6	2.4
Queue Length 50th (ft)	10	12	121	0
Queue Length 95th (ft)	36	m27	151	25
Internal Link Dist (ft)	830		775	994
Turn Bay Length (ft)		260		
Base Capacity (vph)	278	185	3019	2782
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	0.13	0.14	0.16	0.35

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	12	61	38	4	498	33	925	7
v/c Ratio	0.05	0.44	0.14	0.01	0.38	0.05	0.66	0.01
Control Delay	0.4	42.6	1.1	4.0	16.5	4.4	14.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.4	42.6	1.1	4.0	16.5	4.4	14.1	0.0
Queue Length 50th (ft)	0	29	0	1	283	6	384	0
Queue Length 95th (ft)	0	63	0	5	429	m12	#774	m0
Internal Link Dist (ft)	274	940			994		2001	
Turn Bay Length (ft)								400
Base Capacity (vph)	335	234	376	432	1312	732	1398	1254
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	0.04	0.26	0.10	0.01	0.38	0.05	0.66	0.01

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.

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	356	205	311	706
v/c Ratio	0.87	0.41	0.21	0.56
Control Delay	51.6	15.5	10.8	11.2
Queue Delay	0.0	0.0	0.0	0.2
Total Delay	51.6	15.5	10.8	11.4
Queue Length 50th (ft)	184	73	84	222
Queue Length 95th (ft)	287	180	240	298
Internal Link Dist (ft)	928		2001	572
Turn Bay Length (ft)		200		
Base Capacity (vph)	692	512	1483	1268
Starvation Cap Reductn	0	0	0	133
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.40	0.21	0.62

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	49	14	8	365	22	659
v/c Ratio	0.34	0.52	0.11	0.01	0.22	0.02	0.40
Control Delay	44.2	89.7	18.4	2.9	3.1	0.9	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.1
Total Delay	44.2	89.7	18.4	2.9	3.3	0.9	1.5
Queue Length 50th (ft)	21	50	0	2	120	1	23
Queue Length 95th (ft)	64	97	19	m4	84	3	50
Internal Link Dist (ft)	713	719			572		660
Turn Bay Length (ft)			25	50		50	
Base Capacity (vph)	335	267	326	663	1631	912	1659
Starvation Cap Reductn	0	0	0	0	587	0	253
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18	0.04	0.01	0.35	0.02	0.47

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	354	86	438	50	288	90	504	160
v/c Ratio	0.85	0.39	0.70	0.13	0.33	0.16	0.52	0.18
Control Delay	78.2	40.4	51.3	18.9	25.2	18.1	31.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Total Delay	78.2	40.4	51.3	18.9	26.8	18.1	31.4	5.9
Queue Length 50th (ft)	357	62	391	16	98	42	366	11
Queue Length 95th (ft)	450	97	476	43	257	81	529	58
Internal Link Dist (ft)	1970		1510		212		5056	
Turn Bay Length (ft)		115				180		125
Base Capacity (vph)	519	226	738	381	867	603	961	886
Starvation Cap Reductn	0	0	0	0	402	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	0.68	0.38	0.59	0.13	0.62	0.15	0.52	0.18

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	528	352	79	247	549	564
v/c Ratio	0.68	0.55	0.33	0.20	0.54	0.52
Control Delay	39.1	6.6	47.8	8.6	19.5	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	6.6	47.8	8.6	19.5	3.4
Queue Length 50th (ft)	158	0	25	60	228	0
Queue Length 95th (ft)	175	40	42	97	326	30
Internal Link Dist (ft)	1438			278	1688	
Turn Bay Length (ft)			200			310
Base Capacity (vph)	949	708	402	1216	1022	1087
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.50	0.20	0.20	0.54	0.52

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	34	309	308	414	10	167	325	715	517
v/c Ratio	0.08	0.28	0.84	0.83	0.62	0.12	0.28	0.44	0.84	0.47
Control Delay	59.1	48.0	69.0	68.1	8.2	62.3	38.3	6.4	50.6	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	48.0	69.0	68.1	8.2	62.3	38.3	6.4	50.6	11.5
Queue Length 50th (ft)	7	18	257	256	0	8	114	0	279	228
Queue Length 95th (ft)	26	53	#395	#391	89	27	193	80	328	372
Internal Link Dist (ft)		642		1304			4390			2474
Turn Bay Length (ft)	25		575		265	220		265	375	
Base Capacity (vph)	116	127	401	403	691	191	598	740	997	1094
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	0.08	0.27	0.77	0.76	0.60	0.05	0.28	0.44	0.72	0.47

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	68	49	35	34	540	29	8	1143	4
v/c Ratio	0.21	0.35	0.45	0.22	0.12	0.34	0.02	0.01	0.75	0.00
Control Delay	59.0	18.0	69.0	22.3	2.3	2.7	0.0	1.9	10.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	18.0	69.0	22.3	2.3	2.7	0.0	1.9	10.9	0.0
Queue Length 50th (ft)	19	1	40	2	3	56	0	1	388	0
Queue Length 95th (ft)	47	46	81	35	m5	99	m0	m1	1076	m0
Internal Link Dist (ft)		822		1205		2474			2882	
Turn Bay Length (ft)	60		70		125		165	170		170
Base Capacity (vph)	252	347	244	321	336	1588	1362	768	1525	1311
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	0.20	0.20	0.11	0.10	0.34	0.02	0.01	0.75	0.00

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	194	378	10	578	88	185	992
v/c Ratio	0.25	0.78	0.64	0.04	0.51	0.09	0.34	0.76
Control Delay	34.3	70.8	9.4	18.4	26.2	10.5	5.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	34.3	70.8	9.4	18.4	26.2	10.5	5.4	8.4
Queue Length 50th (ft)	27	156	0	5	383	24	17	100
Queue Length 95th (ft)	65	235	85	m15	543	53	m50	260
Internal Link Dist (ft)	1074	1430			2882			773
Turn Bay Length (ft)			150	140		150	100	
Base Capacity (vph)	268	310	646	255	1136	1019	582	1306
Starvation Cap Reductn	0	0	0	0	0	0	0	61
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	0.21	0.63	0.59	0.04	0.51	0.09	0.32	0.80

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	134	119	35	903	1055
v/c Ratio	0.69	0.42	0.12	0.63	0.79
Control Delay	73.1	13.4	2.8	5.7	13.2
Queue Delay	0.0	0.0	0.0	0.0	3.8
Total Delay	73.1	13.4	2.8	5.7	17.0
Queue Length 50th (ft)	110	0	3	93	291
Queue Length 95th (ft)	173	55	m10	214	#1082
Internal Link Dist (ft)	1007			773	868
Turn Bay Length (ft)			95		
Base Capacity (vph)	273	345	380	1439	1328
Starvation Cap Reductn	0	0	0	0	192
Spillback Cap Reductn	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.34	0.09	0.63	0.93

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.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	53	642	58	100	816	222	33	355	532
v/c Ratio	0.60	0.22	0.85	0.21	0.54	0.64	0.19	0.04	0.71	0.81
Control Delay	53.7	54.3	16.0	41.0	59.7	33.4	9.1	2.5	45.7	21.9
Queue Delay	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
Total Delay	53.7	54.3	17.0	41.0	59.7	33.4	9.1	2.5	47.1	21.9
Queue Length 50th (ft)	112	42	0	40	74	321	57	1	267	176
Queue Length 95th (ft)	168	81	#164	74	127	414	104	3	366	321
Internal Link Dist (ft)		781			764		868		1120	
Turn Bay Length (ft)	240			50		295		210		
Base Capacity (vph)	256	274	770	299	263	1280	1188	821	571	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	28	0	0	0	0	0	84	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.19	0.87	0.19	0.38	0.64	0.19	0.04	0.73	0.76

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	42	40	64	359	2	942	79
v/c Ratio	0.33	0.18	0.13	0.12	0.00	0.33	0.06
Control Delay	64.2	1.7	1.8	1.2	5.5	5.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	1.7	1.8	1.2	5.5	5.8	0.4
Queue Length 50th (ft)	35	0	3	8	0	122	0
Queue Length 95th (ft)	72	0	m12	26	3	186	5
Internal Link Dist (ft)				1120		2037	
Turn Bay Length (ft)		180	230		215		175
Base Capacity (vph)	435	479	537	3022	804	2848	1299
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	0.10	0.08	0.12	0.12	0.00	0.33	0.06

Intersection Summary

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

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	98	50	16	22	381	8	9	900	9
v/c Ratio	0.14	0.29	0.23	0.06	0.07	0.16	0.01	0.01	0.66	0.01
Control Delay	29.0	10.0	30.3	3.9	4.7	4.2	0.0	3.9	9.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	10.0	30.3	3.9	4.7	4.2	0.0	3.9	9.8	0.0
Queue Length 50th (ft)	9	0	15	0	2	23	0	1	178	0
Queue Length 95th (ft)	38	40	56	7	10	42	0	5	326	0
Internal Link Dist (ft)	1307		680			2037			8029	
Turn Bay Length (ft)		140		25	225		210	215		265
Base Capacity (vph)	590	749	577	714	394	3243	1526	938	1792	1526
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	0.05	0.13	0.09	0.02	0.06	0.12	0.01	0.01	0.50	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	147	226	93	347	129	307	23	178	209	310	522
v/c Ratio	0.54	0.78	0.26	0.52	0.18	0.41	0.15	0.55	0.47	0.93	1.03
Control Delay	50.4	63.8	3.6	31.4	25.6	4.8	27.9	47.7	9.1	69.6	87.3
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	50.4	63.8	3.6	31.4	25.6	4.8	27.9	47.7	9.1	69.6	87.3
Queue Length 50th (ft)	95	152	0	191	61	0	11	115	0	179	343
Queue Length 95th (ft)	167	#260	15	304	115	60	30	188	63	#364	#689
Internal Link Dist (ft)		1925			1796			8029			2274
Turn Bay Length (ft)	170		145	60		105	80		170	330	
Base Capacity (vph)	326	343	406	665	700	750	223	413	511	332	507
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	0.45	0.66	0.23	0.52	0.18	0.41	0.10	0.43	0.41	0.93	1.03

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	54	91	52	23	638	52	760	24
v/c Ratio	0.19	0.35	0.13	0.06	0.35	0.09	0.63	0.02
Control Delay	15.5	26.6	0.9	5.6	11.7	5.7	10.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	26.6	0.9	5.6	11.7	5.7	10.6	0.9
Queue Length 50th (ft)	6	25	0	3	80	6	143	0
Queue Length 95th (ft)	37	77	2	12	132	19	290	4
Internal Link Dist (ft)	816	920			243		892	
Turn Bay Length (ft)			75	95		140		
Base Capacity (vph)	830	782	973	524	2730	614	1728	1544
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	0.07	0.12	0.05	0.04	0.23	0.08	0.44	0.02

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	25	26	45	67	3	72	64	559	33	28	724	10
v/c Ratio	0.14	0.15	0.18	0.29	0.01	0.25	0.16	0.37	0.04	0.06	0.56	0.02
Control Delay	32.5	32.7	2.2	32.1	28.3	6.4	10.2	15.4	0.1	9.5	21.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	32.7	2.2	32.1	28.3	6.4	10.2	15.4	0.1	9.5	21.0	0.0
Queue Length 50th (ft)	10	10	0	25	1	0	12	66	0	5	133	0
Queue Length 95th (ft)	34	35	3	65	8	21	32	153	0	18	205	0
Internal Link Dist (ft)		796			1353			892			2018	
Turn Bay Length (ft)	125		61	140		175	350		210	135		225
Base Capacity (vph)	1191	1199	1152	1254	1320	1141	748	2255	1129	790	2341	1129
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.02	0.04	0.05	0.00	0.06	0.09	0.25	0.03	0.04	0.31	0.01

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	317	149	373	322	241	685
v/c Ratio	0.42	0.32	0.34	0.45	0.37	0.34
Control Delay	25.1	7.1	18.1	4.5	8.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	7.1	18.1	4.5	8.5	7.8
Queue Length 50th (ft)	54	0	58	0	40	66
Queue Length 95th (ft)	108	45	102	50	80	108
Internal Link Dist (ft)			2018			939
Turn Bay Length (ft)	475			330	160	
Base Capacity (vph)	1001	562	2596	1249	966	3438
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	0.27	0.14	0.26	0.25	0.20

Intersection Summary

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	306	240	141	521	581	673
v/c Ratio	0.69	0.42	0.29	0.26	0.40	0.65
Control Delay	40.3	6.5	10.8	9.8	19.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	6.5	10.8	9.8	19.9	4.9
Queue Length 50th (ft)	149	0	30	65	111	0
Queue Length 95th (ft)	302	60	75	126	203	69
Internal Link Dist (ft)				939	831	
Turn Bay Length (ft)		350	160			315
Base Capacity (vph)	798	838	658	3008	2261	1245
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	0.38	0.29	0.21	0.17	0.26	0.54

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	31	436	66	15	16	211	525	24	14	752	108
v/c Ratio	0.32	0.07	0.71	0.50	0.08	0.05	1.15	0.26	0.02	0.07	0.48	0.13
Control Delay	28.5	24.7	16.7	54.2	40.3	0.3	152.8	11.9	0.0	38.8	19.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	24.7	16.7	54.2	40.3	0.3	152.8	11.9	0.0	38.8	19.6	1.6
Queue Length 50th (ft)	44	13	65	37	8	0	~149	71	0	7	162	0
Queue Length 95th (ft)	85	35	173	#85	28	0	#306	159	0	27	230	15
Internal Link Dist (ft)		1703			765			831			2275	
Turn Bay Length (ft)	230			55			125		115	130		170
Base Capacity (vph)	369	623	726	143	193	352	183	2013	1013	494	2161	1053
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.05	0.60	0.46	0.08	0.05	1.15	0.26	0.02	0.03	0.35	0.10

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.

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	313	75	103	512	39	15	676	81
v/c Ratio	0.88	0.28	0.28	0.46	0.04	0.03	0.77	0.10
Control Delay	54.7	26.8	8.6	12.0	0.1	6.1	28.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	26.8	8.6	12.0	0.1	6.1	28.1	1.2
Queue Length 50th (ft)	146	26	21	127	0	3	326	0
Queue Length 95th (ft)	#305	67	40	298	0	9	#537	10
Internal Link Dist (ft)	915	859		2275			1533	
Turn Bay Length (ft)			120		130	80		110
Base Capacity (vph)	368	277	504	1102	1041	756	878	835
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	0.85	0.27	0.20	0.46	0.04	0.02	0.77	0.10

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	SBL	SBT
Lane Group Flow (vph)	23	216	398	137	162	179	220	313	154	205	275
v/c Ratio	0.05	0.47	0.65	0.30	0.24	0.26	0.59	0.67	0.31	0.62	0.59
Control Delay	14.9	33.0	14.2	17.4	22.7	4.8	28.8	41.2	8.4	30.5	37.7
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	14.9	33.0	14.2	17.4	22.7	4.8	28.8	41.2	8.4	30.5	37.7
Queue Length 50th (ft)	7	106	51	47	57	0	81	161	4	75	137
Queue Length 95th (ft)	20	177	147	82	126	44	#171	#325	58	#173	259
Internal Link Dist (ft)		1246			1238			1533			5252
Turn Bay Length (ft)	95		70	90		110	245		160	110	
Base Capacity (vph)	707	1002	988	655	992	911	371	469	499	332	472
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	0.03	0.22	0.40	0.21	0.16	0.20	0.59	0.67	0.31	0.62	0.58

Intersection Summary

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	496	173	6	285	55	302	139
v/c Ratio	0.80	0.20	0.02	0.54	0.18	0.56	0.25
Control Delay	27.3	8.8	13.7	20.9	16.2	21.3	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	8.8	13.7	20.9	16.2	21.3	4.3
Queue Length 50th (ft)	133	25	2	83	14	88	0
Queue Length 95th (ft)	#367	70	8	143	37	151	30
Internal Link Dist (ft)	1473	1333		5252		1686	
Turn Bay Length (ft)			105		115		245
Base Capacity (vph)	619	852	716	1335	752	1361	1202
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	0.80	0.20	0.01	0.21	0.07	0.22	0.12

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	472	477	12	12	718	7	487	689
v/c Ratio	0.62	0.62	0.07	0.10	0.72	0.03	0.87	1.03
Control Delay	18.9	19.1	51.5	0.0	37.5	32.6	50.8	61.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	19.1	51.5	0.0	37.5	32.6	50.8	61.5
Queue Length 50th (ft)	153	155	5	0	152	2	213	~205
Queue Length 95th (ft)	412	417	33	0	#548	18	#692	#727
Internal Link Dist (ft)		1401		1177	1686		1948	
Turn Bay Length (ft)	305					130		
Base Capacity (vph)	1428	1433	258	119	1004	438	1072	976
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	0.33	0.33	0.05	0.10	0.72	0.02	0.45	0.71

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.

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	444	559	3	1014	651	377	669	45
v/c Ratio	0.70	1.06	0.85	0.05	1.05	1.10	0.92	0.37	0.05
Control Delay	112.8	126.5	42.0	100.0	108.9	99.9	101.8	29.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.8	126.5	42.0	100.0	108.9	99.9	101.8	29.2	0.1
Queue Length 50th (ft)	142	~650	344	4	~772	~662	485	260	0
Queue Length 95th (ft)	224	#953	#594	19	#985	#974	#672	371	0
Internal Link Dist (ft)	695	1346			1948			3962	
Turn Bay Length (ft)				90			175		85
Base Capacity (vph)	207	418	661	126	968	592	476	1788	890
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	1.06	0.85	0.02	1.05	1.10	0.79	0.37	0.05

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.

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	114	24	358	1295	27	8	1056	192
v/c Ratio	0.47	0.17	0.63	0.50	0.02	0.02	0.65	0.23
Control Delay	17.2	38.5	15.3	6.4	0.2	2.9	21.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	38.5	15.3	6.4	0.2	2.9	21.1	7.8
Queue Length 50th (ft)	6	11	62	107	0	1	222	23
Queue Length 95th (ft)	58	38	170	285	2	4	373	76
Internal Link Dist (ft)	819	689		3962			2768	
Turn Bay Length (ft)			160		220	195		200
Base Capacity (vph)	907	795	738	2601	1214	581	1637	841
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	0.03	0.49	0.50	0.02	0.01	0.65	0.23

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	93	214	571	110	176	173	472	843	240	595
v/c Ratio	0.23	0.47	0.92	0.29	0.37	0.33	0.91	0.67	0.75	0.68
Control Delay	30.6	49.4	44.5	30.8	45.8	7.8	52.7	38.9	38.0	49.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	49.4	44.5	30.8	45.8	7.8	52.7	38.9	38.0	49.8
Queue Length 50th (ft)	55	165	254	65	130	0	306	325	115	253
Queue Length 95th (ft)	100	268	#526	116	219	61	#543	422	187	331
Internal Link Dist (ft)		1060			1121			1161		2118
Turn Bay Length (ft)	95		70	165			190		510	
Base Capacity (vph)	531	488	643	462	488	544	554	1482	360	1069
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	0.18	0.44	0.89	0.24	0.36	0.32	0.85	0.57	0.67	0.56

Intersection Summary

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

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	58	32	50	1003	13	826
v/c Ratio	0.20	0.12	0.09	0.10	0.42	0.03	0.39
Control Delay	28.2	0.5	0.5	4.3	7.4	4.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	0.5	0.5	4.3	7.4	4.2	10.2
Queue Length 50th (ft)	13	0	0	5	73	1	103
Queue Length 95th (ft)	50	0	0	15	208	6	160
Internal Link Dist (ft)		1636	882		2118		1321
Turn Bay Length (ft)	105			190		275	
Base Capacity (vph)	632	889	736	585	3262	775	3442
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	0.07	0.07	0.04	0.09	0.31	0.02	0.24

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	6	1	12	13	12	1004	30	799	10
v/c Ratio	0.02	0.00	0.04	0.02	0.03	0.35	0.09	0.35	0.01
Control Delay	30.0	0.0	30.3	0.1	13.0	13.4	1.8	1.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	0.0	30.3	0.1	13.0	13.4	1.8	1.6	0.0
Queue Length 50th (ft)	3	0	6	0	4	135	1	13	0
Queue Length 95th (ft)	14	0	21	0	13	171	3	18	m0
Internal Link Dist (ft)		542		1009		1321		441	
Turn Bay Length (ft)	45		60		125		181		45
Base Capacity (vph)	330	534	333	589	369	2867	463	2277	1034
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	0.02	0.00	0.04	0.02	0.03	0.35	0.06	0.35	0.01

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	543	124	270	775	763	347
v/c Ratio	0.80	0.29	0.57	0.23	0.33	0.40
Control Delay	46.7	7.5	17.9	12.1	4.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	7.5	17.9	12.1	4.8	2.3
Queue Length 50th (ft)	170	0	125	131	27	1
Queue Length 95th (ft)	210	41	205	175	40	11
Internal Link Dist (ft)	794			1379	717	
Turn Bay Length (ft)			185			
Base Capacity (vph)	842	504	498	3369	2308	863
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.25	0.54	0.23	0.33	0.40

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	39	48	1241	1099
v/c Ratio	0.14	0.12	0.29	0.23
Control Delay	22.9	0.7	0.3	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.9	0.7	0.3	1.8
Queue Length 50th (ft)	3	0	2	20
Queue Length 95th (ft)	20	m1	2	31
Internal Link Dist (ft)	514		717	663
Turn Bay Length (ft)		155		
Base Capacity (vph)	743	503	4238	4798
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	0.05	0.10	0.29	0.23

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	397	126	223	1059	998	664
v/c Ratio	0.72	0.35	0.49	0.31	0.37	0.57
Control Delay	47.7	9.2	8.7	0.6	17.2	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	47.7	9.2	8.7	0.6	17.2	15.2
Queue Length 50th (ft)	125	0	19	2	198	268
Queue Length 95th (ft)	162	45	53	6	249	397
Internal Link Dist (ft)	692			663	542	
Turn Bay Length (ft)		125	155			
Base Capacity (vph)	880	504	558	3419	2702	1167
Starvation Cap Reductn	0	0	0	0	0	185
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.25	0.40	0.31	0.37	0.68

Intersection Summary

Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	169	52	1	58	72	1335	155	1490	22
v/c Ratio	0.66	0.27	0.00	0.17	0.28	0.47	0.50	0.47	0.02
Control Delay	44.1	38.2	31.0	1.8	10.6	16.2	10.9	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	38.2	31.0	1.8	10.6	16.2	10.9	17.4	0.1
Queue Length 50th (ft)	84	29	1	0	18	138	35	255	0
Queue Length 95th (ft)	143	60	5	5	38	158	m75	m324	m0
Internal Link Dist (ft)	833		580			542		735	
Turn Bay Length (ft)		30		30	190		190		115
Base Capacity (vph)	401	318	452	503	419	2867	432	3141	1023
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	0.42	0.16	0.00	0.12	0.17	0.47	0.36	0.47	0.02

Intersection Summary

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

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	260	441	443	908	465	1283
v/c Ratio	0.62	0.96	0.31	0.85	0.73	0.56
Control Delay	41.4	61.7	32.8	31.1	18.6	12.6
Queue Delay	0.0	0.0	0.0	1.1	0.0	0.0
Total Delay	41.4	61.7	32.8	32.2	18.6	12.6
Queue Length 50th (ft)	148	208	105	295	130	228
Queue Length 95th (ft)	54	#385	205	#645	m236	m442
Internal Link Dist (ft)			735			1221
Turn Bay Length (ft)		430			305	
Base Capacity (vph)	433	469	1440	1070	657	2310
Starvation Cap Reductn	0	0	0	44	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.94	0.31	0.88	0.71	0.56

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.

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	868	436	207	319	841	26
v/c Ratio	0.95	0.59	0.58	0.15	0.61	0.04
Control Delay	55.4	6.4	28.0	10.4	25.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	6.4	28.0	10.4	25.7	0.1
Queue Length 50th (ft)	278	0	81	62	215	0
Queue Length 95th (ft)	#401	75	145	61	299	0
Internal Link Dist (ft)				1221	760	
Turn Bay Length (ft)	475	612	400			
Base Capacity (vph)	919	745	427	2107	1379	740
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	0.94	0.59	0.48	0.15	0.61	0.04

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	SBL	SBT	SBR
Lane Group Flow (vph)	6	7	43	50	49	19	119	446	165	22	702	27
v/c Ratio	0.08	0.09	0.24	0.33	0.32	0.07	0.22	0.18	0.14	0.03	0.33	0.03
Control Delay	48.2	48.6	3.0	47.6	47.2	0.6	5.6	7.0	1.9	5.3	10.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	48.6	3.0	47.6	47.2	0.6	5.6	7.0	1.9	5.3	10.6	0.0
Queue Length 50th (ft)	4	4	0	31	30	0	21	43	0	4	115	0
Queue Length 95th (ft)	17	20	0	71	69	0	41	96	26	11	168	0
Internal Link Dist (ft)		1174			874			760			652	
Turn Bay Length (ft)	90		230			160	250		210	100		210
Base Capacity (vph)	74	75	182	346	349	431	832	2473	1217	967	2143	1052
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.09	0.24	0.14	0.14	0.04	0.14	0.18	0.14	0.02	0.33	0.03

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	22	44	32	1	36	467	24	727	20
v/c Ratio	0.13	0.20	0.18	0.00	0.17	0.36	0.02	0.52	0.02
Control Delay	27.3	10.8	28.2	25.0	8.9	4.4	0.6	5.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	10.8	28.2	25.0	8.9	4.4	0.6	5.9	0.5
Queue Length 50th (ft)	8	0	12	0	0	60	0	114	0
Queue Length 95th (ft)	26	24	34	4	18	120	3	228	2
Internal Link Dist (ft)	401			1094		652		2194	
Turn Bay Length (ft)		30	80						75
Base Capacity (vph)	324	383	339	407	380	1281	1328	1393	1315
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	0.07	0.11	0.09	0.00	0.09	0.36	0.02	0.52	0.02

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	67	29	27	62	1417	13	1015	26
v/c Ratio	0.47	0.11	0.11	0.15	0.37	0.04	0.43	0.02
Control Delay	43.5	0.8	0.8	4.3	5.5	2.8	5.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	0.8	0.8	4.3	5.5	2.8	5.0	0.0
Queue Length 50th (ft)	32	0	0	7	77	1	76	0
Queue Length 95th (ft)	69	0	0	18	176	m3	143	m0
Internal Link Dist (ft)	640		765		375		570	
Turn Bay Length (ft)		25		150		125		
Base Capacity (vph)	186	309	297	461	3860	386	2348	1118
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	0.36	0.09	0.09	0.13	0.37	0.03	0.43	0.02

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	1473	518	193	1598	334	526	510	447	284	331	169
v/c Ratio	0.57	0.68	0.58	0.64	0.70	0.40	0.97	0.72	0.95	0.91	0.71	0.40
Control Delay	80.9	38.9	12.1	80.9	37.4	13.9	99.7	65.6	64.6	98.5	75.0	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0
Total Delay	80.9	38.9	12.1	80.9	37.4	13.9	99.7	65.6	73.9	98.5	75.0	11.0
Queue Length 50th (ft)	74	454	111	102	486	94	~301	224	219	133	184	16
Queue Length 95th (ft)	110	509	230	146	564	183	#425	317	#501	#240	245	47
Internal Link Dist (ft)		2432			2731			570			775	
Turn Bay Length (ft)	425			80		175	270		360	340		350
Base Capacity (vph)	333	2178	888	308	2298	826	542	723	475	313	495	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	25	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.68	0.58	0.63	0.70	0.40	0.97	0.71	0.99	0.91	0.67	0.39

Intersection Summary

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

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

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	122	108	865	729
v/c Ratio	0.55	0.58	0.31	0.32
Control Delay	30.6	36.7	6.7	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.6	36.7	6.7	5.8
Queue Length 50th (ft)	35	45	277	102
Queue Length 95th (ft)	82	m80	325	37
Internal Link Dist (ft)	830		775	994
Turn Bay Length (ft)		260		
Base Capacity (vph)	304	202	2825	2281
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	0.40	0.53	0.31	0.32

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	21	38	65	14	894	33	671	2
v/c Ratio	0.17	0.32	0.26	0.02	0.67	0.09	0.46	0.00
Control Delay	28.0	40.6	3.8	3.5	27.1	3.3	6.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	40.6	3.8	3.5	27.1	3.3	6.7	0.0
Queue Length 50th (ft)	6	18	0	2	401	3	97	0
Queue Length 95th (ft)	27	46	8	m11	785	10	298	0
Internal Link Dist (ft)	274	940			994		2001	
Turn Bay Length (ft)								400
Base Capacity (vph)	247	236	371	636	1337	446	1454	1277
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	0.09	0.16	0.18	0.02	0.67	0.07	0.46	0.00

Intersection Summary

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

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	306	365	549	537
v/c Ratio	0.87	0.55	0.37	0.43
Control Delay	62.1	8.4	6.6	16.2
Queue Delay	0.0	0.0	0.0	0.4
Total Delay	62.1	8.4	6.6	16.7
Queue Length 50th (ft)	194	93	161	292
Queue Length 95th (ft)	297	176	289	411
Internal Link Dist (ft)	928		2001	572
Turn Bay Length (ft)		200		
Base Capacity (vph)	558	807	1493	1256
Starvation Cap Reductn	0	0	0	312
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.45	0.37	0.57

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	71	32	10	607	44	483
v/c Ratio	0.44	0.77	0.21	0.01	0.39	0.07	0.30
Control Delay	61.1	125.1	37.5	2.2	2.8	1.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Delay	61.1	125.1	37.5	2.2	2.9	1.5	1.9
Queue Length 50th (ft)	55	84	11	1	76	2	25
Queue Length 95th (ft)	110	143	49	m3	100	9	60
Internal Link Dist (ft)	713	719			572		660
Turn Bay Length (ft)			25	50		50	
Base Capacity (vph)	322	204	311	772	1572	672	1595
Starvation Cap Reductn	0	0	0	0	248	0	462
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.10	0.01	0.46	0.07	0.43

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	352	68	448	97	507	107	371	188
v/c Ratio	0.88	0.50	0.82	0.18	0.51	0.25	0.37	0.20
Control Delay	90.2	57.4	70.1	17.9	33.4	16.7	27.0	5.3
Queue Delay	0.0	0.0	0.0	0.2	2.6	0.0	0.0	0.0
Total Delay	90.2	57.4	70.1	18.1	36.0	16.7	27.0	5.3
Queue Length 50th (ft)	404	59	488	50	443	50	251	13
Queue Length 95th (ft)	509	97	599	83	602	89	378	63
Internal Link Dist (ft)	1970		1510		212		5056	
Turn Bay Length (ft)		115				180		125
Base Capacity (vph)	483	136	629	624	985	434	1005	940
Starvation Cap Reductn	0	0	0	212	348	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	0.73	0.50	0.71	0.24	0.80	0.25	0.37	0.20

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	745	218	222	337	316	670
v/c Ratio	0.72	0.35	0.62	0.30	0.37	0.62
Control Delay	41.6	5.1	58.8	13.6	25.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	5.1	58.8	13.6	25.3	4.9
Queue Length 50th (ft)	264	0	86	121	160	0
Queue Length 95th (ft)	304	51	124	206	272	88
Internal Link Dist (ft)	1438			278	1688	
Turn Bay Length (ft)			200			310
Base Capacity (vph)	1560	839	362	1117	846	1074
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	0.48	0.26	0.61	0.30	0.37	0.62

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	156	282	289	598	81	335	585	498	300
v/c Ratio	0.49	0.80	0.82	0.82	0.84	0.63	0.49	0.61	0.89	0.36
Control Delay	71.8	89.3	76.8	75.6	22.5	88.4	41.7	5.8	74.2	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	89.3	76.8	75.6	22.5	88.4	41.7	5.8	74.2	28.4
Queue Length 50th (ft)	85	142	273	280	105	78	270	0	239	221
Queue Length 95th (ft)	144	#222	#391	396	283	136	374	95	#342	305
Internal Link Dist (ft)		642		1304			4390			2474
Turn Bay Length (ft)	25		575		265	220		265	375	
Base Capacity (vph)	221	230	374	386	733	166	684	953	575	835
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	0.41	0.68	0.75	0.75	0.82	0.49	0.49	0.61	0.87	0.36

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	54	33	27	58	940	36	38	723	8
v/c Ratio	0.18	0.40	0.38	0.21	0.12	0.61	0.03	0.09	0.47	0.01
Control Delay	70.2	27.3	78.6	27.7	1.3	7.0	0.0	2.8	6.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	27.3	78.6	27.7	1.3	7.0	0.0	2.8	6.8	0.0
Queue Length 50th (ft)	14	4	32	2	3	473	0	6	211	0
Queue Length 95th (ft)	39	49	68	35	m5	553	m1	m10	215	m0
Internal Link Dist (ft)		822		1205		2474			2882	
Turn Bay Length (ft)	60		70		125		165	170		170
Base Capacity (vph)	203	256	214	270	544	1540	1335	517	1539	1308
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	0.21	0.15	0.10	0.11	0.61	0.03	0.07	0.47	0.01

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	28	119	218	8	878	103	247	887
v/c Ratio	0.17	0.79	0.58	0.02	0.70	0.10	0.57	0.59
Control Delay	49.9	97.0	13.7	11.1	14.5	4.8	9.0	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	49.9	97.0	13.7	11.1	14.5	4.8	9.0	2.6
Queue Length 50th (ft)	19	113	0	2	244	8	14	12
Queue Length 95th (ft)	52	#202	79	m4	356	35	m21	41
Internal Link Dist (ft)	1074	1430			2882			773
Turn Bay Length (ft)			150	140		150	100	
Base Capacity (vph)	181	172	397	422	1251	1072	571	1504
Starvation Cap Reductn	0	0	0	0	0	0	0	326
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	0.15	0.69	0.55	0.02	0.70	0.10	0.43	0.75

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.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	103	84	107	1028	1190
v/c Ratio	0.71	0.41	0.45	0.65	0.87
Control Delay	92.4	18.2	12.6	5.4	16.3
Queue Delay	0.0	0.0	0.0	0.0	1.0
Total Delay	92.4	18.2	12.6	5.4	17.3
Queue Length 50th (ft)	99	0	16	207	422
Queue Length 95th (ft)	166	54	m31	360	m534
Internal Link Dist (ft)	1007			773	868
Turn Bay Length (ft)			95		
Base Capacity (vph)	173	229	240	1582	1367
Starvation Cap Reductn	0	0	0	5	50
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.37	0.45	0.65	0.90

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	331	104	743	86	103	739	405	42	373	226
v/c Ratio	0.82	0.30	0.92	0.23	0.73	0.94	0.39	0.08	0.56	0.32
Control Delay	62.4	54.1	26.4	39.0	87.6	68.1	17.1	19.5	43.7	15.8
Queue Delay	0.0	0.0	3.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	54.1	29.8	39.1	87.6	68.1	17.1	19.5	43.7	15.8
Queue Length 50th (ft)	273	86	117	61	88	381	182	16	317	51
Queue Length 95th (ft)	374	146	#401	103	#155	#495	273	53	448	127
Internal Link Dist (ft)		781			764		868		1120	
Turn Bay Length (ft)	240			50		295		210		
Base Capacity (vph)	431	368	821	421	166	785	1043	555	671	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	36	29	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.28	0.95	0.22	0.62	0.94	0.39	0.08	0.56	0.32

Intersection Summary

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

14: Holly Springs Pkwy & Driveway #2/private driveway

Lane Group	EBL	EBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	100	88	44	727	1	567	74
v/c Ratio	0.61	0.36	0.06	0.24	0.00	0.21	0.06
Control Delay	80.6	9.5	3.9	4.6	6.0	5.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	9.5	3.9	4.6	6.0	5.9	0.5
Queue Length 50th (ft)	96	0	12	117	0	78	0
Queue Length 95th (ft)	156	35	m17	155	2	116	6
Internal Link Dist (ft)				1120		2037	
Turn Bay Length (ft)		180	230		215		175
Base Capacity (vph)	293	353	805	2972	544	2703	1258
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	0.34	0.25	0.05	0.24	0.00	0.21	0.06

Intersection Summary

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

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	67	23	8	99	664	46	17	538	22
v/c Ratio	0.05	0.18	0.07	0.03	0.16	0.26	0.04	0.03	0.40	0.02
Control Delay	17.0	7.5	17.2	0.4	5.9	4.8	2.0	5.1	6.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	7.5	17.2	0.4	5.9	4.8	2.0	5.1	6.6	1.4
Queue Length 50th (ft)	3	0	4	0	12	44	0	2	79	0
Queue Length 95th (ft)	16	26	21	1	30	67	9	8	138	4
Internal Link Dist (ft)	1307		680			2037			8029	
Turn Bay Length (ft)		140		25	225		210	215		265
Base Capacity (vph)	953	940	953	830	849	3539	1568	758	1863	1615
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	0.02	0.07	0.02	0.01	0.12	0.19	0.03	0.02	0.29	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	132	167	67	258	229	423	78	303	294	266	384
v/c Ratio	0.57	0.69	0.21	0.40	0.34	0.51	0.36	0.78	0.53	0.99	0.84
Control Delay	54.6	60.6	1.4	29.4	28.2	5.4	29.9	56.7	8.2	84.4	55.8
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	54.6	60.6	1.4	29.4	28.2	5.4	29.9	56.7	8.2	84.4	55.8
Queue Length 50th (ft)	89	114	0	136	118	5	37	203	0	142	251
Queue Length 95th (ft)	152	186	0	222	195	78	75	#347	74	#297	#474
Internal Link Dist (ft)		1925			1796			8029			2274
Turn Bay Length (ft)	170		145	60		105	80		170	330	
Base Capacity (vph)	313	326	390	645	673	834	250	405	571	270	459
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	0.51	0.17	0.40	0.34	0.51	0.31	0.75	0.51	0.99	0.84

Intersection Summary

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	74	94	30	819	142	527	40
v/c Ratio	0.51	0.27	0.23	0.07	0.58	0.35	0.50	0.04
Control Delay	27.7	26.1	5.7	6.0	16.6	8.7	9.2	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	26.1	5.7	6.0	16.6	8.7	9.2	2.0
Queue Length 50th (ft)	39	23	0	4	118	19	90	0
Queue Length 95th (ft)	104	65	27	15	204	48	190	10
Internal Link Dist (ft)	816	920			243		892	
Turn Bay Length (ft)			75	95		140		
Base Capacity (vph)	730	724	874	714	2611	447	1710	1443
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	0.20	0.10	0.11	0.04	0.31	0.32	0.31	0.03

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	117	150	22	9	29	147	742	42	78	551	54
v/c Ratio	0.45	0.45	0.44	0.14	0.05	0.13	0.31	0.51	0.06	0.20	0.45	0.09
Control Delay	39.8	39.8	15.6	41.1	40.0	1.2	11.7	21.4	0.2	10.9	21.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	39.8	15.6	41.1	40.0	1.2	11.7	21.4	0.2	10.9	21.5	1.6
Queue Length 50th (ft)	54	55	14	10	4	0	33	153	0	17	107	0
Queue Length 95th (ft)	126	128	74	38	21	0	72	245	1	42	180	8
Internal Link Dist (ft)		796			1353			892			2018	
Turn Bay Length (ft)	125		61	140		175	350		210	135		225
Base Capacity (vph)	1042	1049	1036	1055	1166	964	739	2128	962	722	2108	1008
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.14	0.02	0.01	0.03	0.20	0.35	0.04	0.11	0.26	0.05

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	699	299	693	402	222	642
v/c Ratio	0.91	0.51	0.45	0.44	0.44	0.29
Control Delay	52.3	7.8	17.6	3.2	9.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	7.8	17.6	3.2	9.2	7.3
Queue Length 50th (ft)	191	0	131	0	43	72
Queue Length 95th (ft)	#366	71	183	47	70	96
Internal Link Dist (ft)			2018			939
Turn Bay Length (ft)	475			330	160	
Base Capacity (vph)	768	583	2070	1077	809	3329
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	0.51	0.33	0.37	0.27	0.19

Intersection Summary

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

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	251	330	185	1236	631	490
v/c Ratio	0.57	0.71	0.39	0.59	0.45	0.54
Control Delay	35.6	32.7	11.8	13.4	21.3	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	32.7	11.8	13.4	21.3	4.3
Queue Length 50th (ft)	114	118	40	197	124	0
Queue Length 95th (ft)	249	276	100	373	234	63
Internal Link Dist (ft)				939	831	
Turn Bay Length (ft)		350	160			315
Base Capacity (vph)	833	803	652	3128	2358	1211
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	0.41	0.28	0.40	0.27	0.40

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	229	81	400	141	106	46	468	1006	75	38	568	225
v/c Ratio	0.62	0.14	0.54	1.13	0.60	0.14	2.77	0.60	0.09	0.19	0.38	0.28
Control Delay	35.5	26.0	6.8	161.3	57.2	0.8	833.5	22.5	0.2	41.2	20.1	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	26.0	6.8	161.3	57.2	0.8	833.5	22.5	0.2	41.2	20.1	3.4
Queue Length 50th (ft)	112	36	11	~101	64	0	~493	263	0	22	123	0
Queue Length 95th (ft)	187	74	86	#226	#132	0	#701	349	0	52	166	42
Internal Link Dist (ft)		1703			765			831			2275	
Turn Bay Length (ft)	230			55			125		115	130		170
Base Capacity (vph)	378	574	749	125	178	340	169	1681	869	451	1992	998
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.14	0.53	1.13	0.60	0.14	2.77	0.60	0.09	0.08	0.29	0.23

Intersection Summary

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

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

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	209	61	207	1014	48	17	676	98
v/c Ratio	0.74	0.28	0.51	0.86	0.05	0.07	0.78	0.12
Control Delay	43.8	27.5	10.6	26.5	0.1	6.8	29.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	27.5	10.6	26.5	0.1	6.8	29.5	2.2
Queue Length 50th (ft)	86	20	39	342	0	3	310	0
Queue Length 95th (ft)	171	58	73	#918	0	10	#574	19
Internal Link Dist (ft)	915	859		2275			1533	
Turn Bay Length (ft)			120		130	80		110
Base Capacity (vph)	343	267	515	1177	1036	452	864	801
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	0.61	0.23	0.40	0.86	0.05	0.04	0.78	0.12

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	SBL	SBT
Lane Group Flow (vph)	19	223	276	132	256	180	560	445	132	197	413
v/c Ratio	0.05	0.53	0.55	0.31	0.39	0.27	2.10	0.94	0.27	0.80	0.87
Control Delay	15.3	35.1	14.0	18.0	25.3	6.8	525.5	64.7	6.0	46.1	54.0
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	15.3	35.1	14.0	18.0	25.3	6.8	525.5	64.7	6.0	46.1	54.0
Queue Length 50th (ft)	6	110	38	46	95	8	~447	245	0	69	221
Queue Length 95th (ft)	19	184	112	81	197	57	#748	#507	40	#204	#460
Internal Link Dist (ft)		1246			1238			1533			5252
Turn Bay Length (ft)	95		70	90		110	245		160	110	
Base Capacity (vph)	617	1010	931	628	1010	922	267	473	495	246	474
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	0.03	0.22	0.30	0.21	0.25	0.20	2.10	0.94	0.27	0.80	0.87

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.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	360	313	30	461	60	370	142
v/c Ratio	0.68	0.39	0.11	0.69	0.29	0.55	0.21
Control Delay	24.6	13.7	13.9	23.1	17.9	19.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	13.7	13.9	23.1	17.9	19.4	3.4
Queue Length 50th (ft)	104	66	8	149	16	112	0
Queue Length 95th (ft)	#271	152	22	227	41	174	27
Internal Link Dist (ft)	1473	1333		5252		1686	
Turn Bay Length (ft)			105		115		245
Base Capacity (vph)	532	794	522	1280	402	1292	1154
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	0.68	0.39	0.06	0.36	0.15	0.29	0.12

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	321	326	9	16	737	24	507	900
v/c Ratio	0.50	0.51	0.04	0.13	0.59	0.08	0.66	1.03
Control Delay	21.1	21.2	39.8	0.0	26.5	18.5	25.5	51.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	21.2	39.8	0.0	26.5	18.5	25.5	51.8
Queue Length 50th (ft)	87	89	3	0	113	6	161	~281
Queue Length 95th (ft)	258	262	22	0	#369	29	434	#745
Internal Link Dist (ft)		1401		1177	1686		1948	
Turn Bay Length (ft)	305					130		
Base Capacity (vph)	1588	1593	309	119	1246	549	1335	1224
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	0.20	0.20	0.03	0.13	0.59	0.04	0.38	0.74

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.

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	159	532	627	16	773	697	442	868	50
v/c Ratio	0.86	1.20	0.99	0.25	0.84	0.97	0.98	0.49	0.06
Control Delay	127.0	169.5	72.2	106.9	82.8	55.1	111.8	36.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.0	169.5	72.2	106.9	82.8	55.1	111.8	36.5	0.1
Queue Length 50th (ft)	217	~893	546	22	543	472	614	436	0
Queue Length 95th (ft)	#347	#1145	#833	54	630	#768	#857	512	0
Internal Link Dist (ft)	695	1346			1948			3962	
Turn Bay Length (ft)				90			175		85
Base Capacity (vph)	200	445	632	120	919	717	461	1786	852
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	0.80	1.20	0.99	0.13	0.84	0.97	0.96	0.49	0.06

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.

Lane Group	EBT	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	56	4	64	1273	4	1197	22
v/c Ratio	0.22	0.03	0.17	0.45	0.00	0.50	0.02
Control Delay	4.1	31.2	3.9	4.1	0.0	9.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	31.2	3.9	4.1	0.0	9.7	0.0
Queue Length 50th (ft)	0	2	6	102	0	170	0
Queue Length 95th (ft)	10	11	14	134	0	230	0
Internal Link Dist (ft)	819	689		3962		2768	
Turn Bay Length (ft)			160		220		200
Base Capacity (vph)	1103	983	847	2835	1294	2395	1117
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	0.05	0.00	0.08	0.45	0.00	0.50	0.02

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	213	437	159	323	369	482	881	307	856
v/c Ratio	0.50	0.56	0.85	0.45	0.80	0.58	1.03	0.65	0.88	0.87
Control Delay	38.7	56.8	39.8	36.2	67.9	8.2	92.4	38.9	53.8	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	56.8	39.8	36.2	67.9	8.2	92.4	38.9	53.8	59.3
Queue Length 50th (ft)	81	178	187	103	284	0	~427	343	156	390
Queue Length 95th (ft)	131	273	#349	160	412	89	#711	456	#360	#546
Internal Link Dist (ft)		1060			1121			1161		2118
Turn Bay Length (ft)	95		70	165			190		510	
Base Capacity (vph)	383	441	558	402	417	648	466	1364	348	988
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	0.33	0.48	0.78	0.40	0.77	0.57	1.03	0.65	0.88	0.87

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.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	157	75	115	1152	44	1019
v/c Ratio	0.41	0.35	0.37	0.29	0.57	0.13	0.55
Control Delay	39.3	2.7	33.8	6.2	12.6	5.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	2.7	33.8	6.2	12.6	5.3	13.3
Queue Length 50th (ft)	37	0	27	14	187	6	155
Queue Length 95th (ft)	93	7	77	34	285	17	244
Internal Link Dist (ft)		1636	882		2118		1321
Turn Bay Length (ft)	105			190		275	
Base Capacity (vph)	481	737	456	437	2723	625	3046
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	0.17	0.21	0.16	0.26	0.42	0.07	0.33

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	23	40	29	19	1188	85	1001	24
v/c Ratio	0.20	0.16	0.37	0.11	0.05	0.31	0.22	0.33	0.02
Control Delay	53.7	21.8	59.7	0.8	6.6	6.5	6.5	4.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	21.8	59.7	0.8	6.6	6.5	6.5	4.8	0.3
Queue Length 50th (ft)	16	1	29	0	4	110	7	56	0
Queue Length 95th (ft)	42	26	64	0	13	153	40	112	m2
Internal Link Dist (ft)		542		1009		1321		441	
Turn Bay Length (ft)	45		60		125		181		45
Base Capacity (vph)	307	373	308	463	407	3875	468	3036	1364
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	0.07	0.06	0.13	0.06	0.05	0.31	0.18	0.33	0.02

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	534	203	357	937	931	438
v/c Ratio	0.80	0.43	0.74	0.26	0.39	0.44
Control Delay	53.9	8.0	36.8	7.7	12.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	8.0	36.8	7.7	12.0	4.7
Queue Length 50th (ft)	196	0	162	93	147	0
Queue Length 95th (ft)	243	59	273	113	187	1
Internal Link Dist (ft)	794			1379	717	
Turn Bay Length (ft)			185			
Base Capacity (vph)	889	561	514	3542	2387	985
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	0.60	0.36	0.69	0.26	0.39	0.44

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	278	143	1327	1321
v/c Ratio	0.66	0.44	0.33	0.31
Control Delay	29.3	10.4	3.7	2.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.3	10.4	3.7	2.5
Queue Length 50th (ft)	44	21	54	27
Queue Length 95th (ft)	85	58	134	25
Internal Link Dist (ft)	514		717	663
Turn Bay Length (ft)		155		
Base Capacity (vph)	956	459	4063	4250
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	0.29	0.31	0.33	0.31

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	617	153	157	1307	1183	630
v/c Ratio	0.82	0.35	0.46	0.39	0.43	0.55
Control Delay	52.7	11.7	9.7	5.9	10.9	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	52.7	11.7	9.7	5.9	10.9	4.0
Queue Length 50th (ft)	226	17	29	89	89	23
Queue Length 95th (ft)	273	69	28	65	80	62
Internal Link Dist (ft)	692			663	542	
Turn Bay Length (ft)		125	155			
Base Capacity (vph)	946	522	485	3388	2776	1153
Starvation Cap Reductn	0	0	0	0	0	151
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.29	0.32	0.39	0.43	0.63

Intersection Summary

Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	167	63	7	73	69	1897	129	1718	22
v/c Ratio	0.68	0.36	0.03	0.23	0.32	0.61	0.64	0.52	0.02
Control Delay	51.3	47.9	38.2	5.9	10.5	17.5	33.4	11.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	51.3	47.9	38.2	5.9	10.5	17.6	33.4	11.4	0.1
Queue Length 50th (ft)	97	42	4	0	13	384	34	143	0
Queue Length 95th (ft)	156	79	16	24	m27	499	m98	400	m0
Internal Link Dist (ft)	833		580			542		735	
Turn Bay Length (ft)		30		30	190		190		115
Base Capacity (vph)	394	296	412	472	371	3106	326	3315	1078
Starvation Cap Reductn	0	0	0	0	0	228	0	0	0
Spillback Cap Reductn	4	0	0	6	0	88	2	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.21	0.02	0.16	0.19	0.66	0.40	0.52	0.02

Intersection Summary

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

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	304	885	1015	466	1484
v/c Ratio	0.21	0.84	0.53	0.95	0.89	0.58
Control Delay	41.0	49.5	9.7	31.9	40.9	11.8
Queue Delay	0.0	0.0	0.0	21.1	0.0	0.0
Total Delay	41.0	49.5	9.7	53.0	40.9	11.8
Queue Length 50th (ft)	40	145	264	694	280	314
Queue Length 95th (ft)	77	#247	60	#1026	m#415	386
Internal Link Dist (ft)			735			1221
Turn Bay Length (ft)		430			305	
Base Capacity (vph)	362	415	1655	1071	542	2559
Starvation Cap Reductn	0	0	0	97	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	0.73	0.53	1.04	0.86	0.58

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.

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	921	683	341	576	967	82
v/c Ratio	0.87	0.99	0.87	0.27	0.80	0.13
Control Delay	48.1	54.7	69.8	18.5	41.5	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	54.7	69.8	18.5	41.5	4.5
Queue Length 50th (ft)	331	321	258	139	338	0
Queue Length 95th (ft)	#438	#585	353	197	#543	27
Internal Link Dist (ft)				1221	760	
Turn Bay Length (ft)	475	612	400			
Base Capacity (vph)	1058	690	550	2097	1215	610
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	0.87	0.99	0.62	0.27	0.80	0.13

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	SBL	SBT	SBR
Lane Group Flow (vph)	12	13	156	188	184	96	59	787	440	62	548	9
v/c Ratio	0.18	0.19	0.74	0.73	0.71	0.28	0.11	0.41	0.41	0.16	0.28	0.01
Control Delay	56.1	56.2	29.3	58.3	56.9	6.2	8.4	15.5	2.7	8.8	14.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	56.2	29.3	58.3	56.9	6.2	8.4	15.5	2.7	8.8	14.0	0.0
Queue Length 50th (ft)	8	9	0	126	123	0	14	160	0	14	102	0
Queue Length 95th (ft)	30	30	#95	208	205	29	31	225	49	32	149	0
Internal Link Dist (ft)		1174			874			760			652	
Turn Bay Length (ft)	90		230			160	250		210	100		210
Base Capacity (vph)	68	70	212	326	327	405	793	1925	1070	693	1947	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.74	0.58	0.56	0.24	0.07	0.41	0.41	0.09	0.28	0.01

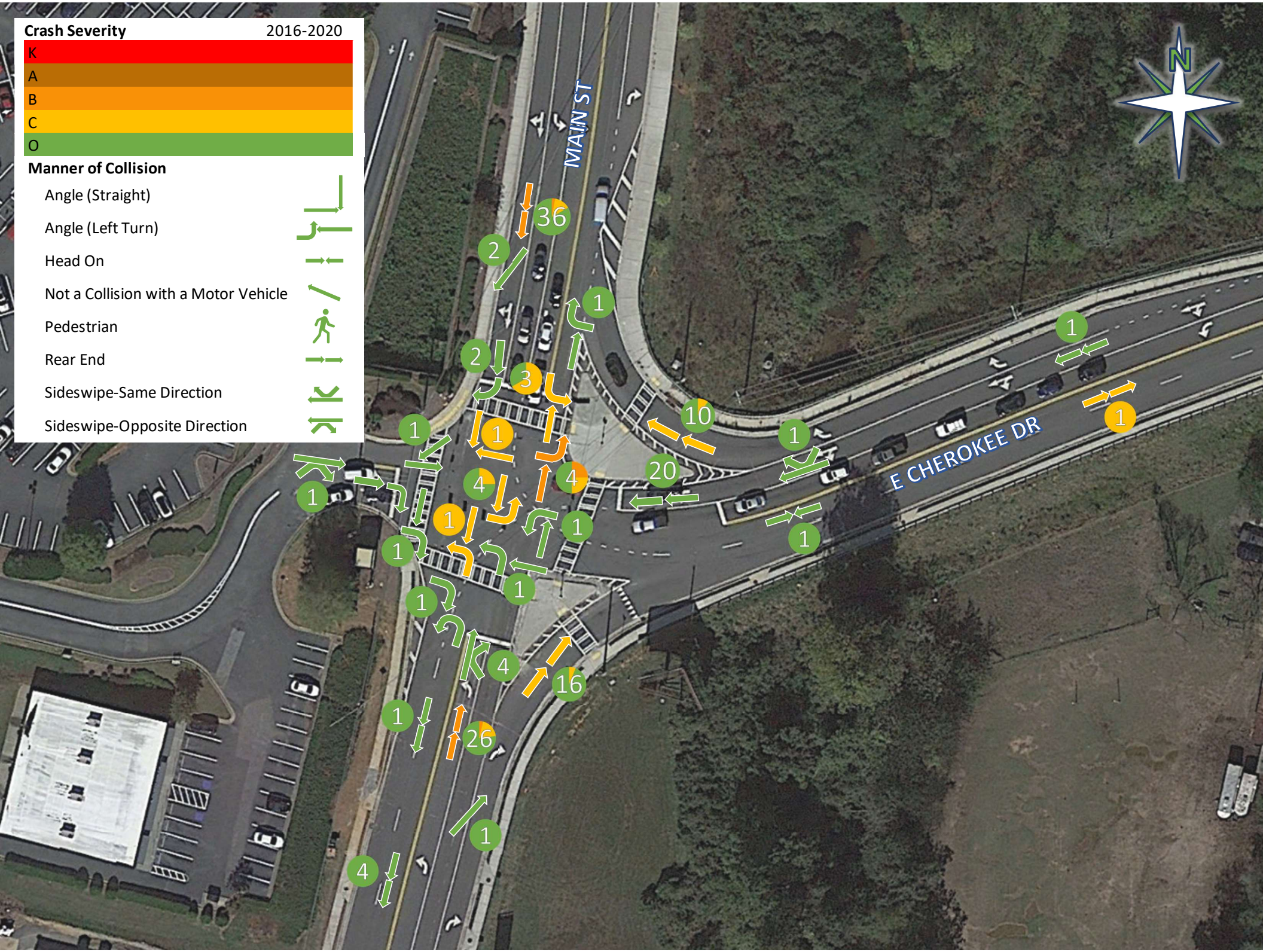
Intersection Summary

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

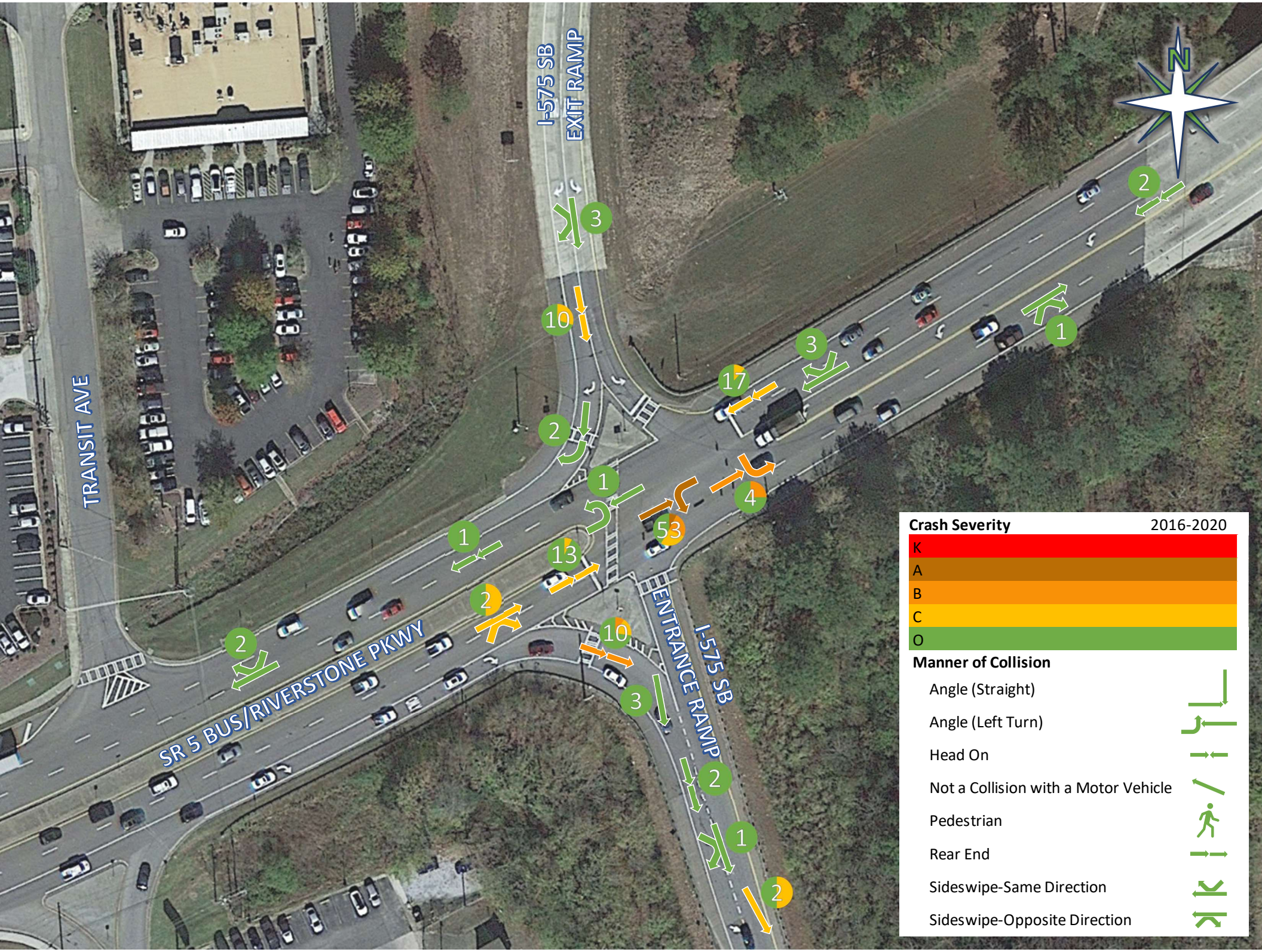
Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	7	11	51	2	85	866	54	605	5
v/c Ratio	0.04	0.05	0.31	0.01	0.33	0.62	0.04	0.46	0.00
Control Delay	24.7	0.4	31.2	24.0	10.5	8.1	1.4	5.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	0.4	31.2	24.0	10.5	8.1	1.4	5.9	0.0
Queue Length 50th (ft)	3	0	19	1	0	155	0	88	0
Queue Length 95th (ft)	12	0	47	6	34	317	9	177	0
Internal Link Dist (ft)	401			1094		652		2194	
Turn Bay Length (ft)		30	80						75
Base Capacity (vph)	322	370	289	392	388	1401	1215	1326	1237
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	0.02	0.03	0.18	0.01	0.22	0.62	0.04	0.46	0.00

Intersection Summary

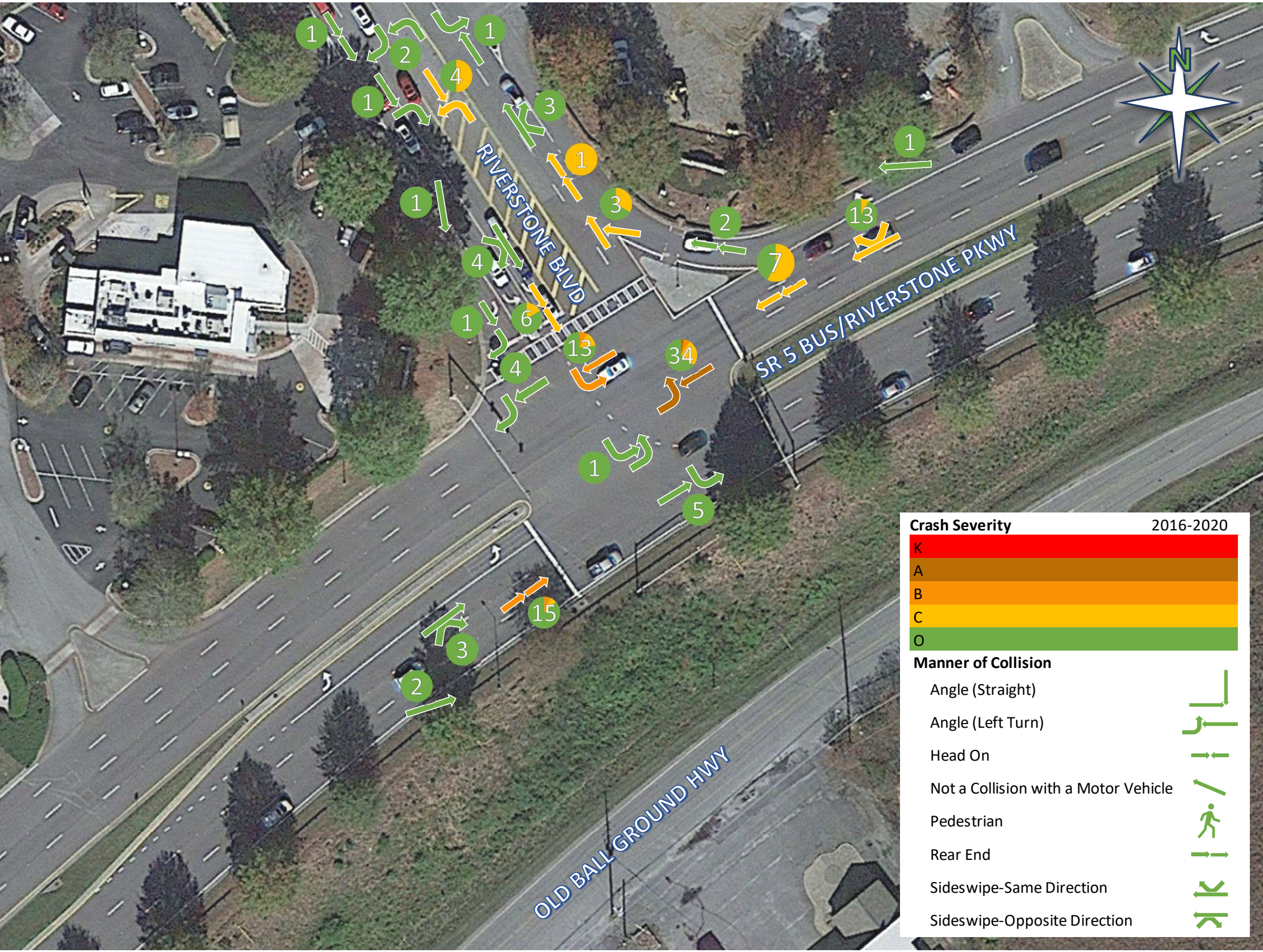
APPENDIX B: CRASH DIAGRAMS

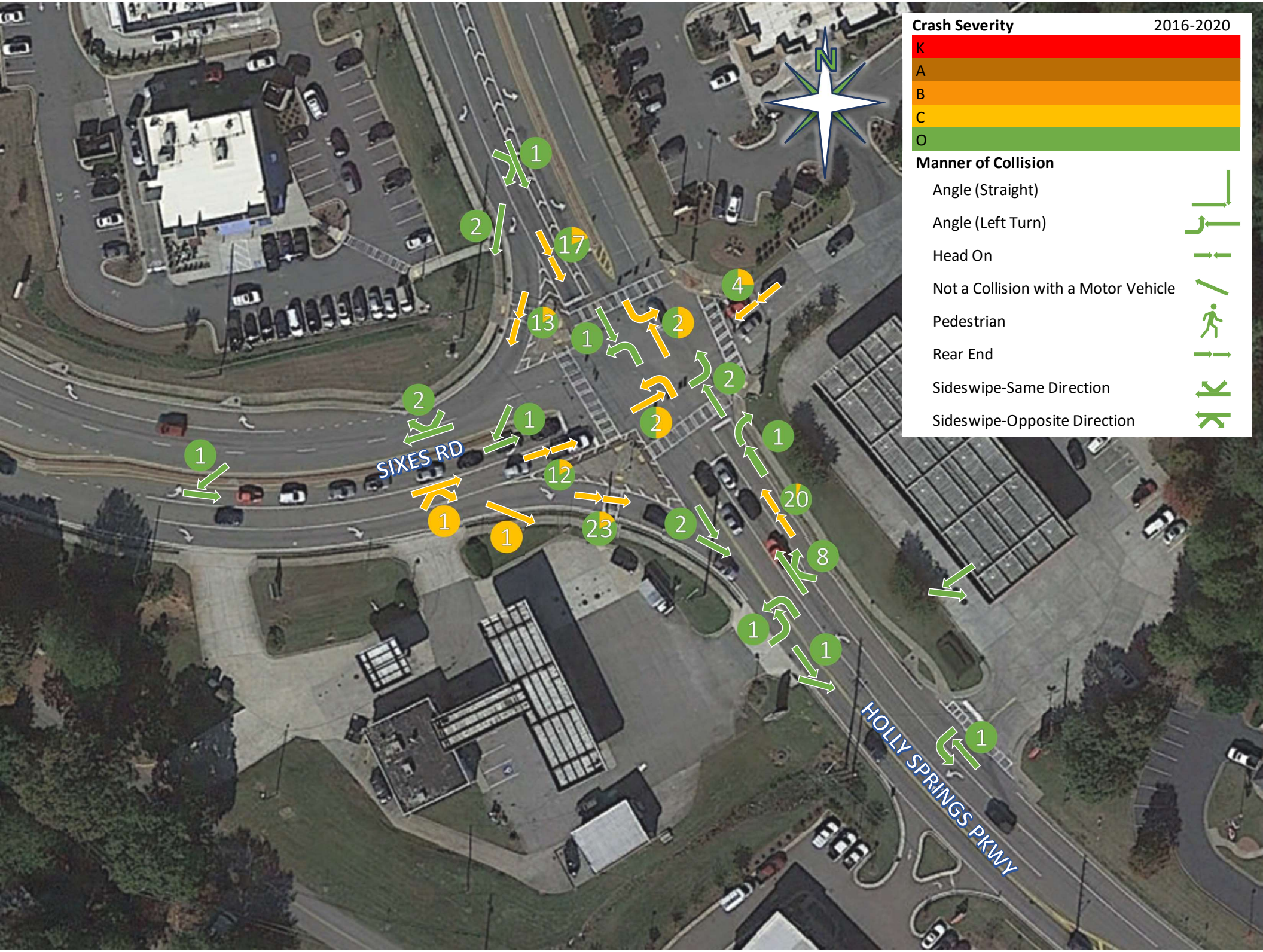

Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction
MAIN ST
E CHEROKEE DR
N
36
2
1
2
3
10
1
1
1
4
4
20
1
1
1
1
1
1
1
4
16
1
26
1
4
1
1

BUTTERWORTH RD
MARIETTA HWY
UNIVETER RD
N
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction



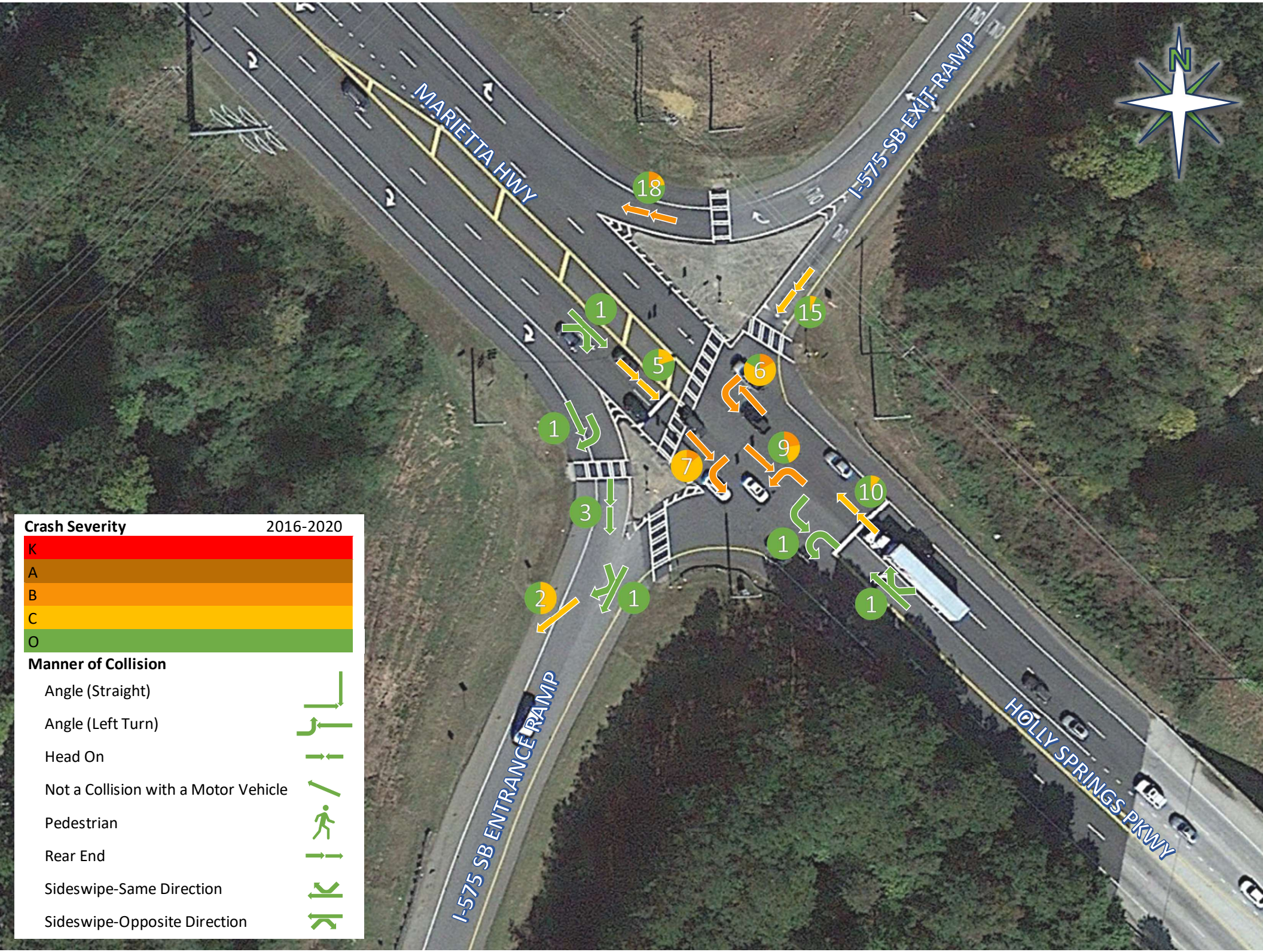
I-575 SB
EXIT RAMP
TRANSIT AVE
SR 5 BUS/RIVERSTONE PKWY
ENTRANCE RAMP
I-575 SB
N
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction


RIVERSTONE BLVD
SR 5 BUS/RIVERSTONE PKWY
OLD BALL GROUND HWY
N
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction


Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction
N
SIXES RD
HOLLY SPRINGS PKWY
1
2
17
13
1
2
4
2
2
1
2
1
12
1
1
23
2
20
8
1
1
1

TOWNE LAKE PKWY
MAIN ST
E MAIN ST
ARNOLD MILL RD
N
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction

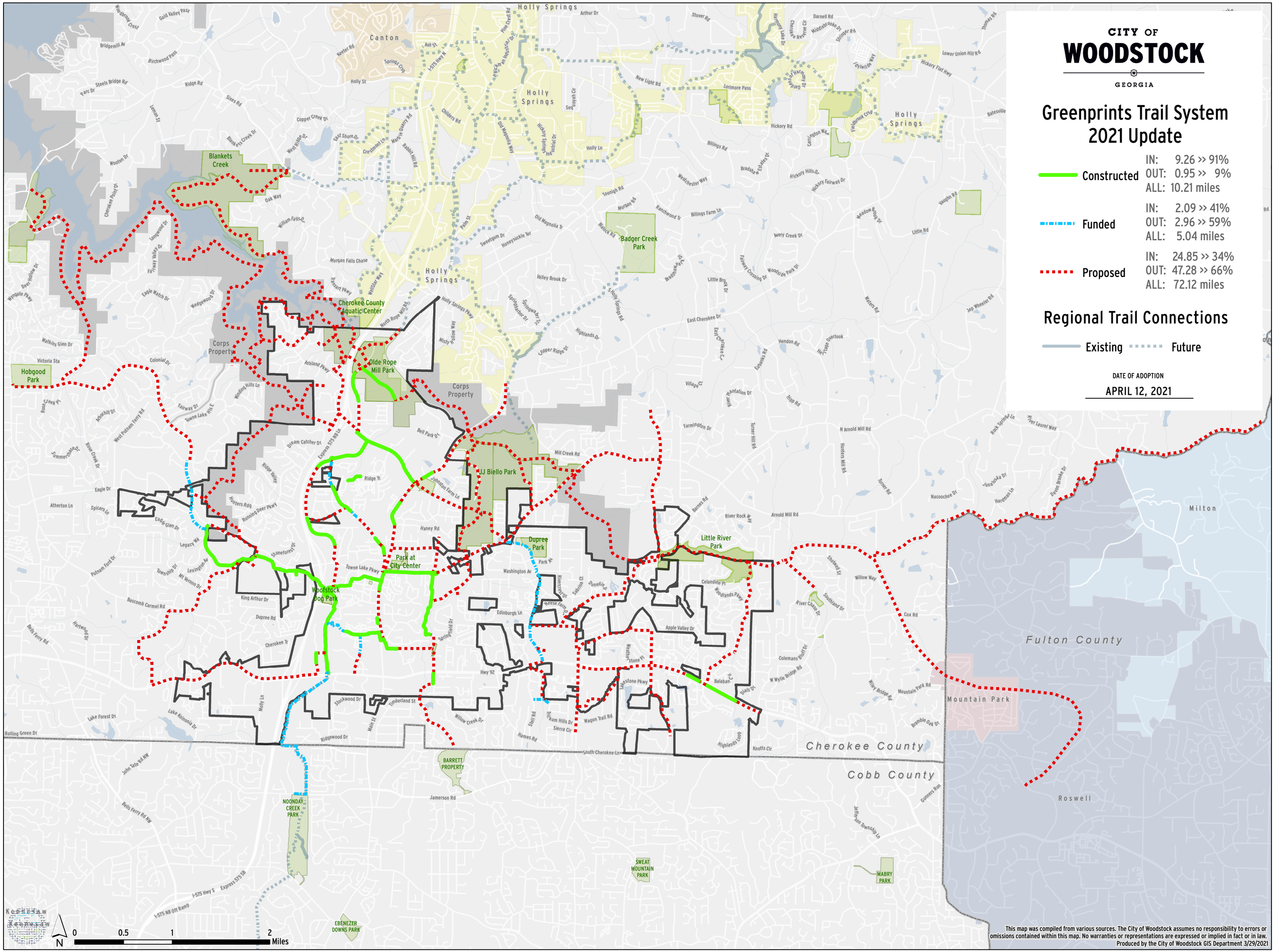
I-575 NB
I-575 NB ENTRANCE RAMP
SR 5 BUS/RIVERSTONE PKWY
I-575 NB EXIT RAMP
N
1
1
4
16
5
1
1
23
9
24
1
1
19
2
5
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction


MARIETTA HWY
I-575 SB EXIT RAMP
I-575 SB ENTRANCE RAMP
HOLLY SPRINGS PKWY
N
18
1
5
6
15
1
7
9
10
3
1
2
1
1
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction

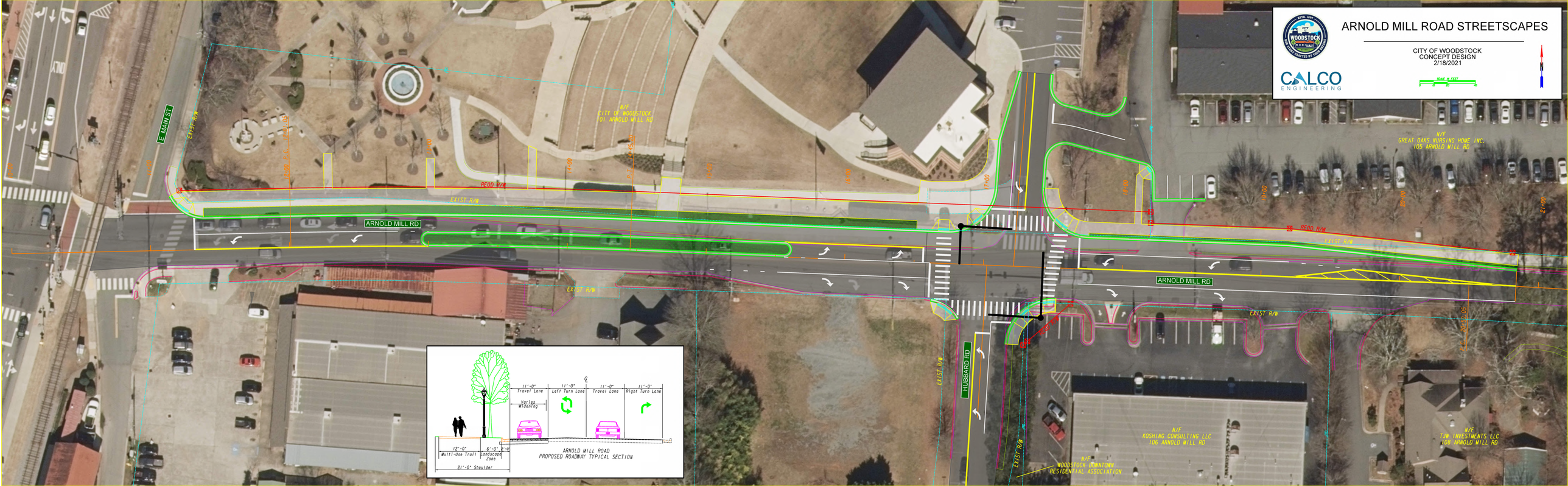
TOONIGH RD
HOLLY SPRINGS PKWY
MISTY HOLLOW WAY
N
1
1
2
9
7
15
1
13
2
21
1
1
1
Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction

Crash Severity
2016-2020
K
A
B
C
O
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction
MARIETTA HWY
DRIVEWAY #3
(KROGER)
PROMINENCE POINT PKWY
MARIETTA HWY
N

APPENDIX C: INFORMATION FROM STAKEHOLDERS



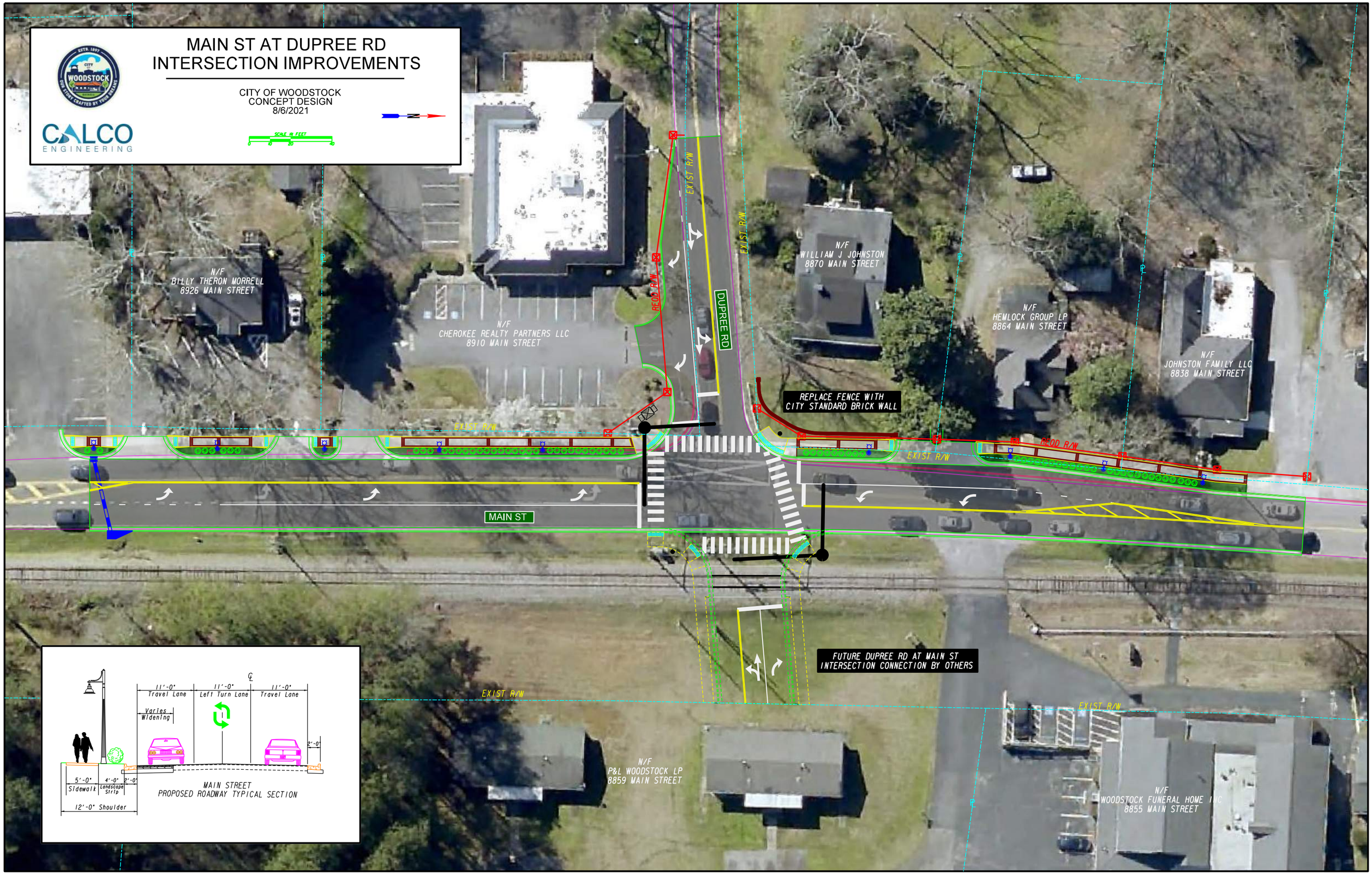
This map was compiled from various sources. The City of Woodstock assumes no responsibility to errors or omissions contained within this map. No warranties or representations are expressed or implied in fact or in law.
Produced by the City of Woodstock GIS Department 3/29/2021


ARNOLD MILL ROAD STREETSCAPES
CITY OF WOODSTOCK
CONCEPT DESIGN
2/18/2021
CALCO ENGINEERING
SCALE IN FEET
0 10 20 40
N
E. MAIN ST
EXIST R/W
REQD R/W
ARNOLD MILL RD
HUBBARD RD
N/F
CITY OF WOODSTOCK
101 ARNOLD MILL RD
N/F
GREAT OAKS NURSING HOME INC.
105 ARNOLD MILL RD
N/F
KOSHING CONSULTING LLC
106 ARNOLD MILL RD
N/F
TJW INVESTMENTS LLC
108 ARNOLD MILL RD
N/F
WOODSTOCK DOWNTOWN
RESIDENTIAL ASSOCIATION
11'-0" Travel Lane
11'-0" Left Turn Lane
11'-0" Travel Lane
11'-0" Right Turn Lane
Varies Widening
12'-0" Multi-Use Trail
6'-0" Landscape Zone
21'-0" Shoulder
ARNOLD MILL ROAD
PROPOSED ROADWAY TYPICAL SECTION

MAIN ST AT DUPREE RD
INTERSECTION IMPROVEMENTS

CITY OF WOODSTOCK
CONCEPT DESIGN
8/6/2021

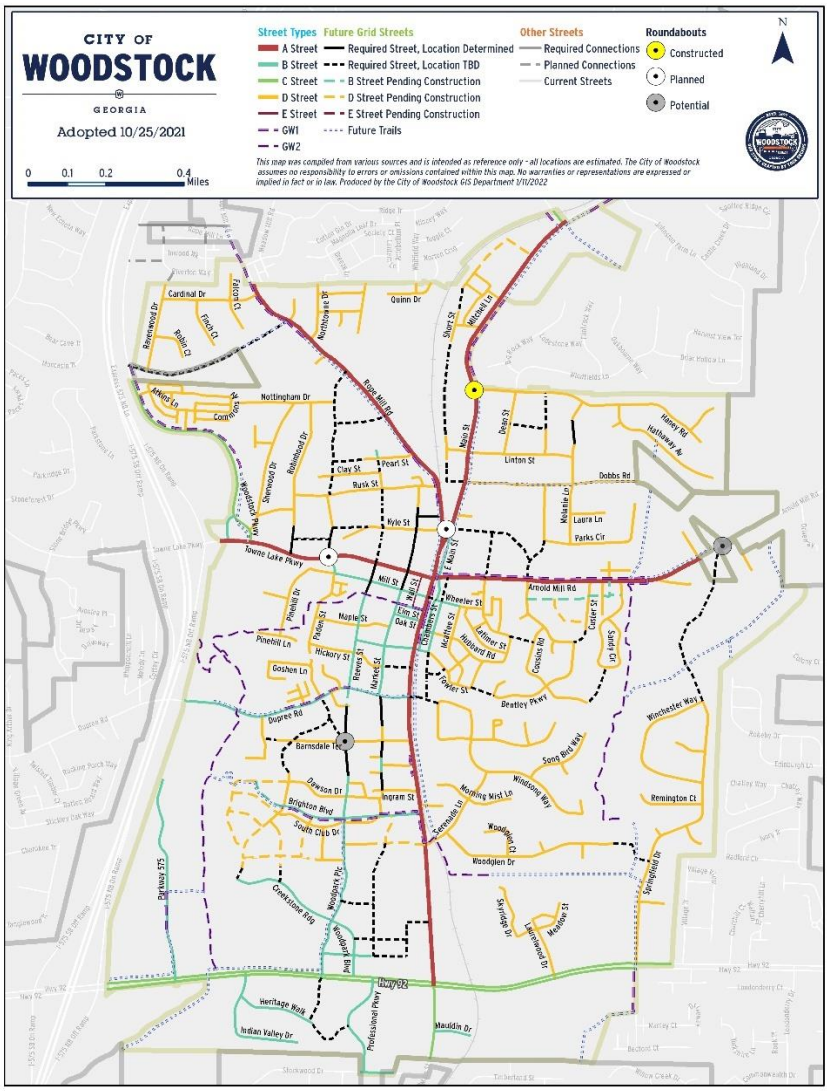
CALCO ENGINEERING



Grid Streets Program

(City-Exclusive Project)

The Grid Streets Program began as a concept to add flexibility for traffic flows to dissipate into many different streets with multiple routes instead of concentration on major arteries that are frequently congested, and subject to gridlock. The program expanded significantly with the development of the Woodstock West by Walton Project. That project included the establishment of several new grid streets, most prominently including Market Street, Reeves Street, and Paden Street. The development of these three grid streets provided efficient new north/south connections between Mill Street and Dupree Road. Additional connections were subsequently proposed in all directions to create the overall Grid Street Map.



A significant sectional addition was completed in 2020 with the extension of Reeves Street through the new South on Main neighborhood and connecting to Woodpark Place that already connects to Highway 92 with a traffic signal. This addition means that more than 50% of the distance of this grid street from Towne Lake Parkway to Highway 92 has now been completed and opened to the public. Importantly, the Serenade and Woodglen neighborhoods have also been connected to the Grid Streets Project by the extension of an east/west connection from Reeves Street to the expanded Serenade/Main intersection.

An important enhancement to the Grid Streets Plan will be completed within the Hub Transformation Project by converting Mill Street back to two-way traffic. The current efficiencies of the Market/Reeves/Paden grid streets are severely constricted by being bordered to the north by a one-way street. Once this Mill Street is converted back to two-way, the Market/Reeves/Paden grid street pattern will gain significant efficiencies and fluidity. The extension of these three north/south grids streets is continually being pursued, as is the possible extension of Mill Street, after it converts to two-way.

Such additional segments are continually being added and adjusted according to the conditions of development, venues, and traffic patterns. The intent is to connect new development areas to existing developments in ways that serves both new and existing traffic patterns. The planning map of grid streets is constantly being adjusted. Some of the most significant future additions to Grid Streets include Mill Street, Lyndee Lane, and Hubbard Road extensions featured on the three following project pages.

Reeves Street Extension to Woodpark

Hub Transformation Project

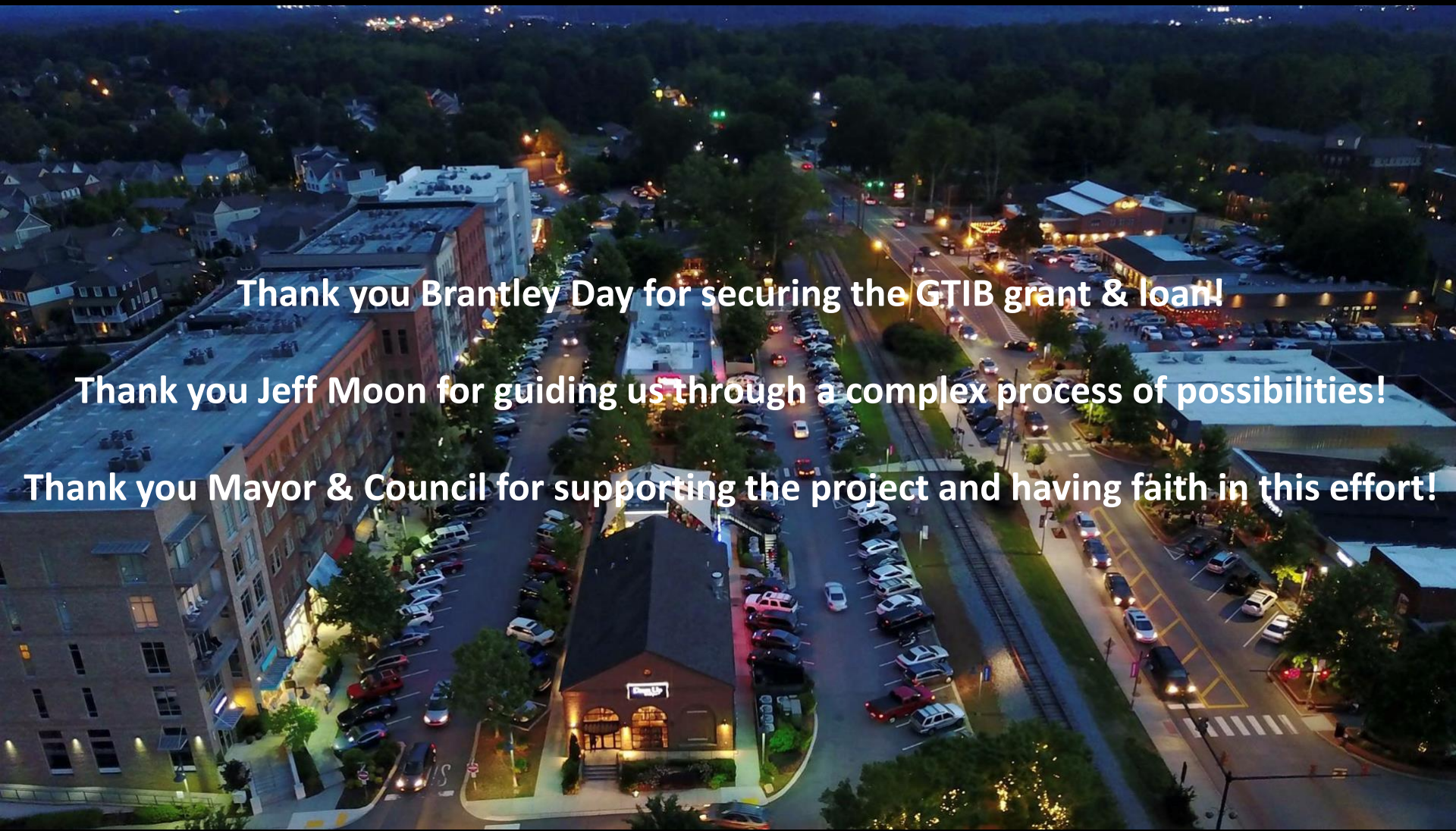
March 2021

CITY OF WOODSTOCK GEORGIA

Hub Transformation Project

March 2021

CITY OF WOODSTOCK GEORGIA



Thank you Brantley Day for securing the GTIB grant & loan!

Thank you Jeff Moon for guiding us through a complex process of possibilities!

Thank you Mayor & Council for supporting the project and having faith in this effort!

Hub Transformation Project

March 2021

CITY OF WOODSTOCK GEORGIA

Many years in the making!

When Arcadis was asked to study downtown traffic, they came back with incredible positive gains based upon the concept behind this plan

But how does this make such a dramatic impact? It looks like it only helps east/west traffic and it does not change the footprint of the road system very much. So, how does it work?

Hub Transformation Project

March 2021

CITY OF WOODSTOCK GEORGIA

What is it?

What will it accomplish?

How does it relate to the remainder of the downtown transportation issues?

What is it?

CITY OF WOODSTOCK GEORGIA

Series of improvements that begin at City Center Main, extend west on Towne Lake Parkway to Mill Street, then extend east on Mill Street back to Main Street, then close the loop north on Main back to City Center Main

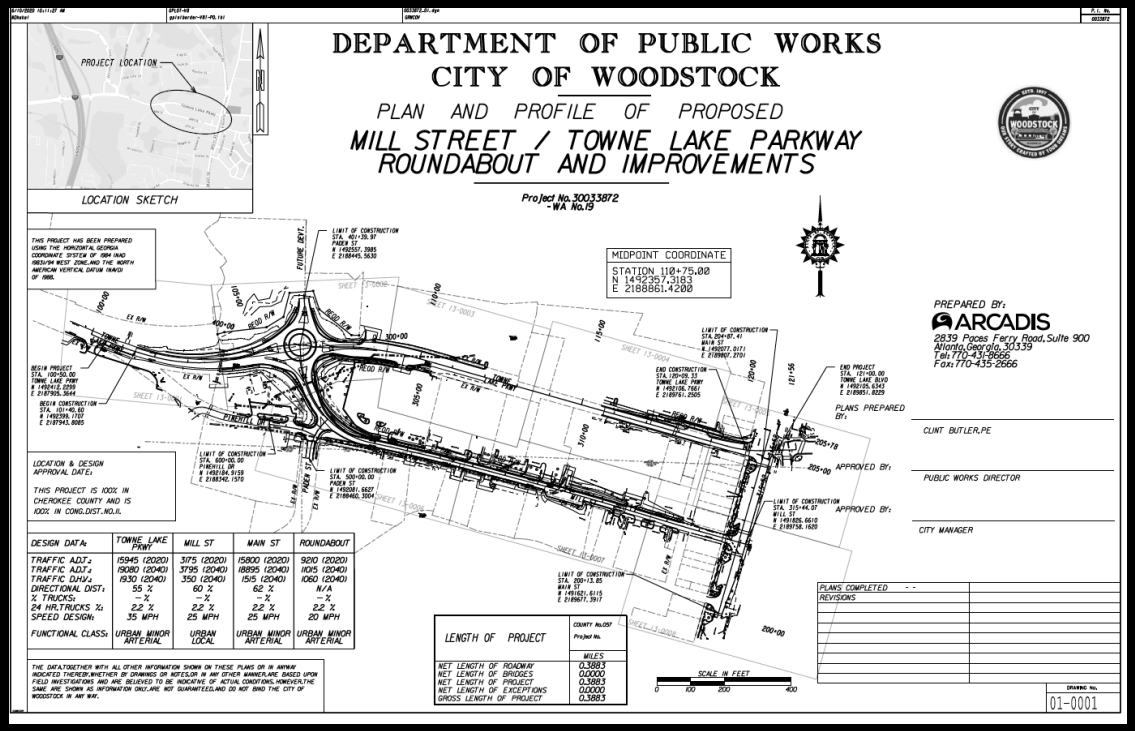
Hence the need to call it a Hub Transformation, rather than the "Mill St Roundabout" or "TLP Turn Lane" or any of the other names it has had in the past

Collaborative effort between the City and Arcadis to dramatically improve downtown traffic flow, congestion, and capability

What is it?

CITY OF WOODSTOCK GEORGIA

This is a transformative transportation project that will significantly improve traffic flow efficiency in the heart of Downtown Woodstock, as well as provide a more efficient connection to I-575. It solves the most significant deficiency at the City Center Main intersection, directly improves seven streets, and dramatically improves pedestrian mobility. All of this from minimal changes to the footprint of the Right of Way by making smarter use of the existing space. This allows continued transition to the Live/Work/Play environment while maintaining the attractive ambiance of a cohesive community.



TLP Eastbound Left Turn at City Center Main

Mill Street Roundabout

Reconstruction Paden/Mill/Pinehill Intersection

Mill Conversion to Two-Way and to a Grid Street

TLP & Mill are East/West

Is this merely an East/West improvement?

No

It will significantly improve North/South at the same time as improving East/West

But there is even more!

How has this issue changed over time?

CITY OF WOODSTOCK GEORGIA

Severe eastbound congestion caused by no left turn at Main

Force left turners down Mill, as one-way street

Worked well at first, but conditions changed

What changed?

The Popularity Zone Expanded
to include the Southwest Quadrant

CITY OF WOODSTOCK GEORGIA

(1) Incredible vehicular demand from this popular district

(2) High % exiting vehicular traffic needs to go west to 575 & Towne Lake

(3) Limited to Market/Mill/Main/TLP Route, same route TLP left-turners are forced into

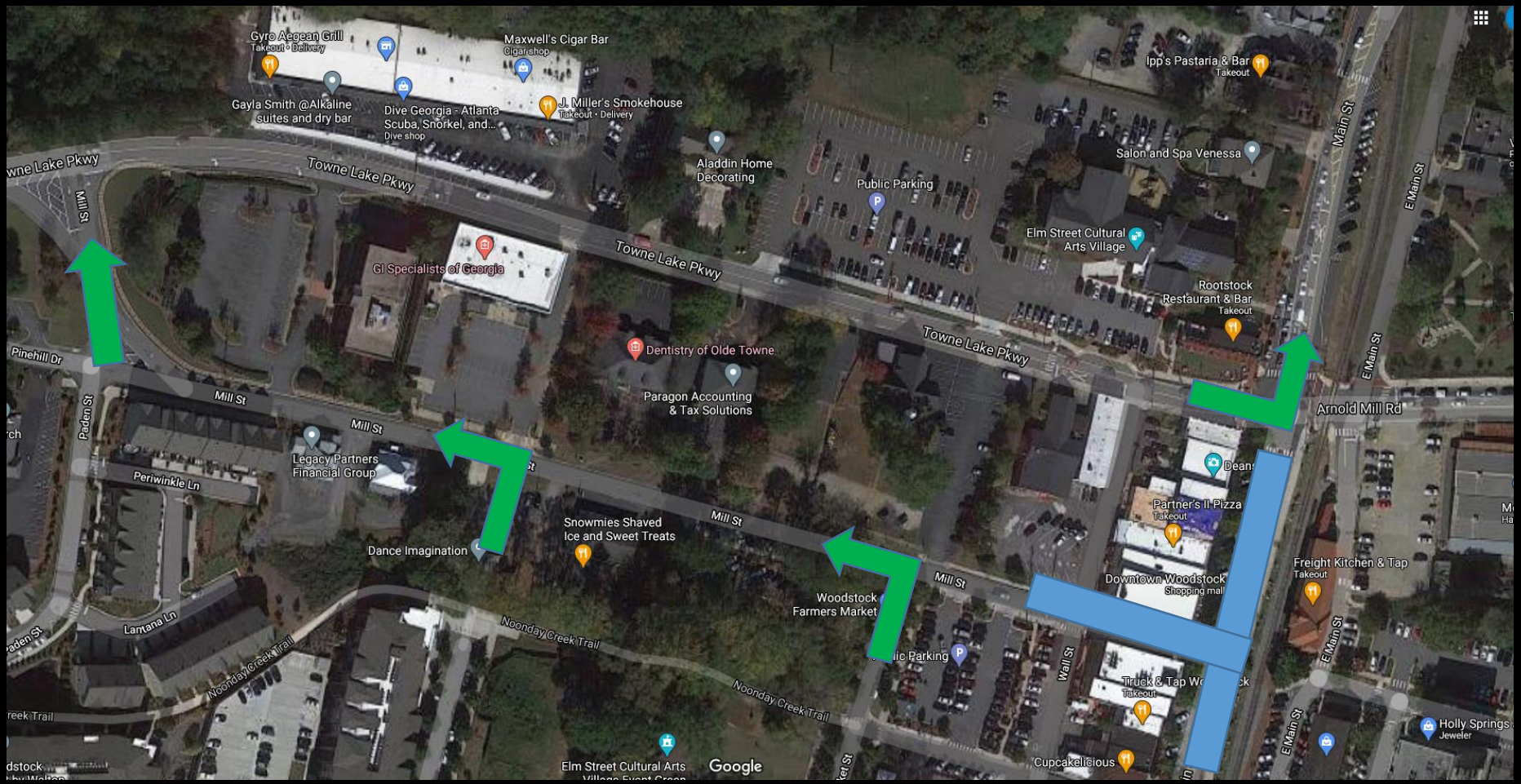
(4) Grid Street efficiency is lost

(5) Incredible, Unsustainable pressure on the Elbow and on Northbound Main at Mill

What is the Big Solution?

Relieve the Elbow

CITY OF WOODSTOCK GEORGIA

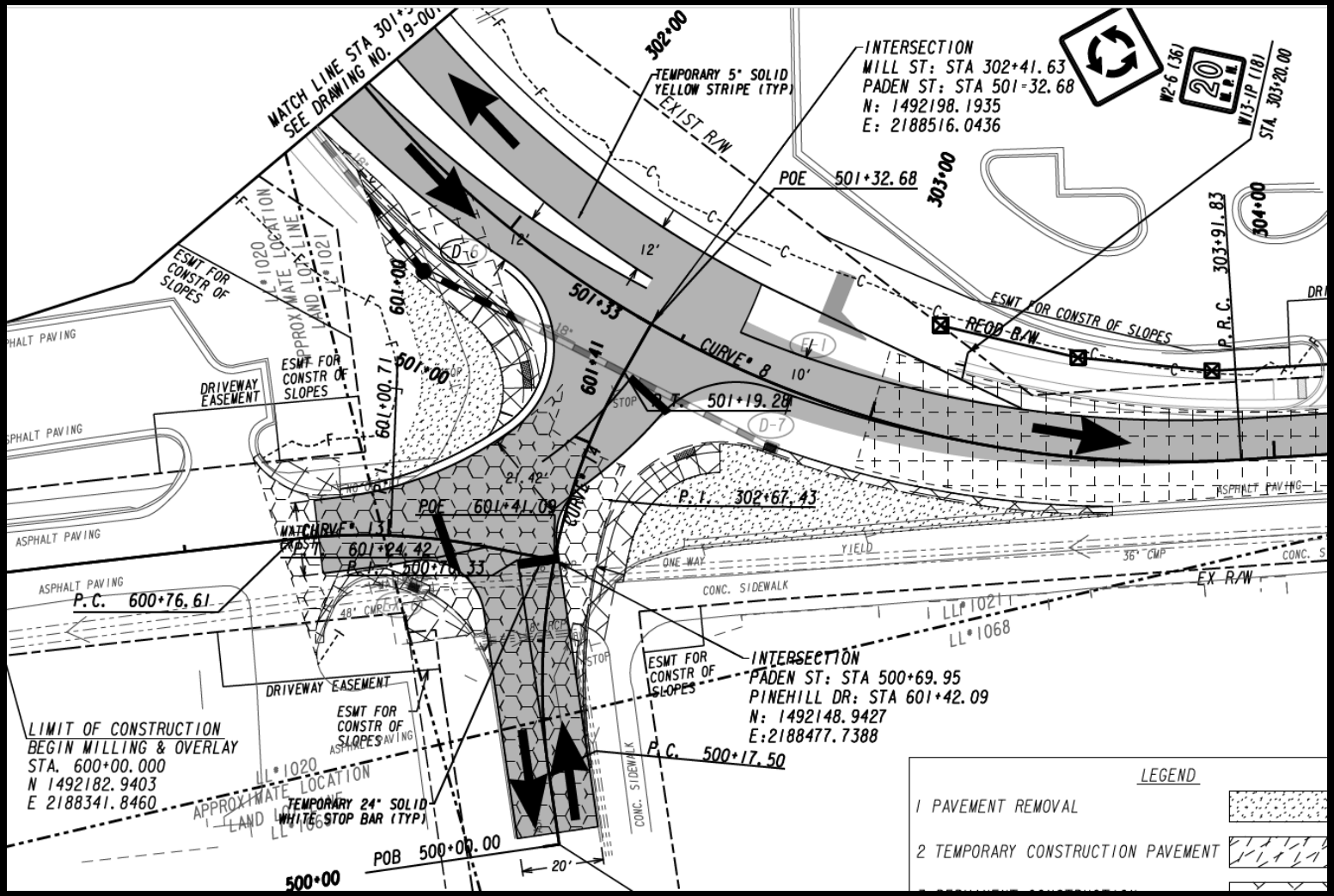


What else?

Reform Paden/Pinehill/Mill Intersection

Dual Sidewalks Length of Mill Street

CITY OF WOODSTOCK GEORGIA



What is the end result?

CITY OF WOODSTOCK GEORGIA

CITY OF WOODSTOCK GEORGIA

Incredibly Improved Downtown Traffic Flows

Council Direction requested

Additional Downtown traffic issues

CITY OF WOODSTOCK GEORGIA

Once Hub Transformation is completed

One huge area/issue gets resolved

But two obvious issues remain

(1) Southeast Quadrant – Accessibility

(2) Main Street Northbound – Traffic flow interruptions

Southeast Quadrant

CITY OF WOODSTOCK GEORGIA

Difficulty exiting the quadrant

E Main (& new Chambers) hopelessly flawed
Fowler seriously flawed
Hubbard requires passage through residential
And circling for parking exacerbates the issue

- Parking Deck will help substantially
- Fourth entrance/exit at deck will help substantially
- Mill/Wheeler connection would be incredible improvement
- Dupree/Chambers connection would be important
- AMR Left Turn at Hubbard is essential

Main St Northbound

CITY OF WOODSTOCK GEORGIA

Consistent, excessive congestion northbound

Elbow solution will help considerably

Signal timing is not enough, because

Pedestrian & parking interruption is primary cause,

not signals, but GridSmart & StreetSmart will help

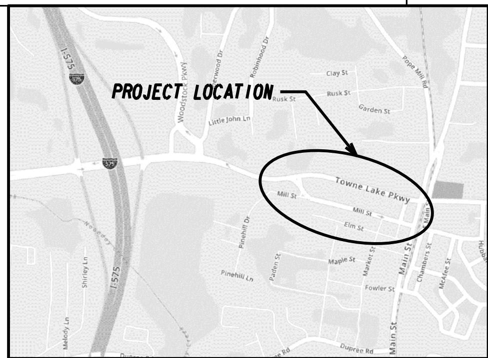
Primary – Solve the Interruptions!

Probable Solution – NRFPT – But control pedestrian crossing

CITY OF
WOODSTOCK
GEORGIA

Questions
Feedback
Direction

4/2/2021 SRodgers | GPLOT-V8 gplotborder-v81-P0.tbl | 0033872_60-0001.dgn GRWCOV | P. I. No. 0033872



LOCATION SKETCH

DEPARTMENT OF PUBLIC WORKS
CITY OF WOODSTOCK

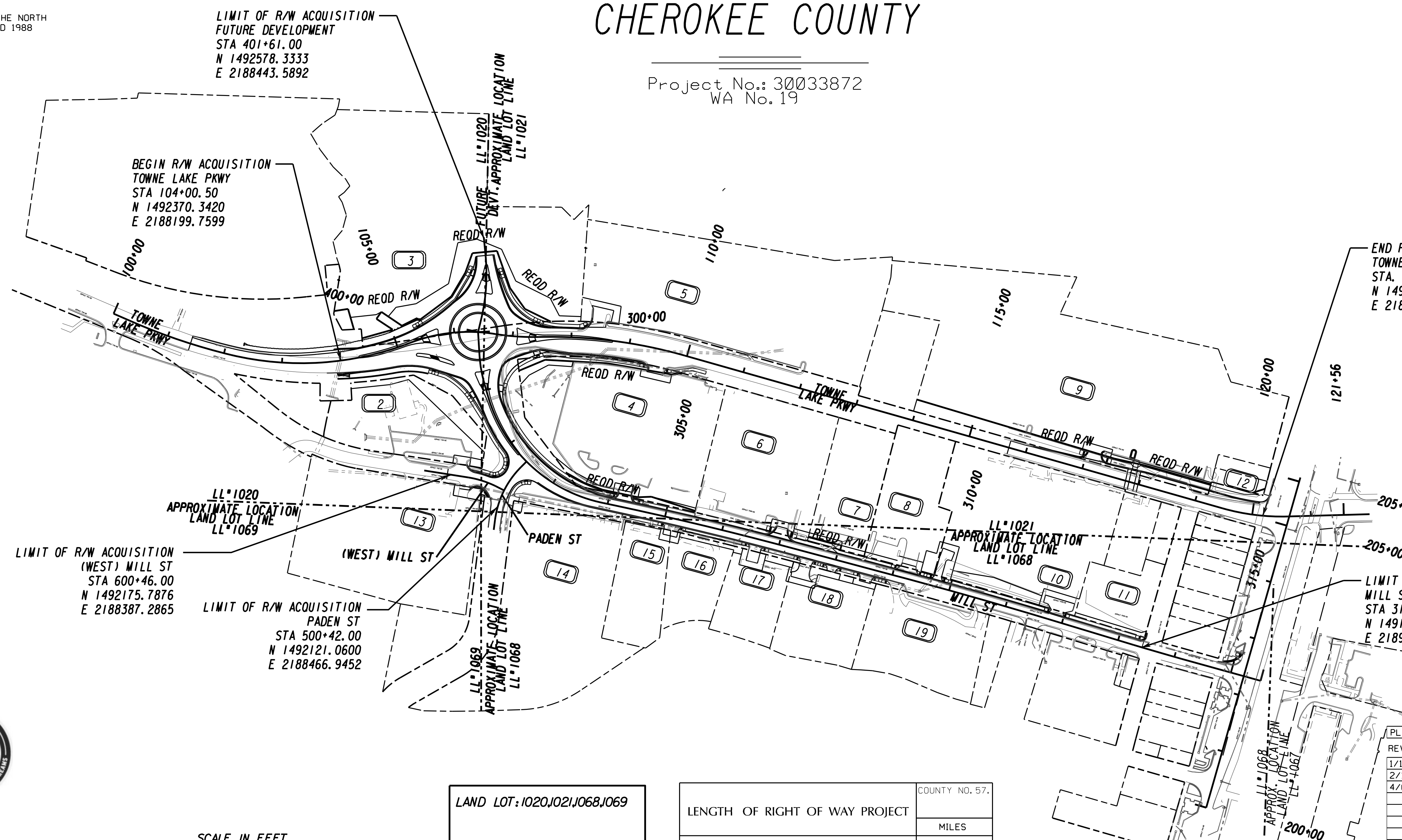
RIGHT OF WAY OF PROPOSED
HUB TRANSFORMATION PROJECT
CHEROKEE COUNTY

Project No.: 30033872
WA No.19

CONVENTIONAL SIGNS

- STATE OR COUNTY LINE
- CITY LIMIT LINE
- LAND LOT LINE
- PROPERTY LINE
- SURVEY OR BASE LINE
- RIGHT OF WAY LINE: EXISTING; REQUIRED; LIMIT OF ACCESS; REQD R/W & LIMIT OF ACCESS; R/W MARKERS
- FENCE
- RAILROAD
- POWER LINE
- TELEPHONE LINE
- POWER/UTILITY POLES
- LIGHT POLES

NOTE: THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA CO-ORDINATE SYSTEM OF 1984. (NAD 1983)/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM : NAVD 1988



PREPARED BY: ARCADIS

PROJECT NUMBER: 0033872
COUNTY: CHEROKEE COUNTY

SCALE IN FEET: 0 100 200 400

LAND LOT: 1020,1021,1068,1069

LAND DISTRICT: 15

LENGTH OF RIGHT OF WAY PROJECT	COUNTY NO. 57.
	MILES
NET LENGTH OF RIGHT OF WAY	0.3140
NET LENGTH OF BRIDGES	0.0000
NET LENGTH OF EXCEPTIONS	0.0000
GROSS LENGTH OF RIGHT OF WAY	0.3140

THIS PROJECT IS LOCATED 100% IN CHEROKEE COUNTY AND CONGRESSIONAL DISTRICT 11.

PLANS COMPLETED DATE: FINAL ROW 9/15/2020

REVISIONS:
1/15/2021
2/12/2021
4/02/2021

DRAWING No. 60-0001

DATE	DRAWING NO.	REVISION
1/15/21	1	PAR 1 - REMOVED LABEL
1/15/21	2	ADDED REVISIONS
1/15/21	3	PAR 1 - REMOVED LABEL
1/15/21	4	PAR 1 - REMOVED TESMT; PAR 2 - MODIFIED TESMT
1/15/21	5	PAR 2 - MODIFIED TESMT; PAR 3 - MODIFIED REQD RW, ADDED TESMT TRACT 1 & 2;
		PAR 5 - MODIFIED DESMT, ADDED PESMT
1/15/21	6	PAR 4 - MODIFIED REQD RW
1/15/21	7	PAR 9 - MODIFIED REQD RW, DWESMT, TESMT, ADDED PESMT
1/15/21	9	PAR 14 - MODIFIED TESMT TRACT 2
1/15/21	10	PAR 8 - MODIFIED TESMT
1/15/21	12	PAR 1 - REMOVED DATA; PAR 2 - MODIFIED TESMT DATA, ;
		PAR 3 - MODIFIED REQD RW DATA, ADDED TESMT DATA; PAR 4 - MODIFIED REQD RW DATA
1/15/21	13	PAR 5 - MODIFIED DESMT DATA, ADDED PESMT DATA; PAR 8 - MODIFIED TESMT TRACT 2 DATA
		PAR 9 - MODIFIED REQD RW, DWESMT, TESMT DATA, ADDED PERM. ESMT DATA
1/15/21	14	PAR 14 - MODIFIED TESMT TRACT 2 DATA
2/12/21	10	PAR 18 - MODIFIED TESMT AND DWESMT TRACT 1
2/12/21	14	PAR 18 - MODIFIED TESMT AND DWESMT TRACT 1 DATA
4/02/21	1	MODIFIED PINEHILL DR TO (WEST) MILL ST
4/02/21	2	ADDED REVISIONS
4/02/21	3	MODIFIED PINEHILL DR TO (WEST) MILL ST
4/02/21	9	MODIFIED PINEHILL TO (WEST) MILL ST, PAR 13 - MODIFIED EXIST RW & DWESMT
4/02/21	12	PAR 2 - MODIFIED PINEHILL TO (WEST) MILL ST
4/02/21	14	PAR 13 - MODIFIED DWESMT, PAR 14 - MODIFIED PINEHILL DR TO (WEST) MILL ST

DATE	DRAWING NO.	REVISION

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

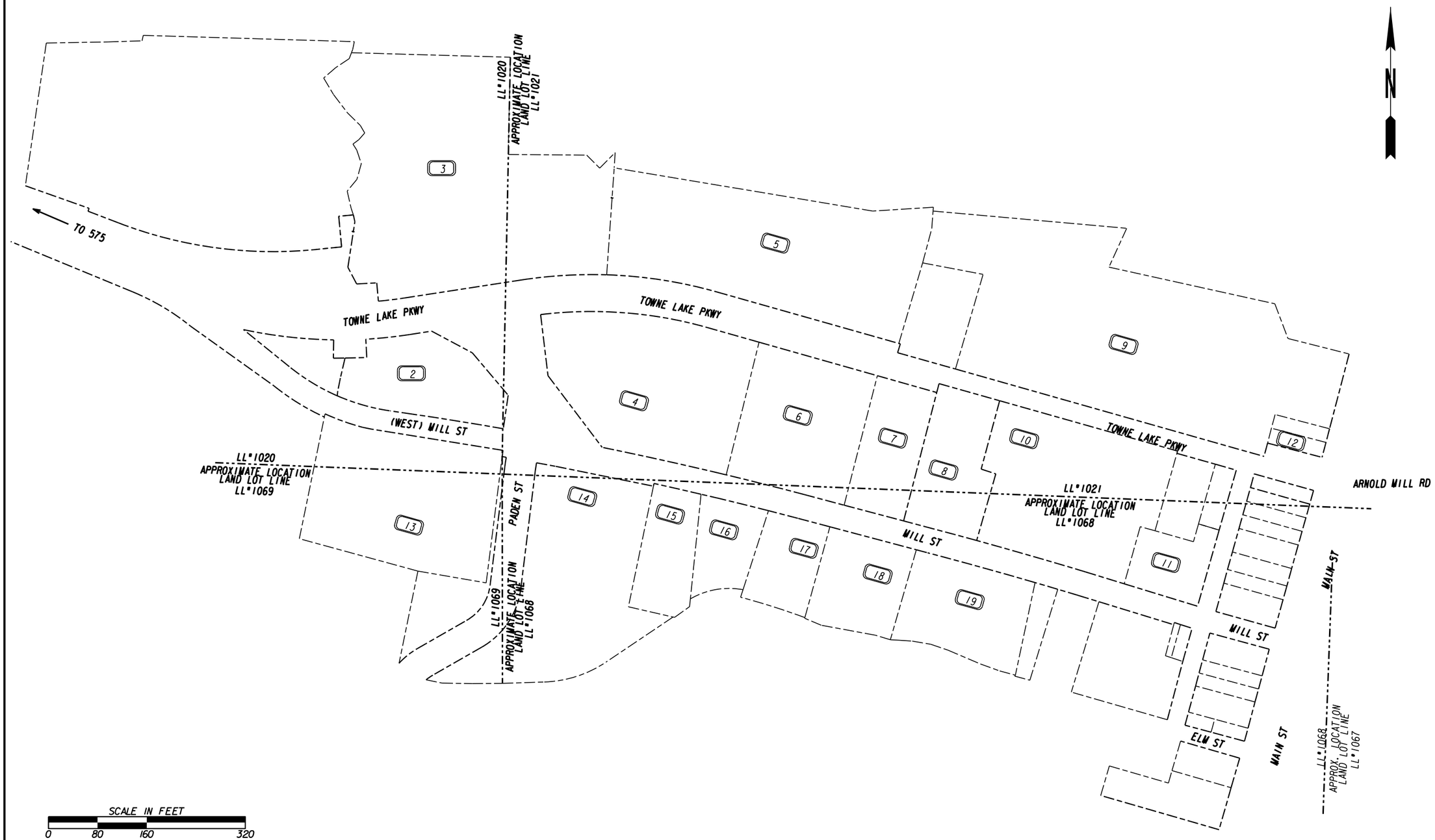
DATE	REVISIONS	DATE	REVISIONS
1/15/21	ADDED REVISIONS		
2/12/21	ADDED REVISIONS		
4/02/21	ADDED REVISIONS		

REVISION SUMMARY

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO:
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 2 OF 14

DRAWING No.
60-0002



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

DATE	REVISIONS	DATE	REVISIONS
1/15/21	REMOVED PAR 1 LABEL		
4/02/21	MODIFIED PINEHILL DR TO (WEST) MILL ST		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

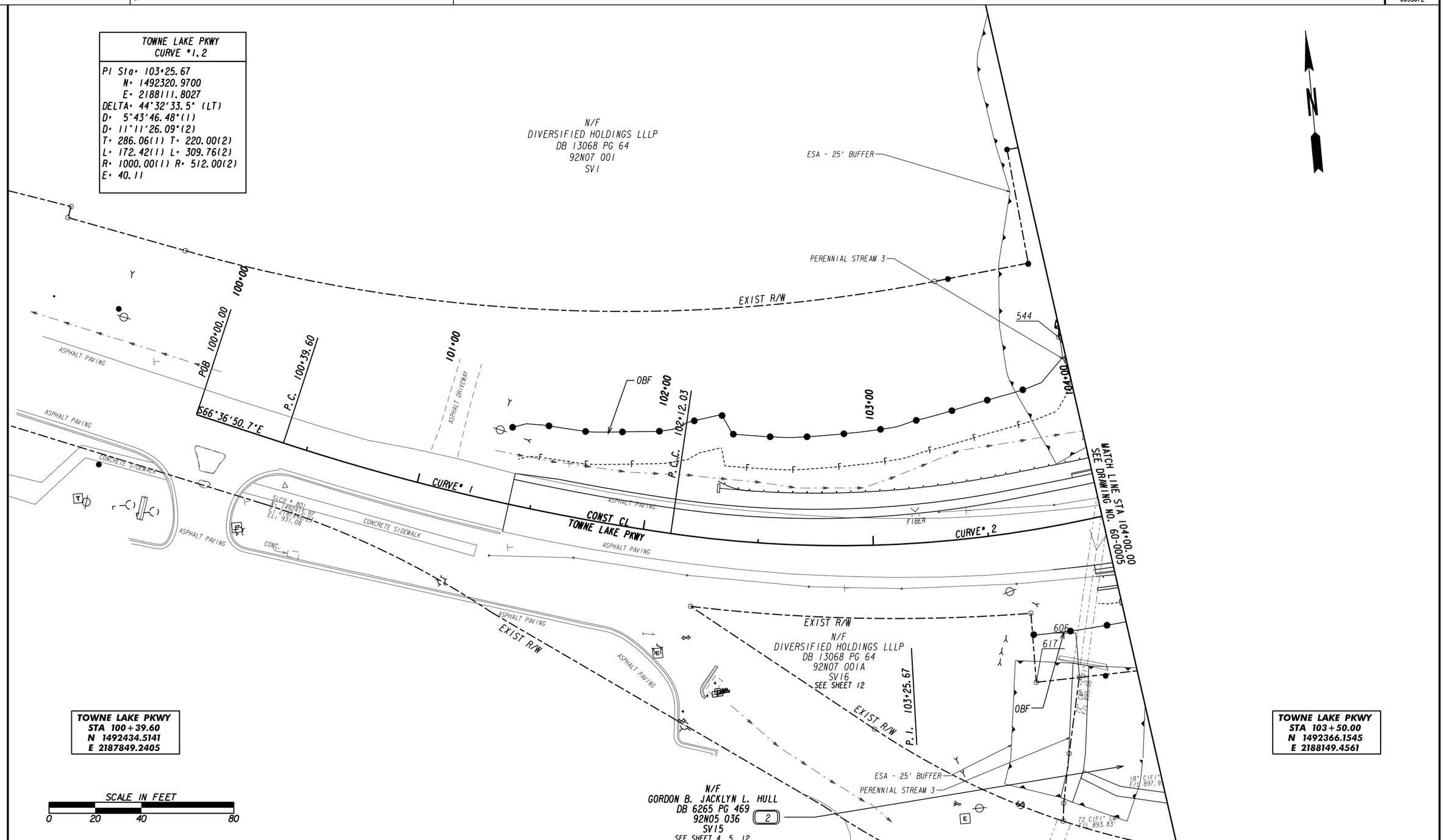
RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1020, 1021, 1068, 1069
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 3 OF 14

DRAWING No. 60-0003

TOWNE LAKE PKWY
CURVE #1, 2

PI Sta= 103+25.67
N= 1492320.9700
E= 2188111.8027
DELTA= 44°32'33.5" (LT)
D= 5°43'46.48"(1)
D= 11°11'26.09"(2)
T= 286.06(1) T= 220.00(2)
L= 172.42(1) L= 309.76(2)
R= 1000.00(1) R= 512.00(2)
E= 40.11



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	
BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

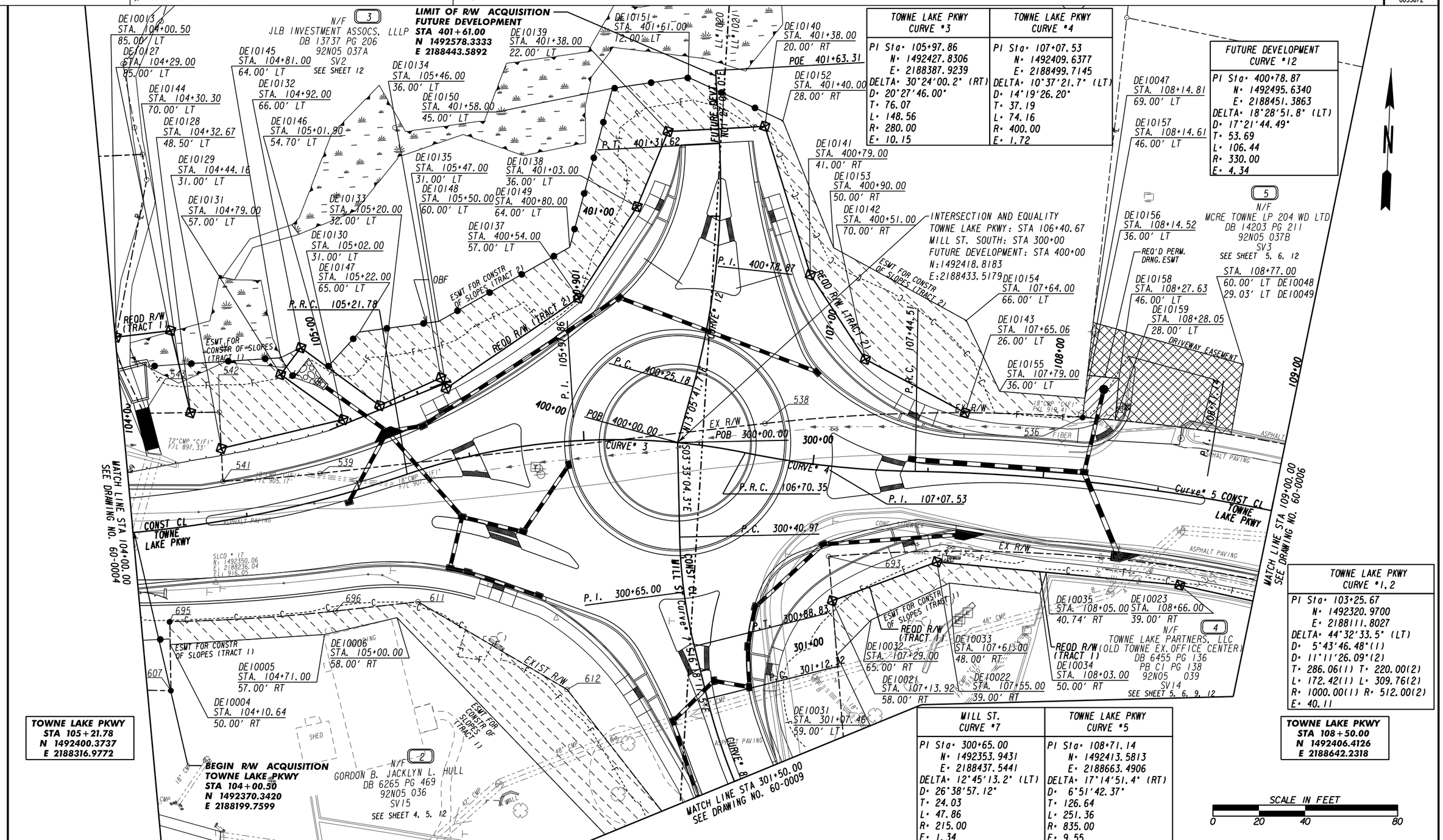
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 1 - REMOVED TESMT; PAR 2 - MODIFIED TESMT		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1020
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 4 OF 14

DRAWING No. 60-0004



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

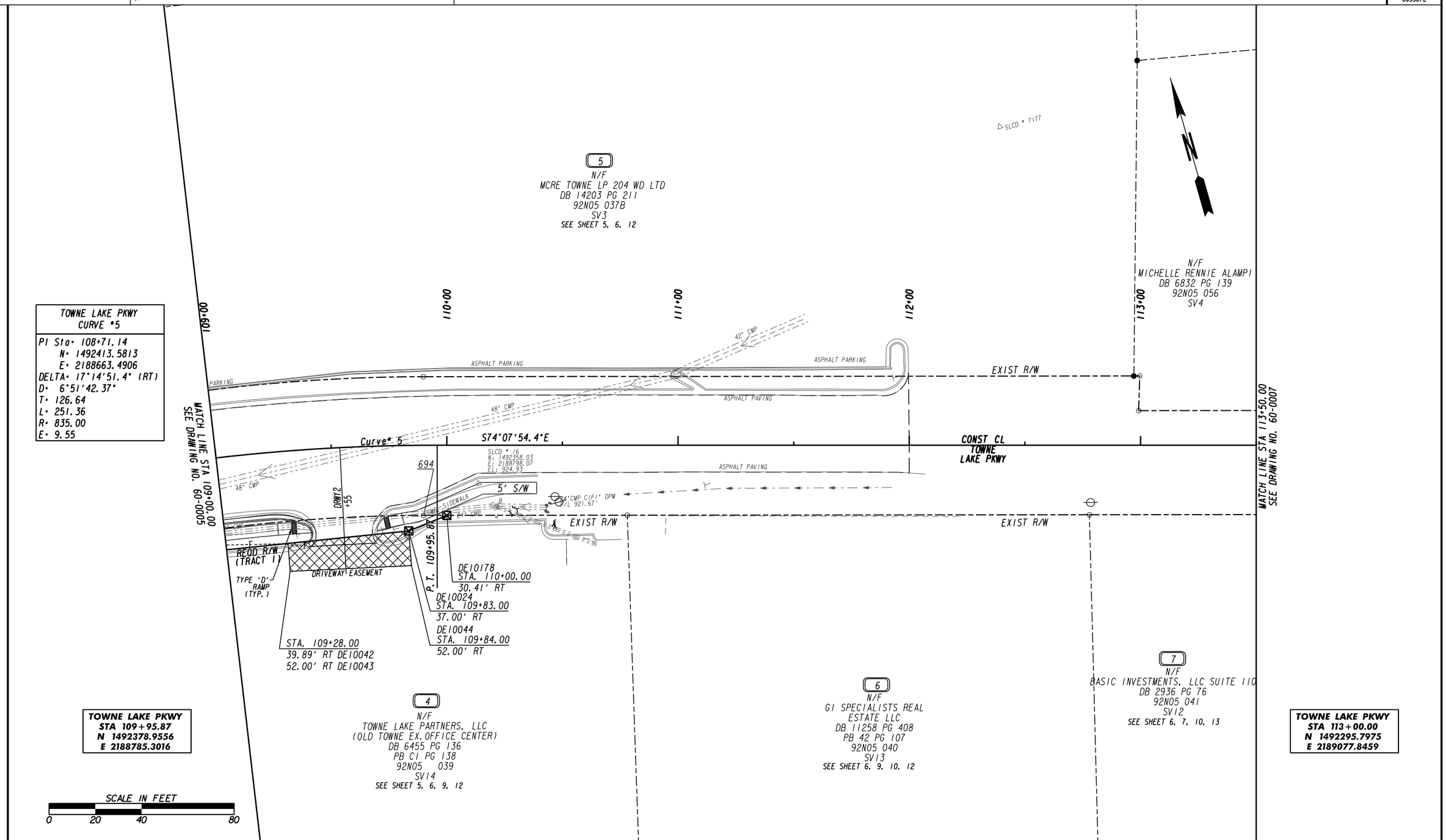
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 2 - MODIFIED TESMT		
1/15/21	PAR 3 - MODIFIED REQD RW, ADDED TESMT TRACT 1 & 2		
1/15/21	PAR 5 - MODIFIED DESMT, ADDED PESMT		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1020, 1021
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 5 OF 14

DRAWING No. 60-0005



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

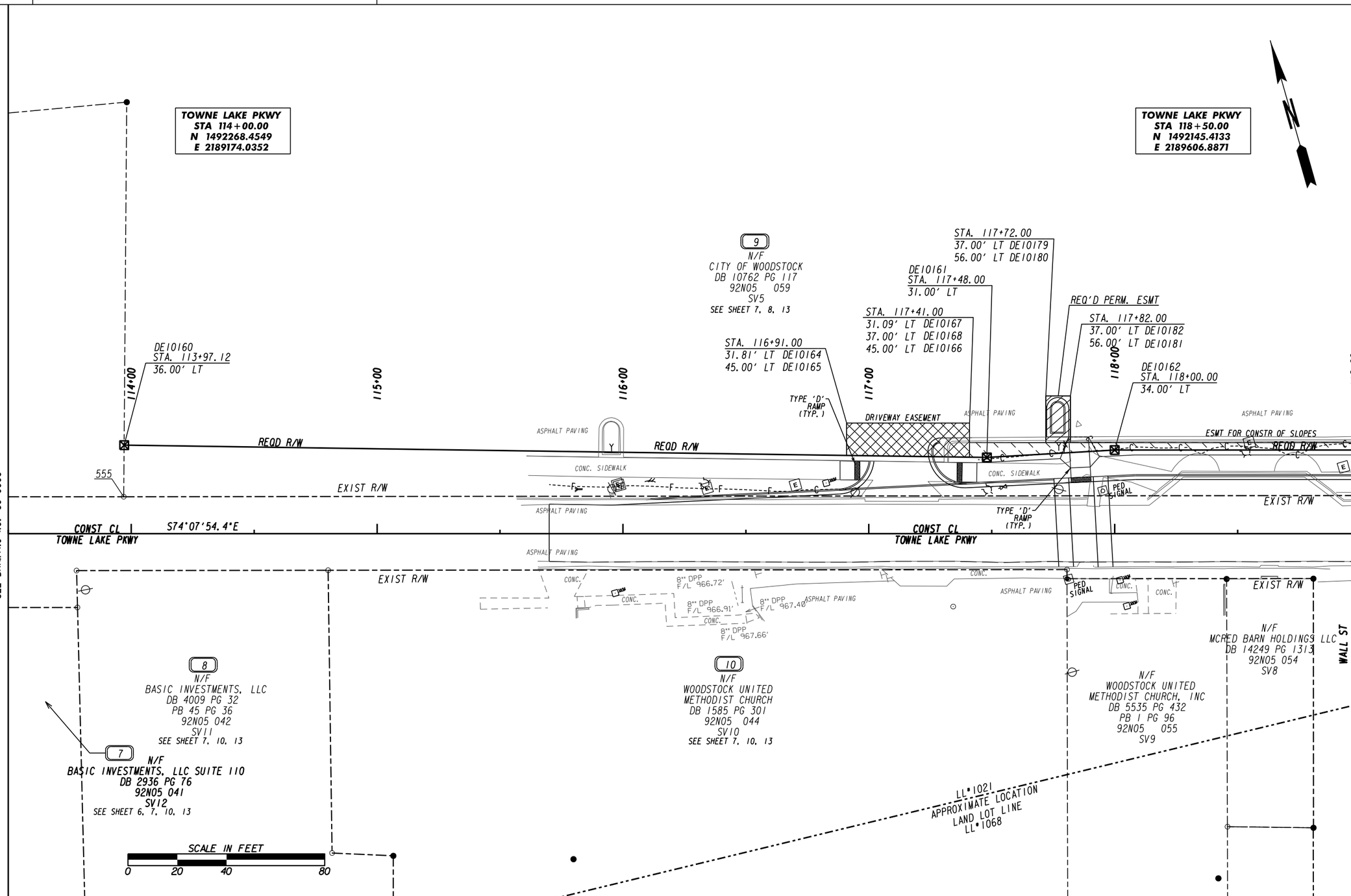
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 4 - MODIFIED REQD RW		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1021
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 6 OF 14

DRAWING No. 60-0006



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C— —F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

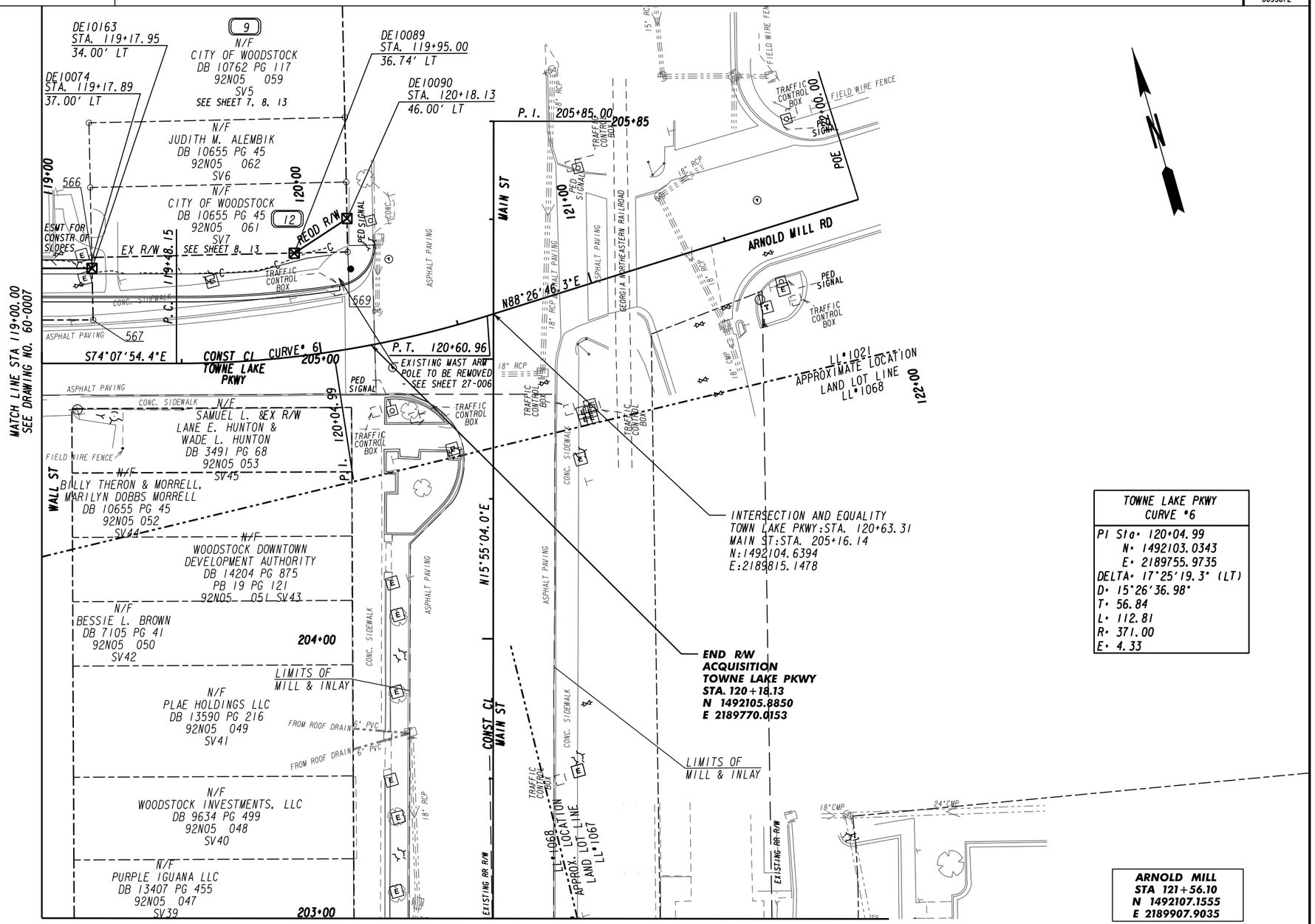
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 9 - MODIFIED REQD RW, DWESMT, TESMT		
1/15/21	PAR 9 - ADDED PESMT		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1021, 1068
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 7 OF 14

DRAWING No. 60-0007



TOWNE LAKE PKWY CURVE #6
PI Sta. 120+04.99
N. 1492103.0343
E. 2189755.9735
DELTA. 17°25'19.3" (LT)
D. 15°26'36.98"
T. 56.84
L. 112.81
R. 371.00
E. 4.33

TOWNE LAKE PKWY
STA 119+48.15
N 1492118.5769
E 2189701.2957

ARNOLD MILL
STA 121+56.10
N 1492107.1555
E 2189907.9035

SCALE IN FEET
0 20 40 80

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

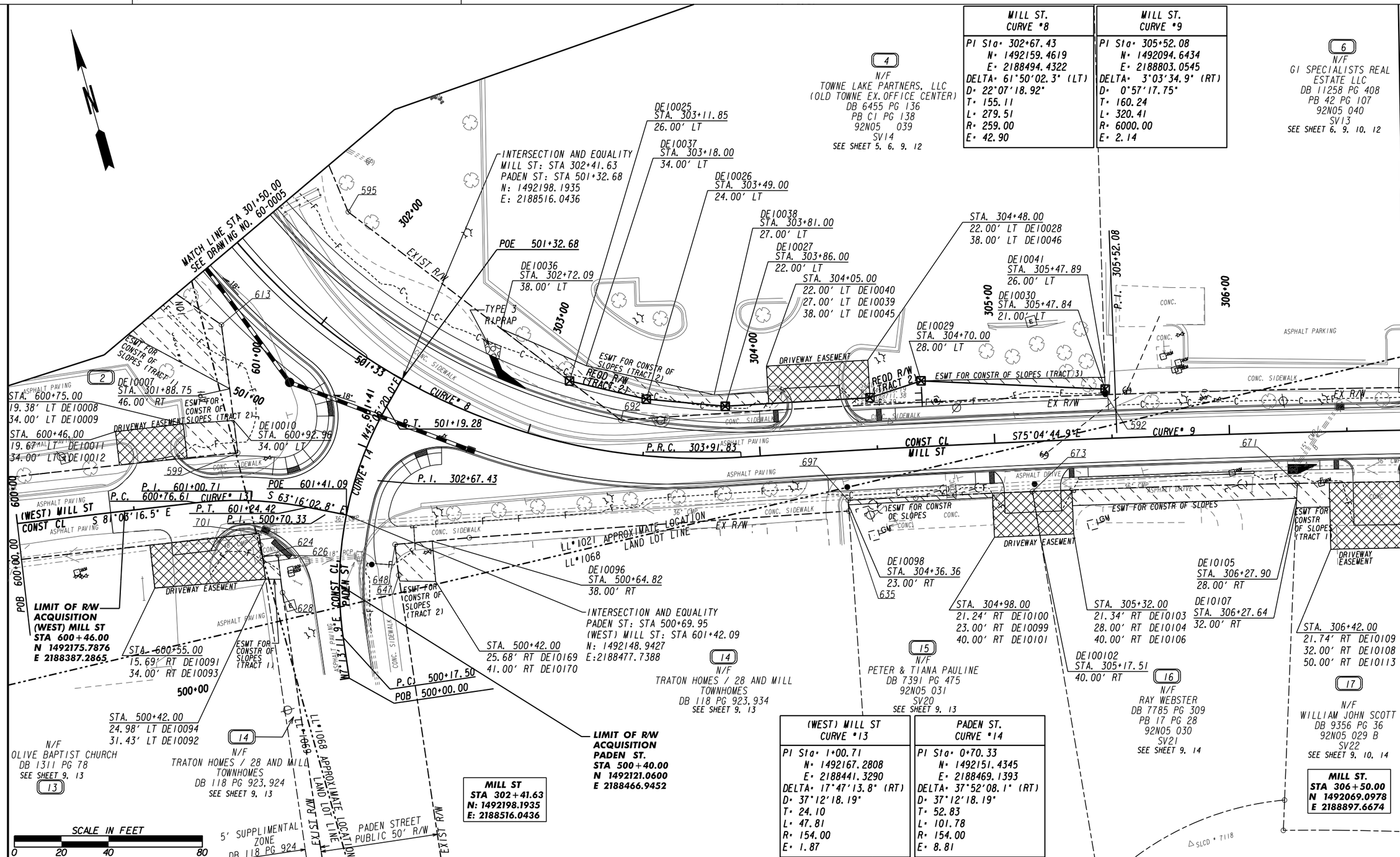
DATE	REVISIONS	DATE	REVISIONS

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1068, 1021
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 8 OF 14

DRAWING No. 60-0008



MILL ST. CURVE #8	
PI Sta=	302+67.43
N=	1492159.4619
E=	2188494.4322
DELTA=	61°50'02.3" (LT)
D=	22°07'18.92"
T=	155.11
L=	279.51
R=	259.00
E=	42.90

MILL ST. CURVE #9	
PI Sta=	305+52.08
N=	1492094.6434
E=	2188803.0545
DELTA=	3°03'34.9" (RT)
D=	0°57'17.75"
T=	160.24
L=	320.41
R=	6000.00
E=	2.14

(WEST) MILL ST CURVE #13	
PI Sta=	1+00.71
N=	1492167.2808
E=	2188441.3290
DELTA=	17°47'13.8" (RT)
D=	37°12'18.19"
T=	24.10
L=	47.81
R=	154.00
E=	1.87

PADEN ST. CURVE #14	
PI Sta=	0+70.33
N=	1492151.4345
E=	2188469.1393
DELTA=	37°52'08.1" (RT)
D=	37°12'18.19"
T=	52.83
L=	101.78
R=	154.00
E=	8.81

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

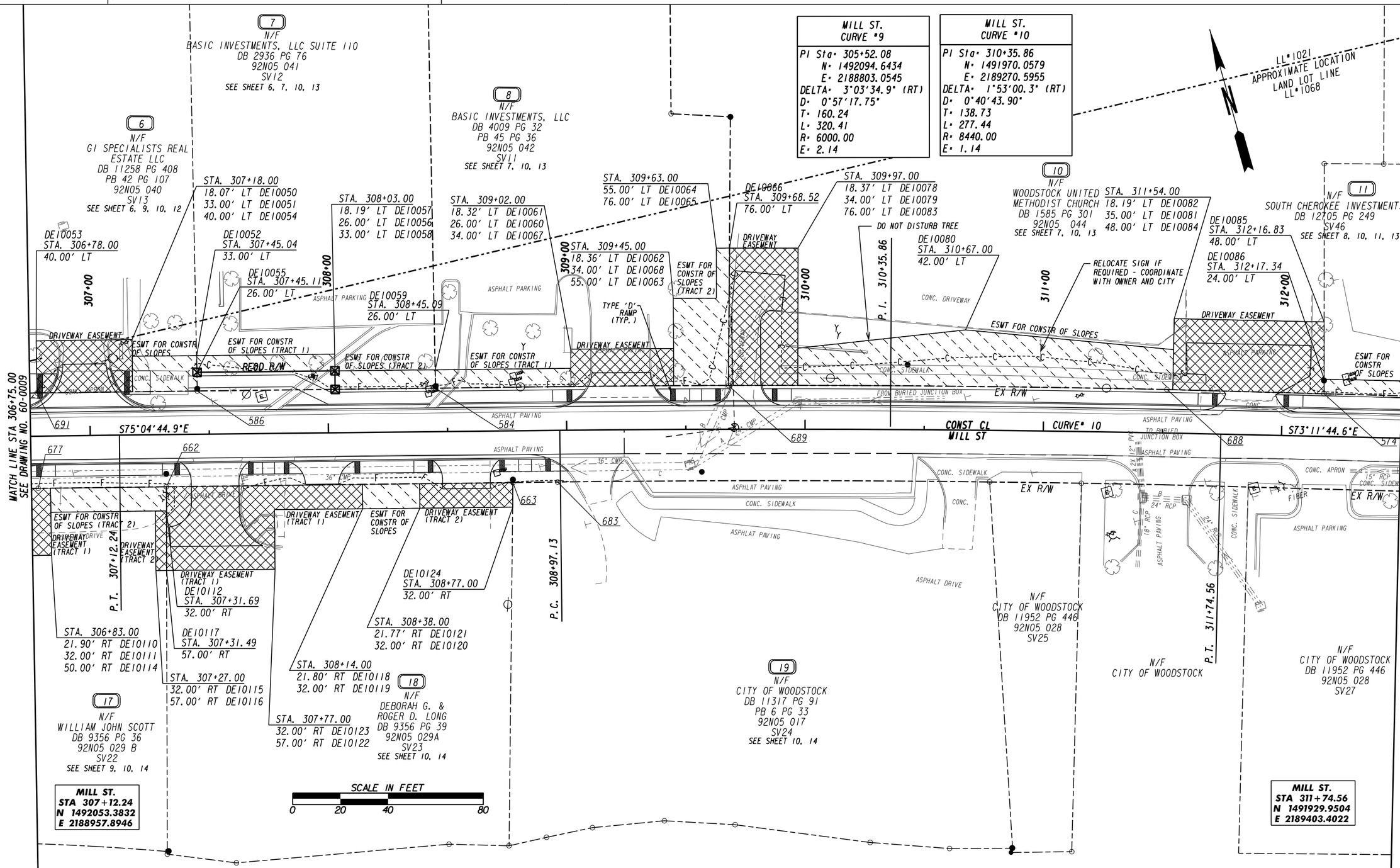
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 14 - MODIFIED TESMT (TRACT 2)		
4/02/21	MODIFIED PINEHILL TO (WEST) MILL ST		
4/02/21	PARCEL 13 - MODIFIED EXIST RW & DWESMT		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO:1020 1021 1068 1069
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 9 OF 14

DRAWING No. 60-0009



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

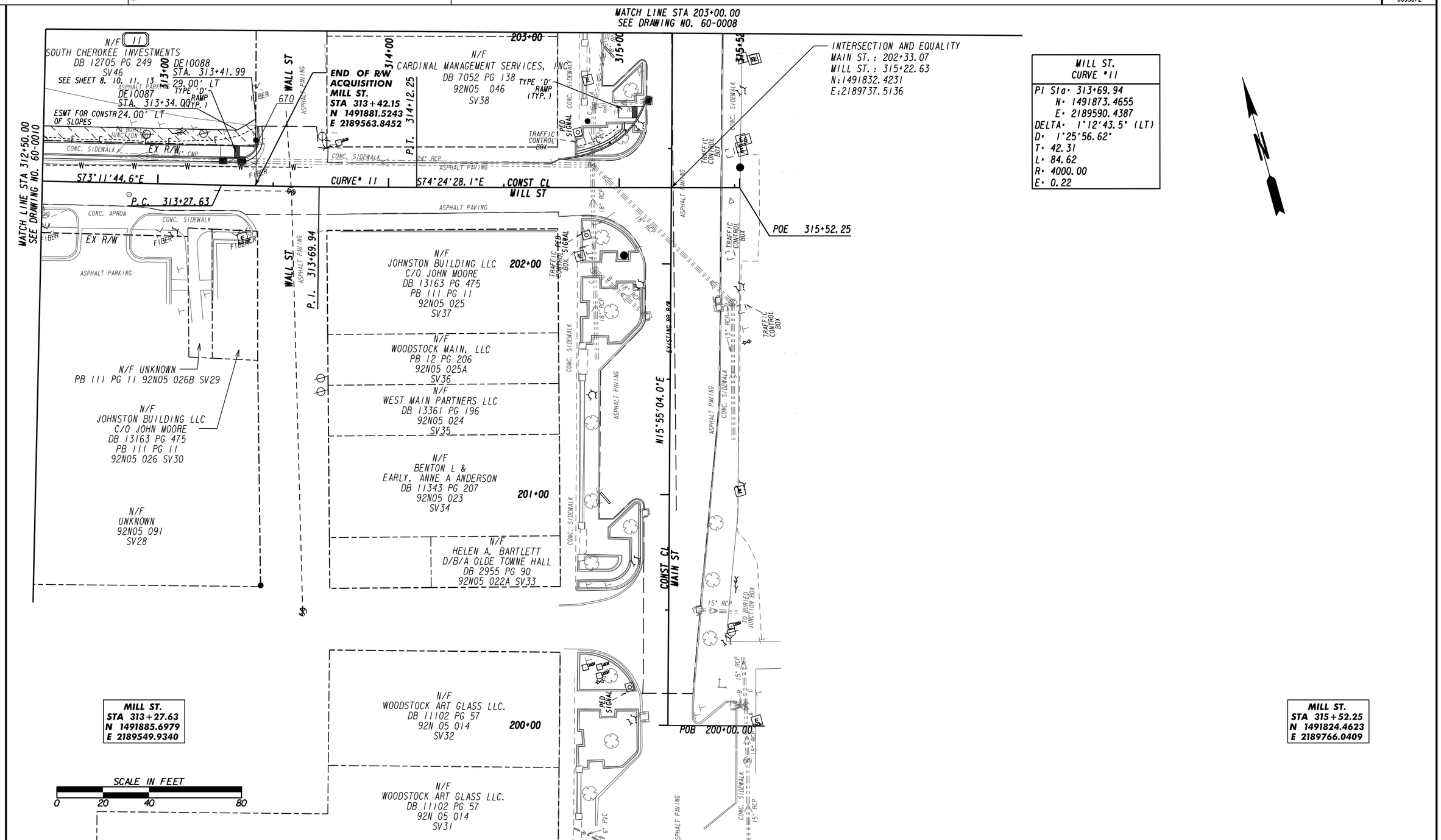
DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 8 - MODIFIED TESMT		
2/12/21	PAR 18 - MODIFIED TESMT AND DWESMT TRACT 1		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1021, 1068
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 10 OF 14

DRAWING No. 60-0010



PROPERTY AND EXISTING R/W LINE	BEGIN LIMIT OF ACCESS.....BLA
REQUIRED R/W LINE	END LIMIT OF ACCESS.....ELA
CONSTRUCTION LIMITS	LIMIT OF ACCESS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	REQ'D R/W & LIMIT OF ACCESS
EASEMENT FOR CONSTR OF SLOPES	ORANGE BARRIER FENCE
EASEMENT FOR CONSTR OF DRIVES	ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

DATE	REVISIONS	DATE	REVISIONS

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO: 1068
LAND DISTRICT: 15
GMD
DATE 9/15/20 SH 11 OF 14

DRAWING No. 60-0011

PAR 2 -TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1003

PNT	OFFSET/		STATION/	ALIGNMENT
DE10004	50.00	R	104+10.64	Towne Lake Pkwy
695	40.06	R	104+11.53	Towne Lake Pkwy

ARC LENGTH = 71.94
CHORD BEAR = N 84°01'23.2" E
LNTH CHORD = 71.92
RADIUS = 746.19
DEGREE = 7°40'42.3"

696	48.25	R	104+77.35	Towne Lake Pkwy
611	54.03	R	105+09.62	Towne Lake Pkwy
612	57.97	R	300+93.71	Mill St
613	28.58	R	301+70.25	Mill St
DE10007	46.00	R	301+88.75	Mill St
DE10006	58.00	R	105+00.00	Towne Lake Pkwy
DE10005	57.00	R	104+71.00	Towne Lake Pkwy
DE10004	50.00	R	104+10.64	Towne Lake Pkwy

REQD EASMT AREA = 5043.34 SF

PAR 2 -TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1004

PNT	OFFSET/		STATION/	ALIGNMENT
DE10008	19.38	L	600+75.00	(West) Mill St
DE10009	34.00	L	600+75.00	(West) Mill St
DE10010	34.00	L	600+92.96	(West) Mill St
599	20.23	L	600+94.41	(West) Mill St
DE10008	19.38	L	600+75.00	(West) Mill St

REQD EASMT AREA = 307.85 SF

TOTAL TEMP. EASM'T. PARCEL 2 = 5715.80 SF

PAR 2 - DWESMT REQ'D DRWY. EASM'T. DE1005

PNT	OFFSET/		STATION/	ALIGNMENT
DE10011	19.67	L	600+46.00	(West) Mill St
DE10012	34.00	L	600+46.00	(West) Mill St
DE10009	34.00	L	600+75.00	(West) Mill St
DE10008	19.38	L	600+75.00	(West) Mill St
DE10011	19.67	L	600+46.00	(West) Mill St

PAR 3 - REQD R/W - TRACT 1 REQ'D R/W DE1045

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
DE10013	85.00	L	104+00.50	Towne Lake Pkwy
	23.77		N 80°49'16.3" E	
DE10127	85.00	L	104+29.00	Towne Lake Pkwy
	36.64		S 15°58'41.3" E	
DE10128	48.50	L	104+32.67	Towne Lake Pkwy
	20.19		S 86°47'06.6" W	
543	50.87	L	104+10.47	Towne Lake Pkwy
	30.65		N 27°38'15.0" W	
544	79.74	L	103+98.68	Towne Lake Pkwy
	5.47		N 8°41'12.6" E	
DE10013	85.00	L	104+00.50	Towne Lake Pkwy

REQD R/W = 817.79 SF
REQD R/W = 0.019 ACRES

PAR 3 - REQD R/W - TRACT 2 REQ'D R/W DE1046

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
DE10129	31.00	L	104+44.16	Towne Lake Pkwy
	54.31		N 74°17'37.1" E	
DE10130	31.00	L	105+02.00	Towne Lake Pkwy
	33.43		N 56°37'09.4" W	
DE10131	57.00	L	104+79.00	Towne Lake Pkwy
	14.55		N 34°42'32.2" E	
DE10132	66.00	L	104+92.00	Towne Lake Pkwy
	42.38		S 56°04'22.0" E	
DE10133	32.00	L	105+20.00	Towne Lake Pkwy
	29.10		N 63°17'26.5" E	
DE10134	36.00	L	105+46.00	Towne Lake Pkwy
	5.12		S 28°43'16.7" E	
DE10135	31.00	L	105+47.00	Towne Lake Pkwy
	69.50		N 53°21'09.1" E	
DE10137	57.00	L	400+54.00	Future Development
	46.98		N 30°18'29.0" E	
DE10138	36.00	L	401+03.00	Future Development
	35.25		N 19°59'19.0" E	
DE10139	22.00	L	401+38.00	Future Development
	42.00		N 84°36'49.9" E	
DE10140	20.00	R	401+38.00	Future Development
	67.29		S 19°23'53.8" E	
DE10141	41.00	R	400+79.00	Future Development
	43.69		S 35°21'44.1" E	
DE10142	70.00	R	400+51.00	Future Development
	49.09		S 64°06'11.3" E	
DE10143	26.00	L	107+65.06	Towne Lake Pkwy

ARC LENGTH = 86.89
CHORD BEAR = S 84°35'48.5" W
LNTH CHORD = 86.84
RADIUS = 746.20
DEGREE = 7°40'41.9"

538	14.06	L	106+76.36	Towne Lake Pkwy
	194.02		S 81°15'39.8" W	
539	11.18	L	104+85.30	Towne Lake Pkwy

ARC LENGTH = 42.21
CHORD BEAR = S 83°01'23.2" W
LNTH CHORD = 42.20
RADIUS = 686.19
DEGREE = 8°20'59.3"

541	16.84	L	104+42.30	Towne Lake Pkwy
	14.28		N 5°12'53.5" W	
DE10129	31.00	L	104+44.16	Towne Lake Pkwy

REQD R/W = 18028.43 SF
REQD R/W = 0.414 ACRES

TOTAL REQ'D ROW PARCEL 3 = 18846.22 SF
REMAINDER = +/- 2.6 ACRES

PAR 3 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1047

PNT	OFFSET/		STATION/	ALIGNMENT
DE10144	70.00	L	104+30.30	Towne Lake Pkwy
DE10145	64.00	L	104+81.00	Towne Lake Pkwy
DE10132	66.00	L	104+92.00	Towne Lake Pkwy
DE10131	57.00	L	104+79.00	Towne Lake Pkwy
DE10130	31.00	L	105+02.00	Towne Lake Pkwy
DE10129	31.00	L	104+44.16	Towne Lake Pkwy
542	46.59	L	104+46.34	Towne Lake Pkwy
DE10128	48.50	L	104+32.67	Towne Lake Pkwy
DE10144	70.00	L	104+30.30	Towne Lake Pkwy

REQD EASMT AREA = 1645.08 SF

PAR 3 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1048

PNT	OFFSET/		STATION/	ALIGNMENT
DE10146	54.70	L	105+01.90	Towne Lake Pkwy
DE10147	65.00	L	105+22.00	Towne Lake Pkwy
DE10148	60.00	L	105+50.00	Towne Lake Pkwy
DE10149	64.00	L	400+80.00	Future Development
DE10150	45.00	L	401+58.00	Future Development
DE10151	12.00	L	401+61.00	Future Development
DE10152	28.00	R	401+40.00	Future Development
DE10153	50.00	R	400+90.00	Future Development
DE10154	66.00	L	107+64.00	Towne Lake Pkwy
DE10155	36.00	L	107+79.00	Towne Lake Pkwy
DE10156	36.00	L	108+14.52	Towne Lake Pkwy
536	27.63	L	108+14.44	Towne Lake Pkwy

ARC LENGTH = 51.00
CHORD BEAR = S 89°53'25.3" W
LNTH CHORD = 50.99
RADIUS = 746.20
DEGREE = 7°40'41.9"

DE10143	26.00	L	107+65.06	Towne Lake Pkwy
DE10142	70.00	R	400+51.00	Future Development
DE10141	41.00	R	400+79.00	Future Development
DE10140	20.00	R	401+38.00	Future Development
DE10139	22.00	L	401+38.00	Future Development
DE10138	36.00	L	401+03.00	Future Development
DE10137	57.00	L	400+54.00	Future Development
DE10135	31.00	L	105+47.00	Towne Lake Pkwy
DE10134	36.00	L	105+46.00	Towne Lake Pkwy
DE10133	32.00	L	105+20.00	Towne Lake Pkwy
DE10146	54.70	L	105+01.90	Towne Lake Pkwy

REQD EASMT AREA = 9221.51 SF

TOTAL TEMP. EASM'T. PARCEL 3 = 10866.59 SF

PAR 4 - REQD RW - TRACT 1 REQ'D R/W DE1007

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
DE10021	58.00	R	107+13.92	Towne Lake Pkwy
	19.27		N 6°59'04.6" W	
693	39.04	R	107+10.87	Towne Lake Pkwy

ARC LENGTH = 273.01
CHORD BEAR = S 85°35'12.4" E
LNTH CHORD = 271.22
RADIUS = 686.20
DEGREE = 8°20'58.9"

694	30.40	R	109+89.78	Towne Lake Pkwy
	10.00		S 74°11'20.2" E	
DE10178	30.41	R	110+00.00	Towne Lake Pkwy
	17.74		S 83°43'54.8" W	
DE10024	37.00	R	109+83.00	Towne Lake Pkwy
	111.60		N 80°03'11.1" W	
DE10023	39.00	R	108+66.00	Towne Lake Pkwy
	105.74		N 86°51'04.2" W	
DE10022	39.00	R	107+55.00	Towne Lake Pkwy
	48.32		S 67°15'35.2" W	
DE10021	58.00	R	107+13.92	Towne Lake Pkwy

REQD R/W = 2408.21 SF
REQD R/W = 0.055 ACRES

PAR 4 - REQD RW - TRACT 2 REQ'D R/W DE1008

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
DE10025	26.00	L	303+11.85	Mill St
	33.59		S 61°08'59.3" E	
DE10026	24.00	L	303+49.00	Mill St
	33.74		S 69°21'59.5" E	
DE10027	22.00	L	303+86.00	Mill St
	61.71		S 77°50'16.9" E	
DE10028	22.00	L	304+48.00	Mill St
	22.89		N 87°18'28.2" E	
DE10029	28.00	L	304+70.00	Mill St
	78.47		S 71°54'10.9" E	
DE10030	21.00	L	305+47.84	Mill St
	2.39		S 13°53'58.9" W	
592	18.61	L	305+47.82	Mill St

ARC LENGTH = 206.53
CHORD BEAR = N 77°28'56.4" W
LNTH CHORD = 206.52
RADIUS = 5784.86
DEGREE = 0°59'25.6"

692	13.78	L	303+38.59	Mill St
	27.53		N 37°04'50.8" W	
DE10025	26.00	L	303+11.85	Mill St

REQD R/W (TRACT 2) = 1185.53 SF
REQD R/W (TRACT 2) = 0.027 ACRES

TOTAL REQ'D ROW PARCEL 4 = 3593.74 SF
REMAINDER = +/- 1.5 ACRES

PAR 4 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1009

PNT	OFFSET/		STATION/	ALIGNMENT
DE10031	59.00	L	301+07.46	Mill St
DE10021	58.00	R	107+13.92	Towne Lake Pkwy
DE10022	39.00	R	107+55.00	Towne Lake Pkwy
DE10035	40.74	R	108+05.00	Towne Lake Pkwy
DE10034	50.00	R	108+03.00	Towne Lake Pkwy
DE10033	48.00	R	107+61.00	Towne Lake Pkwy
DE10032	65.00	R	107+29.00	Towne Lake Pkwy
DE10031	59.00	L	301+07.46	Mill St

REQD EASMT AREA = 1107.42 SF

PAR 4 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1010

PNT	OFFSET/		STATION/	ALIGNMENT
DE10025	26.00	L	303+11.85	Mill St
DE10036	38.00	L	302+72.09	Mill St
DE10037	34.00	L	303+18.00	Mill St
DE10038	27.00	L	303+81.00	Mill St
DE10039	27.00	L	304+05.00	Mill St
DE10040	22.00	L	304+05.00	Mill St
DE10027	22.00	L	303+86.00	Mill St
DE10026	24.00	L	303+49.00	Mill St
DE10025	26.00	L	303+11.85	Mill St

REQD EASMT AREA = 718.94 SF

PAR 4 - TESMT - TRACT 3 REQ'D TEMP. EASM'T. DE1044

PNT	OFFSET/		STATION/	ALIGNMENT
DE10029	28.00	L	304+70.00	Mill St
DE10041	26.00	L	305+47.89	Mill St
DE10030	21.00	L	305+47.84	Mill St
DE10029	28.00	L	304+70.00	Mill St

REQD EASMT AREA = 195.66 SF

TOTAL TEMP. EASM'T. PARCEL 4 = 2022.02 SF

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 1 - REMOVED DATA; PAR 2 - MODIFIED TESMT DATA		
1/15/21	PAR 3 - MODIFIED REQD RW DATA, ADDED TESMT DATA		
1/15/21	PAR 4 - MODIFIED REQD RW DATA		
4/02/21	PAR 2 - MODIFIED PINEHILL TO (WEST) MILL ST		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO:1020, 1021, 1068
LAND DISTRICT:15
GMD
DATE 9/15/20 SH12 OF 14

DRAWING No. 60-0012

PAR 4 - DWESMT - TRACT 1 REQ'D DRWY. EASM'T. DE1011

PNT	OFFSET/	STATION/	ALIGNMENT
DE10043	52.00 R	109+28.00	Towne Lake Pkwy
DE10042	39.89 R	109+28.00	Towne Lake Pkwy
DE10024	37.00 R	109+83.00	Towne Lake Pkwy
DE10044	52.00 R	109+84.00	Towne Lake Pkwy
DE10043	52.00 R	109+28.00	Towne Lake Pkwy

PAR 4 - DWESMT - TRACT 2 REQ'D DRWY. EASM'T. DE1012

PNT	OFFSET/	STATION/	ALIGNMENT
DE10040	22.00 L	304+05.00	Mill St
DE10045	38.00 L	304+05.00	Mill St
DE10046	38.00 L	304+48.00	Mill St
DE10028	22.00 L	304+48.00	Mill St
DE10040	22.00 L	304+05.00	Mill St

PAR 5 - PESMT REQ'D PERM. DRNG. EASM'T. DE1049

PNT	OFFSET/ DIST	STATION/ BEARING	ALIGNMENT
536	27.63 L	108+14.44	Towne Lake Pkwy
	18.37	N 3°58'30.7" E	
DE10157	46.00 L	108+14.61	Towne Lake Pkwy
	13.74	S 86°07'21.5" E	
DE10158	46.00 L	108+27.63	Towne Lake Pkwy
	18.01	S 2°55'49.9" W	
DE10159	28.00 L	108+28.05	Towne Lake Pkwy

ARC LENGTH = 14.07
CHORD BEAR = N 87°36'32.0" W
LNTH CHORD = 14.07
RADIUS = 746.20
DEGREE = 7°40'42.0"

536	27.63 L	108+14.44	Towne Lake Pkwy

REQD EASMT = 252.51 SF
REQD EASMT = 0.006 ACRES

PAR 5 - DWESMT REQ'D DRWY. EASM'T. DE1050

PNT	OFFSET/	STATION/	ALIGNMENT
DE10047	69.00 L	108+14.81	Towne Lake Pkwy
DE10048	60.00 L	108+77.00	Towne Lake Pkwy
DE10049	29.03 L	108+77.00	Towne Lake Pkwy

ARC LENGTH = 50.63
CHORD BEAR = N 85°07'41.9" W
LNTH CHORD = 50.62
RADIUS = 746.20
DEGREE = 7°40'42.0"

DE10159	28.00 L	108+28.05	Towne Lake Pkwy
DE10158	46.00 L	108+27.63	Towne Lake Pkwy
DE10157	46.00 L	108+14.61	Towne Lake Pkwy
DE10047	69.00 L	108+14.81	Towne Lake Pkwy

PAR 6 - TESMT REQ'D TEMP. EASM'T. DE1014

PNT	OFFSET/	STATION/	ALIGNMENT
DE10050	18.07 L	307+18.00	Mill St
DE10051	33.00 L	307+18.00	Mill St
DE10052	33.00 L	307+45.04	Mill St
586	18.11 L	307+45.18	Mill St
DE10050	18.07 L	307+18.00	Mill St

REQD EASMT AREA = 404.20 SF

PAR 6 - DWESMT REQ'D DRWY. EASM'T. DE1015

PNT	OFFSET/	STATION/	ALIGNMENT
691	18.12 L	306+78.06	Mill St
DE10053	40.00 L	306+78.00	Mill St
DE10054	40.00 L	307+18.00	Mill St
DE10050	18.07 L	307+18.00	Mill St
691	18.12 L	306+78.06	Mill St

PAR 7 - REQD RW REQ'D R/W DE1016

PNT	OFFSET/ DIST	STATION/ BEARING	ALIGNMENT
586	18.11 L	307+45.18	Mill St
	7.89	N 14°23'20.6" E	
DE10055	26.00 L	307+45.11	Mill St
	57.89	S 75°04'44.9" E	
DE10056	26.00 L	308+03.00	Mill St
	7.81	S 14°55'15.1" W	
DE10057	18.19 L	308+03.00	Mill St
	57.82	N 75°09'20.3" W	
586	18.11 L	307+45.18	Mill St

REQD R/W = 454.24 SF
REQD R/W = 0.010 ACRES
REMAINDER = +/- .49 ACRES

PAR 7 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1017

PNT	OFFSET/	STATION/	ALIGNMENT
DE10055	26.00 L	307+45.11	Mill St
DE10052	33.00 L	307+45.04	Mill St
DE10058	33.00 L	308+03.00	Mill St
DE10056	26.00 L	308+03.00	Mill St
DE10055	26.00 L	307+45.11	Mill St

REQD EASMT AREA = 405.47 SF

PAR 7 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1018

PNT	OFFSET/	STATION/	ALIGNMENT
DE10057	18.19 L	308+03.00	Mill St
DE10056	26.00 L	308+03.00	Mill St
DE10059	26.00 L	308+45.09	Mill St
584	18.24 L	308+45.16	Mill St
DE10057	18.19 L	308+03.00	Mill St

REQD EASMT AREA = 327.92 SF

TOTAL TEMP. EASM'T. PARCEL 7 = 733.39

PAR 8 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1019

PNT	OFFSET/	STATION/	ALIGNMENT
584	18.24 L	308+45.16	Mill St
DE10059	26.00 L	308+45.09	Mill St
DE10060	26.00 L	309+02.00	Mill St
DE10061	18.32 L	309+02.00	Mill St
584	18.24 L	308+45.16	Mill St

REQD EASMT AREA = 439.14 SF

PAR 8 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1020

PNT	OFFSET/	STATION/	ALIGNMENT
DE10062	18.36 L	309+45.00	Mill St
DE10063	55.00 L	309+45.00	Mill St
DE10064	55.00 L	309+63.00	Mill St
DE10065	76.00 L	309+63.00	Mill St
DE10066	76.00 L	309+68.52	Mill St
689	18.37 L	309+67.97	Mill St
DE10062	18.36 L	309+45.00	Mill St

REQD EASMT AREA = 966.28 SF

TOTAL TEMP. EASM'T. PARCEL 8 = 1374.23 SF

PAR 8 - DWESMT REQ'D DRWY. EASM'T. DE1021

PNT	OFFSET/	STATION/	ALIGNMENT
DE10061	18.32 L	309+02.00	Mill St
DE10067	34.00 L	309+02.00	Mill St
DE10068	34.00 L	309+45.00	Mill St
DE10062	18.36 L	309+45.00	Mill St
DE10061	18.32 L	309+02.00	Mill St

PAR 9 - REQD R/W REQ'D R/W DE1051

PNT	OFFSET/ DIST	STATION/ BEARING	ALIGNMENT
DE10160	36.00 L	113+97.12	Towne Lake Pkwy
	350.91	S 73°18'55.3" E	
DE10161	31.00 L	117+48.00	Towne Lake Pkwy
	52.09	S 77°26'01.1" E	
DE10162	34.00 L	118+00.00	Towne Lake Pkwy
	117.95	S 74°07'54.4" E	
DE10163	34.00 L	119+17.95	Towne Lake Pkwy
	18.50	S 14°38'15.1" W	
567	15.50 L	119+18.35	Towne Lake Pkwy
	521.39	N 74°11'20.2" W	
555	14.98 L	113+96.96	Towne Lake Pkwy
	21.02	N 16°18'21.3" E	
DE10160	36.00 L	113+97.12	Towne Lake Pkwy

REQD R/W = 9520.29 SF
REQD R/W = 0.219 ACRES
REMAINDER = +/- 3.2 ACRES

PAR 9 - DWESMT REQ'D DRWY. EASM'T. DE1052

PNT	OFFSET/	STATION/	ALIGNMENT
DE10164	31.81 L	116+91.00	Towne Lake Pkwy
DE10165	45.00 L	116+91.00	Towne Lake Pkwy
DE10166	45.00 L	117+41.00	Towne Lake Pkwy
DE10167	31.09 L	117+41.00	Towne Lake Pkwy
DE10164	31.81 L	116+91.00	Towne Lake Pkwy

PAR 9 - TESMT REQ'D TEMP. EASM'T. DE1053

PNT	OFFSET/	STATION/	ALIGNMENT
DE10168	37.00 L	117+41.00	Towne Lake Pkwy
DE10074	37.00 L	119+17.89	Towne Lake Pkwy
DE10163	34.00 L	119+17.95	Towne Lake Pkwy
DE10162	34.00 L	118+00.00	Towne Lake Pkwy
DE10161	31.00 L	117+48.00	Towne Lake Pkwy
DE10167	31.09 L	117+41.00	Towne Lake Pkwy
DE10168	37.00 L	117+41.00	Towne Lake Pkwy

REQD EASMT AREA = 629.44 SF

PAR 9 - PERM ESMT REQ'D PERM. EASM'T. DE1054

PNT	OFFSET/ DIST	STATION/ BEARING	ALIGNMENT
DE10179	37.00 L	117+72.00	Towne Lake Pkwy
	19.00	N 15°52'05.6" E	
DE10180	56.00 L	117+72.00	Towne Lake Pkwy
	10.00	S 74°07'54.4" E	
DE10181	56.00 L	117+82.00	Towne Lake Pkwy
	19.00	S 15°52'05.6" W	
DE10182	37.00 L	117+82.00	Towne Lake Pkwy
	10.00	N 74°07'54.4" W	
DE10179	37.00 L	117+72.00	Towne Lake Pkwy

REQD EASMT = 190.00 SF
REQD EASMT = 0.004 ACRES

PAR 10 - TESMT REQ'D TEMP. EASM'T. DE1025

PNT	OFFSET/	STATION/	ALIGNMENT
DE10078	18.37 L	309+97.00	Mill St
DE10079	34.00 L	309+97.00	Mill St
DE10080	42.00 L	310+67.00	Mill St
DE10081	35.00 L	311+54.00	Mill St
DE10082	18.19 L	311+54.00	Mill St
688	18.21 L	311+51.59	Mill St

ARC LENGTH = 154.93
CHORD BEAR = N 73°49'06.2" W
LNTH CHORD = 154.92
RADIUS = 7659.46
DEGREE = 0°44'52.9"

DE10078	18.37 L	309+97.00	Mill St

REQD EASMT AREA = 3134.71 SF

PAR 10 - DWESMT - TRACT 1 REQ'D DRWY. EASM'T. DE1026

PNT	OFFSET/	STATION/	ALIGNMENT
689	18.37 L	309+67.97	Mill St
DE10066	76.00 L	309+68.52	Mill St
DE10083	76.00 L	309+97.00	Mill St
DE10078	18.37 L	309+97.00	Mill St

ARC LENGTH = 29.10
CHORD BEAR = N 74°30'24.0" W
LNTH CHORD = 29.10
RADIUS = 7659.46
DEGREE = 0°44'52.9"

689	18.37 L	309+67.97	Mill St

PAR 10 - DWESMT - TRACT 2 REQ'D DRWY. EASM'T. DE1027

PNT	OFFSET/	STATION/	ALIGNMENT
DE10082	18.19 L	311+54.00	Mill St
DE10084	48.00 L	311+54.00	Mill St
DE10085	48.00 L	312+16.83	Mill St
574	17.86 L	312+17.47	Mill St
DE10082	18.19 L	311+54.00	Mill St

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 5 - MODIFIED DWESMT DATA, ADDED PESMT DATA		
1/15/21	PAR 8 - MODIFIED TESMT TRACT 2 DATA		
1/15/21	PAR 9 - MODIFIED REQD RW, DWESMT, TESMT DATA		
1/15/21	PAR 9 - ADDED PERM. ESMT DATA		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO:1020, 1021, 1068, 1069
LAND DISTRICT:15
GMD
DATE 9/15/20 SH13 OF 14

DRAWING No. 60-0013

PAR 11 - TESMT REQ'D TEMP. EASM'T. DE1028

PNT	OFFSET/	STATION/	ALIGNMENT
574	17.86 L	312+17.47	Mill St
DE10086	24.00 L	312+17.34	Mill St
DE10087	24.00 L	313+34.00	Mill St
DE10088	29.00 L	313+41.99	Mill St
670	17.23 L	313+42.15	Mill St
574	17.86 L	312+17.47	Mill St

REQD EASMT AREA = 823.42 SF

PAR 12 - REQD RW REQ'D R/W DE1029

PNT	OFFSET/ DIST	STATION/ BEARING	ALIGNMENT
DE10089	36.74 L	119+95.00	Towne Lake Pkwy
	22.54	N 72°36'42.0" E	
DE10090	46.00 L	120+18.13	Towne Lake Pkwy
	11.95	S 14°38'15.1" W	
569	34.21 L	120+15.94	Towne Lake Pkwy
	19.11	N 75°21'44.9" W	
DE10089	36.74 L	119+95.00	Towne Lake Pkwy

REQD R/W = 114.18 SF
REQD R/W = 0.003 ACRES
REMAINDER = +/- .05 ACRES

PAR 13 - DWESMT REQ'D DRWY. EASM'T. DE1030

PNT	OFFSET/	STATION/	ALIGNMENT
DE10091	15.69 R	600+55.00	(West) Mill St
701	13.66 R	601+04.26	(West) Mill St
624	23.44 R	601+06.73	(West) Mill St
DE10092	31.43 L	500+42.00	Paden st
DE10093	34.00 R	600+55.00	(West) Mill St
DE10091	15.69 R	600+55.00	(West) Mill St

PAR 14 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1031

PNT	OFFSET/	STATION/	ALIGNMENT
DE10092	31.43 L	500+42.00	Padel St C/L
624	23.44 R	601+06.73	(West) Mill St
626	22.12 R	601+14.52	(West) Mill St

ARC LENGTH = 10.38
CHORD BEAR = S 9°20'48.1" W
LNTH CHORD = 10.38
RADIUS = 272.50
DEGREE = 21°01'33.5"

DE10094	24.98 L	500+42.00	Padel St C/L
DE10092	31.43 L	500+42.00	Padel St C/L

REQD EASMT AREA = 65.76 SF

PAR 14 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1032

PNT	OFFSET/	STATION/	ALIGNMENT
DE10169	25.68 R	500+42.00	Padel St C/L
647	25.21 R	500+44.85	Padel St C/L

ARC LENGTH = 13.21
CHORD BEAR = N 8°44'50.5" E
LNTH CHORD = 13.21
RADIUS = 222.50
DEGREE = 25°45'03.3"

648	22.58 R	500+60.18	Padel St C/L
DE10096	38.00 R	500+64.82	Padel St C/L
DE10170	41.00 R	500+42.00	Padel St C/L
DE10169	25.68 R	500+42.00	Padel St C/L

REQD EASMT AREA = 256.74 SF

TOTAL TEMP. EASM'T. PARCEL 14 = 322.5 SF

PAR 15 - TESMT REQ'D TEMP. EASM'T. DE1033

PNT	OFFSET/	STATION/	ALIGNMENT
DE10098	23.00 R	304+36.36	Mill St
697	21.06 R	304+36.34	Mill St

ARC LENGTH = 61.44
CHORD BEAR = S 77°15'34.9" E
LNTH CHORD = 61.44
RADIUS = 5744.86
DEGREE = 0°59'50.4"

DE10100	21.24 R	304+98.00	Mill St
DE10099	23.00 R	304+98.00	Mill St
DE10098	23.00 R	304+36.36	Mill St

REQD EASMT AREA = 117.00 SF

PAR 15 - DWESMT REQ'D DRWY. EASM'T. DE1034

PNT	OFFSET/	STATION/	ALIGNMENT
DE10100	21.24 R	304+98.00	Mill St

ARC LENGTH = 17.08
CHORD BEAR = S 76°52'05.4" E
LNTH CHORD = 17.08
RADIUS = 5744.86
DEGREE = 0°59'50.4"

673	21.29 R	305+15.14	Mill St
DE10102	40.00 R	305+17.51	Mill St
DE10101	40.00 R	304+98.00	Mill St
DE10100	21.24 R	304+98.00	Mill St

PAR 16 -TESMT REQ'D TEMP. EASM'T. DE1035

PNT	OFFSET/	STATION/	ALIGNMENT
DE10103	21.34 R	305+32.00	Mill St

ARC LENGTH = 95.97
CHORD BEAR = S 76°08'12.8" E
LNTH CHORD = 95.97
RADIUS = 5744.86
DEGREE = 0°59'50.4"

671	21.68 R	306+28.31	Mill St
DE10105	28.00 R	306+27.90	Mill St
DE10104	28.00 R	305+32.00	Mill St
DE10103	21.34 R	305+32.00	Mill St

REQD EASMT AREA = 633.70 SF

PAR 16 -DWESMT REQ'D DRWY. EASM'T. DE1036

PNT	OFFSET/	STATION/	ALIGNMENT
DE10102	40.00 R	305+17.51	Mill St
673	21.29 R	305+15.14	Mill St
DE10103	21.34 R	305+32.00	Mill St
DE10106	40.00 R	305+32.00	Mill St
DE10102	40.00 R	305+17.51	Mill St

PAR 17 - TESMT - TRACT 1 REQ'D TEMP. EASM'T. DE1037

PNT	OFFSET/	STATION/	ALIGNMENT
DE10107	32.00 R	306+27.64	Mill St
671	21.68 R	306+28.31	Mill St

ARC LENGTH = 13.64
CHORD BEAR = S 75°35'25.1" E
LNTH CHORD = 13.64
RADIUS = 5744.86
DEGREE = 0°59'50.4"

DE10109	21.74 R	306+42.00	Mill St
DE10108	32.00 R	306+42.00	Mill St
DE10107	32.00 R	306+27.64	Mill St

REQD EASMT AREA = 143.74 SF

PAR 17 - TESMT - TRACT 2 REQ'D TEMP. EASM'T. DE1038

PNT	OFFSET/	STATION/	ALIGNMENT
DE10110	21.90 R	306+83.00	Mill St
662	21.91 R	307+31.77	Mill St
DE10112	32.00 R	307+31.69	Mill St
DE10111	32.00 R	306+83.00	Mill St
DE10110	21.90 R	306+83.00	Mill St

REQD EASMT AREA = 490.55 SF

TOTAL TEMP. EASM'T. PARCEL 17 = 634.29 SF

PAR 17 - DWESMT - TRACT 1 REQ'D DRWY. EASM'T. DE1039

PNT	OFFSET/	STATION/	ALIGNMENT
DE10109	21.74 R	306+42.00	Mill St

ARC LENGTH = 40.85
CHORD BEAR = S 75°19'13.8" E
LNTH CHORD = 40.85
RADIUS = 5744.86
DEGREE = 0°59'50.4"

DE10110	21.90 R	306+83.00	Mill St
DE10114	50.00 R	306+83.00	Mill St
DE10113	50.00 R	306+42.00	Mill St
DE10109	21.74 R	306+42.00	Mill St

PAR 17 - DWESMT - TRACT 2 REQ'D DRWY. EASM'T. DE1040

PNT	OFFSET/	STATION/	ALIGNMENT
DE10115	32.00 R	307+27.00	Mill St
DE10112	32.00 R	307+31.69	Mill St
DE10117	57.00 R	307+31.49	Mill St
DE10116	57.00 R	307+27.00	Mill St
DE10115	32.00 R	307+27.00	Mill St

PAR 18 - TESMT REQ'D TEMP. EASM'T. DE1041

PNT	OFFSET/	STATION/	ALIGNMENT
DE10118	21.80 R	308+14.00	Mill St
DE10121	21.77 R	308+38.00	Mill St
DE10120	32.00 R	308+38.00	Mill St
DE10119	32.00 R	308+14.00	Mill St
DE10118	21.80 R	308+14.00	Mill St

REQD EASMT AREA = 245.23 SF

PAR 18 - DWESMT - TRACT 1 REQ'D DRWY. EASM'T. DE1042

PNT	OFFSET/	STATION/	ALIGNMENT
662	21.91 R	307+31.77	Mill St
DE10118	21.80 R	308+14.00	Mill St
DE10119	32.00 R	308+14.00	Mill St
DE10123	32.00 R	307+77.00	Mill St
DE10122	57.00 R	307+77.00	Mill St
DE10117	57.00 R	307+31.49	Mill St
662	21.91 R	307+31.77	Mill St

PAR 18 - DWESMT - TRACT 2 REQ'D DRWY. EASM'T. DE1043

PNT	OFFSET/	STATION/	ALIGNMENT
DE10121	21.77 R	308+38.00	Mill St
663	21.71 R	308+77.22	Mill St
DE10124	32.00 R	308+77.00	Mill St
DE10120	32.00 R	308+38.00	Mill St
DE10121	21.77 R	308+38.00	Mill St

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

DATE	REVISIONS	DATE	REVISIONS
1/15/21	PAR 14 - MODIFIED TESMT TRACT 2 DATA		
2/12/21	PAR 18 - MODIFIED TESMT AND DWESMT TRACT 1 DATA		
4/02/21	PAR 13 - MODIFIED DWESMT		
4/02/21	PAR 14 - MODIFIED PINEHILL DR TO (WEST) MILL ST		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

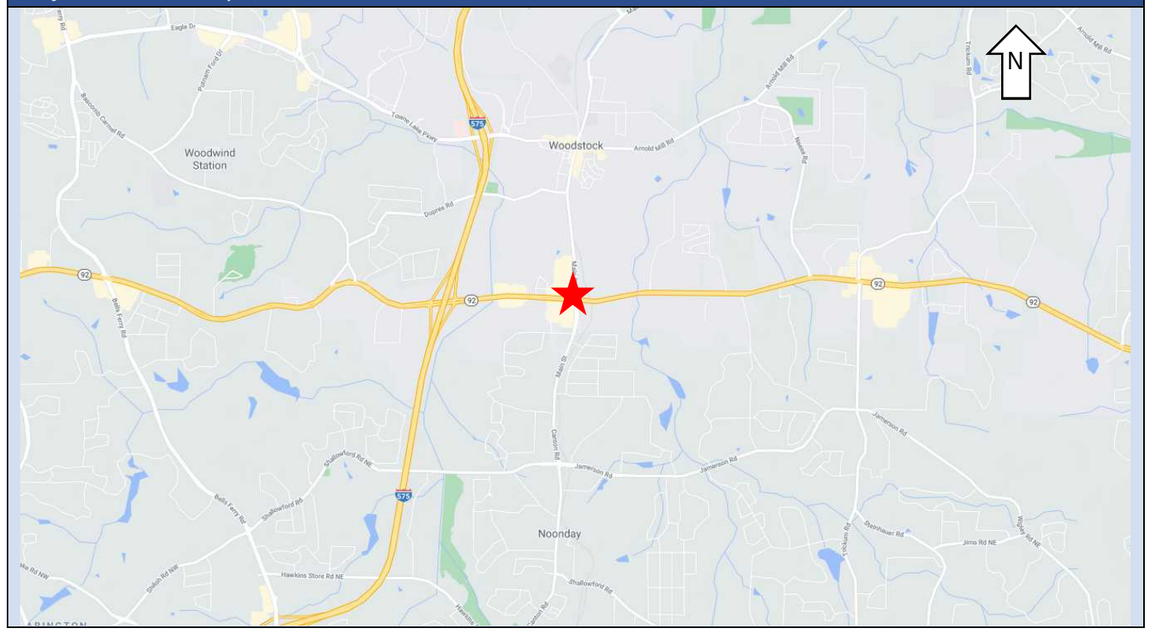
PROJECT NO:033872
COUNTY: CHEROKEE
LAND LOT NO:1020, 1021, 1068, 1069
LAND DISTRICT:15
GMD
DATE 9/15/20 SH14 OF 14

DRAWING No. 60-0014

Operational Improvement Summary

SR 92/Alabama Road at Main Street	***GDOT District:*** District 6
	County: Cherokee
	City: Woodstock
Ops ID: 20-6054	*Requested By:* Data-Driven

Project Location Map:



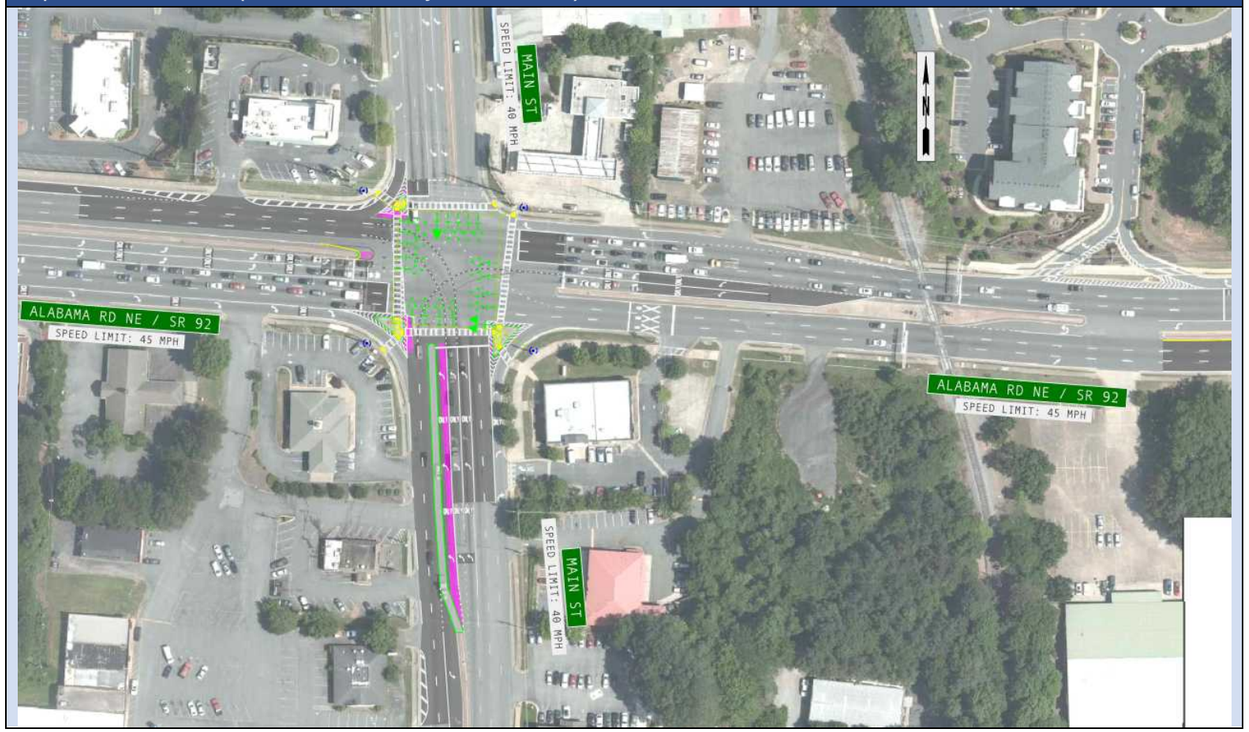
Description of the Problem:

This intersection currently experiences delay for vehicles in the northbound and southbound directions both peak hours. The primary delay during the AM peak hour is the eastbound approach of SR 92, while the primary delay during the PM peak hour is the westbound approach of SR 92.

Proposed Improvement Description:

The proposed improvements involve restriping along SR 92 to provide three (3) through lanes in each direction along SR 92 between Main Street and Stonecroft Lane. Additionally, restriping along SR 92 will extend the westbound left-turn storage to a total of 300 feet at Main Street. A southbound receiving lane along Main Street will be removed to add a third northbound left-turn lane, creating triple lefts. The westbound receiving lanes will be modified to provide wider receiving lanes, and the southbound right-turn add lane will be removed to accommodate the change.

Improvement Sketch (More Detailed Layout Attached):



Anticipated Benefits:

Results Table:

Delay (sec/veh)	AM Peak Hour		PM Peak Hour	
	2022	2028	2022	2028
No-Build (Intersection)	146.6	548.4	81.4	416.5
Build (Intersection)	101.7	407.9	67.3	351.3
% Improvement (Intersection)	31%	26%	17%	16%

Improvement Summary: Restriping along SR 92 to provide three (3) through lanes along SR 92 in each direction between Main Street and Stonecroft Lane. The intersection of SR 92 at Main Street will be reconfigured to provide northbound triple left-turns along Main Street. A southbound receiving lane along Main Street and westbound receiving lane along SR 92 will be removed. Additionally, the westbound stopbar will be moved closer to the intersection and the westbound left-turn storage would be extended.

Benefit/Cost Estimate: 42.27

Initial Project Cost Estimate ($):

PE:	$375,000	*Utility:*	$47,601	*ROW:*	$0	*CST:*	$980,571	*Total:*	$1,403,172

GDOT Georgia Department of Transportation

P. I. No.

SEE SHEET 2/4

LEGEND

PROPOSED PAVEMENT WIDENING

STRIPING IMPROVEMENTS ONLY

PROPOSED RAISED CONCRETE ISLAND/MEDIAN

Kimley»Horn

GDOT Georgia Department of Transportation

SCALE IN FEET

0 50 100 200

REVISION DATES

CONCEPT LAYOUT
ALABAMA RD NE/SR 92
@ MAIN ST
CHEROKEE COUNTY

CHECKED:		DATE:	
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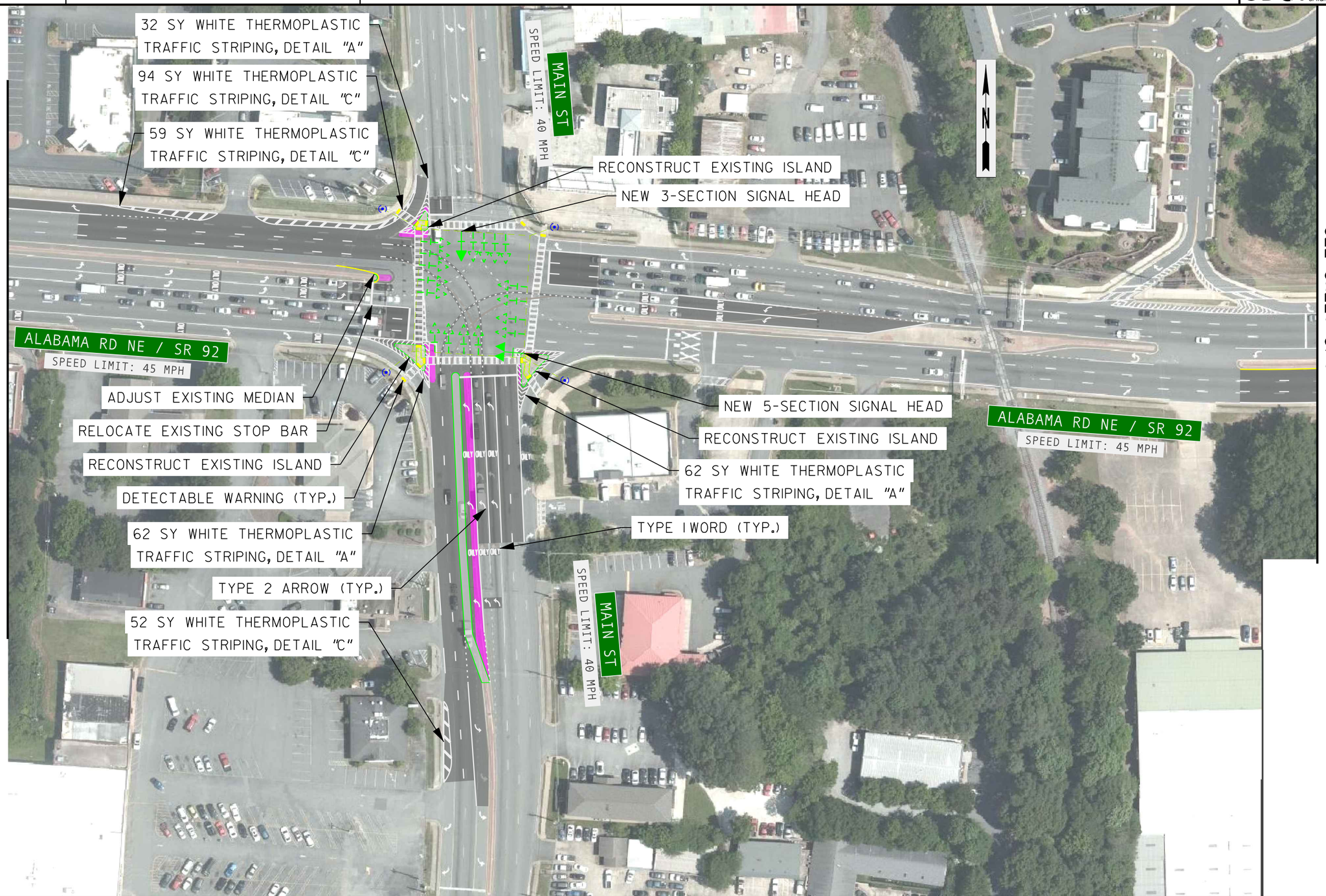
CORRECTED:		DATE:	
VERIFIED:		DATE:	

SHEET 1/4

GDOT Georgia Department of Transportation

P. I. No.



SEE SHEET 1/4

SEE SHEET 3/4

LEGEND

PROPOSED PAVEMENT WIDENING

STRIPING IMPROVEMENTS ONLY

PROPOSED RAISED CONCRETE ISLAND/MEDIAN

Kimley»Horn

GDOT Georgia Department of Transportation

SCALE IN FEET

0 50 100 200

REVISION DATES

CONCEPT LAYOUT
ALABAMA RD NE/SR 92
@ MAIN ST
CHEROKEE COUNTY

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SHEET 2/4

GDOT Georgia Department of Transportation

P. I. No.

SEE SHEET 2/4

SEE SHEET 4/4

LEGEND

- PROPOSED PAVEMENT WIDENING
- STRIPING IMPROVEMENTS ONLY
- PROPOSED RAISED CONCRETE ISLAND/MEDIAN

Kimley»Horn

GDOT Georgia Department of Transportation

SCALE IN FEET

0 50 100 200

REVISION DATES

CONCEPT LAYOUT
ALABAMA RD NE/SR 92
@ MAIN ST
CHEROKEE COUNTY

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SHEET 3/4

GDOT Georgia Department of Transportation

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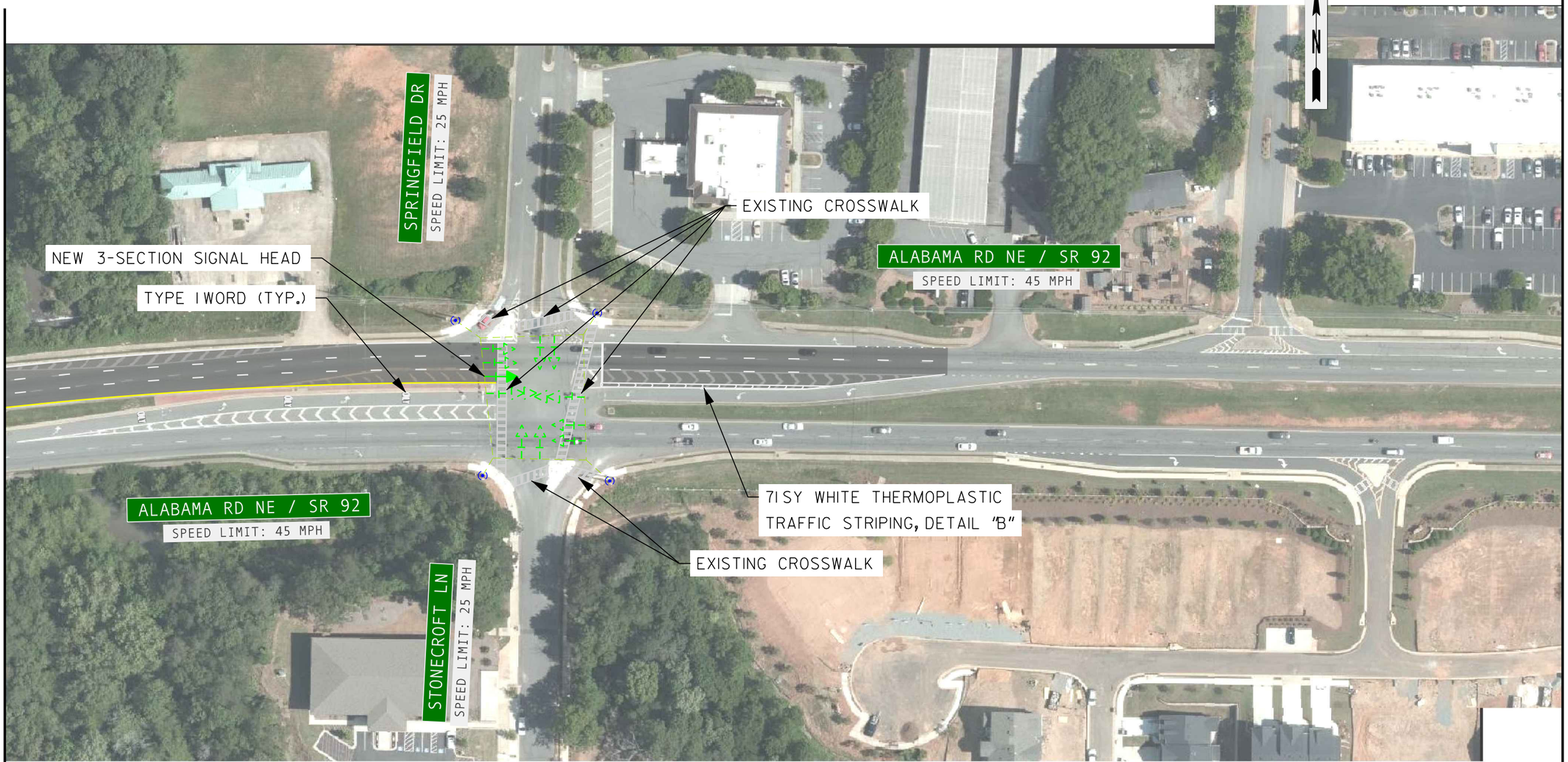

SEE SHEET 3/4

LEGEND

PROPOSED PAVEMENT WIDENING

STRIPING IMPROVEMENTS ONLY

PROPOSED RAISED CONCRETE ISLAND/MEDIAN

Kimley»Horn

GDOT Georgia Department of Transportation

SCALE IN FEET

0 50 100 200

REVISION DATES

CONCEPT LAYOUT
ALABAMA RD NE/SR 92
@ MAIN ST
CHEROKEE COUNTY

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CORRECTED:		DATE:	
VERIFIED:		DATE:	

SHEET 4/4

GDOT Benefit-Cost Calculator

Project Information

ID	WA-53
Description	SR 92 / Alabama Road at Main Street
	Extend WBL at Main Street, extend 3rd EB receiving lane to drop at Springfield Drive, add NBL at Main Street

Cost Estimate

Date of estimate	11/18/2020
Preliminary Engineering	$ 375,000
Reimbursable Utility	$ 47,601
Right-of-Way	
Construction	$ 980,571
Total	**$ 1,403,172**

Source of traffic data

Design traffic provided by PE consultant; Analysis in SimTraffic

Without project (No-Build)	Open Year				Design Year			
	2024				2044			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	6,630	149.9	7,670	81.4	6,430	371.0	8,135	301.2
Vehicle Denied	231	53.1	0	0.8	4,108	826.0	3,344	697.1
Total Delay (hr)	**279.5**		**173.4**		**1,605.2**		**1,328.2**	

With project (Build - Add Lane Alt)	Open Year				Design Year			
	2024				2044			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	6,903	103.3	7,792	67.3	7,420	331	8,960	300.2
Vehicle Denied	182	41.2	1	0.8	3,380	577.2	3,013	503.2
Total Delay (hr)	**200.2**		**145.7**		**1,223.7**		**1,168.3**	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2024	2024
Design year	2036	2044	2044
Discount rate	7%		7%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	3	3
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	7.0%	7.0%
Fatality Cost (Fc)	$9,100,000		$9,100,000
Injury Cost (Ic)	$955,500		$955,500
Property Damage Cost (Pc)	$27,300		$27,300
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,403,172**
Open Year (2024) Auto Delay Costs		
Nobuild	$	3,450,156
Build	$	2,676,818
Auto delay savings	**$**	**773,339**
Open Year (2024) Truck Delay Costs		
Nobuild	$	1,372,103
Build	$	1,064,552
Truck delay savings	**$**	**307,551**
Open Year (2024) Benefits	**$**	**1,080,890**
Design Year (2044) Auto Delay Costs		
Nobuild	$	23,001,133
Build	$	19,029,172
Auto delay savings	**$**	**3,971,961**
Design Year (2044) Truck Delay Costs		
Nobuild	$	9,147,391
Build	$	7,567,770
Truck delay savings	**$**	**1,579,621**
Design Year (2044) Benefits	**$**	**5,551,583**
Design Life Benefits	**$**	**66,324,727**
Design Life Benefit-Cost Ratio		**47.27**

Safety Benefits

Recommendation	Ek	R	r	Rp	rp

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,403,172

Accident Data	Symbol	Value
PDO	P	456
Fatalities	F	0
Injuries	I	96

Weighted cost of fatal and injury collisions
Q = $ 955,500

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$66,324,727	**Weight=**	100%
Design Life Safety Benefit	$0	**Weight=**	0%
Total Weighted Benefit	**$66,324,727**		
Design Life Operational Cost	$1,403,172	**Weight=**	100%
Design Life Safety Cost	$0	**Weight=**	0%
Total Weighted Cost	**$1,403,172**		
Project Benefit-Cost Ratio	**47.27**		

Project Cost Estimation Spreadsheet

Project Identification	SR 92 @ Main St				
Description	Extend WBL at Main Street, extend 3rd EB receiving lane to drop at Springfield Drive, add NBL at Main Street			Proj. Type	WA
From Limit	700' east of Main Street			District	
To Limit	300' east of Springfield Drive				
Notes					
SR 92	0.54				
Main St	0.12	miles	total	0.66	

Cost Summary Incl. Contingency		per mile	Yr. of Exp.	Inflated Cost	Total Program Cost
Preliminary Engineering	**$375,000**	$ 568,182	2020	**$ 386,250**	**$375,000**
Reimbursable Utility	**$40,186**	$ 60,888	2020	**$ 41,392**	**$47,601**
Right-of-Way	**$0**	$ -	2021	**$ -**	**$0**
Construction	**$803,724**	$ 1,217,764	2021	**$ 852,671**	**$980,571**
Total	**$1,218,910**	$ 1,846,834	**Total**	**$1,280,313**	**$1,403,172**

Construction Costs

Average Per Lane-Mile Components	Unit Cost	Miles	Add Lanes	Lane-Miles		Cost
Surface Str. New Cst. base & pave	$410,000			0		$0
SR or High volume Rd widening	$440,000	0.06	1.00	0.06		$26,400
Surface Street Overlay	$86,000	0.65	3.00	1.95		$167,700
Concrete Widening (Ramps)	$843,744			0		$0
Cross Streets widening	$307,500			0		$0
						$0
			Factor			$0
Cross Street Overlay	$20,000					$0
Traffic Control	$150,000	0.66	1.00			$99,000
Typical Driveways	$75,000	0.20	1.00			$15,000
Typical E & S Control Temp&Perm	$150,000	0.08	0.50			$6,000
Typical Earthwork	$500,000	0.06	1.00			$30,000
Typical Drainage - Urban Section	$255,000	0.06	0.50			$7,650
Curb & Gutter both sides (mile)	$264,000	0.06	0.50			$7,920
Typical Drainage - Rural Section	$150,000					$0
Signing & Marking	$50,000	0.66	3.00			$99,000
Typical Clear & Grub-120 ft wide	$109,091		1.00			$0
Typical Guardrail Type W	$212,000					$0
20ft. Raised median +C&G (mile)	$968,000					$0
Median landscaping	$100,000					$0
Sidewalks 5 ft. ea.side (mile)	$294,000		0.50			$0
ADA Ramps	$1,500	1.00	9.00			$13,500
						$0
						$0
						$0
					Subtotal	**$472,170**

Additional Per Mile Components	Unit Cost	Length	factor		Cost
Add'l Major Earthwork (mile)	$350,000				$0
Add'l Major Drainage (mile)	$150,000				$0
Add'l Major Grade changes (mile)	$350,000				$0
Major alignment corrections (mile)	$750,000				$0
Maint of Traffic difficulty (mile)	$200,000	0.66	0.50		$66,000
Temporary Barrier	$30				$0
Concrete Island + C&G (SY)	$60	110.00	1.00		$6,600
Add'l guardrail Type T (mile)	$423,000				$0
Paved Shoulders, 4 ft, 2 sides(mile)	$100,000				$0
blank	$0				$0
blank	$0				$0
Bikeway, 4 feet, both side (mile)	$293,333				$0
Add'l driveways (mile)	$75,000				$0
Cl. B Conc. Base or pvmt widening	$792,000				$0
Colored & Stamped Concrete + C&G	$100				$0
Special E&S control	$300,000				$0
					$0
				Subtotal	**$72,600**

Individual Components	Unit Cost	Length (ft)	Width (ft)	Ht (ft)	Cost
Retaining Walls - Gravity 0 - 5' (LF)	$60				$0
Retaining Walls-Gravity 5'-max (LF)	$120				$0
Retaining Walls-Special Design(SF)	$60				$0
Bridges - widen (SF)	$100				$0
Bridges - widen (SF)	$100				$0
Bridges - replace (SF)	$120				$0
Bridges - replace (SF)	$120				$0
Bridges - detour (SF)	$60				$0
Bridge Removal (SF)	$25				$0
Cofferdams (ea)	$20,000				$0
Box Culverts (SF)	$95				$0
Box Culverts (SF)	$95				$0
Large cross drains (LF)	$80				$0
Replace cross drains (LF)	$120				$0
Sediment/ detention ponds (ea)	$30,000				$0
Pavement patching (Sq yd)	$30				$0
Roundabout Lighting	$100,000				$0
Traffic Signalization / Upgrade (ea)	$125,000	1			$125,000
				Subtotal	**$125,000**
				Total Construction Cost	**$669,770**
					62%

Right-of-Way Costs

Area Type	Unit Cost (acre)	Miles	Width (ft)	Acres	Cost
Urban Residential	$800,000				$0
Easement Residential	$240,000			0.000	$0
Urban Commercial	$2,306,992			0.000	$0
Easement Commercial	$175,000			0.000	$0
Suburban/Rural Residential	$100,000			0.000	$0
Easement rural Residential	$180,000			0.000	$0
Suburban/Rural Commercial	$800,000			0.000	$0
Easement rural Commercial	$240,000			0.000	$0
Displacements		Number	factor		
Residential	$250,000	0	0.00		$0
Commercial	$1,000,000	0	0		$0
Damages	$0	0	0.00		$0
				ROW multiplier	1
				Total Right-of-Way Cost	**$0**
					0%

Reimbursable Utility Costs

			0
	5%		$ 33,489
		Total Reimbursable Utility Cost	**$33,489**
			3.11%

Preliminary Engineering Costs

PE %	35%	**Total Preliminary Engineering Cost**	**$375,000**
			34.78%

Contingency Costs

Contingency %	20%	**Total Contingency Cost**	**$215,652**
		Total (PE+Util.+ROW+CST)	**$1,078,259**
		Grand Total	**$1,293,910**

DHV TRAFFIC VOLUMES
OPENING YEAR 2024
PM PEAK HOUR = (000)
AM PEAK HOUR = 000

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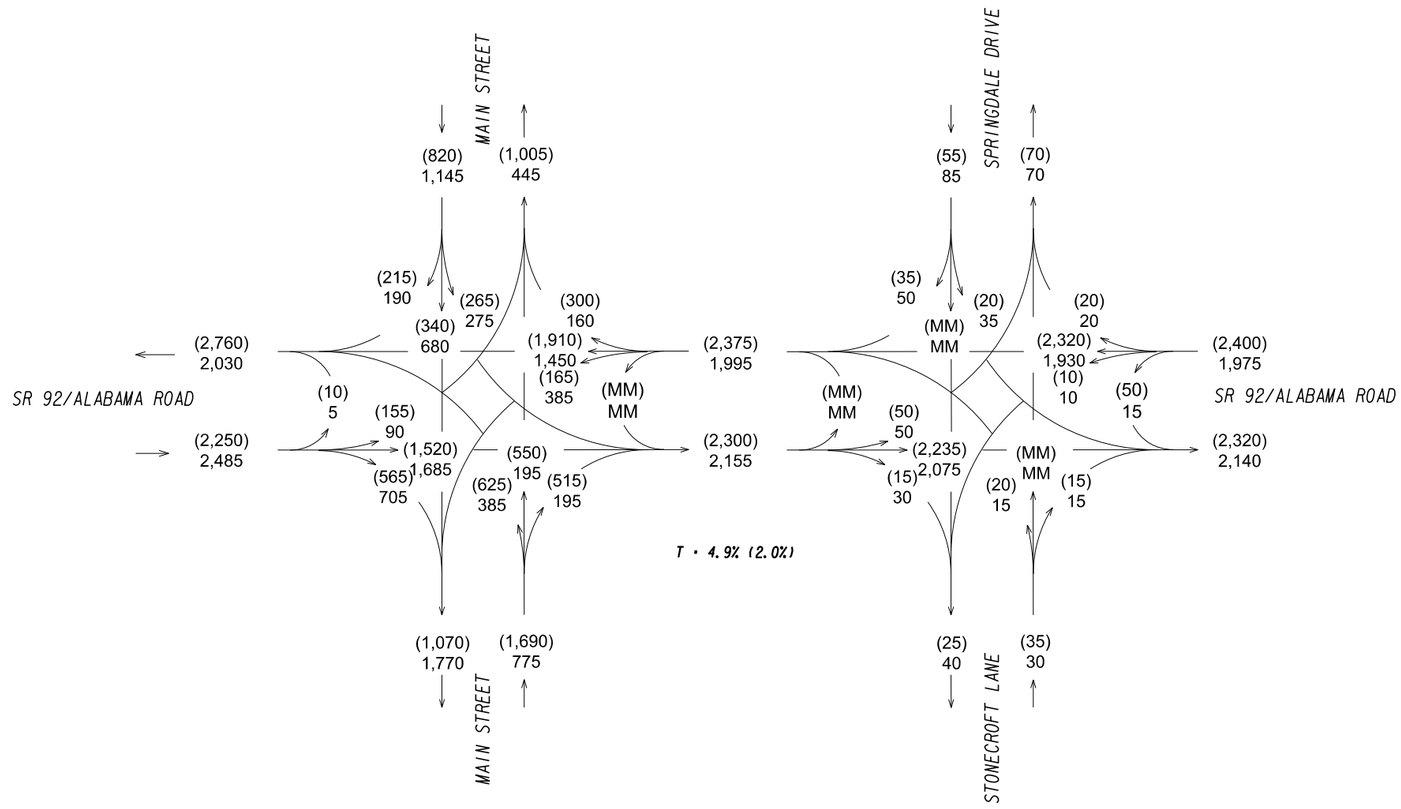

OPENING YEAR 2024
DHV TRAFFIC VOLUMES

Kimley»Horn
Engineering, Planning, and Environmental Consultants
817 West Peachtree Street NW, Suite 601
Atlanta, Georgia 30308

GDOT
Georgia Department of Transportation

NOT TO SCALE

REVISION DATES

TRAFFIC DIAGRAM
SR 92/ALABAMA ROAD AT MAIN STREET
YEAR 2024 DHV
SHEET 1 OF 1

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10-0001

DHV TRAFFIC VOLUMES
DESIGN YEAR 2044
PM PEAK HOUR = (000)
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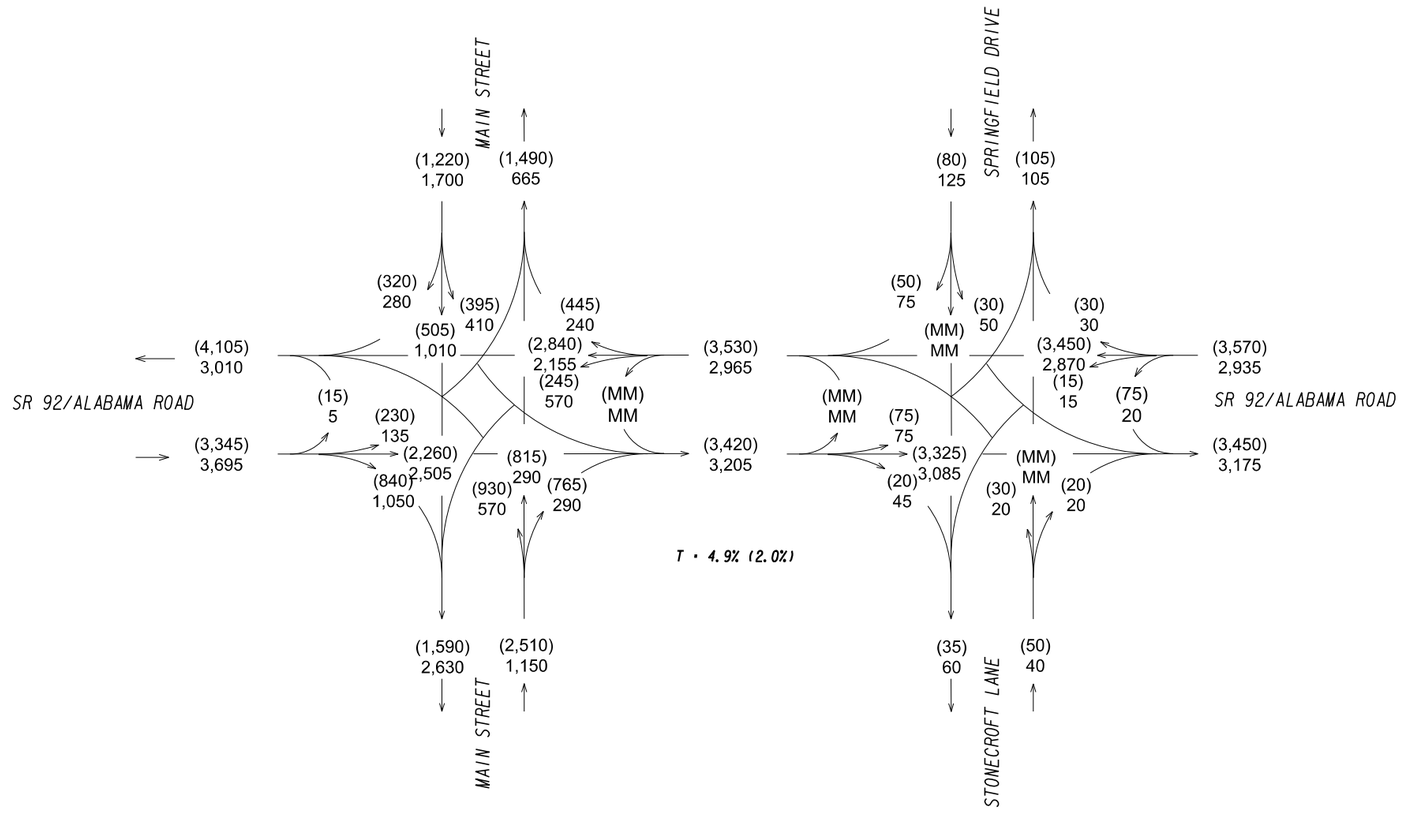

DESIGN YEAR 2044
DHV TRAFFIC VOLUMES

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REVISION DATES

TRAFFIC DIAGRAM
SR 92/ALABAMA ROAD AT MAIN STREET
YEAR 2044 DHV
SHEET 1 OF 1

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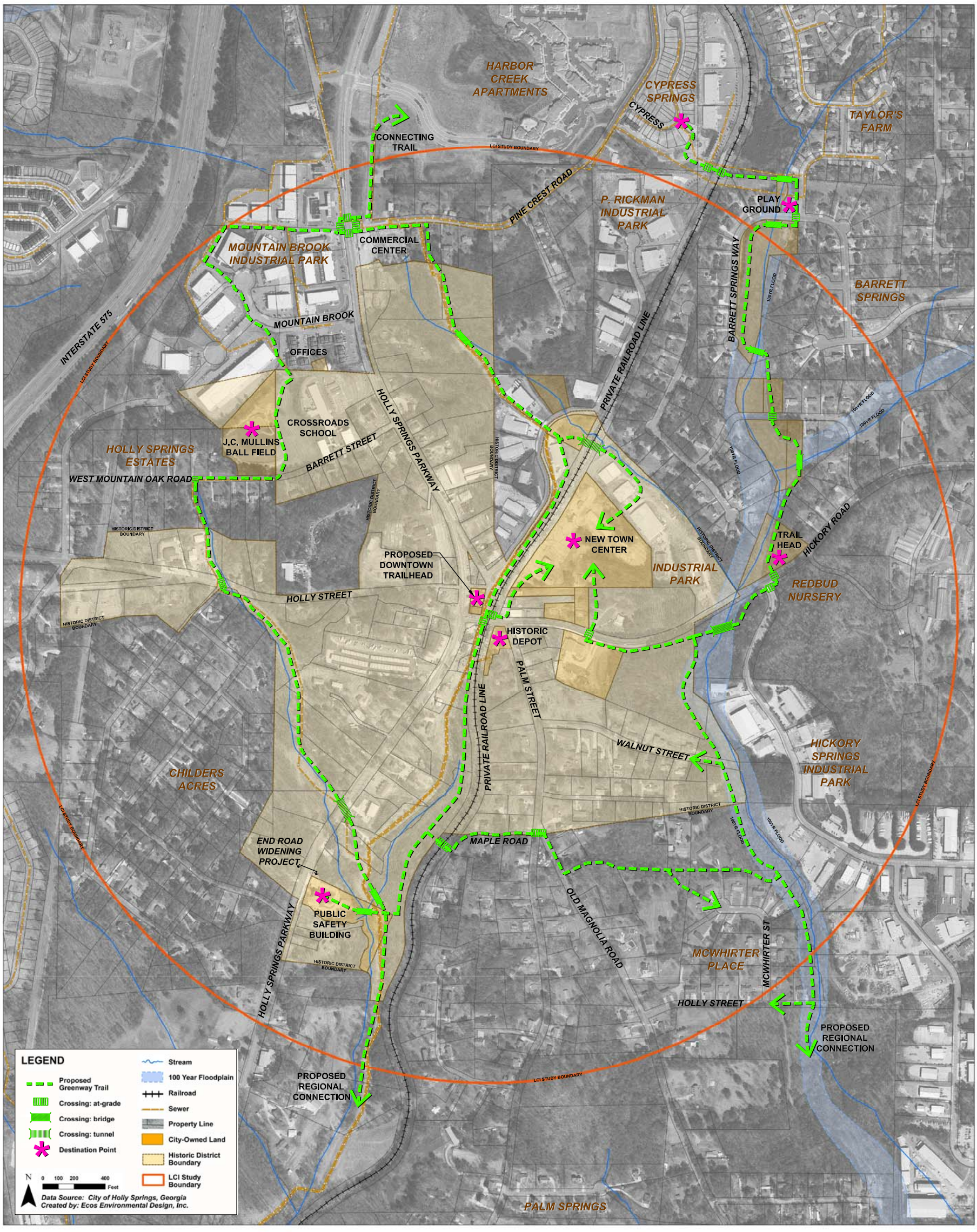


City of Holly Springs Greenway Trail Masterplan

ECOS ENVIRONMENTAL DESIGN, INC.

ROSS CONSULTING ENGINEERS, P.C.

Prepared for City of Holly Springs
September 18, 2008

Holly Springs
City Wide Trail Study
Planning Document

June 2009

City of Holly Springs
Community Development Department
PO BOX 990
Holly Springs, GA 30142
770-345-5533

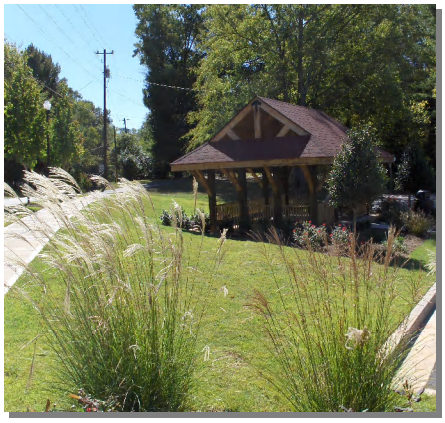
Brantley Day, AICP
Community Development Director

Trail Study Completed by:

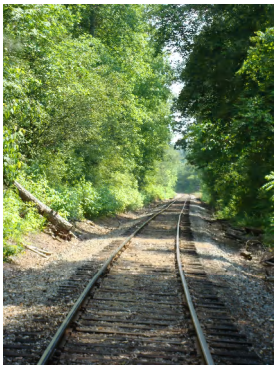
Will Evans
2040 North Ave. • Napa, CA 94558
678-425-8970 • wevans99@gmail.com
CITY PLANNING • GIS • MAPPING

Holly Springs
City Wide Trail Study
Planning Document

Introduction



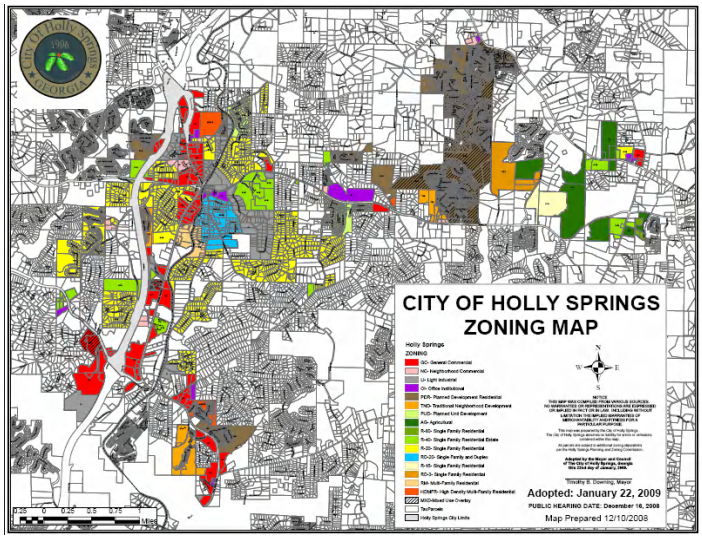
In 2008, the City of Holly Springs adopted an updated version of their comprehensive plan, which identified a system of connected parks and greenspaces as part of the community's vision for the City over the next twenty years. The City had already been actively pursuing this goal through their participation in the Livable Centers Initiative (LCI) program. The LCI program afforded the City a grant opportunity to conduct a Multi-Use Trail Study in the downtown area. This study was conducted by Ecos Environmental Design in the fall of 2008.



The City Wide Trail Plan will apply many concepts from the 2008 LCI Multi-Use Trail Study to the rest of the City. This trail study document will include an overview of the study area, the goals of the project, an explanation of the analysis process, a discussion of the findings, and details for the highest priority trail corridor.

City Overview

The City was incorporated in 1906 and stayed the same size for almost a century. Around 2000, the City experienced a significant population and annexation boom. This caused the City to grow both in population and in land area. The circular city limits began to grow to the south and east. In 2003, a 600+ acre development annexed into the City creating a large population center several miles to the east of downtown. Additionally, in the second half of the decade brought new commercial and residential annexations to the south. The resultant city limits is fragmented and has a long reach from the downtown area. The City's current Zoning Map helps illustrate this characteristic.



Goals

Multiple goals were observed during the trail planning process. Goals include:

- Locate off-road connections between destinations within and around the city for the construction of a bicycle and pedestrian trail
- Find routes that will minimize impact to both the natural and built environment through the utilization of existing corridors and rights-of-way
- Reduce the travel distance required for non-motorized modes of transportation within and around the City; provide safer, more appealing connections for bicycles and pedestrians
- Provide City residents with a recreation facility that will enhance greenspaces
- Allow greater access to the City's natural environments
- Create a plan that could be utilized in the grant writing process to obtain construction funding

These goals were intended to be more specific applications, but generally a reiteration of the goal statement from the LCI Multi-Use Trail Study:

> *The goal of the Downtown Multi-use Trail Study is to create a downtown trail network that connects parks, greenspaces, cultural amenities, community facilities, neighborhoods and businesses all the while enhancing the quality of life and improving land values throughout the community.*
>
> -City of Holly Springs LCI Multi-Use Trail Study, 2008

Planning Process/Routing

The planning consultant conducted extensive investigations before making the recommendations proposed. The process began by compiling many databases of information into a GIS for an overlay analysis. This data included topography, streets, railroad, streams, lakes, sewer lines, subdivisions, commercial areas, schools, cultural resources, parks and greenspaces. The resulting compilation was used as the base map for the *Proposed Trail Connectivity* map.

Using the data compilation in the context of the City's Comprehensive Plan and with guidance from the LCI Multi-Use Trail Study, routes were proposed and illustrated on the base map. These routes were then broken into different priority groups and the highest priority segment was investigated in the field using GPS to verify its feasibility. This process resulted in the production of several documents; the *Proposed Trail Connectivity Map*, the *Trail Corridor Investment Priorities Map*, the *Initial Trail Segment Map*, the *City Wide Trail Planning Document* (this document), and three section maps of the *Proposed Trail Connectivity Map* for added detail.

Findings

The trail study was able to identify linkages between all major commercial areas and many residential subdivisions. The network proposed also incorporates all City parks and many greenspaces, as well as identifies connections to recreation opportunities in the areas surrounding the City. The findings include identification of several different types of trails included in the system, recognition of trail corridor partners, a potential connection to a busy regional mountain biking facility, classification of the proposed routes into priority areas and details for the highest priority segment.

Trail Types

Trail Corridor- This is the standard 10-12 foot wide, hard surface trail section. The 2008 LCI Multi-Use Trail Study including engineering for the first trail segment downtown from Hickory Road to Taylor's Farm. The engineering details included with this plan shall serve as the standard details for the rest of the City. However, following construction of this first segment in the summer of 2009, the City may want to consider modifying some landscape and surface materials to reduce costs. The details can be modified following an audit of actual construction costs.

Alternate Route- These routes can be utilized instead of the Trail Corridor sections nearby. These options were presented due to difficult circumstances in the surrounding area, such as a large number of parcels which must grant easements or drastic topographical changes.

Private Trail- These trails are mostly located on homeowners' association property and are maintained by the HOA. They have been included in the plan to illustrate the trail connectivity throughout the City. The surfaces of these trails are highly variable with many of them simply being cleared footpaths through wooded areas. The City should monitor these routes in case the City wishes to maintain and upgrade these routes in the future.

Contingent Trail- this type of trail recognizes and works in conjunction with future development projects. Contingent trail routes are included with the plan to show properties where trail corridors exist. The City and property owners should work in conjunction throughout the development process to incorporate the trail routes into the development.

In the years prior to development, the City may wish to establish the connection using a lower cost trail, such as a soft surface trail. This will allow the desired connectivity to be established without making a large public investment in a project that will likely be destroyed when the properties are developed. This arrangement allows the property owner more flexibility with the future uses of their land and saves public funds in the process.

Regional Connections- These trails are linkages to other communities and may be part of another trail plan. They generally lead to destinations outside the city limits, so level of City funding varies. The following priorities section recommends the City consider funding or partially funding two regional connection trails based on the nature of the destination they serve.

Corridor Partners

The trail network follows existing transportation corridors in some locations including a railroad right-of-way and several sanitary sewer easements.

The Railroad- Several trails in the trail network utilize routes the railroad right-of-way as a corridor. The railroad was originally constructed over a century ago, so the right-of-way varies greatly in terms of construction quality and amount of shoulder room available for trail construction. Trains on the route are restricted to slow speeds (less than 20 mph) due to the track condition and sharp curves in some locations. The pictures below illustrate the varying conditions currently existing on potential trail sections. The picture on the left shows significantly more shoulder space than the picture on the right.

The City should consider exploring a partnership agreement with the railroad to restore the track as well as construct sections of the trail network in the process. Costs can be saved on both sides because several improvements, such as drainage, can be utilized by both parties. The railroad is a small, family-owned company that has had positive relations with the City in the past, so this type of partnership may be an option to help the City save funds.

Cherokee Water and Sewer Authority- Cooperation from this governing authority is a necessity for successful trail implementation. Many gravity sanitary sewer lines utilize paths along streams and through flood plains, which are also good locations to place greenway trails. The City should explore a maintenance agreement with CCWSA to maintain sections of sewer easements in exchange for utilizing the easements as trail locations.

Blankets Creek Mountain Bike Trails Staging Area

The study revealed a potential linkage with the Blanket's Creek Mountain Bike Trails on Sixes Road. This is a very well-known and highly utilized public mountain biking facility located approximately half a mile outside the city limits on the land managed by the Army Corps of Engineers surrounding

Lake Allatoona. The parking lot at this facility is often overcrowded and users have to park at neighboring businesses and places of worship. By linking the Holly Springs trail network to this facility, the City has an opportunity to market itself as a jump-off point for people who wish to ride the mountain bike trails, but don't want to deal with the parking situation at the trailhead. This staging area could be incorporated into the design of the new town center by adding bike racks, free air pumps, and equipment check areas. A bicycle merchant could be recruited to the downtown as a partner in the process.

Non-motorized Trans-Interstate Connectivity

The plan includes two connections over Interstate 575 for pedestrians and bicycles only. In many cases, local governments will strive to include these connections with normal automobile crossings due to the large cost associated with any interstate crossings. However, in the case of Holly Springs these connections were

unavoidable due to the location of current road bridges and the positioning of certain subdivisions. In addition to connectivity, these bridges provide an opportunity for the City to showcase itself and the trail system. The bridges can be decorative structures that will be visible to all who pass both underneath and on top of them.

Priorities

The planning process included identifying critical and important trail segments for the purpose of guiding public trail investment. The proposed trail network was broken down into individual trail segments and each was evaluated based on several factors. These prioritization factors include:

- Establishing primary North/South and East/West connections first;
- Focusing on segments that will yield the highest amount of use by citizens;
- Construction costs; and
- Number of parcels affected by the acquisition process.

The segments were then categorized based on target completion years. They were divided into five categories covering the next ten years, 2010-2019. The results are displayed in the *Trail Corridor Investment Priorities* map and accompanying *Trail Investment Priorities Summery* table. The table includes a breakdown of the length of each type of trail constructed during each time period. This is useful for policymakers in determining the amount of public vs. private funds to be invested in trail development.

The priority status of contingent trails is not a prediction of when the property will develop, but rather a timeline of when the City should consider establishing the connection using a lower cost trail as discussed earlier in the contingent trail section. Similarly, the prioritization of private trails signifies the timeframe of when the private trails will be connected to the rest of the trail network and when the City may want to examine improving those trails.

Holly Springs Trail Investment Priorities Summery Table

Implementation Timeline	Total Length (feet)	Total Length (miles)	Trail Length By Type (*feet*/miles)			
			Trail Corridor	Contingent Trail	Private Trail*	Regional Connection
Complete/ Under Construction	6,898	1.3	*6,898* 1.3	0	0	0
2010-2011	31,714	6.0	*25,921* 4.9	*5,793* 1.1	0	0
2012-2013	38,085	7.2	*32,378* 6.1	*1,944* .37	0	*3,763* .7
2014-2015	36,168	6.9	*27,665* 5.2	*6,640* 1.3	*1,863* .4	0
2016-2017	37,767	7.1	*13,021* 2.5	*17,130* 3.2	*7,616* 1.4	0
2018-2019	42,111	8.0	*16,820* 3.2	*12,046* 2.3	*6,552* 1.2	*6,693* 1.3
TOTAL	192,743	36.5	*122,703* 23.2	*43,553* 8.3	*16,031* 3	*10,456* 2

Highest Priority Trail Corridor

The prioritization process resulted in identification of the highest priority segment, which should be constructed soonest. This initial trail segment to be constructed is a section that runs along Holly Springs Parkway, known as The Holly Springs Parkway Trail. This route was chosen because it runs North/South connecting the City's downtown area with new emerging commercial centers to the south. This route also ties in several residential areas to these commercial hubs.

The route follows a wide sewer easement for most of the way making construction and acquisition easier than in other sections of the trail system. There are very few parcels that do not already have existing easements for the City to work through for establishing a trail corridor.

Segment Details

(All descriptions are from north to south)

Segment 1- Depot to Police Station

This section of trail will begin next to the historic train depot in downtown Holly Springs. The route initially parallels the railroad tracks; the track clear area may need to be expanded to allow adequate safety distance. The trail will follow the railroad right-of-way for several hundred feet before veering to the right and onto the large T-shaped property which abuts the property that houses the Public Safety Building. This property will most likely have to be completely bought out by the City due to its T shape. The segment will terminate at the clearing behind the Public Safety Building, which may be converted into a temporary parking lot for trail users.

Segment 2- Police Station to Overlook

This is the longest and probably most costly segment of the Parkway Trail. It begins at the Public Safety Building and heads south following a CCWSA easement. The route is fairly easy going for the first 1,800 feet. The easement is flat or slightly graded downward to the west. There are 2 minor ditch crossings in this area.

At approximately 1,800 feet the trail makes a sharp right turn, following the easement across a stream and then a sharp left, following the easement across another stream. After this jig-jog, the trail continues to follow the sewer easement for approximately 1,000 feet. This 1,000 foot stretch is located on a lateral grade, so a short retaining wall (under 4 feet) will be required for much of this section.

For the next 250 feet, the trail leaves the easement and crosses private property on its way to the railroad right-of-way. There is a stream crossing and a steep grade to be negotiated during this stretch.

It then follows the railroad for the final 500 feet of this section to terminate behind the old Pike's Nursery near the Overlook commercial area. This final section along the railroad will

require considerable reinforcing and expanding of the railroad shoulder to accommodate trail users safely. When engineering this area, the City may want to consider utilizing the sidewalk on Holly Springs Parkway rather than the railroad to avoid expensive construction costs. However, a partnership with the railroad could help alleviate some of the financial burden.

Section of railroad ROW to be reinforced/expanded

Sewer easement behind the Holly Springs Public Safety Building

Segment 3- Overlook to Home Depot

This segment begins at the south end of the old Pike's Nursery property. It follows a CCWSA easement the entire way to Home Depot at Holly Springs Parkway. The route crosses a stream twice during this span as well as passing through a large cleared area, which could be utilized as a trailhead parking area. The southern portion of this segment follows the sewer easement through an area of gradual lateral slope on one side. In order to avoid the use of retaining walls, the trail must follow the tree line on the flat side of the easement. This will also help the trail avoid an old house near the trail's terminus.

Trail will follow level side of easement.

Clearing near Palm St. trail junction; potential trailhead parking area.

Segment 4- Old Pike's Connection

This final phase of the Holly Springs Parkway Trail is situated mostly in the back of a commercial lot, formally known as Pike's Nursery. The trail begins this section by leaving the railroad right-of-way and crosses a stream as it enters the rear of the commercial property. The path follows the stream through the back of the lot, eventually circling an existing wet detention pond. The

pathway around the pond has already been graded to suit trail construction. Once around the pond the trail connects with the Overlook to Home Depot trail segment described above.

Depending on the exact implementation timeline associated with this phase of construction, agreements may or may not already be in place with the railroad and CCWSA to utilize their corridors. Since this segment is located almost entirely on one commercial property with high potential for redevelopment, this segment of trail may be completed before the others as part of the development process.

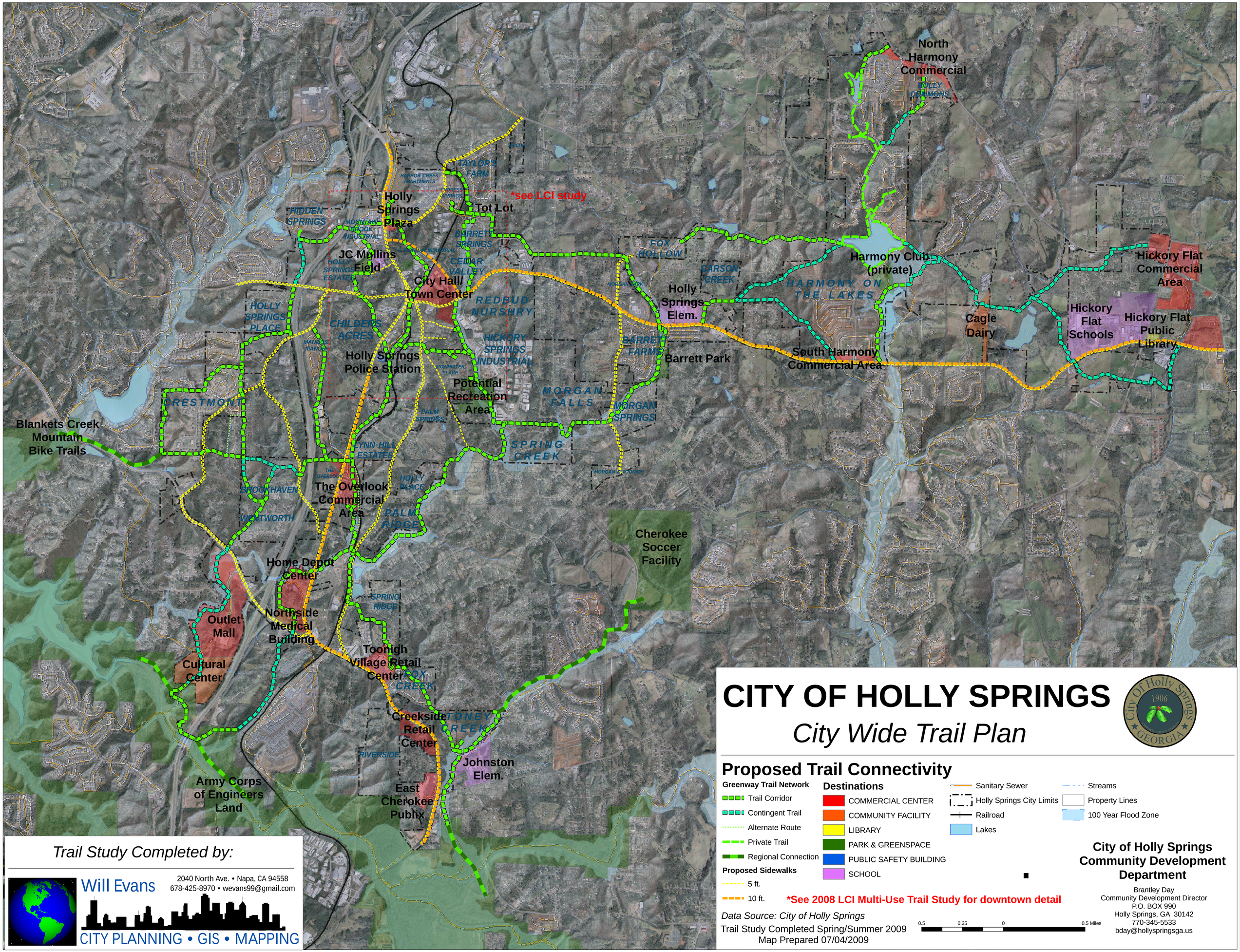
Holly Springs Parkway Trail Overview Table

Segment	Name	Length (feet)	Notes	Stream X-ings	# of parcels	# of parcels w/o existing easements
1	Depot to Police Station	2,072	Most likely have to buy out one property due to its shape; section follows railroad ROW, agreement will be required	1	2	2
2	Police Station to Overlook	3,774	Follows CCWSA easement most of the way, agreement will be required; easy going for first 1,800 ft.; final 500 ft. follows railroad ROW; grade will require short retaining wall (under 4') along trail for several hundred feet	4	6	2
3	Overlook to Home Depot	2,979	This entire section is on CCWSA easement, an agreement with CCWSA will be required; there is an opportunity for a trailhead parking area with access from Palm Street in this section	2	5	0
4	Old Pike's Connection	1,722	Most of this section is on the old Pike's Nursery property; land has already been graded	0	2	2
	TOTAL	**10,547 FEET**		**7**	**15***	**6**

* There are 14 different parcels required; this higher number is due to some parcels having multiple trail segments on them

Conclusion

The Holly Springs City Wide Trail Plan serves as one of the vehicles for accelerating multi-use trail development throughout the City of Holly Springs. The information contained in the planning study is intended to help the City capture and maximize the opportunity to use its natural resources and cultural amenities. The plan strives to provide an excellent recreation facility and transportation service to the citizens and businesses of the City. The Holly Springs trail network, if fully implemented, will contribute greatly to the long term prosperity of the City throughout the rest of twenty-first century and for many years beyond.



CITY OF HOLLY SPRINGS

City Wide Trail Plan

City Of Holly Springs 1906 GEORGIA

Proposed Trail Connectivity

Greenway Trail Network
- Trail Corridor
- Contingent Trail
- Alternate Route
- Private Trail
- Regional Connection

Proposed Sidewalks
- 5 ft.
- 10 ft.

Destinations
- COMMERCIAL CENTER
- COMMUNITY FACILITY
- LIBRARY
- PARK & GREENSPACE
- PUBLIC SAFETY BUILDING
- SCHOOL

- Sanitary Sewer
- Holly Springs City Limits
- Railroad
- Lakes
- Streams
- Property Lines
- 100 Year Flood Zone

***See 2008 LCI Multi-Use Trail Study for downtown detail**

Data Source: City of Holly Springs

Trail Study Completed Spring/Summer 2009
Map Prepared 07/04/2009

0.5 0.25 0 0.5 Miles

City of Holly Springs Community Development Department

Brantley Day
Community Development Director
P.O. BOX 990
Holly Springs, GA 30142
770-345-5533
bday@hollyspringsga.us

Trail Study Completed by:

Will Evans
2040 North Ave. • Napa, CA 94558
678-425-8970 • wevans99@gmail.com
CITY PLANNING • GIS • MAPPING

5-Year Work Program: Impact Fee Eligible Projects

2022 CIE Annual Update
1 CITY-WIDE DISTRICT

Project Description	2022	2023	2024	2025	2026	Cost Estimate	Funding Source	Responsible Party
Fire Protection								
Fire Station 16	X					$3,500,000	100% Impact Fees	Cherokee Co. Fire and Emergency
Pumper Truck			X			$580,000	100% Impact Fees	Cherokee Co. Fire and Emergency
Aerial Truck			X			$1,300,000	100% Impact Fees	Cherokee Co. Fire and Emergency
Ambulance	X					$250,000	100% Impact Fees	Cherokee Co. Fire and Emergency
Police Services								
Police Station & Facilities	X	X	X	X		$1,519,608	64.2% Impact Fees; SPLOST	Canton Police Dept.
Pursuit Management System (2 units)		X				$12,000	100% impact fees	Canton Police Dept.
Pursuit Management System (1 unit)			X			$6,000	34.01% Impact Fees; General Fund	Canton Police Dept.
Records Management System	X	X				$150,000	64.2% Impact Fees; General Fund	Canton Police Dept.
Parks and Recreation								
Heritage Park Trail	x					$120,000	63.8% Impact Fees; SPLOST	Canton Public Works Dept.
Heritage Park Outdoor Gym	X					$140,300	45.01% Impact Fees; General Fund	Canton Public Works Dept.
Heritage Park Playground		x				$183,000	95.48% Impact Fees; General Fund; SPLOST	Canton Public Works Dept.

Project Description	2022	2023	2024	2025	2026	Cost Estimate	Funding Source	Responsible Party
Heritage Park Splash Pad			x			$610,000	45.01% Impact Fees; General Fund; SPLOST	Canton Public Works Dept.
Heritage Park Restroom Building			x			$91,500	81.84% Impact Fees; General Fund; SPLOST	Canton Public Works Dept.
Heritage Park Community Pavilion				x		$305,000	45.01% Impact Fees; General Fund; SPLOST	Canton Public Works Dept.
Etowah River Park Trail Extension	x	x				$6,500,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 1 (Heritage Park to Cherokee High)	x	x	x			$2,250,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 2 (Cherokee High to Boling Park)		x	x			$750,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Boling Park Trailhead			x	x		$3,050,000	45.01% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 4A				x	x	$11,225,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 4B	x	x	x	x	x	$850,000	63.8% Impact Fees; SPLOST; General Fund;	Canton Public Works Dept.
Etowah River Trail Phase 5					x	$1,100,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 6 (Harmon Park Connection)					x	$850,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.
Etowah River Trail Phase 7					x	$2,000,000	63.8% Impact Fees; SPLOST; LWCF; General Fund	Canton Public Works Dept.

Project Description	2022	2023	2024	2025	2026	Cost Estimate	Funding Source	Responsible Party
New Park Acres (30 acres)	X	X	X	X	X	$400,000	100% Impact Fees	Canton Public Works Dept.
Parks, Recreation Cultural Arts Master Plan	X	X				$250,000.00	45.01% Impact Fees; General Fund	Canton Public Works Dept.
Road Improvements								
Canton Transportation Plan	x	x				$200,000	34.2% Impact Fees; SPLOST; General Fund	Canton Community Dev. Dept.
Prominence Boulevard-Keeter Road widening	x	x	x			$3,661,632	34.2% Impact Fees; SPLOST; Developer	Canton Community Dev. Dept.
Business Hwy. 5 - Marietta Hwy. widening			x	x	x	$10,000,000	34.2% Impact Fees; Grants; Cherokee Co.	Canton Community Dev. Dept.
SR Business 5 Intersection Improvements	x	x	x	x	x	$1,647,000	34.2% Impact Fees; Grants	Canton Community Dev. Dept.
Heard Road Extension	x	x	x	x	x	$1,525,736	34.2% Impact Fees; SPLOST; Developer	Canton Community Dev. Dept.
Eastside Connector		x	x	x	x	$8,928,930	34.2% Impact Fees; Cherokee Co.; SPLOST	Canton Community Dev. Dept.
Marietta Hwy./Riverstone Pkwy./Waleska Rd.	X	X	X	X		$4,400,000	34.2% Impact Fees; Cherokee Co.; SPLOST:	Canton Community Dev. Dept.
Reinhardt College Pkwy./Waleska Rd. Intersection	X	X	X	X		$2,400,000	34.2% Impact Fees; Cherokee Co.; SPLOST:	Canton Community Dev. Dept.
Reinhardt College Pkwy./Reservoir Drive Intersection	X	X	X			$500,000	34.2% Impact Fees; SPLOST; GDOT; FHWA	Canton Community Dev. Dept.
Marietta Road – Bridge Replacement	X	X	X	X	X	$1,300,000	34.2% Impact Fees; SPLOST; GDOT; FHWA	Canton Community Dev. Dept.
Reservoir Drive – Intersection Improvements	X	X	X			$1,000,000	34.2% Impact Fees; SPLOST; GDOT; FHWA	Canton Community Dev. Dept.
Waleska Road/Hospital Drive/Old Donaldson		X	X			$2,200,000	34.2% Impact Fees; SPLOST; GDOT; FHWA	Canton Community Dev. Dept

Memo

To:	John D. Boudreau, RLA		
From:	Jimmy Adams, AICP	Email:	Jimmy.Adams@atkinsglobal.com
Date:	14 March 2022	Phone:	678-247-2474
Ref:	Pedestrian Hybrid Beacon Warrant Study	cc:	Bethany Watson
Subject:	Pedestrian Hybrid Beacon Warrant Analyses for the City of Canton - Riverstone Parkway, between Waleska Road and Hospital Drive		

Atkins Global, Inc. (Atkins) is conducting a Pedestrian Hybrid Beacon (PHB) Warrant Analyses for the City of Canton along Riverstone Parkway (SR 5 Business), between Waleska Road/Waleska Street and Hospital Drive. This portion of Riverstone Parkway is a commercial corridor consisting of numerous driveways providing access to a variety of office, retail, and fast-food establishments.

Location:

As illustrated in **Figure 1**, the location of the PHB warrant analyses along Riverstone Parkway is situated in the center of Canton. The primarily commercial corridor has single-family detached and multi-family attached housing units to the north, multi-family apartment complexes to the east and west and a community center and park to the south. Riverstone Parkway is also a heavily traveled commuter corridor with a connection to Interstate 575 to the east and State Route 140 (Waleska Road/Marietta Highway) to the west.

Reason for Investigation:

The City of Canton is requesting an evaluation for a pedestrian crossing at this location due to concerns about pedestrian mobility and safety in the corridor. There have been multiple collisions in the corridor that involved pedestrians and the City of Canton has identified the need for an additional safe crossing. A PHB at this location would improve and encourage pedestrian mobility and provide an additional safe crossing location for pedestrians along this portion of Riverstone Parkway.

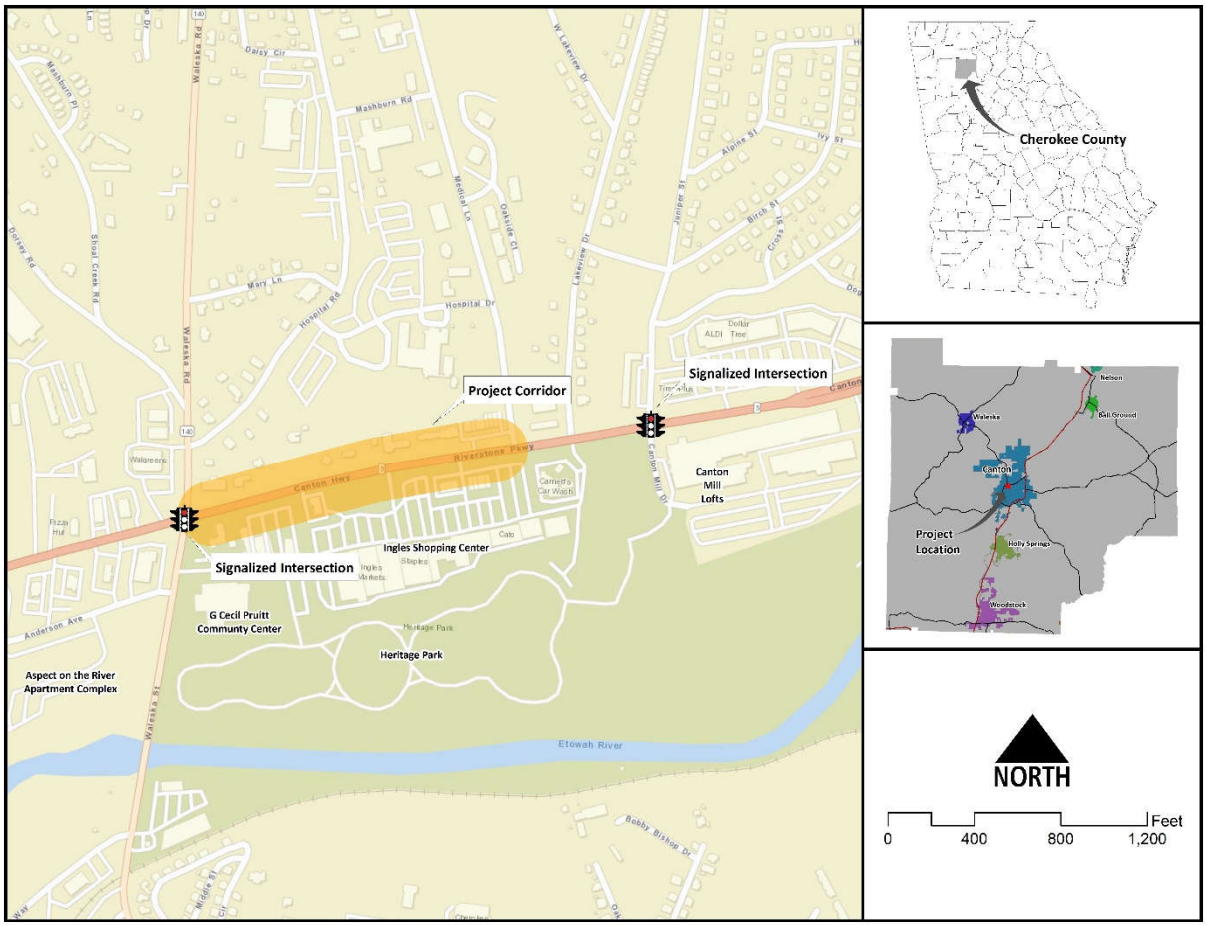


Figure 1. Intersection Locations

Description of Corridor:

Riverstone Parkway (SR 5 Business) is classified as an urban, minor arterial in this portion of Canton that provides a connection to Waleska Road (SR 140) to the west and to Interstate 575 (I-575) to the east. Riverstone Parkway, between Waleska Road and Hospital Drive, is constructed as a five-lane facility with two through lanes in each direction and a continuous, center left-turn lane (CCLTL). This roadway facility has a posted speed limit of 35 mph.

Growth Rate:

The growth rate for the identified corridor, Riverstone Parkway between Waleska Road and Hospital Drive, was calculated to forecast existing (2022) average annual daily traffic (AADT) from historical traffic count data to determine the need for a COVID adjustment factor. A COVID adjustment factor is determined because of the overall reduced levels of traffic on Georgia's roadways due to the on-going COVID-19 pandemic. COVID adjustment factors are applied to account for any decrease of traffic on Georgia's roadways.

A COVID adjustment factor for developing existing year traffic volumes from traffic count data are based upon a review of traffic count data at a "count adjustment station." A "count adjustment station" is a location in the vicinity of the proposed project where both historical traffic count data and new traffic count data are available. For this evaluation, GDOT Traffic Analysis and Data Application (TADA) traffic count station 057-0028 along Riverstone Parkway, east of Juniper Street, was used for the necessary adjustment factor.

The growth rate along Riverstone Parkway was calculated using historical annual volume statistics from GDOT, data from the Atlanta Regional Commission's (ARC) travel demand model (TDM), and population growth estimates. These growth rate calculations are provided in **Attachment A**. The annual compound growth rate can be calculated using the following equation:

$$Annual\ Growth\ Rate = \left(\frac{End\ Count}{Begin\ Count}\right) exp^{\frac{1}{End\ Year - Begin\ Year}} - 1$$

The historical annual volume traffic count stations from GDOT that were reviewed are:

1. Count Station: 057-0104 – Waleska Rd, between N Etowah Dr and Old Donaldson Rd
2. Count Station: 057-0028 – Riverstone Pkwy, east of Juniper St
3. Count Station: 057-0283 – Waleska St, between Reformation Pkwy and Anderson Ave
4. Count Station: 057-0105 – Marietta Hwy, north of School Dr

Any historical counts that were collected during the COVID period (March 2020 to present) were not included in the growth rate calculations. As shown in **Table 1**, the weighted average based on incremental, historical traffic volume growth rates along the roadways at this location is approximately 1.1%. Actual traffic counts obtained from the GDOT traffic count database were used to calculate a weighted average annual historical growth rate. Estimated traffic counts were not used in the historical count analysis.

Table 1. GDOT Historic Growth Rates

Riverstone Pkwy, between Waleska Rd and Hospital Dr			
GDOT Count Location	Location Description	Increment (in years)	Exponential Growth Rate
057-0104	Waleska Rd, between N Etowah Dr and Old Donaldson Rd	5-Yr	0.6%
		10-Yr	2.8%
057-0028	Riverstone Pkwy, east of Juniper St	5-Yr	-0.6%
		10-Yr	0.9%
057-0283	Waleska St, between Reformation Pkwy and Anderson Ave	5-Yr	3.0%
		10-Yr	2.1%
057-0105	Marietta Hwy, north of School Dr	5-Yr	0.5%
		10-Yr	0.6%
Overall Weighted Annual Average Growth Rate			**1.1%**

An examination of the ARC's TDM assignments for an intersection near the proposed PHB between 2015 and 2050, revealed an annual growth rate of 1.1% as shown in **Table 2**.

Table 2. Travel Demand Model Growth

Waleska Rd at Riverstone Pkwy				
	Forecast Year – 2050 Volume		Base Year – 2015 Volume	
Intersection Leg	Direction 1	Direction 2	Direction 1	Direction 2
North	16,205	16,747	12,163	12,063
East	6,440	4,894	3,375	2,906
South	11,740	12,891	8,636	9,922
West	14,417	14,269	8,771	8,055
Two-Way Total	97,603		65,891	
Annual Average Growth Rate				1.1%

Lastly, the growth rates based on population projections for Cherokee County (Governor's Office of Planning and Budget-OPB) were also calculated. The population forecasts for the years 2022 through 2024 and 2044 were obtained and the expected growth rates for the region were calculated. The population forecasts are provided in **Table 3**.

Table 3. Cherokee County Population Forecast

County	Population 2022	Population 2024	Population 2044	Average Annual Growth Rate
Cherokee	264,292	269,165	317,274	0.9%
Base 2022	-	0.9%	0.8%	

SOURCES:
https://opb.georgia.gov/census-data/population-projections

The calculated growth rates for the GDOT historical traffic count data, the TDM volumes, and the future traffic volumes as predicted by the population projections are 1.1%, 1.1%, and 0.9%, respectively. The final annual compounded growth rate was calculated by taking a weighted average of the three annual growth rates, giving the TDM data 80% of the yielded value, which resulted in a value of 1.1%.

Traffic Volumes in Vehicles per Day (vpd):

48-hour bi-directional, vehicle classification counts were collected along Riverstone Parkway at two (2) locations on January 18th and January 19th, 2022. The first location, near the proposed mid-block pedestrian crossing, was between Waleska Road and Hospital Drive. The other count location was used for the COVID adjustment factor. In compliance with the GDOT Design Traffic Forecasting Manual, these days are representative of normal conditions in the area. Counts were taken at fifteen-minute intervals for each of the approaches. Summaries of the raw traffic count worksheets can be found in **Attachment B**.

As indicated previously, the need for a COVID adjustment factor was determined by comparing the calculated existing year AADT historical traffic count data to the raw (new) traffic count data collected at the identified count adjustment station (057-0028). Use of the AADT adjustment factor took into consideration the count adjustment station's geographic proximity, as well as characteristics such as functional classification, development density, lanes, speed limit, access type, etc. The historical volumes provided at count station 057-0028 provided for directional, vehicle classification counts. The historical traffic counts were collected between October 16th and October 18th, 2018, beginning and ending at 2:00 PM for a total of 48 hours and are provided in **Attachment B**. The most recent traffic factors obtained

from GDOT's website, provided in **Table 4** and the calculated average annual growth rate of 1.1% was applied to the historical raw counts collected at this location to determine the existing (2022) AADT.

Table 4. GDOT Traffic Factors

Roadway Functional Class	Month	Day		
	October	Tue	Wed	Thu
Urban Minor/Major Arterials (Atlanta Metropolitan Region)	0.96	0.96	0.96	0.94

The existing (2022) AADT for traffic count station 057-0028 was 20,350 vehicles per day, using historical traffic data, which was then compared to the raw counts collected in January 2022 at the same location. There were 17,321 and 18,072 vehicles per day recorded for January 18th and 19th, 2022, respectively, at this same location. These traffic counts are also provided in **Attachment B**. The seasonally adjusted 2022 AADT, using actual data at this same location is 17,700 vehicles per day; therefore, a COVID adjustment factor for the AADT is necessary because the forecasted 2022 AADT using historical data is greater than the calculated 2022 AADT using recent count data. A COVID adjustment factor of 1.15 provides the necessary increase in traffic on Riverstone Parkway to account for the overall reduced levels of traffic on Georgia's roadways due to the on-going COVID-19 pandemic. The resulting traffic volumes for the portion of Riverstone Parkway near the proposed PHB are summarized in **Table 5**.

Existing Traffic Control:

There is no traffic control along Riverstone Parkway between Waleska Road and Hospital Drive.

Vehicular Speeds:

The posted speed limit along Riverstone Parkway is 35 mph.

Pedestrian Movements:

Pedestrian counts were collected along Riverstone Parkway between Waleska Road and Hospital Drive on January 18th, 2022, for a 12-hour period (8:00 AM to 8:00 PM). The pedestrian movements at this location are generated, in large part, by the retail land uses south of Riverstone Parkway and the residential land uses located to the north of Riverstone Parkway. There were 19 pedestrians crossing Riverstone Parkway on January 18th, between 8:00 AM and 8:00 PM.

Other Modes of Transportation Present:

The Cherokee Area Transportation System (CATS) provides for fixed bus route trips. CATS Route 1 provides for multiple stops near Riverstone Parkway, between Waleska Road and Hospital Drive during weekdays between 8:00 AM and 4:00 PM. The CATS bus route system does not operate on the weekends or on selected holidays. There are bus stops for Route 1 at Ingles (Bus Stop 1100) on Riverstone Parkway and at G. Cecil Pruett YMCA (Bus Stop 1090) on Waleska Street.

Table 5. Annual Average Daily Traffic

Date	Vehicle Type	AM Peak				PM Peak				24-Hr Vehicle Mix	
		From	To	Volume	% Mix	From	To	Volume	% Mix	24-Hr Count	% Mix
January 18th, 2022	Auto	8:00 a.m.	9:00 a.m.	1,198	92.4%	4:00 p.m.	5:00 p.m.	1,823	95.4%	21,926	95.3%
	S.U.	8:00 a.m.	9:00 a.m.	76	5.9%	4:00 p.m.	5:00 p.m.	61	3.2%	801	3.5%
	Comb.	8:00 a.m.	9:00 a.m.	22	1.7%	4:00 p.m.	5:00 p.m.	28	1.4%	286	1.2%
	Total	8:00 a.m.	9:00 a.m.	1,296	100.0%	4:00 p.m.	5:00 p.m.	1,912	100.0%	23,014	100.0%
January 19th, 2022	Auto	8:00 a.m.	9:00 a.m.	1,314	94.4%	4:00 p.m.	5:00 p.m.	1,802	96.2%	22,718	95.7%
	S.U.	8:00 a.m.	9:00 a.m.	49	3.6%	4:00 p.m.	5:00 p.m.	52	2.8%	712	3.0%
	Comb.	8:00 a.m.	9:00 a.m.	28	2.0%	4:00 p.m.	5:00 p.m.	18	1.0%	300	1.3%
	Total	8:00 a.m.	9:00 a.m.	1,391	100.0%	4:00 p.m.	5:00 p.m.	1,872	100.0%	23,730	100.0%
Average	Auto	8:00 a.m.	9:00 a.m.	1,256	93.4%	4:00 p.m.	5:00 p.m.	1,813	95.8%	22,322	95.5%
	S.U.	8:00 a.m.	9:00 a.m.	63	4.7%	4:00 p.m.	5:00 p.m.	57	3.0%	757	3.2%
	Comb.	8:00 a.m.	9:00 a.m.	25	1.9%	4:00 p.m.	5:00 p.m.	23	1.2%	294	1.3%
	Total	8:00 a.m.	9:00 a.m.	1,344	100.0%	4:00 p.m.	5:00 p.m.	1,892	100.0%	23,373	100.0%

Delay:

No significant delays will occur due to the placement of a PHB on Riverstone Parkway between Waleska Road and Hospital Drive.

Parking:

There was no on-street parking observed or expected on Riverstone Parkway between Waleska Road and Hospital Drive.

Adjacent Signalized Intersections:

The proposed location for the PHB is on Riverstone Parkway approximately 730 feet east of a signalized intersection at Waleska Road and approximately 1,450 feet west of a signalized intersection at Juniper Street/Canton Mill Drive.

Crash Analysis:

Crashes on Riverstone Parkway were reviewed for the years between 2013 and 2021. For the purposes of this analysis, only the collisions that occurred between Waleska Road and Hospital Drive were considered. This segment of Riverstone Parkway is approximately 1,540 feet in length. These collisions have been summarized in **Table 6** and greater detail is provided in **Attachment C.** There has been a total of 89 crashes along this portion of Riverstone Parkway between the years 2013 and 2021 that resulted in 66 property damage only (PDO) crashes, 22 injury crashes and one (1) fatal crash. Four (4) of these collisions were pedestrian crashes that resulted in one (1) fatality.

Table 6. Crash Summary

	Riverstone Pkwy, between Waleska Rd and Hospital Dr									
Crash Type	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Single	0	0	0	0	0	0	0	1	0	**1**
Angle-Left Turn	0	0	0	3	1	1	1	0	4	**10**
Angle	2	5	4	3	3	3	5	4	3	**32**
Sideswipe Same	1	0	1	3	0	3	1	3	1	**13**
Sideswipe Opposite	0	0	1	0	0	1	1	0	0	**3**
Rear End	1	1	2	3	0	2	0	9	5	**23**
Head On	0	0	0	0	0	0	2	0	1	**3**
Pedestrian	0	0	1	1	0	0	1	0	1	**4**
Total:	**4**	**6**	**9**	**13**	**4**	**10**	**11**	**17**	**15**	**89**
Crash Severity	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
PDO Crash	3	6	7	10	2	10	7	11	10	**66**
Injury Crash	1	0	2	3	2	0	3	6	5	**22**
Fatal Crash	0	0	0	0	0	0	1	0	0	**1**
Total:	**4**	**6**	**9**	**13**	**4**	**10**	**11**	**17**	**15**	**89**

Warrant Analysis:

Guidelines used to justify the placement of a PHB were taken from the **Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition, Chapter 4F**. A PHB beacon may be considered for installation to facilitate pedestrian crossings at locations that do not meet traffic signal warrants. Criteria from the **MUTCD, 2009 edition** for roadway facilities that operate more than 35 mph were utilized for this analysis. The need for a PHB should be considered when the number of vehicles per hour (total of both approaches) and the corresponding total of all pedestrians crossing the major-street for a one-hour period (any four consecutive 15-minute periods) exceed the plotted curve on **Figure 4F-2** that represents the length of the subject crosswalk. The placement of a PHB should consider the major-street volumes, speeds, widths, and gaps in conjunction with pedestrian volumes, walking speeds, and delay.

To evaluate the proposed location for the placement of a PHB, 12-hour, typical weekday pedestrian activity was observed on Tuesday, January 18th, 2022, between the hours of 8:00 AM and 8:00 PM. Corresponding traffic data was also collected for the proposed PHB on Tuesday, January 18th, 2022, and Wednesday, January 19th, 2022. The 48-hour traffic counts were averaged to obtain Average Daily Traffic (ADT). The ADTs were then adjusted using the COVID adjustment factor discussed previously and by using the monthly and daily traffic factors to estimate the Existing (2022) Year AADT. Fifteen-minute hourly distributions were applied to the seasonally adjusted AADTs. These data are summarized in **Table 7**.

The data in **Table 7** indicates that on a typical weekday, 19 pedestrians were observed crossing Riverstone Parkway between 8:00 AM and 8:00 PM, which had a corresponding 12-hour traffic volume of 17,762 vehicles. These pedestrian crossings were evaluated for one-hour periods using any four consecutive 15-mnute time periods available. These data have revealed that a PHB along this portion of Riverstone Parkway is not justified using **MUTCD, 2009 edition** guidelines because the number of pedestrians per hour do not exceed the lower threshold volume of twenty (20) pedestrians per hour for a one-hour period, using any four consecutive 15-minute periods. The results of this analysis are illustrated on **Figure 2**.

Figure 2. Guidelines for the Installation of Pedestrian Hybrid Beacons on High-Speed Roadways

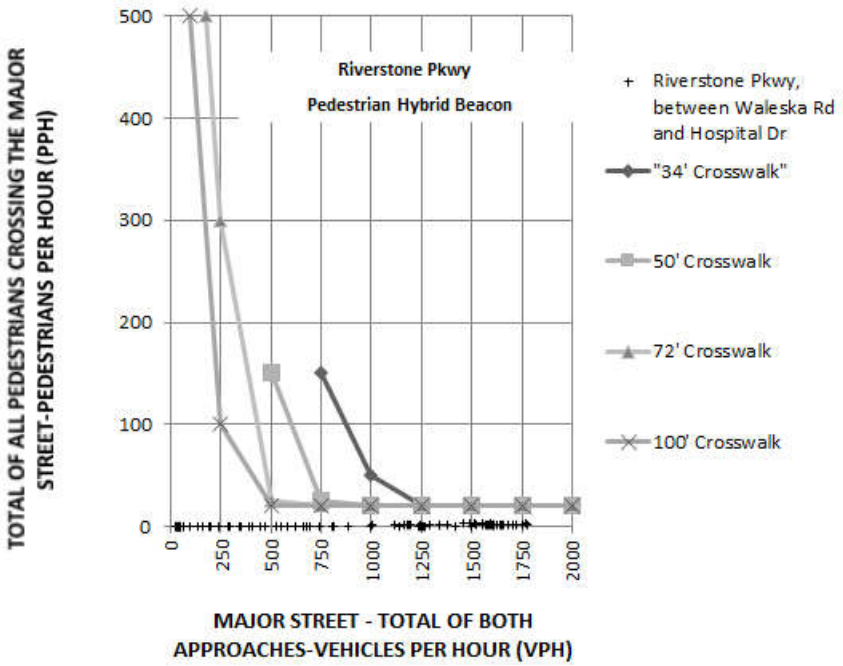


Table 7. Hourly Pedestrian Movements along Riverstone Pkwy

Time			Pedestrians per Hour	Vehicles per Hour
8:00 AM	to	9:00 AM	0	1,238
8:15 AM	to	9:15 AM	1	1,187
8:30 AM	to	9:30 AM	1	1,165
8:45 AM	to	9:45 AM	1	1,177
9:00 AM	to	10:00 AM	1	1,195
9:15 AM	to	10:15 AM	0	1,247
9:30 AM	to	10:30 AM	0	1,259
9:45 AM	to	10:45 AM	1	1,290
10:00 AM	to	11:00 AM	1	1,337
10:15 AM	to	11:15 AM	2	1,378
10:30 AM	to	11:30 AM	3	1,456
10:45 AM	to	11:45 AM	3	1,493
11:00 AM	to	12:00 PM	4	1,513
11:15 AM	to	12:15 PM	3	1,558
11:30 AM	to	12:30 PM	3	1,594
11:45 AM	to	12:45 PM	2	1,606
12:00 PM	to	1:00 PM	2	1,607
12:15 PM	to	1:15 PM	2	1,603
12:30 PM	to	1:30 PM	2	1,611
12:45 PM	to	1:45 PM	2	1,643
1:00 PM	to	2:00 PM	2	1,647
1:15 PM	to	2:15 PM	2	1,654
1:30 PM	to	2:30 PM	2	1,606
1:45 PM	to	2:45 PM	2	1,594
2:00 PM	to	3:00 PM	2	1,609
2:15 PM	to	3:15 PM	2	1,574
2:30 PM	to	3:30 PM	1	1,567
2:45 PM	to	3:45 PM	1	1,553
3:00 PM	to	4:00 PM	1	1,575
3:15 PM	to	4:15 PM	1	1,625
3:30 PM	to	4:30 PM	1	1,684
3:45 PM	to	4:45 PM	1	1,706
4:00 PM	to	5:00 PM	2	1,722
4:15 PM	to	5:15 PM	2	1,757
4:30 PM	to	5:30 PM	2	1,779
4:45 PM	to	5:45 PM	3	1,768
5:00 PM	to	6:00 PM	2	1,706
5:15 PM	to	6:15 PM	2	1,651
5:30 PM	to	6:30 PM	2	1,585
5:45 PM	to	6:45 PM	1	1,523
6:00 PM	to	7:00 PM	0	1,497
6:15 PM	to	7:15 PM	0	1,422
6:30 PM	to	7:30 PM	2	1,341
6:45 PM	to	7:45 PM	2	1,246
7:00 PM	to	8:00 PM	2	1,116
12-Hour Total:			**19**	**17,762**

Recommendations:

A proposed mid-block crossing on Riverstone Parkway, between Waleska Road and Hospital Drive, does not meet the guidance provided in Section 4F of the **MUTCD, 2009 edition**, for the placement of a PHB. However, there are additional issues to consider that include residential and non-residential land uses, transit ridership, and pedestrian collisions. While the identified portion of Riverstone Parkway is largely comprised of office and retail land uses, there are residential land uses connected with sidewalks to the north, east and west of the corridor. There are also two (2) bus transit stops for CATS along the identified corridor. There is a Route 1 bus stop at Ingles (Bus Stop 1100) on Riverstone Parkway and a Route 1 bus stop at G. Cecil Pruett YMCA (Bus Stop 1090) on Waleska Street. Lastly, there have been four (4) pedestrian collisions, one resulting in a fatality, on Riverstone Parkway, between Waleska Road and Hospital Drive.

It is recommended that a permit be issued for the installation of a PHB approximately 730 feet east of Waleska Road. There is a sidewalk with railing from the River Place Shopping Center that leads up to the sidewalk on Riverstone Parkway. It is at this location that most pedestrian crossings occurred, and the four (4) pedestrian collisions were located between this proposed location and the intersection along Riverstone Parkway at Hospital Drive. While the proposed location does not meet the guidance provided in Section 4F of **the MUTCD, 2009 edition**, a PHB would improve and encourage pedestrian mobility along Riverstone Parkway and provide for an additional safe crossing along the same facility.

RECOMMENDED BY:_____ Date:_____

District Traffic Engineer

RECOMMENDED BY:_____ Date:_____

State Traffic Engineer

RECOMMENDED BY:_____ Date:_____

Director of Operations

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SR 140 Corridor Planning Study

Traffic Engineering Study Report

City of Canton

Cherokee County, Georgia

30 April 2019

Notice

This document and its contents have been prepared and are intended solely as information for the City of Canton and use in relation to the Traffic Engineering Study for the SR 140 Corridor Planning Study.

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorized	Date

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1. Introduction

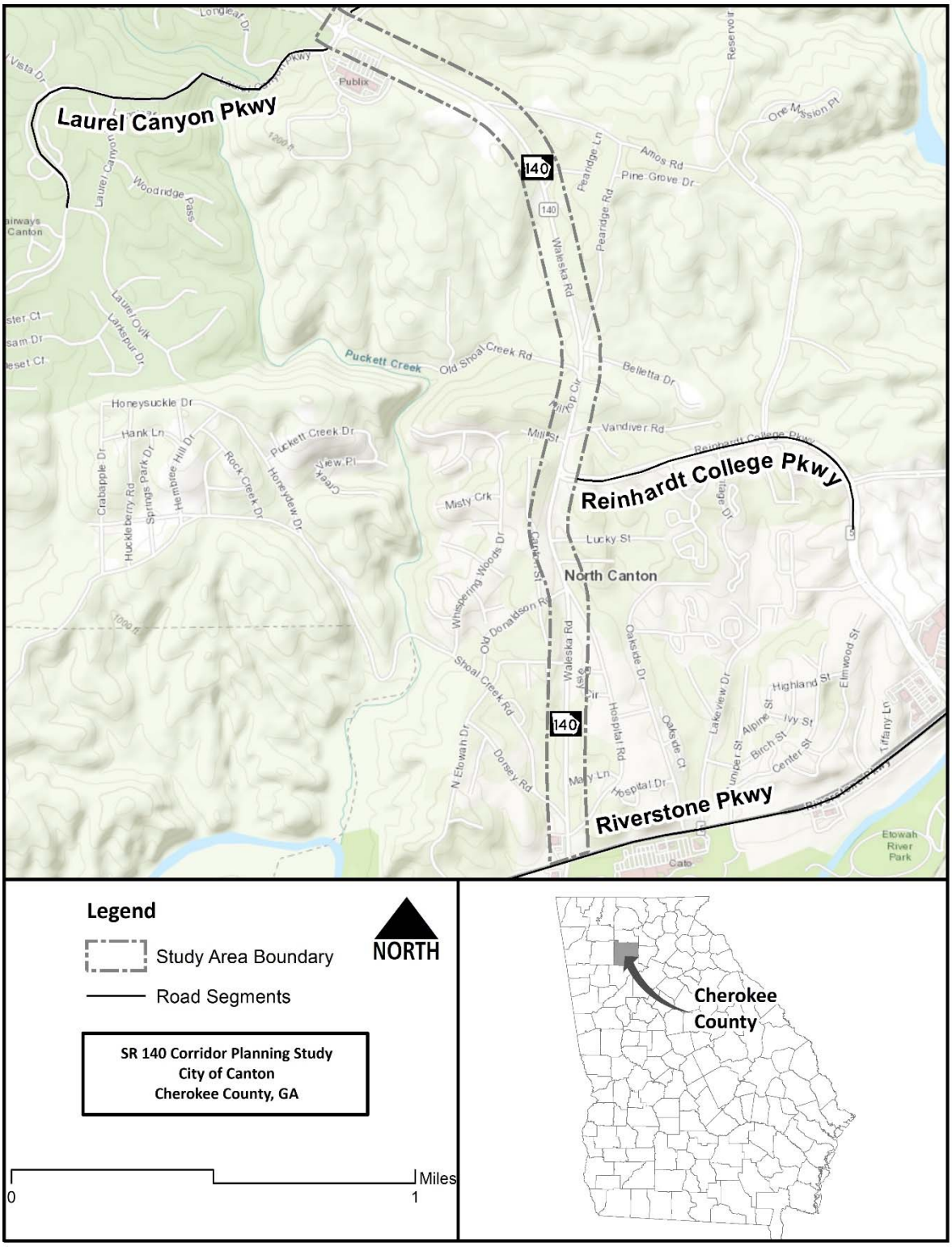
SR 140 is a 78-mile-long state highway in the northwestern part of Georgia. It connects the Armuchee and Norcross areas within portions of Floyd, Bartow, Cherokee, Fulton, and Gwinnett counties. Within Cherokee County and the City of Canton, SR 140 is a two-lane, undivided facility. The posted speed limit along most of the corridor is 45 mph; however, the posted speed limit increases to 55 mph north of Pearidge Road. The facility includes paved shoulders and limited sidewalks. There is a mix or residential and commercial uses along the corridor with two large residential developments located on the northern end of the study area. The purpose of this project is to provide the City of Canton, Georgia with a Corridor Planning Study to evaluate SR 140 from Marietta Hwy/Riverstone Pkwy to Laurel Canyon Pkwy/Great Sky Pkwy. The study will determine the existing and future conditions of the roadway and will consider interim and long term build out conditions.

This report includes the documentation of the traffic and safety analyses along the project corridor. The study area for the project is a 12,500-feet (2.4-miles) long corridor along SR 140 beginning at Marietta Hwy/Riverstone Pkwy and ending at Laurel Canyon Pkwy/Great Sky Pkwy provided below in Figure 1-1. There are three major signalized intersections and four minor/unsignalized intersections along the corridor. The three major signalized intersections are SR 140 at Marietta Hwy/Riverstone Pkwy, SR 140 at Reinhardt College Pkwy, and SR 140 at Laurel Canyon Pkwy/Great Sky Pkwy.

The traffic analyses were conducted for the existing year (2018), open year (2021), and design year (2041) using the traffic counts collected as part of the study and respective year growth rates. Please note that the report indicates the interim year as open year and future year as design year. The crash analyses included crashes that occurred between 2013 and 2017 collected from the Georgia Electronic Accident Reporting System (GEARS)[1].

[1] www.gearsportal.com/Pages/Public/Home.aspx

Figure 1-1 - Project Corridor



2. Data Collection

Eight (8) six-hour Turning Movement Counts (TMCs) for both AM (7:00-10:00 AM) and PM (3:00-6:00 PM) peak periods were collected on Tuesday, October 23, 2018. Six (6) forty-eight-hour bi-directional classification counts and eight (8) forty-eight-hour bi-directional counts were also taken on Tuesday, October 23, 2018, and Wednesday, October 24, 2018. Both types of counts were aggregated at fifteen-minute intervals. Please see **Appendix A** for the counts. Crash data along SR 140 between Laurel Canyon Pkwy and Riverstone Pkwy in the project area were extracted from GEARS and analyzed for years 2013 through 2017. Traffic signal information was collected from Georgia Department of Transportation (GDOT) District 6. There were two (2) site visits performed as part of the data collection and operational condition observation. A preliminary site visit was performed on Tuesday December 4, 2018 to verify the intersection geometry and posted speed limit, and report the operational and safety conditions and intersection skewness, etc. Figure 2-1 illustrates AM peak period Marietta Hwy (SR 140) Eastbound queuing at SR 140 and Marietta Hwy (SR 140)/Riverstone Pkwy intersection observed during the preliminary site visit.

Figure 2-1 - Site Visit – SR 140 at Marietta Hwy/Riverstone Pkwy – AM Peak Period

A comprehensive site visit was performed on Thursday December 13, 2018. Drone videos were taken for the three major intersections, discussed on Section 1, for both AM and PM peak periods. Figure 2-2 illustrates the operational condition captured on the drone video at SR 140 and Marietta Hwy (SR 140)/Riverstone Pkwy intersection during the AM peak period.

Figure 2-2 - Drone Image – SR 140 at Marietta Hwy/Riverstone Pkwy – AM Peak Period

3. Crash Analysis

There were 435 total crashes observed during 2013 – 2017 within the project study area. The locations of crashes are provided in Figure 3-1. The crashes are summarized by type in Table 3-1 and indicate that in each year of the five-year period, the most prevalent crash type is Rear End Collision. Across the five-year period, these crashes represent 55.9% of the total crashes. Angle crashes are the second most frequent type of crash at 22.8% of the total.

A summary of the crashes by severity is provided in Table 3-2 which indicate that 92 of the 435 crashes resulted in an injury with 137 total injuries during the analysis period. No fatal injury crashes have occurred in the study area during the analysis period. Crash rates were calculated by two segments in the project area as follows:

- Segment 1: SR 140 Corridor North of Reinhardt College Pkwy to Laurel Canyon Pkwy
- Segment 2: SR 140 Corridor South of Riverstone Pkwy to Riverstone Pkwy

The crash rates were computed for the five-year time-period and compared against the state-wide average in Table 3-3. As indicated in the table, the study area (SR 140 between Laurel Canyon Pkwy and Riverstone Pkwy) has higher crash rates than that of the state-wide average for similar roads.

Table 3-1 - Crashes by Type

Crash Type	2013		2014		2015		2016		2017		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Angle	15	24.2%	17	27.9%	14	14.7%	23	23.5%	30	25.2%	99	22.8%
Head On	1	1.6%	1	1.6%	1	1.1%	1	1.0%	2	1.7%	6	1.4%
Not A Collision with Motor Vehicle	7	11.3%	6	9.8%	15	15.8%	9	9.2%	5	4.2%	42	9.7%
Rear End	35	56.5%	31	50.8%	57	60.0%	53	54.1%	67	56.3%	243	55.9%
Sideswipe-Opposite Direction	0	0.0%	2	3.3%	3	3.2%	2	2.0%	2	1.7%	9	2.1%
Sideswipe-Same Direction	3	4.8%	4	6.6%	4	4.2%	3	3.1%	9	7.6%	23	5.3%
Other	1	1.6%	0	0.0%	1	1.1%	7	7.1%	4	3.4%	13	3.0%
Total	**62**	**100.0%**	**61**	**100.0%**	**95**	**100.0%**	**98**	**100.0%**	**119**	**100.0%**	**435**	**100.0%**

Table 3-2 - Crashes by Severity

Crash Severity	2013	2014	2015	2016	2017	Total
Injury Crashes	17	10	18	22	25	92
Total Injuries	23	15	28	31	40	137
Fatal Injuries	0	0	0	0	0	0
Total Fatalities	0	0	0	0	0	0
Total Crashes	62	61	95	98	119	435

Table 3-3 - Crash Rate Comparisons

Segment	Average Observed Crash Rate (per 100 million VMT)	State-Wide Average Crash Rate (per 100 million VMT)
SR 140 - North of Reinhardt College Pkwy	1,722	-
SR 140 - North of Riverstone Pkwy	4,170	-
Total	1,330	655

Maps illustrating the type of crashes by location along the two segments are provided in Figures 3-2 and 3-3. Table 3-4 provides the intersection level crashes by types along SR 140 corridor. It can be observed that most of the crashes along SR 140 occurred at the intersections of Marietta Hwy/Riverstone Pkwy, Hospital Rd/Old Donaldson Rd, Reinhardt College Pkwy, and Lauren Canyon Pkwy/Great Sky Pkwy at SR 140, respectively. Read End Collision is the most prevalent type of crash at these intersections. Table 3-5 illustrates the intersection level crashes by severity and indicates most of the injury and property damage only crashes occurred at the three signalized intersections.

Figure 3-1 - Crash Locations by Severity

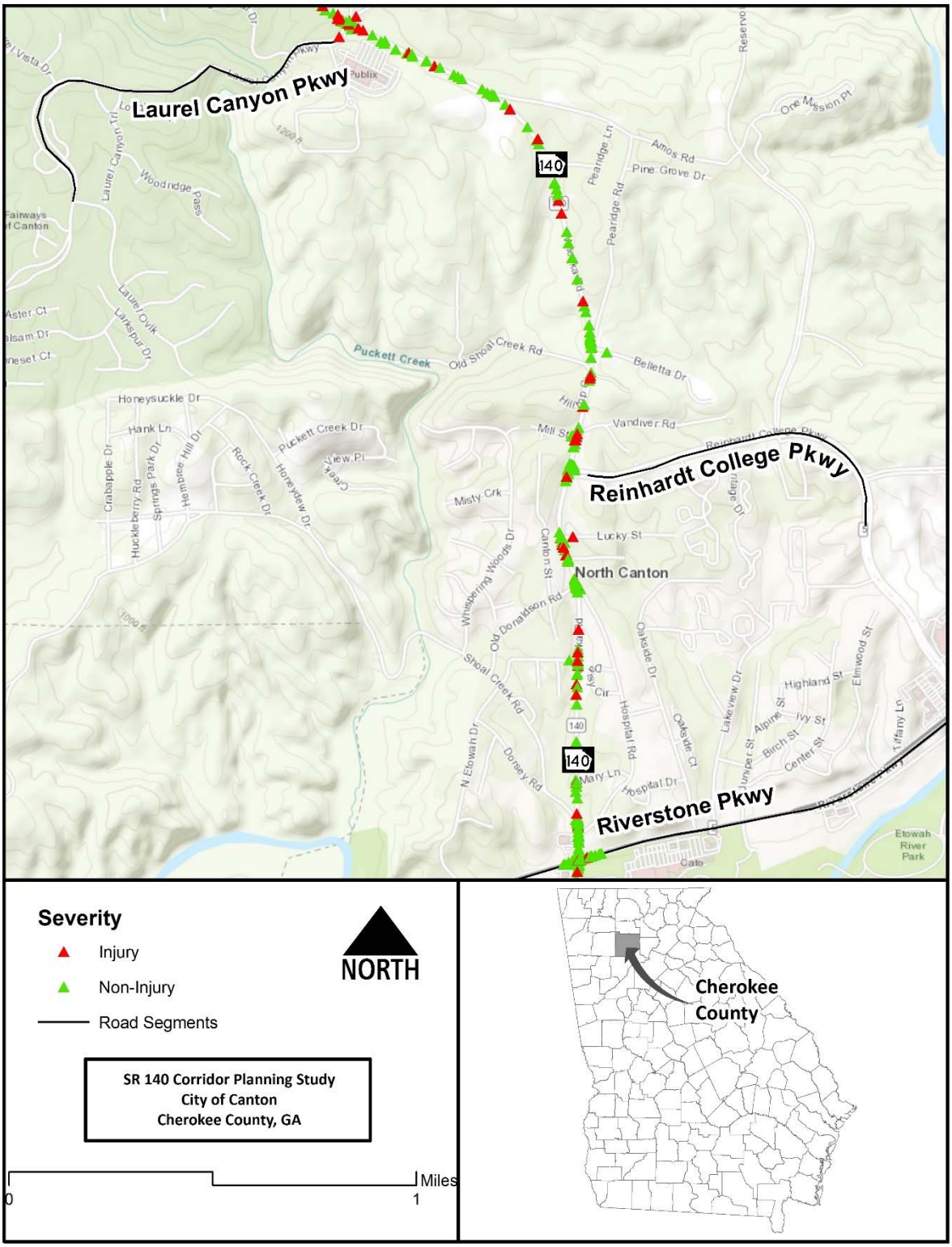


Figure 3-2 - SR 140 Corridor Crashes North of Reinhardt College Pkwy to Laurel Canyon Pkwy

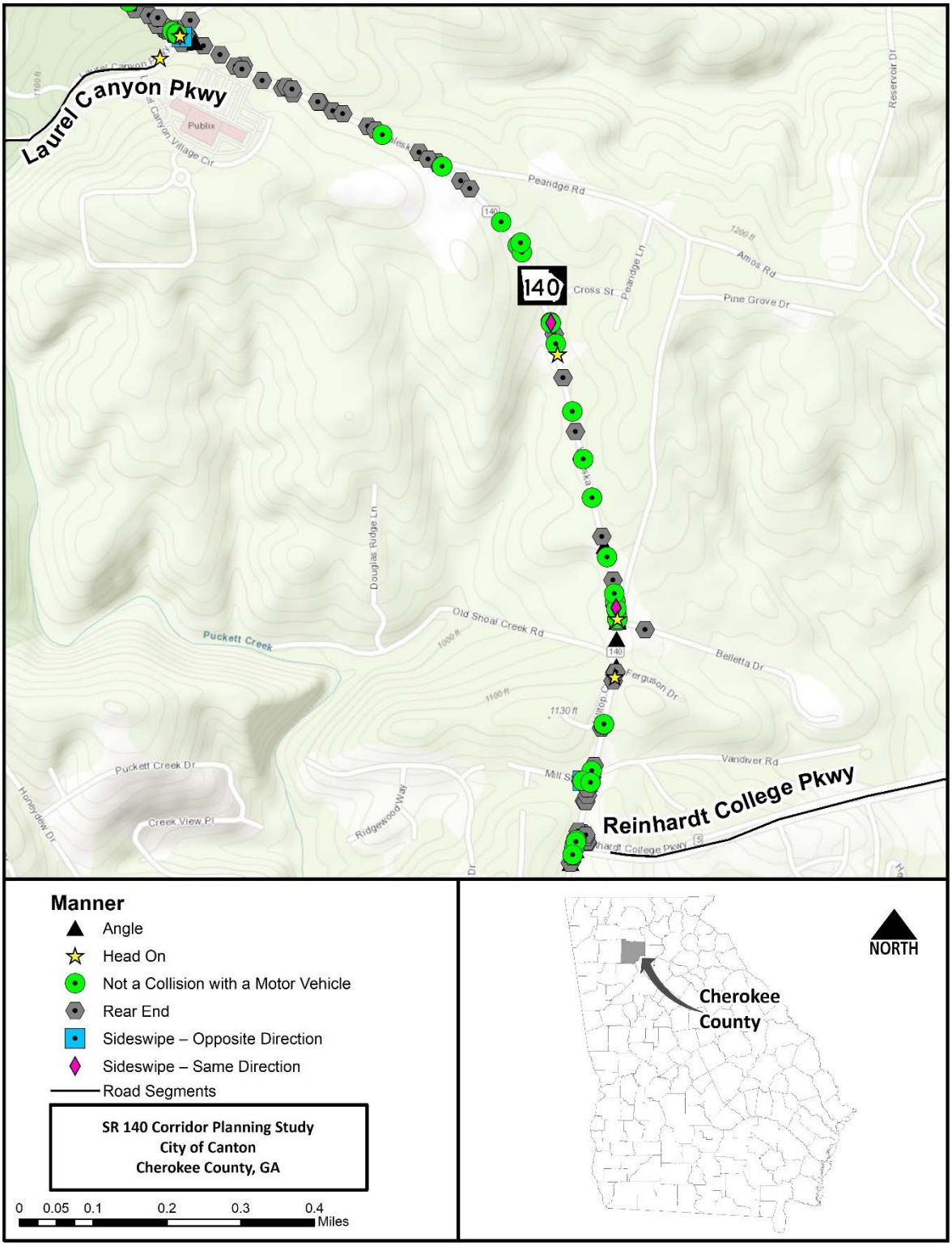


Figure 3-3 - SR 140 Corridor Crashes South of Reinhardt College Pkwy to Riverstone Pkwy

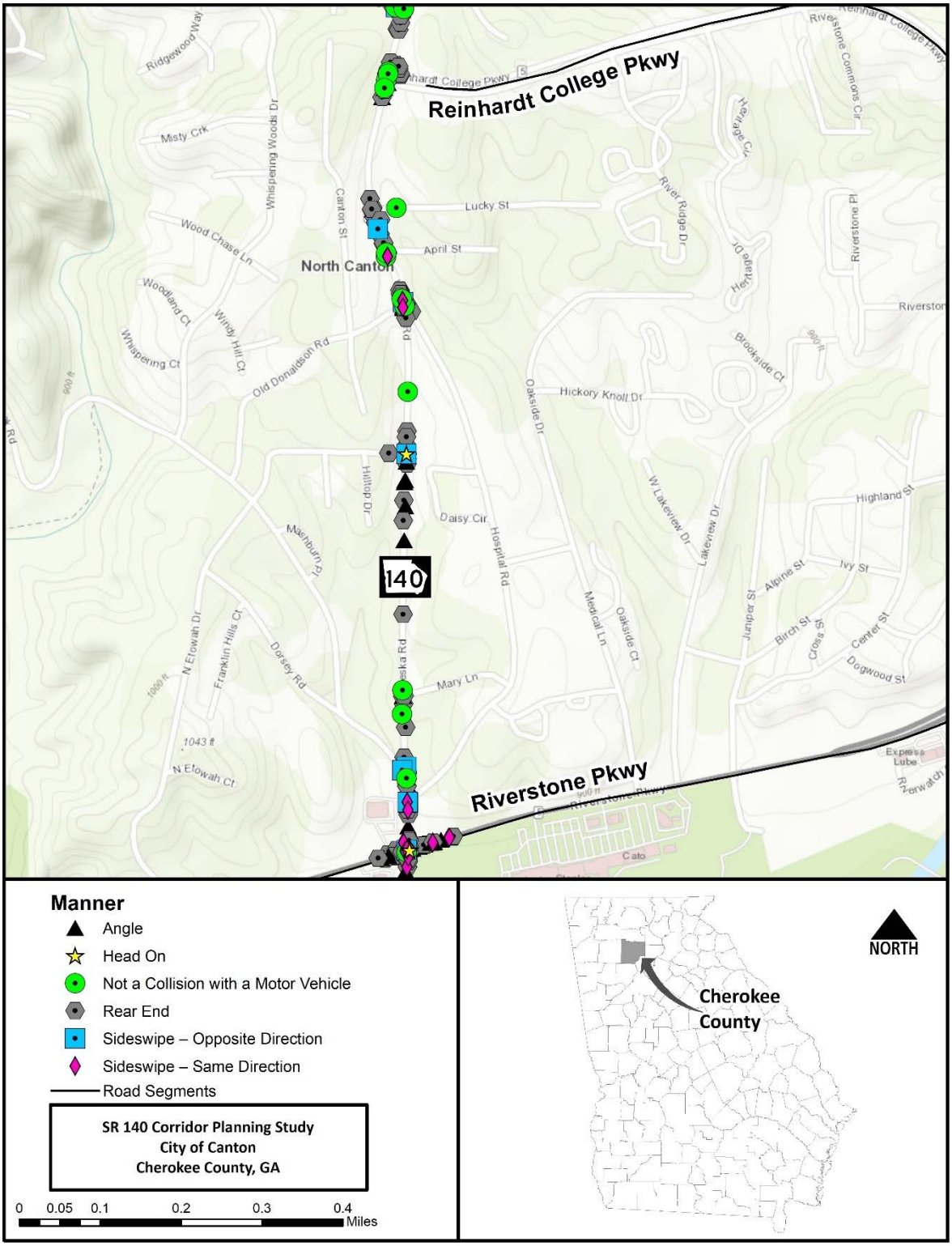


Table 3-4 - Summary of Crashes by Type along SR 140 Corridor

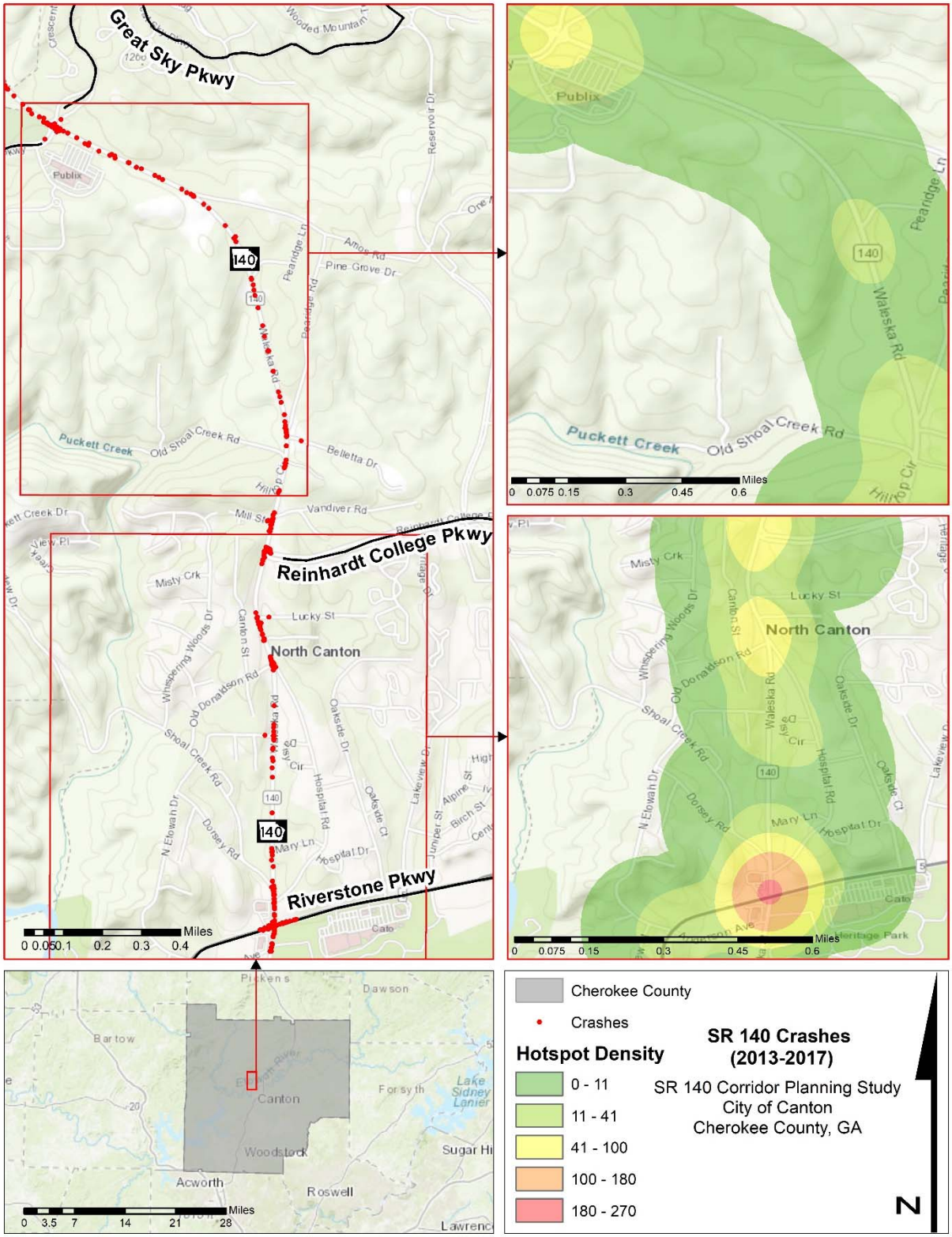
Intersections	Angle	Not a Collision with Motor Vehicle	Rear End	Sideswipe, Opposite Direction	Sideswipe, Same Direction	Head On	Others	Total
SR 140 at Laurel Canyon Pkwy / Great Sky Pkwy	7	6	36	1	1	2	0	53
SR 140 at Pearidge Rd	1	1	6	0	0	0	0	8
SR 140 at Reinhardt College Pkwy	8	4	35	0	0	0	0	47
SR 140 at Old Donaldson Rd / Hospital Rd	12	2	25	1	2	0	2	44
SR 140 at Shoal Creek Rd	3	1	14	2	0	0	4	24
SR 140 at Hospital Rd / Dwy	5	0	7	2	2	0	2	18
SR 140 at Riverstone Pkwy	55	2	62	1	16	1	5	142
SR 140 at Anderson Ave / Etowah Rd	7	4	1	0	1	2	2	17
Total	**98**	**20**	**186**	**7**	**22**	**5**	**15**	**353**

Table 3-5 - Summary of Crashes by Severity along SR 140 Corridor

Intersections	Fatal	Injury	Property Damage	Total
SR 140 at Laurel Canyon Pkwy / Great Sky Pkwy	0	24	29	53
SR 140 at Pearidge Rd	0	1	7	8
SR 140 at Reinhardt College Pkwy	0	9	38	47
SR 140 at Old Donaldson Rd / Hospital Rd	0	8	36	44
SR 140 at Shoal Creek Rd	0	4	20	24
SR 140 at Hospital Rd / Dwy	0	0	18	18
SR 140 at Riverstone Pkwy	0	13	129	142
SR 140 at Anderson Ave / Etowah Rd	0	4	13	17
Total	**0**	**63**	**290**	**353**

Figure 3-4 illustrates the spatial patterns of density values computed along the SR 140 study area with the network kernel density algorithm based on kernel functions of Gaussian at a 300-ft search bandwidth. The SR 140 at Marietta Hwy/Riverstone Pkwy intersection was observed to have the highest crash density. This is due to the higher number of vehicles crossing this intersection. Some other intersections that were observed to have higher crash density include SR 140 at Hospital Rd/Old Donaldson Rd, SR 140 at Reinhardt College Pkwy, and SR 140 at Lauren Canyon Pkwy/Great Sky Pkwy intersections.

Figure 3-4 - SR 140 Corridor Crashes (2013 – 2017)



4. Existing and Future Land Use and Transportation Projects

The approved future growth and development information from the City of Canton's Horizon 2030 Comprehensive Plan was collected. The Community Level Mixed-Use/Retail Center (CLMURC) and Suburban Development Area (SDA) are provided in Table 4-1. Figure 4-1 illustrates the land use map based on the Comprehensive Plan.

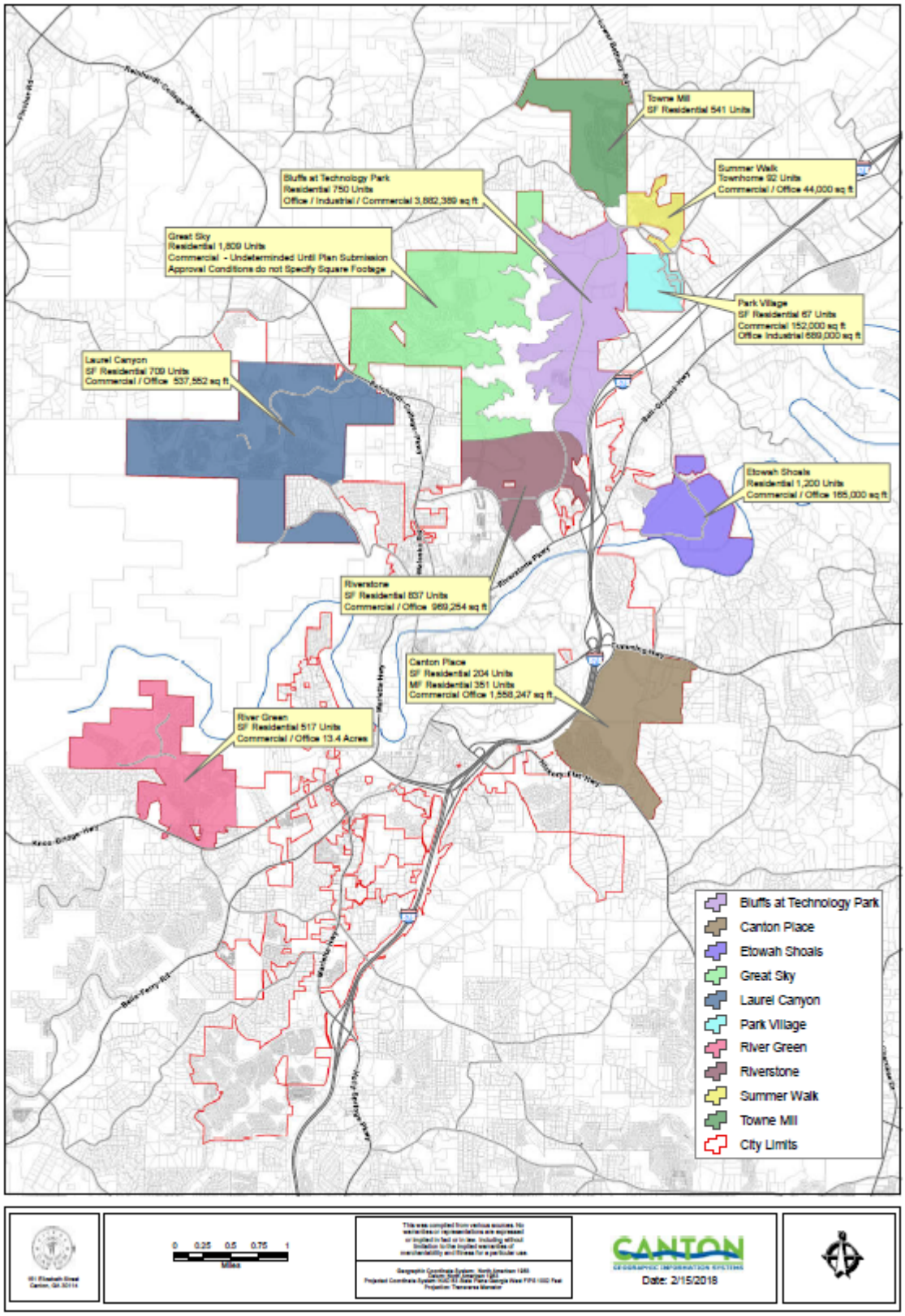
Georgia Department of Transportation's (GDOT's) GeoPI website[2] does not show any programmed project within the corridor. However, Cherokee County Comprehensive Transportation Plan[3] includes two aspirational widening projects along the SR 140 corridor: SR 140 Widening from SR 108 (Fincher Rd) to Lower Burris Rd (ARC ID – ASP-CH-001) and SR 140 Segment 3 Widening from Lower Burris Rd to SR 5 Business (Riverstone Pkwy) (ARC ID – ASP-CH-140C).

Table 4-1 – Approved Future Growth and Development (from the City of Canton's Horizon 2030 Comprehensive Plan)

Sub Area	Development Name	Pod	Units	Future Development Area
Community Level Mixed-Use/Retail Center (CLMURC)				
Canton Place	Canton Place	SRF (Single Family Residential)	204	
		C/O (Commercial/Office)		1,558,247 sq ft
Riverstone	Riverstone	SRF	837	
		Residential (R)		969,254 sq ft
		MF (Multifamily)	351	
Suburban Development Area (SDA)				
Hickory Log	Towne Mill	SFR	541	
	Summer Walk	TH (Townhomes)	92	
		C/O		44,000 sq ft
	Park Village	SFR	67	
		C (Commercial)		152,000 sq ft
		OI (Office Industrial)		689,000 sq ft
	Etowah Shoals	R	1,200	
		C/O		165,000 sq ft
Knox Bridge	River Green	SFR	517	
		C/O		13.4 AC
Laurel Canyon	Laurel Canyon	SFR	709	
		C/O		537,552 sq ft
Pea Ridge	Pea Ridge	R	1,809	
		C		Undetermined

[2] http://www.dot.ga.gov/BS/Projects/ProjectSearch
[3] https://www.cherokeega.com/Roadway-Splost-Program/_resources/documents/CTP2015/Cherokee_CTP_Existing_Conditions_Report_DRAFT.pdf

Figure 4-1 - Land Use based on City of Canton's Horizon 2030 Comprehensive Plan



5. Growth Rates

Traffic projections were calculated for the AM and PM peak hour volumes. The growth rate for the area was calculated using the annual volume statistics from GDOT Traffic Analysis and Data Application (TADA), the Cherokee County census data, the Governor's Office of Planning and Budget census data, and the Atlanta Regional Commission (ARC) Travel Demand Model (TDM). The annual compound growth rate can be calculated using the following equation:

$$Annual\ Growth\ Rate = \left(\frac{End\ Count}{Begin\ Count}\right)^{\frac{1}{End\ Year - Begin\ Year}} - 1$$

The growth rate calculation for the GDOT TADA data, the Cherokee County census data, the Governor's Office of Planning and Budget census data, and the ARC TDM data utilizes the mentioned equation. Please note that the GDOT TADA and County census data the Governor's Office of Planning and Budget census data provide historic information whereas the ARC TDM data provide projected information. Table 5-1 presents the range of sources suggested for growth rate development along with their availability.

Table 5 -1 - Summary of Available Data

Data Source	Availability	Data Year	Obtained From
GDOT TADA	✓	2010 - 2018	Website[4]
County Census	✓	2010 - 2017	Website[5]
ARC TDM	✓	2015, 2040	Cube Models

5.1. GDOT TADA Data

Six (6) short-term stations along SR 140, Riverstone Pkwy, and Waleska St were considered. See **Appendix B** for all the GDOT TADA stations. Based on the GDOT Design Traffic Forecasting Manual, the count data, only for the years for which an actual count was performed and not for the years for which counts were estimated, were used. Several TADA stations were excluded from the analysis due to less or erroneous data. The TADA data yielded an average annual historic growth rate of 1.78%.

5.2. County Census Data

The Cherokee County census data were collected from the US Census Bureau and the Governor's Office of Planning and Budget for 2010 and 2017 to determine census growth trends. The average annual population growth rates for Cherokee County was determined to be 2.05% (see **Appendix B**).

5.3. ARC TDM Data

The ARC TDM for Year 2015 and Year 2040 were used as the base models. The average annual growth rate was determined to be 1.59% (see **Appendix B**).

[4] gdottrafficdata.drakewell.com/publicmultinodemap.asp
[5] www.census.gov/quickfacts/fact/table/gwinnettcountygeorgia/PST045217

5.4. Summary

The final annual compound growth rate for the corridor was calculated by taking an average of those three annual growth rates which yielded a value of 1.80% (see Table 5-2).

Table 5-2 - Annual Compound Growth Rate Summary

Data Source	Annual Growth Rates
GDOT TADA	1.78%
County Census	2.05%
ARC TDM	1.59%
Average	**1.80%**

6. Traffic Volumes

6.1. Existing Year (2018) Volume Development

The Existing Year (2018) AM and PM peak hours were determined using 15-minute count data across the entire study area. The analysis yielded an AM peak hour from 7:30 AM to 8:30 AM and a PM peak hour from 4:45 PM to 5:45 PM. Tables 6-1 and 6-2 present the bi-directional 15-minute and hourly volume distributions for AM and PM peak periods, respectively. Each 15-minute distribution percentage is calculated by dividing that 15-minute volume by the peak hour volume. Similarly, each hourly distribution percentage is calculated by dividing that hourly volume by the peak hour volume. The Existing year (2018) AM and PM peak hour volumes were developed using the Turning Movement Counts for the respective peak hours. The Existing Year AM and PM peak hour volumes are provided in **Appendix C**.

Table 6 -1 - AM Peak Period Distribution

Start Time	End Time	15-Minute		Hourly		
		Volumes	Distribution	Volumes	Distribution	
12:00 AM	12:15 AM	169	2%			
12:15 AM	12:30 AM	140	2%			
12:30 AM	12:45 AM	122	1%	403	4%	
12:45 AM	1:00 AM	100	1%			
1:00 AM	1:15 AM	74	1%			
1:15 AM	1:30 AM	107	1%			
1:30 AM	1:45 AM	73	1%	242	3%	
1:45 AM	2:00 AM	63	1%			
2:00 AM	2:15 AM	50	1%			
2:15 AM	2:30 AM	56	1%			
2:30 AM	2:45 AM	52	1%	211	2%	
2:45 AM	3:00 AM	63	1%			
3:00 AM	3:15 AM	41	0%			
3:15 AM	3:30 AM	55	1%			
3:30 AM	3:45 AM	58	1%	335	4%	
3:45 AM	4:00 AM	91	1%			
4:00 AM	4:15 AM	77	1%			
4:15 AM	4:30 AM	109	1%			
4:30 AM	4:45 AM	186	2%	1,288	14%	
4:45 AM	5:00 AM	219	2%			
5:00 AM	5:15 AM	343	4%			
5:15 AM	5:30 AM	540	6%			
5:30 AM	5:45 AM	666	7%	3,462	38%	
5:45 AM	6:00 AM	794	9%			
6:00 AM	6:15 AM	862	9%			
6:15 AM	6:30 AM	1,140	12%			
6:30 AM	6:45 AM	1,398	15%	6,521	71%	
6:45 AM	7:00 AM	1,522	17%			
7:00 AM	7:15 AM	1,675	18%			
7:15 AM	7:30 AM	1,926	21%			
7:30 AM	7:45 AM	2,151	23%	9,185	100%	AM Peak Hour
7:45 AM	8:00 AM	2,357	26%			
8:00 AM	8:15 AM	2,390	26%			
8:15 AM	8:30 AM	2,287	25%			
8:30 AM	8:45 AM	1,934	21%	7,482	81%	
8:45 AM	9:00 AM	1,929	21%			
9:00 AM	9:15 AM	1,776	19%			
9:15 AM	9:30 AM	1,843	20%			
9:30 AM	9:45 AM	1,832	20%	7,301	79%	
9:45 AM	10:00 AM	1,832	20%			
10:00 AM	10:15 AM	1,703	19%			
10:15 AM	10:30 AM	1,934	21%			
10:30 AM	10:45 AM	1,881	20%	8,020	87%	
10:45 AM	11:00 AM	2,013	22%			
11:00 AM	11:15 AM	2,058	22%			
11:15 AM	11:30 AM	2,068	23%			
11:30 AM	11:45 AM	2,097	23%			
11:45 AM	12:00 PM	2,189	24%			

Table 6-2 - PM Peak Period Distribution

Start Time	End Time	15-Minute		Hourly		
		Volumes	Distribution	Volumes	Distribution	
12:00 PM	12:15 PM	2,314	21%			
12:15 PM	12:30 PM	2,303	21%			
12:30 PM	12:45 PM	2,357	22%			
12:45 PM	1:00 PM	2,274	21%	9,281	85%	
1:00 PM	1:15 PM	2,329	21%			
1:15 PM	1:30 PM	2,334	21%			
1:30 PM	1:45 PM	2,344	21%			
1:45 PM	2:00 PM	2,317	21%	9,232	85%	
2:00 PM	2:15 PM	2,273	21%			
2:15 PM	2:30 PM	2,236	20%			
2:30 PM	2:45 PM	2,406	22%			
2:45 PM	3:00 PM	2,414	22%	9,792	90%	
3:00 PM	3:15 PM	2,377	22%			
3:15 PM	3:30 PM	2,422	22%			
3:30 PM	3:45 PM	2,579	24%			
3:45 PM	4:00 PM	2,717	25%	10,308	94%	
4:00 PM	4:15 PM	2,611	24%			
4:15 PM	4:30 PM	2,515	23%			
4:30 PM	4:45 PM	2,465	23%			
4:45 PM	5:00 PM	2,615	24%	10,910	100%	PM Peak Hour
5:00 PM	5:15 PM	2,795	26%			
5:15 PM	5:30 PM	2,803	26%			
5:30 PM	5:45 PM	2,697	25%			
5:45 PM	6:00 PM	2,573	24%	9,852	90%	
6:00 PM	6:15 PM	2,526	23%			
6:15 PM	6:30 PM	2,487	23%			
6:30 PM	6:45 PM	2,266	21%			
6:45 PM	7:00 PM	2,214	20%	7,852	72%	
7:00 PM	7:15 PM	2,033	19%			
7:15 PM	7:30 PM	1,850	17%			
7:30 PM	7:45 PM	1,755	16%			
7:45 PM	8:00 PM	1,546	14%	5,949	55%	
8:00 PM	8:15 PM	1,513	14%			
8:15 PM	8:30 PM	1,452	13%			
8:30 PM	8:45 PM	1,438	13%			
8:45 PM	9:00 PM	1,249	11%	3,994	37%	
9:00 PM	9:15 PM	997	9%			
9:15 PM	9:30 PM	929	9%			
9:30 PM	9:45 PM	819	8%			
9:45 PM	10:00 PM	792	7%	2,380	22%	
10:00 PM	10:15 PM	675	6%			
10:15 PM	10:30 PM	523	5%			
10:30 PM	10:45 PM	390	4%			
10:45 PM	11:00 PM	363	3%	1,220	11%	
11:00 PM	11:15 PM	336	3%			
11:15 PM	11:30 PM	271	2%			
11:30 PM	11:45 PM	250	2%			
11:45 PM	12:00 AM	207	2%			

6.2. Existing Year Truck Percentages

The forty-eight-hour classification counts were used to calculate the AM peak hour, the PM peak hour and the daily truck percentages. The percentages are reported separately for Single Unit (S.U.) and Multi-Unit or Combination (Comb.) trucks. It was observed that the corridor has 4.0-6.5% and 1.5-3.5% trucks during AM and PM peak hours, respectively. The detailed truck percentages calculations based on the raw count data are included in **Appendix C**.

6.3. Future Year Volume Development

Future Year AM and PM peak hour volumes were calculated using the growth rate described in the previous section. Future year traffic volumes are proposed to be calculated for the Open Year (2021), and the Design Year (2041). The Future Year AM and PM peak hour volumes are provided in **Appendix C**.

7. Traffic Analysis for Existing Conditions and Future No-Build Alternatives

For the existing conditions and future no-build scenarios, three signalized intersections and four unsignalized intersections along SR 140 were analyzed. The intersection analyses were based on the developed traffic volumes discussed in Section 5 and the LOS criteria from the Highway Capacity Manual (HCM) for signalized and unsignalized intersections. The results of the existing year (2018), and open year (2021) and design year (2041) no-build scenarios are provided in Table 7-1. Please note, the design year no-build alternatives for AM and PM peak hours include one additional lane in each direction along SR 140.

As shown in the table, SR 140 at Hospital Rd and SR 140 at Marietta Hwy/Riverstone Pkwy operate at LOS E or worse in both existing year (2018), open year (2021), and design year (2041) no-build conditions. SR 140 at Old Donaldson Rd/Hospital Rd and SR 140 at Pearidge Rd intersections operate at LOS F during design year (2041) PM peak hour. Detailed traffic analysis results for movements and approaches for each intersection are provided in **Appendix D**.

Table 7 -1 - Existing Condition and Future No-Build Intersection Average Delay and LOS

Intersection	Intersection Control	Existing Year (2018)				Open Year (2021) No-Build				Design Year (2041) No-Build			
		AM		PM		AM		PM		AM		PM	
		Delay*	LOS	Delay*	LOS	Delay*	LOS	Delay*	LOS	Delay*	LOS	Delay*	LOS
SR 140 at Laurel Canyon Pkwy/Great Sky Pkwy	Signalized	29.2	C	26.1	C	33.1	C	27.0	C	27.2	C	27.4	C
SR 140 at Pearidge Rd	TWSC	5.7	A	19.7	C	6.0	A	22.0	C	7.1	A	50.6	F
SR 140 at Reinhardt College Pkwy	Signalized	21.5	C	25.1	C	22.3	C	28.1	C	27.2	C	52.1	D
SR 140 at Old Donaldson Rd/Hospital Rd	TWSC	13.3	B	13.3	D	14.4	B	36.8	E	35.1	E	198.7	F
SR 140 at Shoal Creek Rd	TWSC	13.0	B	13.0	A	14.4	B	8.6	A	13.9	B	9.4	A
SR 140 at Hospital Rd	TWSC	36.3	E	36.3	F	46.9	E	203.9	F	46.2	E	382.6	F
SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy	Signalized	62.6	E	55.1	E	71.6	E	59.3	E	152.7	F	133.6	F

*Average Delay (veh/sec)

8. Intersection Control Evaluation (ICE) Analysis

The ICE analyses were performed on two at-grade signalized intersections along SR 140 corridor. An ICE waiver was completed based on the Stage 1 results for SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy. Addition of left turning lanes are found to be an effective alternative based on Stage 1 analysis. The ICE for SR 140 at Reinhardt College Pkwy intersection has two alternatives for Stage 2. A multilane roundabout is proposed to be the build alternative based on Stage 2 analysis; however, due to cost, a continuous green-T intersection is proposed as the interim alternative. Table 8-1 illustrates the alternatives for the SR 140 intersections based on the ICE analyses. Detailed ICE analyses can be found in **Appendix E**.

Table 8-1 - ICE Analysis for Build Scenario

Intersection	Base Alternative	ICE Alternatives			Final Alternative
		Alternative 1	Alternative 2	Alternative 3	
SR 140 at Reinhardt College Pkwy	Signalized	Multilane Roundabout	Continuous Green-T	-	Multilane Roundabout*
SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy	Signalized	Add LT Lanes	-	-	Add LT Lanes

*Continuous Green-T intersection is proposed as an interim alternative

9. Proposed Improvements

The proposed improvements for short-term, interim, and long-term improvements are discussed below. Please note that the costs will vary depending on the final design recommendations. Please see **Appendix F** for the short-term, interim, and long-term improvement layouts.

1. **Short-Term Intersection Improvements**
   SR 140/Waleska St at Riverstone Pkwy/Marietta Hwy Intersection (Quick Response Project)
   - Proposed improvements
     - Increase right turning lane storage on SR 140 Southbound at Riverstone Pkwy
     - Right-in and right-out improvements at Walgreens Drwy and Hospital Rd
     - Signal upgrade at Riverstone Pkwy and SR 140
   - Estimate of Probable Costs $250,000.00

2. **Interim Intersection Improvements**
   Area 1 – SR 140/Waleska St at Riverstone Pkwy/Marietta Hwy Intersection
   - Proposed improvements
     - Provide median on SR 140 southbound approach to restrict left turn movements to and from Walgreens Drwy and Hospital Rd
     - Realign Shoal Creek Rd to align with Mary Lane
     - Provide left turning lane on SR 140 Northbound onto realigned Shoal Creek Rd
     - Provide right turning lane on SR 140 Northbound onto Mary Lane
     - Provide left turning lane on SR 140 Southbound onto Mary Lane
     - Provide right turning lane on SR 140 Southbound onto realigned Shoal Creek Rd

- Estimate of Probable Costs $3,750,000.00

Area 2 – SR 140 at Hospital Rd/Old Donaldson Rd Intersection

- Proposed improvements
  - Realign Hospital Rd with Old Donaldson Rd
  - Provide left turning lane on SR 140 Northbound onto realigned Old Donaldson Rd
  - Provide right turning lane on SR 140 Northbound onto Hospital Rd
  - Provide left turning lane on SR 140 Southbound onto Hospital Rd
  - Provide right turning lane on SR 140 Southbound onto realigned Old Donaldson Rd
- Estimate of Probable Costs $1,600,000.00

Area 3 - SR 140 at Reinhardt College Pkwy Intersection

- Proposed improvements
  - Provide a continuous green T-intersection at SR 140 at Reinhardt College Pkwy
  - Provide right-in right-out at SR 140 at Mill Street intersection
  - Provide right-in right-out at SR 140 at Vandiver Rd intersection
- Estimate of Probable Costs $ 2,400,000.00

Area 4 – SR 140 at Belletta Dr and Pearidge Rd Intersection

- Proposed improvements
  - Realign Belletta Dr and Pearidge Rd
  - Provide right turning lane on SR 140 Northbound onto Belletta Dr
  - Provide right turning lane on SR 140 Northbound onto Pearidge Rd
  - Provide left turning lane on SR 140 Southbound onto Belletta Dr
  - Provide left turning lane on SR 140 Southbound onto Pearidge Rd
- Estimate of Probable Costs $ 1,600,000.00

Area 5 – SR 140 at Cross Street Intersection

- Proposed improvements
  - Realign cross street
  - Provide right turning lane on SR 140 Northbound
- Estimate of Probable Costs $ 400,000.00

Area 6 – SR 140 at Pearidge Rd Intersection

- Proposed improvements
  - Realign Pearidge Rd
  - Provide right turning lane on SR 140 Northbound onto Pearidge Rd
  - Provide left turning lane on SR 140 Southbound onto Pearidge Rd
  - Provide left turning lane on SR 140 Northbound onto driveway at Pearidge Rd intersection
  - Northbound, provide left turn lane into future development parcel
  - Provide left turning lane on SR 140 Northbound onto future development parcel driveway
  - Provide right-in right-out at future development parcel driveway
- Estimate of Probable Costs $2,500,000.00

Area 7 – SR 140 at Laurel Canyon Pkwy/Great Sky Pkwy Intersection

- Proposed improvements
  - Reduce Laurel Canyon Pkwy Eastbound right turning radius
  - Signal Improvements
- Estimate of Probable Costs $250,000.00

3. **Long-Term Intersection Improvements**

Area 1 – SR 140/Waleska St at Riverstone Pkwy/Marietta Hwy Intersection

- Proposed improvements
  - Provide a second left turning lane on Riverstone Pkwy Westbound
  - Provide a second left turning lane on Marietta Hwy Eastbound
  - Provide a second left turning lane on Waleska Street Northbound
  - Provide medians to restrict left turn movements to and from driveways on Riverstone Pkwy Westbound and Marietta Hwy Eastbound
  - Provide a second receiving lane on SR 140 Northbound
- Estimate of Probable Costs $10,410,000.00

Area 3 - SR 140 at Reinhardt College Pkwy

- Proposed improvements
  - Provide a multilane roundabout
- Estimate of Probable Costs $ 3,400,000.00

Area 1-6 – SR 140/Waleska St at Riverstone Pkwy/Marietta Hwy intersection to SR 140 at Laurel Canyon/Great Sky intersection

- Proposed improvements
  - Provide 4-Lane divided roadway with median
  - Provide 8' wide multi-purpose paths to improve pedestrian connections from Laurel Canyon Pkwy and Great Sky Pkwy to City of Canton
- Estimate of Probable Costs $ 40,000,000.00 (per Cherokee County, CTP Estimate by WSP)

10. Traffic Analysis for Future Build Alternatives

Based on the ICE analyses, the final alternatives were identified. Traffic analyses were performed for both open year (2021) and design year (2041) AM and PM peak hours for the intersections along SR 140. The results of the open year (2021) and design year (2041) build scenarios are provided in Table 9-1. Please note that SR 140 at Reinhardt College Pkwy is analyzed as Continuous Green-T in open year (2021) and multilane roundabout in design year (2041) as discussed in Section 8. Shoal Creek Rd is realigned with Mary Ln. The design year (2041) build alternatives for AM and PM peak hours include one additional lane in each direction along SR 140.

As shown in the table, all intersections along SR 140 operate at LOS E or better in both open year (2021) AM and PM conditions except SR 140 at Shoal Creek Rd/Mary Ln intersection with operational conditions worsening at this location in the design year (2041). SR 140 at Old Donaldson Rd/Hospital Rd and SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy also operate at LOS F in design year (2041) PM peak hour.

At the intersection of SR 140 at Reinhardt College Pkwy, the proposed roundabout is estimated to result in a reduction in delay of 13.1 sec/veh and 38.4 sec/veh during design year (2041) AM and PM peak hours, respectively. At the intersection of SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy, the proposed left turning lane addition is estimated to result in a reduction in delay of 19.0 sec/veh during open year (2021) AM peak hour. Similarly, the proposed left turning lane additions at the intersection is estimated to result in a reduction in delay of 91.7 sec/veh and 53.5 sec/veh during design year (2041) AM and PM peak hours, respectively.

SR 140 at Old Donaldson Rd/Hospital Rd and SR 140 at Shoal Creek Rd/Mary Ln intersections require ICEs for future build alternatives to improve the operational conditions in open year (2021) and design year (2041).

Detailed traffic analysis results for movements and approaches for each intersection are provided in **Appendix D**.

Table 10-1 - Future Year Build Intersection Average Delay and LOS

Intersection	Intersection Control	Open Year (2021) Build				Design Year (2041) Build			
		AM		PM		AM		PM	
		Delay*	LOS	Delay*	LOS	Delay*	LOS	Delay*	LOS
SR 140 at Laurel Canyon Pkwy/Great Sky Pkwy	Signalized	33.1	C	27.0	C	19.4	B	27.4	C
SR 140 at Pearidge Rd	TWSC	10.0	A	25.5	D	10.9	B	49.6	E
SR 140 at Reinhardt College Pkwy	Continuous Green-T / Multilane Roundabout	18.1	B	26.3	C	14.1	B	13.7	B
SR 140 at Old Donaldson Rd/Hospital Rd	TWSC	18.4	C	38.3	E	39.0	E	200.4	F
SR 140 at Shoal Creek Rd/Mary Ln	TWSC	26.2	D	115.7	F	306.9	F	Err	F
SR 140 at Hospital Rd	TWSC	12.3	B	11.4	B	9.5	A	9.5	A
SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy	Signalized	45.8	D	52.6	D	61.0	E	80.1	F

*Average Delay (veh/sec)

11. Summary

This report includes the documentation of the traffic and safety analyses along the project corridor. The historic crash data were collected for the SR 140 corridor and compared against the state-wide average. The corridor has higher crash rates than the state-wide average. The traffic analysis for this report focuses only on the preferred alternative alignment for build scenarios. The traffic analyses were conducted for the existing year (2018), open year (2021), and design year (2041) using traffic volumes developed using the traffic counts and after applying their respective growth rates.

The ICE analyses were performed to identify the preferred intersection controls. An ICE waiver to add left turn lanes was completed based on the Stage 1 results for SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy. A multilane roundabout is proposed to be the build alternative based on Stage 2 analysis for SR 140 at Reinhardt College Pkwy intersection; however, due to cost, a continuous green-T intersection is postposed as the interim alternative. At the intersection of SR 140 at Reinhardt College Pkwy, the proposed roundabout results in a reduction in delay of 13.1 sec/veh and 38.4 sec/veh during design year (2041) AM and PM peak hours, respectively. At the intersection of SR 140/Waleska St at Marietta Hwy/Riverstone Pkwy, the proposed left turning lane addition results in a reduction in delay of 19.0 sec/veh during open year (2021) AM peak hour. Similarly, the proposed left turning lane additions at the intersection results in a reduction in delay of 91.7 sec/veh and 53.5 sec/veh during design year (2041) AM and PM peak hours, respectively.

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APPENDIX D: RAW TRAFFIC COUNTS

All Traffic Data Services

www.alltrafficdata.net

Site Code: 39
Station ID: 39
MAIN ST SOUTH OF MEADOW LN

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	227			12	186				
12:15		7	232			10	235				
12:30		7	209			13	225				
12:45		8	207	26	875	10	214	45	860	71	1735
01:00		9	228			6	224				
01:15		7	209			3	200				
01:30		3	205			4	226				
01:45		2	217	21	859	5	230	18	880	39	1739
02:00		3	208			3	180				
02:15		5	205			6	189				
02:30		4	222			5	204				
02:45		2	243	14	878	3	206	17	779	31	1657
03:00		6	250			3	248				
03:15		4	271			9	193				
03:30		4	244			8	239				
03:45		5	291	19	1056	7	218	27	898	46	1954
04:00		10	276			7	199				
04:15		10	296			13	204				
04:30		13	322			15	231				
04:45		17	294	50	1188	19	251	54	885	104	2073
05:00		20	369			20	255				
05:15		25	351			27	241				
05:30		36	362			55	227				
05:45		40	338	121	1420	88	218	190	941	311	2361
06:00		44	307			86	195				
06:15		64	293			136	230				
06:30		98	294			156	171				
06:45		104	210	310	1104	217	176	595	772	905	1876
07:00		122	173			265	153				
07:15		133	141			283	165				
07:30		184	157			328	139				
07:45		199	123	638	594	323	115	1199	572	1837	1166
08:00		179	94			327	137				
08:15		179	90			288	114				
08:30		173	76			327	98				
08:45		198	91	729	351	297	93	1239	442	1968	793
09:00		184	83			217	86				
09:15		168	71			188	80				
09:30		159	51			182	58				
09:45		171	48	682	253	207	54	794	278	1476	531
10:00		164	49			154	51				
10:15		160	31			183	27				
10:30		160	35			166	29				
10:45		180	26	664	141	190	33	693	140	1357	281
11:00		186	21			160	25				
11:15		184	17			179	22				
11:30		199	16			213	18				
11:45		206	12	775	66	183	18	735	83	1510	149
Total		4049	8785			5606	7530			9655	16315
Percent		31.5%	68.5%			42.7%	57.3%			37.2%	62.8%
Grand Total		4049	8785			5606	7530			9655	16315
Percent		31.5%	68.5%			42.7%	57.3%			37.2%	62.8%

ADT ADT 25,970 AADT 25,970

All Traffic Data Services

www.alltrafficdata.net

Site Code: 40
Station ID: 40
MAIN ST NORTH OF JOHNSTON FARM LN

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	201			9	214				
12:15		9	170			5	181				
12:30		5	197			5	213				
12:45		7	179	31	747	3	185	22	793	53	1540
01:00		3	208			3	217				
01:15		4	222			0	185				
01:30		5	181			1	169				
01:45		5	198	17	809	3	195	7	766	24	1575
02:00		4	192			2	180				
02:15		3	188			1	167				
02:30		1	197			3	192				
02:45		1	199	9	776	1	185	7	724	16	1500
03:00		1	199			3	214				
03:15		2	205			15	143				
03:30		3	206			16	180				
03:45		5	207	11	817	9	200	43	737	54	1554
04:00		1	229			9	211				
04:15		8	236			9	230				
04:30		7	221			25	225				
04:45		16	236	32	922	23	218	66	884	98	1806
05:00		13	248			27	246				
05:15		11	265			32	242				
05:30		16	257			43	211				
05:45		30	198	70	968	61	202	163	901	233	1869
06:00		56	221			87	217				
06:15		81	212			106	162				
06:30		80	200			140	151				
06:45		130	188	347	821	146	142	479	672	826	1493
07:00		122	174			170	129				
07:15		129	160			244	117				
07:30		148	112			266	105				
07:45		158	115	557	561	218	60	898	411	1455	972
08:00		153	122			241	66				
08:15		141	93			235	75				
08:30		157	92			219	83				
08:45		177	100	628	407	207	68	902	292	1530	699
09:00		145	79			178	61				
09:15		147	79			194	71				
09:30		138	58			195	41				
09:45		159	49	589	265	182	29	749	202	1338	467
10:00		100	40			169	25				
10:15		148	30			156	28				
10:30		126	29			202	30				
10:45		143	15	517	114	161	13	688	96	1205	210
11:00		137	13			166	22				
11:15		129	13			168	9				
11:30		167	14			173	8				
11:45		169	12	602	52	183	13	690	52	1292	104
Total		3410	7259			4714	6530			8124	13789
Percent		32.0%	68.0%			41.9%	58.1%			37.1%	62.9%
Grand Total		3410	7259			4714	6530			8124	13789
Percent		32.0%	68.0%			41.9%	58.1%			37.1%	62.9%

ADT ADT 21,913 AADT 21,913

All Traffic Data Services

www.alltrafficdata.net

Site Code: 41
Station ID: 41
HOLLY SPRINGS PKWY
NORTH OF RABBITT HILL RD
Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	115			6	127				
12:15		2	118			9	117				
12:30		3	115			1	120				
12:45		4	126	16	474	2	101	18	465	34	939
01:00		3	98			4	103				
01:15		1	106			2	92				
01:30		1	99			4	114				
01:45		1	106	6	409	2	85	12	394	18	803
02:00		2	119			2	101				
02:15		1	110			2	94				
02:30		3	111			2	100				
02:45		4	91	10	431	3	86	9	381	19	812
03:00		2	118			2	92				
03:15		3	115			2	92				
03:30		1	97			7	101				
03:45		1	122	7	452	2	92	13	377	20	829
04:00		5	140			4	125				
04:15		2	139			8	104				
04:30		5	131			18	125				
04:45		12	139	24	549	26	114	56	468	80	1017
05:00		11	127			29	95				
05:15		10	130			34	116				
05:30		19	136			48	110				
05:45		35	118	75	511	55	121	166	442	241	953
06:00		27	133			51	108				
06:15		31	126			65	109				
06:30		45	118			102	95				
06:45		66	74	169	451	112	56	330	368	499	819
07:00		61	71			124	64				
07:15		69	69			169	57				
07:30		88	68			190	36				
07:45		89	59	307	267	163	36	646	193	953	460
08:00		79	67			141	51				
08:15		78	48			139	28				
08:30		88	51			123	34				
08:45		83	43	328	209	103	28	506	141	834	350
09:00		71	51			144	29				
09:15		79	36			119	27				
09:30		102	46			137	21				
09:45		101	27	353	160	103	16	503	93	856	253
10:00		91	21			84	17				
10:15		91	22			99	19				
10:30		104	30			106	7				
10:45		89	16	375	89	99	11	388	54	763	143
11:00		83	18			87	5				
11:15		96	12			148	4				
11:30		131	7			103	9				
11:45		102	14	412	51	104	3	442	21	854	72
Total		2082	4053			3089	3397			5171	7450
Percent		33.9%	66.1%			47.6%	52.4%			41.0%	59.0%
Grand Total		2082	4053			3089	3397			5171	7450
Percent		33.9%	66.1%			47.6%	52.4%			41.0%	59.0%
ADT		ADT 12,621		AADT 12,621							

All Traffic Data Services

www.alltrafficdata.net

Site Code: 42
Station ID: 42
HOLLY SPRINGS PKWY NORTH OF BARRETT RD

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	135			5	122				
12:15		3	144			4	121				
12:30		1	127			3	111				
12:45		1	140	10	546	3	137	15	491	25	1037
01:00		1	131			1	127				
01:15		5	119			4	125				
01:30		2	137			6	127				
01:45		1	131	9	518	2	127	13	506	22	1024
02:00		2	143			3	118				
02:15		1	117			1	133				
02:30		0	181			1	124				
02:45		2	113	5	554	2	132	7	507	12	1061
03:00		3	136			3	136				
03:15		1	134			3	143				
03:30		2	151			6	155				
03:45		5	153	11	574	4	119	16	553	27	1127
04:00		4	184			3	151				
04:15		4	196			5	140				
04:30		8	164			8	154				
04:45		21	184	37	728	9	145	25	590	62	1318
05:00		22	206			12	124				
05:15		19	186			16	154				
05:30		32	187			36	135				
05:45		41	163	114	742	44	176	108	589	222	1331
06:00		41	170			40	125				
06:15		60	146			60	157				
06:30		84	129			68	158				
06:45		86	80	271	525	117	85	285	525	556	1050
07:00		106	73			124	104				
07:15		131	95			149	62				
07:30		155	58			184	81				
07:45		150	58	542	284	149	60	606	307	1148	591
08:00		122	44			122	63				
08:15		119	52			136	45				
08:30		118	39			127	69				
08:45		133	40	492	175	107	62	492	239	984	414
09:00		121	42			107	55				
09:15		109	25			92	36				
09:30		84	31			116	25				
09:45		131	28	445	126	91	23	406	139	851	265
10:00		118	18			103	34				
10:15		114	25			85	24				
10:30		132	12			116	16				
10:45		124	7	488	62	104	15	408	89	896	151
11:00		113	10			86	14				
11:15		129	4			121	5				
11:30		140	8			113	14				
11:45		136	7	518	29	116	6	436	39	954	68
Total		2942	4863			2817	4574			5759	9437
Percent		37.7%	62.3%			38.1%	61.9%			37.9%	62.1%
Grand Total		2942	4863			2817	4574			5759	9437
Percent		37.7%	62.3%			38.1%	61.9%			37.9%	62.1%
ADT		ADT 15,196		AADT 15,196							

All Traffic Data Services

www.alltrafficdata.net

Site Code: 43
Station ID: 43
MARIETTA HWY NORTH OF GOODWIN RD

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		6	135			8	123				
12:15		3	123			2	123				
12:30		7	114			3	111				
12:45		3	114	19	486	6	108	19	465	38	951
01:00		2	108			2	116				
01:15		5	121			3	113				
01:30		3	104			3	119				
01:45		0	112	10	445	3	106	11	454	21	899
02:00		1	118			4	89				
02:15		3	103			4	103				
02:30		3	142			3	105				
02:45		4	104	11	467	5	110	16	407	27	874
03:00		1	99			0	123				
03:15		3	101			2	119				
03:30		0	110			0	108				
03:45		5	139	9	449	4	126	6	476	15	925
04:00		5	129			1	149				
04:15		4	121			7	139				
04:30		7	122			7	142				
04:45		8	127	24	499	12	129	27	559	51	1058
05:00		10	139			16	145				
05:15		14	135			23	163				
05:30		21	135			39	106				
05:45		28	139	73	548	37	92	115	506	188	1054
06:00		39	90			42	105				
06:15		37	93			52	91				
06:30		37	79			59	81				
06:45		72	78	185	340	132	72	285	349	470	689
07:00		74	73			119	73				
07:15		106	55			94	74				
07:30		93	57			104	59				
07:45		132	48	405	233	120	60	437	266	842	499
08:00		107	50			106	53				
08:15		95	52			114	51				
08:30		90	40			111	47				
08:45		121	26	413	168	87	37	418	188	831	356
09:00		101	36			108	43				
09:15		75	29			72	45				
09:30		99	34			91	35				
09:45		99	24	374	123	116	35	387	158	761	281
10:00		93	29			87	38				
10:15		109	19			88	26				
10:30		79	19			79	20				
10:45		110	14	391	81	94	14	348	98	739	179
11:00		94	17			88	15				
11:15		112	11			101	10				
11:30		131	10			126	8				
11:45		98	4	435	42	120	7	435	40	870	82
Total		2349	3881			2504	3966			4853	7847
Percent		37.7%	62.3%			38.7%	61.3%			38.2%	61.8%
Grand Total		2349	3881			2504	3966			4853	7847
Percent		37.7%	62.3%			38.7%	61.3%			38.2%	61.8%
ADT		ADT 12,700		AADT 12,700							

All Traffic Data Services

www.alltrafficdata.net

Site Code: 44
Station ID: 44
MARIETTA HWY SOUTH OF HICKORY FLAT HWY

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		14	221			11	230				
12:15		17	214			11	256				
12:30		16	254			10	256				
12:45		13	241	60	930	11	232	43	974	103	1904
01:00		5	179			7	203				
01:15		10	222			9	210				
01:30		4	207			7	250				
01:45		9	242	28	850	2	222	25	885	53	1735
02:00		3	201			9	218				
02:15		5	234			6	238				
02:30		7	257			6	247				
02:45		7	316	22	1008	7	200	28	903	50	1911
03:00		4	275			5	242				
03:15		7	285			10	229				
03:30		2	269			9	355				
03:45		6	280	19	1109	4	346	28	1172	47	2281
04:00		10	309			8	348				
04:15		7	297			22	273				
04:30		13	302			38	268				
04:45		17	266	47	1174	20	281	88	1170	135	2344
05:00		20	325			53	393				
05:15		23	312			53	267				
05:30		32	353			92	277				
05:45		49	288	124	1278	96	287	294	1224	418	2502
06:00		62	296			128	257				
06:15		75	314			153	215				
06:30		128	224			177	175				
06:45		135	189	400	1023	258	203	716	850	1116	1873
07:00		162	188			280	160				
07:15		201	176			232	163				
07:30		326	134			191	79				
07:45		413	144	1102	642	237	93	940	495	2042	1137
08:00		360	106			276	90				
08:15		371	118			289	107				
08:30		190	118			247	97				
08:45		187	105	1108	447	173	115	985	409	2093	856
09:00		189	85			199	116				
09:15		196	81			204	96				
09:30		156	79			178	69				
09:45		183	87	724	332	209	60	790	341	1514	673
10:00		201	63			205	60				
10:15		179	40			200	64				
10:30		184	36			171	49				
10:45		187	34	751	173	208	23	784	196	1535	369
11:00		224	37			224	42				
11:15		206	33			207	18				
11:30		219	24			265	15				
11:45		197	18	846	112	226	13	922	88	1768	200
Total		5231	9078			5643	8707			10874	17785
Percent		36.6%	63.4%			39.3%	60.7%			37.9%	62.1%
Grand Total		5231	9078			5643	8707			10874	17785
Percent		36.6%	63.4%			39.3%	60.7%			37.9%	62.1%
ADT		ADT 28,659		AADT 28,659							

All Traffic Data Services

www.alltrafficdata.net

Site Code: 45
Station ID: 45
RIVERSTONE PKWY NORTH OF JUNIPER ST

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	216			11	224				
12:15		7	231			10	237				
12:30		4	250			8	244				
12:45		1	214	22	911	9	236	38	941	60	1852
01:00		1	207			6	230				
01:15		3	209			3	214				
01:30		2	248			8	233				
01:45		7	231	13	895	9	220	26	897	39	1792
02:00		1	221			1	227				
02:15		2	225			6	232				
02:30		7	227			6	195				
02:45		4	207	14	880	5	214	18	868	32	1748
03:00		3	207			9	225				
03:15		2	226			7	191				
03:30		6	231			5	208				
03:45		4	290	15	954	2	216	23	840	38	1794
04:00		4	229			7	239				
04:15		13	244			5	207				
04:30		9	215			4	210				
04:45		21	239	47	927	13	216	29	872	76	1799
05:00		27	256			5	257				
05:15		22	253			15	232				
05:30		38	243			17	198				
05:45		47	230	134	982	14	188	51	875	185	1857
06:00		39	215			23	194				
06:15		53	209			30	172				
06:30		73	182			61	184				
06:45		98	161	263	767	76	161	190	711	453	1478
07:00		88	118			77	152				
07:15		101	132			121	151				
07:30		140	95			142	117				
07:45		181	163	510	508	177	94	517	514	1027	1022
08:00		163	99			141	103				
08:15		140	75			176	92				
08:30		162	82			152	93				
08:45		144	58	609	314	135	90	604	378	1213	692
09:00		134	44			147	90				
09:15		149	45			149	61				
09:30		172	34			162	51				
09:45		168	33	623	156	177	35	635	237	1258	393
10:00		188	38			156	54				
10:15		173	32			158	27				
10:30		161	22			179	29				
10:45		191	11	713	103	177	30	670	140	1383	243
11:00		173	13			167	28				
11:15		231	18			204	17				
11:30		236	15			215	17				
11:45		218	7	858	53	218	14	804	76	1662	129
Total		3821	7450			3605	7349			7426	14799
Percent		33.9%	66.1%			32.9%	67.1%			33.4%	66.6%
Grand Total		3821	7450			3605	7349			7426	14799
Percent		33.9%	66.1%			32.9%	67.1%			33.4%	66.6%
ADT		ADT 22,225		AADT 22,225							

All Traffic Data Services

www.alltrafficdata.net

Site Code: 46
Station ID: 46
BALL GROUND HWY NORTH OF ROLAND DR

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start	16-Nov-21	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	114			1	149				
12:15		6	159			4	133				
12:30		8	126			1	116				
12:45		2	137	21	536	4	127	10	525	31	1061
01:00		4	126			3	112				
01:15		5	120			3	118				
01:30		3	134			3	119				
01:45		3	121	15	501	3	95	12	444	27	945
02:00		0	135			1	85				
02:15		4	134			6	97				
02:30		4	144			15	121				
02:45		0	149	8	562	2	124	24	427	32	989
03:00		1	121			10	105				
03:15		4	121			5	110				
03:30		3	169			10	107				
03:45		4	193	12	604	4	128	29	450	41	1054
04:00		3	171			7	143				
04:15		7	182			15	125				
04:30		5	173			22	148				
04:45		6	191	21	717	25	123	69	539	90	1256
05:00		10	226			24	157				
05:15		12	226			41	120				
05:30		24	208			47	125				
05:45		34	168	80	828	49	130	161	532	241	1360
06:00		27	148			74	113				
06:15		40	149			100	123				
06:30		68	133			135	82				
06:45		60	140	195	570	129	62	438	380	633	950
07:00		42	116			161	62				
07:15		101	89			183	64				
07:30		97	106			151	39				
07:45		111	86	351	397	194	39	689	204	1040	601
08:00		85	74			144	34				
08:15		96	74			169	25				
08:30		115	70			142	27				
08:45		78	65	374	283	126	23	581	109	955	392
09:00		63	57			110	21				
09:15		73	66			130	24				
09:30		61	47			108	24				
09:45		84	47	281	217	109	11	457	80	738	297
10:00		89	26			90	14				
10:15		85	34			124	14				
10:30		65	21			113	12				
10:45		89	17	328	98	103	19	430	59	758	157
11:00		87	40			105	3				
11:15		103	21			105	3				
11:30		93	12			118	7				
11:45		99	10	382	83	139	1	467	14	849	97
Total		2068	5396			3367	3763			5435	9159
Percent		27.7%	72.3%			47.2%	52.8%			37.2%	62.8%
Grand Total		2068	5396			3367	3763			5435	9159
Percent		27.7%	72.3%			47.2%	52.8%			37.2%	62.8%
ADT		ADT 14,594		AADT 14,594							

057-0003 Main St, south of Meadow Ln
2010 Raw Counts

Multi-Day Volume Report 057-0003 Tuesday, April 27, 2010 to Thursday, April 29, 2010						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-27**	**2010-04-28**	**2010-04-29**	**Workday**	**7 Day**	**Count**
00:00:00		96	84	**90**		180
01:00:00		58	50	**54**		108
02:00:00		42	50	**46**		92
03:00:00		38	28	**33**		66
04:00:00		62	66	**64**		128
05:00:00		216	218	**217**		434
06:00:00		1006	1094	**1050**		2100
07:00:00		2124	2168	**2146**		4292
08:00:00		1682	1788	**1735**		3470
09:00:00		1312	1298	**1305**		2610
10:00:00		1246	1264	**1255**		2510
11:00:00	1324	1286		**1305**		2610
12:00:00	1466	1498		**1482**		2964
13:00:00	1456	1380		**1418**		2836
14:00:00	1462	1528		**1495**		2990
15:00:00	1616	1596		**1606**		3212
16:00:00	1926	1968		**1947**		3894
17:00:00	2306	2400		**2353**		4706
18:00:00	1664	1832		**1748**		3496
19:00:00	1200	1316		**1258**		2516
20:00:00	916	1042		**979**		1958
21:00:00	586	654		**620**		1240
22:00:00	314	326		**320**		640
23:00:00	158	192		**175**		350
7am-7pm		19852		**19795**		39590
6am-10pm		23870		**23702**		47404
6am-12am		24388		**24197**		48394
12am-12am		24900		**24701**		49402
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2124	2168	**2146**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2306	2400		**2353**		

057-0003 Main St, south of Meadow Ln
2011 Raw Counts

Multi-Day Volume Report 057-0003 Monday, May 2, 2011 to Wednesday, May 4, 2011						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-05-02**	**2011-05-03**	**2011-05-04**	**Workday**	**7 Day**	**Count**
00:00:00		64	54	**59**		118
01:00:00		48	48	**48**		96
02:00:00		40	30	**35**		70
03:00:00		44	30	**37**		74
04:00:00		58	72	**65**		130
05:00:00		220	194	**207**		414
06:00:00		1176	1112	**1144**		2288
07:00:00		2356	2432	**2394**		4788
08:00:00		1738	1822	**1780**		3560
09:00:00		1352	1438	**1395**		2790
10:00:00		1202	1260	**1231**		2462
11:00:00		1342	1374	**1358**		2716
12:00:00		1570	1584	**1577**		3154
13:00:00		1518	1534	**1526**		3052
14:00:00		1486	1472	**1479**		2958
15:00:00		1766	1686	**1726**		3452
16:00:00		2010	1942	**1976**		3952
17:00:00	2274	2306		**2290**		4580
18:00:00	1704	1842		**1773**		3546
19:00:00	1162	1300		**1231**		2462
20:00:00	842	798		**820**		1640
21:00:00	590	492		**541**		1082
22:00:00	308	264		**286**		572
23:00:00	144	134		**139**		278
7am-7pm		20488		**20505**		41010
6am-10pm		24254		**24241**		48482
6am-12am		24652		**24666**		49332
12am-12am		25126		**25117**		50234
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2356	2432	**2394**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2274	2306		**2290**		

057-0003 Main St, south of Meadow Ln
2015 Raw Counts

Multi-Day Volume Report 057-0003 Monday, May 4, 2015 to Wednesday, May 6, 2015						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-04**	**2015-05-05**	**2015-05-06**	**Workday**	**7 Day**	**Count**
00:00:00		96	116	**106**		212
01:00:00		52	66	**59**		118
02:00:00		30	32	**31**		62
03:00:00		32	46	**39**		78
04:00:00		68	84	**76**		152
05:00:00		314	292	**303**		606
06:00:00		1502	1488	**1495**		2990
07:00:00		2304	2140	**2222**		4444
08:00:00		1842	1882	**1862**		3724
09:00:00		1420	1452	**1436**		2872
10:00:00		1278	1370	**1324**		2648
11:00:00		1426	1456	**1441**		2882
12:00:00	1576	1578		**1577**		3154
13:00:00	1588	1520		**1554**		3108
14:00:00	1446	1622		**1534**		3068
15:00:00	1698	1702		**1700**		3400
16:00:00	2094	2170		**2132**		4264
17:00:00	2444	2508		**2476**		4952
18:00:00	1962	2118		**2040**		4080
19:00:00	1256	1480		**1368**		2736
20:00:00	960	1082		**1021**		2042
21:00:00	628	768		**698**		1396
22:00:00	310	420		**365**		730
23:00:00	218	230		**224**		448
7am-7pm		21488		**21298**		42596
6am-10pm		26320		**25880**		51760
6am-12am		26970		**26469**		52938
12am-12am		27562		**27083**		54166
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2304	2140	**2222**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2444	2508		**2476**		

057-0003 Main St, south of Meadow Ln
2018 Raw Counts

Multi-Day Volume Report 057-0003 Wednesday, June 6, 2018 to Friday, June 8, 2018						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2018-06-06**	**2018-06-07**	**2018-06-08**	**Workday**	**7 Day**	**Count**
00:00:00		104	142	**123**		246
01:00:00	66	67		**67**		133
02:00:00	48	36		**42**		84
03:00:00	41	38		**40**		79
04:00:00	85	93		**89**		178
05:00:00	320	524		**422**		844
06:00:00	1442	1923		**1683**		3365
07:00:00	2086	2249		**2168**		4335
08:00:00	1953	1999		**1976**		3952
09:00:00	1685	1592		**1639**		3277
10:00:00	1465	1512		**1489**		2977
11:00:00	1670	1615		**1643**		3285
12:00:00	1777	1770		**1774**		3547
13:00:00	1649	1720		**1685**		3369
14:00:00	1719	1557		**1638**		3276
15:00:00	1945	1857		**1901**		3802
16:00:00	2377	2241		**2309**		4618
17:00:00	2555	2453		**2504**		5008
18:00:00	2101	2299		**2200**		4400
19:00:00	1476	1572		**1524**		3048
20:00:00	1226	1154		**1190**		2380
21:00:00	825	912		**869**		1737
22:00:00	479	483		**481**		962
23:00:00	227	262		**245**		489
7am-7pm		22864		**22926**		45846
6am-10pm		28425		**28192**		56376
6am-12am		29170		**28918**		57827
12am-12am		30032		**29701**		59391
am Peak	7:00:00	7:00:00		**7:00:00**		
Peak Volume	2086	2249		**2168**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2555	2453		**2504**		

057-0004 Main St, south of SR 92/Alabama Rd
2012 Raw Counts

Multi-Day Volume Report 057-0004 Monday, October 22, 2012 to Wednesday, October 24, 2012						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2012-10-22**	**2012-10-23**	**2012-10-24**	**Workday**	**7 Day**	**Count**
00:00:00		96	90	**93**		186
01:00:00		78	48	**63**		126
02:00:00		35	47	**41**		82
03:00:00		47	43	**45**		90
04:00:00		61	71	**66**		132
05:00:00		280	234	**257**		514
06:00:00		1239	1222	**1231**		2461
07:00:00		2318	2372	**2345**		4690
08:00:00		1890	2006	**1948**		3896
09:00:00		1443	1526	**1485**		2969
10:00:00		1180	1265	**1223**		2445
11:00:00		1306	1446	**1376**		2752
12:00:00	1609	1645		**1627**		3254
13:00:00	1597	1566		**1582**		3163
14:00:00	1571	1449		**1510**		3020
15:00:00	1734	1669		**1702**		3403
16:00:00	2531	2120		**2326**		4651
17:00:00	2555	2354		**2455**		4909
18:00:00	2115	1888		**2002**		4003
19:00:00	1554	1212		**1383**		2766
20:00:00	790	855		**823**		1645
21:00:00	553	543		**548**		1096
22:00:00	285	300		**293**		585
23:00:00	142	135		**139**		277
7am-7pm		20828		**21581**		43155
6am-10pm		24677		**25566**		51123
6am-12am		25112		**25998**		51985
12am-12am		25709		**26563**		53115
am Peak	7:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	0	2318	2372	**2345**		
pm Peak	17:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	2555	2354	0	**2455**		

057-0004 Main St, south of SR 92/Alabama Rd
2016 Raw Counts

Multi-Day Volume Report 057-0004 Tuesday, May 10, 2016 to Thursday, May 12, 2016						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2016-05-10**	**2016-05-11**	**2016-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		116	143	**130**		259
01:00:00		75	69	**72**		144
02:00:00		43	42	**43**		85
03:00:00		44	49	**47**		93
04:00:00		96	95	**96**		191
05:00:00		449	433	**441**		882
06:00:00		2031	2048	**2040**		4079
07:00:00		2840	2720	**2780**		5560
08:00:00		2643	2622	**2633**		5265
09:00:00		2081	2112	**2097**		4193
10:00:00		1838	1850	**1844**		3688
11:00:00		1998	1938	**1968**		3936
12:00:00		2180	2165	**2173**		4345
13:00:00		2167	2031	**2099**		4198
14:00:00		2047	2080	**2064**		4127
15:00:00		2240	2448	**2344**		4688
16:00:00		2795	2901	**2848**		5696
17:00:00		3056	3205	**3131**		6261
18:00:00	2277	2615		**2446**		4892
19:00:00	1559	1673		**1616**		3232
20:00:00	1139	1230		**1185**		2369
21:00:00	815	918		**867**		1733
22:00:00	410	472		**441**		882
23:00:00	193	253		**223**		446
7am-7pm		28500		**28427**		56849
6am-10pm		34352		**34135**		68262
6am-12am		35077		**34799**		69590
12am-12am		35900		**35628**		71244
am Peak	7:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	0	2840	2720	**2780**		
pm Peak	18:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	2277	3056	3205	**3131**		

057-0004 Main St, south of SR 92/Alabama Rd
2019 Raw Counts

Multi-Day Volume Report 057-0004 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		113	134	**124**		247
01:00:00		69	69	**69**		138
02:00:00		36	23	**30**		59
03:00:00		53	44	**49**		97
04:00:00		112	106	**109**		218
05:00:00		374	407	**391**		781
06:00:00	1016	1052		**1034**		2068
07:00:00	1715	1894		**1805**		3609
08:00:00	1761	1673		**1717**		3434
09:00:00	1434	1513		**1474**		2947
10:00:00	1378	1391		**1385**		2769
11:00:00	1473	1536		**1505**		3009
12:00:00	1673	1683		**1678**		3356
13:00:00	1575	1585		**1580**		3160
14:00:00	1616	1621		**1619**		3237
15:00:00	1761	1707		**1734**		3468
16:00:00	1902	1958		**1930**		3860
17:00:00	2161	1963		**2062**		4124
18:00:00	1727	1741		**1734**		3468
19:00:00	1286	1330		**1308**		2616
20:00:00	1060	1093		**1077**		2153
21:00:00	743	752		**748**		1495
22:00:00	415	459		**437**		874
23:00:00	208	201		**205**		409
7am-7pm		20265		**20223**		40441
6am-10pm		24492		**24390**		48773
6am-12am		25152		**25032**		50056
12am-12am		25909		**25804**		51596
am Peak	8:00:00	7:00:00	5:00:00	**7:00:00**		
Peak Volume	1761	1894	407	**1805**		
pm Peak	17:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	2161	1963	0	**2062**		

057-0007 Main St, south of Barnesdale Terrace
2013 Raw Counts

Multi-Day Volume Report 057-0007 Tuesday, June 18, 2013 to Thursday, June 20, 2013						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2013-06-18**	**2013-06-19**	**2013-06-20**	**Workday**	**7 Day**	**Count**
00:00:00		68	72	**70**		140
01:00:00		31	27	**29**		58
02:00:00		22	37	**30**		59
03:00:00		22	22	**22**		44
04:00:00		47	40	**44**		87
05:00:00		134	148	**141**		282
06:00:00		659	630	**645**		1289
07:00:00		1307	1210	**1259**		2517
08:00:00		1105	1119	**1112**		2224
09:00:00		980	945	**963**		1925
10:00:00		989	922	**956**		1911
11:00:00	971	1001		**986**		1972
12:00:00	1088	1154		**1121**		2242
13:00:00	1087	1250		**1169**		2337
14:00:00	1082	1122		**1102**		2204
15:00:00	1162	1193		**1178**		2355
16:00:00	1253	1257		**1255**		2510
17:00:00	1440	1436		**1438**		2876
18:00:00	1246	1258		**1252**		2504
19:00:00	957	991		**974**		1948
20:00:00	576	550		**563**		1126
21:00:00	412	426		**419**		838
22:00:00	262	234		**248**		496
23:00:00	141	173		**157**		314
7am-7pm		14052		**13791**		27577
6am-10pm		16678		**16392**		32778
6am-12am		17085		**16797**		33588
12am-12am		17409		**17133**		34258
am Peak	11:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	971	1307	1210	**1259**		
pm Peak	17:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	1440	1436	0	**1438**		

057-0007 Main St, south of Barnesdale Terrace
2019 Raw Counts

Multi-Day Volume Report 057-0007 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		63	84	**74**		147
01:00:00		39	49	**44**		88
02:00:00		25	17	**21**		42
03:00:00		32	36	**34**		68
04:00:00		56	62	**59**		118
05:00:00		210	207	**209**		417
06:00:00	566	623		**595**		1189
07:00:00	1104	1135		**1120**		2239
08:00:00	1169	1158		**1164**		2327
09:00:00	1008	1054		**1031**		2062
10:00:00	962	1007		**985**		1969
11:00:00	1037	1085		**1061**		2122
12:00:00	1197	1224		**1211**		2421
13:00:00	1117	1156		**1137**		2273
14:00:00	1106	1177		**1142**		2283
15:00:00	1175	1231		**1203**		2406
16:00:00	1402	1405		**1404**		2807
17:00:00	1431	1622		**1527**		3053
18:00:00	1230	1255		**1243**		2485
19:00:00	982	980		**981**		1962
20:00:00	770	792		**781**		1562
21:00:00	549	600		**575**		1149
22:00:00	327	406		**367**		733
23:00:00	172	202		**187**		374
7am-7pm		14509		**14228**		28447
6am-10pm		17504		**17160**		34309
6am-12am		18112		**17714**		35416
12am-12am		18537		**18155**		36296
am Peak	8:00:00	8:00:00	5:00:00	**8:00:00**		
Peak Volume	1169	1158	207	**1164**		
pm Peak	17:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	1431	1622	0	**1527**		

057-0007 Main St, south of Barnesdale Terrace
2020 Raw Counts

Multi-Day Volume Report 057-0007 Monday, August 3, 2020 to Wednesday, August 5, 2020						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-08-03**	**2020-08-04**	**2020-08-05**	**Workday**	**7 Day**	**Count**
00:00:00		48	53	**51**		101
01:00:00		15	20	**18**		35
02:00:00		19	12	**16**		31
03:00:00		25	23	**24**		48
04:00:00		35	37	**36**		72
05:00:00		145	146	**146**		291
06:00:00		506	442	**474**		948
07:00:00		985	937	**961**		1922
08:00:00		989	972	**981**		1961
09:00:00		894	921	**908**		1815
10:00:00		967	1020	**994**		1987
11:00:00		1113	1178	**1146**		2291
12:00:00		1191	1184	**1188**		2375
13:00:00		1289	1199	**1244**		2488
14:00:00		1248	1195	**1222**		2443
15:00:00		1242	1269	**1256**		2511
16:00:00		1314	1399	**1357**		2713
17:00:00		1366	1412	**1389**		2778
18:00:00		1126	1085	**1106**		2211
19:00:00		837	883	**860**		1720
20:00:00		662	700	**681**		1362
21:00:00		442	487	**465**		929
22:00:00	221	251		**236**		472
23:00:00	108	116		**112**		224
7am-7pm		13724		**13752**		27495
6am-10pm		16171		**16232**		32454
6am-12am		16538		**16580**		33150
12am-12am		16825		**16871**		33728
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1113	1178	**1146**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1366	1412	**1389**		

057-0010 Main St, north of Johnston Farm Ln
2010 Raw Counts

Multi-Day Volume Report 057-0010 Wednesday, April 21, 2010 to Friday, April 23, 2010						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2010-04-21**	**2010-04-22**	**2010-04-23**	**Workday**	**7 Day**	**Count**
00:00:00		52	70	**61**		122
01:00:00		35	36	**36**		71
02:00:00		23	25	**24**		48
03:00:00		33	33	**33**		66
04:00:00		63	76	**70**		139
05:00:00		206	200	**203**		406
06:00:00		799	712	**756**		1511
07:00:00		1768	1430	**1599**		3198
08:00:00		1236	1057	**1147**		2293
09:00:00		925	861	**893**		1786
10:00:00		865	816	**841**		1681
11:00:00		797	942	**870**		1739
12:00:00	948	960		**954**		1908
13:00:00	907	969		**938**		1876
14:00:00	988	989		**989**		1977
15:00:00	965	999		**982**		1964
16:00:00	1234	1204		**1219**		2438
17:00:00	1357	1436		**1397**		2793
18:00:00	1213	1236		**1225**		2449
19:00:00	818	947		**883**		1765
20:00:00	681	682		**682**		1363
21:00:00	455	573		**514**		1028
22:00:00	273	246		**260**		519
23:00:00	106	153		**130**		259
7am-7pm		13384		**13054**		26102
6am-10pm		16385		**15889**		31769
6am-12am		16784		**16279**		32547
12am-12am		17196		**16706**		33399
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1768	1430	**1599**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1357	1436		**1397**		

057-0010 Main St, north of Johnston Farm Ln
2014 Raw Counts

Multi-Day Volume Report 057-0010 Monday, April 14, 2014 to Wednesday, April 16, 2014						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2014-04-14**	**2014-04-15**	**2014-04-16**	**Workday**	**7 Day**	**Count**
00:00:00		52	50	**51**		102
01:00:00		22	26	**24**		48
02:00:00		24	22	**23**		46
03:00:00		90	30	**60**		120
04:00:00		66	120	**93**		186
05:00:00		272	254	**263**		526
06:00:00		884	882	**883**		1766
07:00:00		1120	1142	**1131**		2262
08:00:00		1006	1024	**1015**		2030
09:00:00		778	830	**804**		1608
10:00:00		818	826	**822**		1644
11:00:00		932	1002	**967**		1934
12:00:00		1036	1002	**1019**		2038
13:00:00		972	1012	**992**		1984
14:00:00		1004	1066	**1035**		2070
15:00:00	1050	1112		**1081**		2162
16:00:00	1492	1490		**1491**		2982
17:00:00	1410	1464		**1437**		2874
18:00:00	1146	1260		**1203**		2406
19:00:00	706	814		**760**		1520
20:00:00	554	592		**573**		1146
21:00:00	346	422		**384**		768
22:00:00	208	202		**205**		410
23:00:00	108	106		**107**		214
7am-7pm		12992		**12997**		25994
6am-10pm		15704		**15597**		31194
6am-12am		16012		**15909**		31818
12am-12am		16538		**16423**		32846
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1120	1142	**1131**		
pm Peak	16:00:00	16:00:00		**16:00:00**		
Peak Volume	1492	1490		**1491**		

057-0010 Main St, north of Johnston Farm Ln
2020 Raw Counts

Multi-Day Volume Report 057-0010 Monday, July 27, 2020 to Wednesday, July 29, 2020						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-07-27**	**2020-07-28**	**2020-07-29**	**Workday**	**7 Day**	**Count**
00:00:00		46	49	**48**		95
01:00:00		28	32	**30**		60
02:00:00		31	32	**32**		63
03:00:00		52	65	**59**		117
04:00:00		90	85	**88**		175
05:00:00		242	232	**237**		474
06:00:00		749	705	**727**		1454
07:00:00		1186	1136	**1161**		2322
08:00:00		1108	1166	**1137**		2274
09:00:00		1054	1067	**1061**		2121
10:00:00		1122	1184	**1153**		2306
11:00:00		1327	1331	**1329**		2658
12:00:00		1438	1449	**1444**		2887
13:00:00		1380	1405	**1393**		2785
14:00:00		1325	1349	**1337**		2674
15:00:00		1337	1459	**1398**		2796
16:00:00		1599	1671	**1635**		3270
17:00:00		1620	1674	**1647**		3294
18:00:00		1198	1320	**1259**		2518
19:00:00		927	921	**924**		1848
20:00:00		645	770	**708**		1415
21:00:00	332	399		**366**		731
22:00:00	168	219		**194**		387
23:00:00	98	117		**108**		215
7am-7pm		15694		**15954**		31905
6am-10pm		18414		**18679**		37353
6am-12am		18750		**18981**		37955
12am-12am		19239		**19475**		38939
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1327	1331	**1329**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1620	1674	**1647**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2012 Raw Counts

Multi-Day Volume Report 057-0012 Tuesday, October 23, 2012 to Thursday, October 25, 2012						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2012-10-23**	**2012-10-24**	**2012-10-25**	**Workday**	**7 Day**	**Count**
00:00:00		72	95	**84**		167
01:00:00		47	41	**44**		88
02:00:00		34	34	**34**		68
03:00:00		28	36	**32**		64
04:00:00		62	62	**62**		124
05:00:00		199	215	**207**		414
06:00:00		767	749	**758**		1516
07:00:00		1517	1986	**1752**		3503
08:00:00		1302	1731	**1517**		3033
09:00:00		931	993	**962**		1924
10:00:00		835	833	**834**		1668
11:00:00	954	905		**930**		1859
12:00:00	1098	988		**1043**		2086
13:00:00	1083	1083		**1083**		2166
14:00:00	1077	1103		**1090**		2180
15:00:00	1274	1289		**1282**		2563
16:00:00	1467	1522		**1495**		2989
17:00:00	1796	1778		**1787**		3574
18:00:00	1524	1531		**1528**		3055
19:00:00	1186	1036		**1111**		2222
20:00:00	826	863		**845**		1689
21:00:00	511	569		**540**		1080
22:00:00	290	293		**292**		583
23:00:00	111	124		**118**		235
7am-7pm		14784		**15303**		30600
6am-10pm		18019		**18557**		37107
6am-12am		18436		**18967**		37925
12am-12am		18878		**19430**		38850
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1517	1986	**1752**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1796	1778		**1787**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2017 Raw Counts

Multi-Day Volume Report 057-0012 Tuesday, September 5, 2017 to Thursday, September 7, 2017						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2017-09-05**	**2017-09-06**	**2017-09-07**	**Workday**	**7 Day**	**Count**
00:00:00		58	53	**56**		111
01:00:00		29	34	**32**		63
02:00:00		27	21	**24**		48
03:00:00		28	31	**30**		59
04:00:00		75	73	**74**		148
05:00:00		252	248	**250**		500
06:00:00		800	789	**795**		1589
07:00:00		1296	1252	**1274**		2548
08:00:00		1036	637	**837**		1673
09:00:00		827	288	**558**		1115
10:00:00		726	470	**598**		1196
11:00:00		792	253	**523**		1045
12:00:00		971	508	**740**		1479
13:00:00		772	861	**817**		1633
14:00:00		880	970	**925**		1850
15:00:00		947	1146	**1047**		2093
16:00:00		1233	163	**698**		1396
17:00:00		1335	321	**828**		1656
18:00:00		1214	1353	**1284**		2567
19:00:00		1017	1140	**1079**		2157
20:00:00	525	868		**697**		1393
21:00:00	354	436		**395**		790
22:00:00	185	204		**195**		389
23:00:00	107	101		**104**		208
7am-7pm		12029		**10129**		20251
6am-10pm		15150		**13095**		26180
6am-12am		15455		**13394**		26777
12am-12am		15924		**13860**		27706
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1296	1252	**1274**		
pm Peak		17:00:00	18:00:00	**18:00:00**		
Peak Volume		1335	1353	**1284**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2020 Raw Counts

Multi-Day Volume Report 057-0012 Monday, November 9, 2020 to Wednesday, November 11, 2						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-11-09**	**2020-11-10**	**2020-11-11**	**Workday**	**7 Day**	**Count**
00:00:00		54	36	**45**		90
01:00:00		27	22	**25**		49
02:00:00		23	17	**20**		40
03:00:00		35	31	**33**		66
04:00:00		71	74	**73**		145
05:00:00		222	231	**227**		453
06:00:00		701	657	**679**		1358
07:00:00		1341	1268	**1305**		2609
08:00:00		1259	1126	**1193**		2385
09:00:00		953	884	**919**		1837
10:00:00		896	920	**908**		1816
11:00:00		1030	1055	**1043**		2085
12:00:00		1201	1156	**1179**		2357
13:00:00	1183	1136		**1160**		2319
14:00:00	1112	1234		**1173**		2346
15:00:00	1300	1426		**1363**		2726
16:00:00	1518	1520		**1519**		3038
17:00:00	1670	1617		**1644**		3287
18:00:00	1229	1246		**1238**		2475
19:00:00	759	820		**790**		1579
20:00:00	486	530		**508**		1016
21:00:00	318	348		**333**		666
22:00:00	169	195		**182**		364
23:00:00	78	83		**81**		161
7am-7pm		14859		**14644**		29280
6am-10pm		17258		**16954**		33899
6am-12am		17536		**17217**		34424
12am-12am		17968		**17640**		35267
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1341	1268	**1305**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1670	1617		**1644**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2013 Raw Counts

Multi-Day Volume Report 057-0014 Wednesday, June 19, 2013 to Friday, June 21, 2013						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-06-19**	**2013-06-20**	**2013-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		43	62	**53**		105
01:00:00		32	26	**29**		58
02:00:00		24	19	**22**		43
03:00:00		15	24	**20**		39
04:00:00		57	42	**50**		99
05:00:00		149	140	**145**		289
06:00:00		347	326	**337**		673
07:00:00		463	482	**473**		945
08:00:00		491	281	**386**		772
09:00:00	428	455		**442**		883
10:00:00	448	463		**456**		911
11:00:00	502	527		**515**		1029
12:00:00	572	604		**588**		1176
13:00:00	516	596		**556**		1112
14:00:00	487	561		**524**		1048
15:00:00	548	642		**595**		1190
16:00:00	627	766		**697**		1393
17:00:00	706	731		**719**		1437
18:00:00	585	613		**599**		1198
19:00:00	422	445		**434**		867
20:00:00	363	362		**363**		725
21:00:00	235	241		**238**		476
22:00:00	148	155		**152**		303
23:00:00	81	87		**84**		168
7am-7pm		6912		**6550**		13094
6am-10pm		8307		**7922**		15835
6am-12am		8549		**8158**		16306
12am-12am		8869		**8477**		16939
am Peak		11:00:00	7:00:00	**11:00:00**		
Peak Volume		527	482	**515**		
pm Peak	17:00:00	16:00:00		**17:00:00**		
Peak Volume	706	766		**719**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2016 Raw Counts

Multi-Day Volume Report 057-0014 Tuesday, May 10, 2016 to Thursday, May 12, 2016						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2016-05-10**	**2016-05-11**	**2016-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		36	54	**45**		90
01:00:00		38	42	**40**		80
02:00:00		26	18	**22**		44
03:00:00		24	32	**28**		56
04:00:00		52	58	**55**		110
05:00:00		232	230	**231**		462
06:00:00		408	420	**414**		828
07:00:00		628	646	**637**		1274
08:00:00		538	538	**538**		1076
09:00:00		490	488	**489**		978
10:00:00		490	482	**486**		972
11:00:00		518	504	**511**		1022
12:00:00		606	684	**645**		1290
13:00:00		564	554	**559**		1118
14:00:00		558	526	**542**		1084
15:00:00		592	638	**615**		1230
16:00:00		676	852	**764**		1528
17:00:00		730	842	**786**		1572
18:00:00		694	638	**666**		1332
19:00:00	486	550		**518**		1036
20:00:00	330	424		**377**		754
21:00:00	234	242		**238**		476
22:00:00	106	152		**129**		258
23:00:00	62	78		**70**		140
7am-7pm		7084		**7238**		14476
6am-10pm		8708		**8785**		17570
6am-12am		8938		**8984**		17968
12am-12am		9346		**9405**		18810
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		628	646	**637**		
pm Peak	19:00:00	17:00:00	16:00:00	**17:00:00**		
Peak Volume	486	730	852	**786**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2019 Raw Counts

Multi-Day Volume Report 057-0014 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		46	36	**41**		82
01:00:00		25	32	**29**		57
02:00:00		20	14	**17**		34
03:00:00		24	23	**24**		47
04:00:00		62	74	**68**		136
05:00:00		201	187	**194**		388
06:00:00	380	392		**386**		772
07:00:00	615	773		**694**		1388
08:00:00	568	985		**777**		1553
09:00:00	543	784		**664**		1327
10:00:00	558	567		**563**		1125
11:00:00	665	651		**658**		1316
12:00:00	698	716		**707**		1414
13:00:00	612	675		**644**		1287
14:00:00	647	684		**666**		1331
15:00:00	654	695		**675**		1349
16:00:00	768	793		**781**		1561
17:00:00	839	914		**877**		1753
18:00:00	696	725		**711**		1421
19:00:00	504	515		**510**		1019
20:00:00	390	441		**416**		831
21:00:00	302	306		**304**		608
22:00:00	149	165		**157**		314
23:00:00	109	106		**108**		215
7am-7pm		8962		**8417**		16825
6am-10pm		10616		**10033**		20055
6am-12am		10887		**10298**		20584
12am-12am		11265		**10671**		21328
am Peak	11:00:00	8:00:00	5:00:00	**8:00:00**		
Peak Volume	665	985	187	**777**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	839	914		**877**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2010 Raw Counts

Multi-Day Volume Report 057-0016 Tuesday, April 27, 2010 to Thursday, April 29, 2010						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-27**	**2010-04-28**	**2010-04-29**	**Workday**	**7 Day**	**Count**
00:00:00		58	76	**67**		134
01:00:00		28	52	**40**		80
02:00:00		21	23	**22**		44
03:00:00		38	30	**34**		68
04:00:00		59	63	**61**		122
05:00:00		189	212	**201**		401
06:00:00		636	679	**658**		1315
07:00:00		1278	1246	**1262**		2524
08:00:00		969	1019	**994**		1988
09:00:00		690	768	**729**		1458
10:00:00		766	805	**786**		1571
11:00:00	796	809		**803**		1605
12:00:00	982	860		**921**		1842
13:00:00	876	917		**897**		1793
14:00:00	940	911		**926**		1851
15:00:00	1148	1068		**1108**		2216
16:00:00	1236	1123		**1180**		2359
17:00:00	1363	1167		**1265**		2530
18:00:00	1015	1025		**1020**		2040
19:00:00	773	699		**736**		1472
20:00:00	643	660		**652**		1303
21:00:00	405	474		**440**		879
22:00:00	227	217		**222**		444
23:00:00	154	153		**154**		307
7am-7pm		11583	3838	**11891**		23777
6am-10pm		14052	4517	**14377**		28746
6am-12am		14422		**14753**		29497
12am-12am		14815		**15178**		30346
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1278	1246	**1262**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1363	1167		**1265**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2014 Raw Counts

Multi-Day Volume Report 057-0016 Wednesday, March 19, 2014 to Friday, March 21, 2014						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2014-03-19**	**2014-03-20**	**2014-03-21**	**Workday**	**7 Day**	**Count**
00:00:00		30	56	**43**		86
01:00:00		14	16	**15**		30
02:00:00		26	14	**20**		40
03:00:00		18	8	**13**		26
04:00:00		30	36	**33**		66
05:00:00		140	128	**134**		268
06:00:00		378	362	**370**		740
07:00:00		596	590	**593**		1186
08:00:00		748	720	**734**		1468
09:00:00		638	516	**577**		1154
10:00:00		454	526	**490**		980
11:00:00		492	512	**502**		1004
12:00:00	514	504		**509**		1018
13:00:00	546	558		**552**		1104
14:00:00	668	654		**661**		1322
15:00:00	602	640		**621**		1242
16:00:00	800	758		**779**		1558
17:00:00	898	910		**904**		1808
18:00:00	716	708		**712**		1424
19:00:00	578	624		**601**		1202
20:00:00	424	464		**444**		888
21:00:00	258	300		**279**		558
22:00:00	164	214		**189**		378
23:00:00	62	80		**71**		142
7am-7pm		7660		**7634**		15268
6am-10pm		9426		**9328**		18656
6am-12am		9720		**9588**		19176
12am-12am		9978		**9846**		19692
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		748	720	**734**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	898	910		**904**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2018 Raw Counts

Multi-Day Volume Report 057-0016 Tuesday, July 17, 2018 to Thursday, July 19, 2018						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-07-17**	**2018-07-18**	**2018-07-19**	**Workday**	**7 Day**	**Count**
00:00:00		63	68	**66**		131
01:00:00		40	44	**42**		84
02:00:00		23	29	**26**		52
03:00:00		37	36	**37**		73
04:00:00		55	69	**62**		124
05:00:00		266	267	**267**		533
06:00:00		530	527	**529**		1057
07:00:00		784	850	**817**		1634
08:00:00		847	824	**836**		1671
09:00:00		760	735	**748**		1495
10:00:00		786	754	**770**		1540
11:00:00		847	826	**837**		1673
12:00:00		972	947	**960**		1919
13:00:00		896	923	**910**		1819
14:00:00		828	848	**838**		1676
15:00:00	914	956		**935**		1870
16:00:00	993	1073		**1033**		2066
17:00:00	1088	1157		**1123**		2245
18:00:00	901	936		**919**		1837
19:00:00	723	713		**718**		1436
20:00:00	504	542		**523**		1046
21:00:00	326	407		**367**		733
22:00:00	191	240		**216**		431
23:00:00	111	135		**123**		246
7am-7pm		10842	6707	**10726**		21445
6am-10pm		13034	7234	**12863**		25717
6am-12am		13409		**13202**		26394
12am-12am		13893		**13702**		27391
am Peak		8:00:00	7:00:00	**11:00:00**		
Peak Volume		847	850	**837**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1088	1157		**1123**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2011 Raw Counts

Multi-Day Volume Report 057-0018 Monday, May 9, 2011 to Wednesday, May 11, 2011						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-05-09**	**2011-05-10**	**2011-05-11**	**Workday**	**7 Day**	**Count**
00:00:00		88	112	**100**		200
01:00:00		42	50	**46**		92
02:00:00		30	58	**44**		88
03:00:00		38	46	**42**		84
04:00:00		94	84	**89**		178
05:00:00		288	306	**297**		594
06:00:00		636	704	**670**		1340
07:00:00		1108	1114	**1111**		2222
08:00:00		1178	1168	**1173**		2346
09:00:00		1040	954	**997**		1994
10:00:00		1040	1046	**1043**		2086
11:00:00		1186	1150	**1168**		2336
12:00:00		1250	1250	**1250**		2500
13:00:00		1150	1176	**1163**		2326
14:00:00		1234	1248	**1241**		2482
15:00:00	1342	1408		**1375**		2750
16:00:00	1414	1388		**1401**		2802
17:00:00	1490	1454		**1472**		2944
18:00:00	1232	1298		**1265**		2530
19:00:00	952	1048		**1000**		2000
20:00:00	730	802		**766**		1532
21:00:00	498	536		**517**		1034
22:00:00	328	344		**336**		672
23:00:00	154	172		**163**		326
7am-7pm		14734		**14659**		29318
6am-10pm		17756		**17612**		35224
6am-12am		18272		**18111**		36222
12am-12am		18852		**18729**		37458
am Peak		11:00:00	8:00:00	**8:00:00**		
Peak Volume		1186	1168	**1173**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1490	1454		**1472**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2015 Raw Counts

Multi-Day Volume Report 057-0018 Monday, May 11, 2015 to Wednesday, May 13, 2015						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-11**	**2015-05-12**	**2015-05-13**	**Workday**	**7 Day**	**Count**
00:00:00		92	88	**90**		180
01:00:00		48	48	**48**		96
02:00:00		40	28	**34**		68
03:00:00		44	48	**46**		92
04:00:00		96	92	**94**		188
05:00:00		420	412	**416**		832
06:00:00		756	784	**770**		1540
07:00:00		1428	1408	**1418**		2836
08:00:00		1304	1228	**1266**		2532
09:00:00		1104	1064	**1084**		2168
10:00:00		1036	1092	**1064**		2128
11:00:00		1152	1196	**1174**		2348
12:00:00		1204	1328	**1266**		2532
13:00:00		1244	1296	**1270**		2540
14:00:00		1328	1308	**1318**		2636
15:00:00		1368	1416	**1392**		2784
16:00:00	1496	1596		**1546**		3092
17:00:00	1512	1804		**1658**		3316
18:00:00	1228	1320		**1274**		2548
19:00:00	1032	1076		**1054**		2108
20:00:00	764	872		**818**		1636
21:00:00	544	612		**578**		1156
22:00:00	284	320		**302**		604
23:00:00	156	160		**158**		316
7am-7pm		15888		**15730**		31460
6am-10pm		19204		**18950**		37900
6am-12am		19684		**19410**		38820
12am-12am		20424		**20138**		40276
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1428	1408	**1418**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1512	1804		**1658**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2019 Raw Counts

Multi-Day Volume Report 057-0018 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		83	92	**88**		175
01:00:00		51	52	**52**		103
02:00:00		37	45	**41**		82
03:00:00		52	46	**49**		98
04:00:00		123	122	**123**		245
05:00:00		378	362	**370**		740
06:00:00	708	731		**720**		1439
07:00:00	1058	1075		**1067**		2133
08:00:00	1039	1122		**1081**		2161
09:00:00	1033	1172		**1103**		2205
10:00:00	1051	1048		**1050**		2099
11:00:00	1160	1160		**1160**		2320
12:00:00	1238	1268		**1253**		2506
13:00:00	1168	1200		**1184**		2368
14:00:00	1161	1205		**1183**		2366
15:00:00	1283	1221		**1252**		2504
16:00:00	1396	1418		**1407**		2814
17:00:00	1461	1433		**1447**		2894
18:00:00	1159	1247		**1203**		2406
19:00:00	838	944		**891**		1782
20:00:00	697	770		**734**		1467
21:00:00	607	671		**639**		1278
22:00:00	350	340		**345**		690
23:00:00	191	190		**191**		381
7am-7pm		14569		**14390**		28776
6am-10pm		17685		**17374**		34742
6am-12am		18215		**17910**		35813
12am-12am		18939		**18633**		37256
am Peak	11:00:00	9:00:00	5:00:00	**11:00:00**		
Peak Volume	1160	1172	362	**1160**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1461	1433		**1447**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2021 Raw Counts

Multi-Day Volume Report 057-0018 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		63	59	**61**		122
01:00:00		35	37	**36**		72
02:00:00		33	34	**34**		67
03:00:00		50	52	**51**		102
04:00:00		131	107	**119**		238
05:00:00		322	329	**326**		651
06:00:00		800	825	**813**		1625
07:00:00		1154	1226	**1190**		2380
08:00:00		1234	1216	**1225**		2450
09:00:00		1088	1123	**1106**		2211
10:00:00		1123	1170	**1147**		2293
11:00:00		1263	1278	**1271**		2541
12:00:00		1384	1327	**1356**		2711
13:00:00		1422	1317	**1370**		2739
14:00:00	1355	1370		**1363**		2725
15:00:00	1331	1396		**1364**		2727
16:00:00	1517	1489		**1503**		3006
17:00:00	1451	1603		**1527**		3054
18:00:00	1239	1357		**1298**		2596
19:00:00	969	1044		**1007**		2013
20:00:00	761	802		**782**		1563
21:00:00	523	574		**549**		1097
22:00:00	334	342		**338**		676
23:00:00	161	129		**145**		290
7am-7pm		15883		**15720**		31433
6am-10pm		19103		**18871**		37731
6am-12am		19574		**19354**		38697
12am-12am		20208		**19981**		39949
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1263	1278	**1271**		
pm Peak	16:00:00	17:00:00		**17:00:00**		
Peak Volume	1517	1603		**1527**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2013 Raw Counts

Multi-Day Volume Report 057-0020 Wednesday, June 19, 2013 to Friday, June 21, 2013						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-06-19**	**2013-06-20**	**2013-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		84	103	**94**		187
01:00:00		48	43	**46**		91
02:00:00		29	37	**33**		66
03:00:00		37	36	**37**		73
04:00:00		54	64	**59**		118
05:00:00		169	156	**163**		325
06:00:00		425	415	**420**		840
07:00:00		713	717	**715**		1430
08:00:00		774	848	**811**		1622
09:00:00		793	973	**883**		1766
10:00:00		875	963	**919**		1838
11:00:00		993	1134	**1064**		2127
12:00:00	1060	1125		**1093**		2185
13:00:00	984	1064		**1024**		2048
14:00:00	1027	994		**1011**		2021
15:00:00	1047	1026		**1037**		2073
16:00:00	1022	1047		**1035**		2069
17:00:00	1051	1195		**1123**		2246
18:00:00	838	839		**839**		1677
19:00:00	632	709		**671**		1341
20:00:00	593	574		**584**		1167
21:00:00	471	459		**465**		930
22:00:00	267	256		**262**		523
23:00:00	141	149		**145**		290
7am-7pm		11438		**11554**		23102
6am-10pm		13605		**13694**		27380
6am-12am		14010		**14101**		28193
12am-12am		14431		**14533**		29053
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		993	1134	**1064**		
pm Peak	12:00:00	17:00:00		**17:00:00**		
Peak Volume	1060	1195		**1123**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2019 Raw Counts

Multi-Day Volume Report 057-0020 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		65	59	**62**		124
01:00:00		30	47	**39**		77
02:00:00		47	40	**44**		87
03:00:00		32	48	**40**		80
04:00:00		73	59	**66**		132
05:00:00		215	188	**202**		403
06:00:00	415	414		**415**		829
07:00:00	658	742		**700**		1400
08:00:00	649	741		**695**		1390
09:00:00	649	765		**707**		1414
10:00:00	761	772		**767**		1533
11:00:00	852	855		**854**		1707
12:00:00	896	885		**891**		1781
13:00:00	874	882		**878**		1756
14:00:00	845	884		**865**		1729
15:00:00	991	848		**920**		1839
16:00:00	985	960		**973**		1945
17:00:00	990	999		**995**		1989
18:00:00	692	730		**711**		1422
19:00:00	520	565		**543**		1085
20:00:00	456	495		**476**		951
21:00:00	362	425		**394**		787
22:00:00	225	231		**228**		456
23:00:00	113	141		**127**		254
7am-7pm		10063		**9956**		19905
6am-10pm		11962		**11784**		23557
6am-12am		12334		**12139**		24267
12am-12am		12796		**12592**		25170
am Peak	11:00:00	11:00:00	5:00:00	**11:00:00**		
Peak Volume	852	855	188	**854**		
pm Peak	15:00:00	17:00:00		**17:00:00**		
Peak Volume	991	999		**995**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2020 Raw Counts

Multi-Day Volume Report 057-0020 Tuesday, May 19, 2020 to Thursday, May 21, 2020						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2020-05-19**	**2020-05-20**	**2020-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		46	32	**39**		78
01:00:00		29	42	**36**		71
02:00:00		35	39	**37**		74
03:00:00		40	24	**32**		64
04:00:00		64	59	**62**		123
05:00:00		179	176	**178**		355
06:00:00		382	406	**394**		788
07:00:00		642	611	**627**		1253
08:00:00		578	555	**567**		1133
09:00:00		724	667	**696**		1391
10:00:00	743	827		**785**		1570
11:00:00	864	889		**877**		1753
12:00:00	967	898		**933**		1865
13:00:00	865	916		**891**		1781
14:00:00	889	924		**907**		1813
15:00:00	925	945		**935**		1870
16:00:00	973	891		**932**		1864
17:00:00	965	847		**906**		1812
18:00:00	694	653		**674**		1347
19:00:00	620	543		**582**		1163
20:00:00	421	385		**403**		806
21:00:00	295	226		**261**		521
22:00:00	157	152		**155**		309
23:00:00	76	67		**72**		143
7am-7pm		9734		**9730**		19452
6am-10pm		11270		**11370**		22730
6am-12am		11489		**11597**		23182
12am-12am		11882		**11981**		23947
am Peak		11:00:00	9:00:00	**11:00:00**		
Peak Volume		889	667	**877**		
pm Peak	16:00:00	15:00:00		**15:00:00**		
Peak Volume	973	945		**935**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2010 Raw Counts

Multi-Day Volume Report 057-0022 Tuesday, April 6, 2010 to Thursday, April 8, 2010						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-06**	**2010-04-07**	**2010-04-08**	**Workday**	**7 Day**	**Count**
00:00:00		77	81	**79**		158
01:00:00		52	46	**49**		98
02:00:00		27	35	**31**		62
03:00:00		29	27	**28**		56
04:00:00		41	58	**50**		99
05:00:00		121	117	**119**		238
06:00:00		300	295	**298**		595
07:00:00		541	560	**551**		1101
08:00:00		636	619	**628**		1255
09:00:00		768	646	**707**		1414
10:00:00		852	722	**787**		1574
11:00:00	896	943		**920**		1839
12:00:00	1041	1019		**1030**		2060
13:00:00	1031	955		**993**		1986
14:00:00	978	973		**976**		1951
15:00:00	968	1017		**993**		1985
16:00:00	1013	1016		**1015**		2029
17:00:00	1007	983		**995**		1990
18:00:00	903	843		**873**		1746
19:00:00	750	709		**730**		1459
20:00:00	629	564		**597**		1193
21:00:00	433	437		**435**		870
22:00:00	240	271		**256**		511
23:00:00	154	179		**167**		333
7am-7pm		10546		**10468**		20930
6am-10pm		12556		**12528**		25047
6am-12am		13006		**12951**		25891
12am-12am		13353		**13307**		26602
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		943	722	**920**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1041	1019		**1030**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2014 Raw Counts

Multi-Day Volume Report 057-0022 Monday, September 15, 2014 to Wednesday, September 17						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2014-09-15**	**2014-09-16**	**2014-09-17**	**Workday**	**7 Day**	**Count**
00:00:00		80	84	**82**		164
01:00:00		38	46	**42**		84
02:00:00		34	38	**36**		72
03:00:00		44	38	**41**		82
04:00:00		60	52	**56**		112
05:00:00		182	154	**168**		336
06:00:00		394	340	**367**		734
07:00:00		696	714	**705**		1410
08:00:00		726	656	**691**		1382
09:00:00		736	796	**766**		1532
10:00:00		830	798	**814**		1628
11:00:00		930	920	**925**		1850
12:00:00		1118	1038	**1078**		2156
13:00:00		1012	976	**994**		1988
14:00:00		1022	916	**969**		1938
15:00:00		972	982	**977**		1954
16:00:00		1018	978	**998**		1996
17:00:00		1036	1104	**1070**		2140
18:00:00		880	852	**866**		1732
19:00:00		700	640	**670**		1340
20:00:00		488	550	**519**		1038
21:00:00	300	334		**317**		634
22:00:00	232	242		**237**		474
23:00:00	108	138		**123**		246
7am-7pm		10976		**10853**		21706
6am-10pm		12892		**12726**		25452
6am-12am		13272		**13086**		26172
12am-12am		13710		**13511**		27022
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		930	920	**925**		
pm Peak		12:00:00	17:00:00	**12:00:00**		
Peak Volume		1118	1104	**1078**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2018 Raw Counts

Multi-Day Volume Report 057-0022 Tuesday, June 19, 2018 to Thursday, June 21, 2018						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-06-19**	**2018-06-20**	**2018-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		78	94	**86**		172
01:00:00		44	48	**46**		92
02:00:00		43	30	**37**		73
03:00:00		46	47	**47**		93
04:00:00		55	43	**49**		98
05:00:00		178	190	**184**		368
06:00:00		436	377	**407**		813
07:00:00		691	729	**710**		1420
08:00:00		739	703	**721**		1442
09:00:00		761	821	**791**		1582
10:00:00		805	858	**832**		1663
11:00:00		815	878	**847**		1693
12:00:00	966	929		**948**		1895
13:00:00	885	867		**876**		1752
14:00:00	912	926		**919**		1838
15:00:00	881	886		**884**		1767
16:00:00	1017	942		**980**		1959
17:00:00	1020	1004		**1012**		2024
18:00:00	870	862		**866**		1732
19:00:00	686	699		**693**		1385
20:00:00	628	590		**609**		1218
21:00:00	450	475		**463**		925
22:00:00	276	283		**280**		559
23:00:00	126	164		**145**		290
7am-7pm		10227		**10386**		20767
6am-10pm		12427		**12558**		25108
6am-12am		12874		**12983**		25957
12am-12am		13318		**13432**		26853
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		815	878	**847**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1020	1004		**1012**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2010 Raw Counts

Multi-Day Volume Report 057-0028 Wednesday, April 21, 2010 to Friday, April 23, 2010						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2010-04-21**	**2010-04-22**	**2010-04-23**	**Workday**	**7 Day**	**Count**
00:00:00		87	84	**86**		171
01:00:00		60	48	**54**		108
02:00:00		39	30	**35**		69
03:00:00		33	27	**30**		60
04:00:00		33	69	**51**		102
05:00:00		165	144	**155**		309
06:00:00		345	363	**354**		708
07:00:00		843	894	**869**		1737
08:00:00		1041	1122	**1082**		2163
09:00:00		1116	1263	**1190**		2379
10:00:00		1269	1500	**1385**		2769
11:00:00	1644	1584		**1614**		3228
12:00:00	1854	1824		**1839**		3678
13:00:00	1776	1713		**1745**		3489
14:00:00	1653	1518		**1586**		3171
15:00:00	1719	1608		**1664**		3327
16:00:00	1755	1632		**1694**		3387
17:00:00	1596	1680		**1638**		3276
18:00:00	1251	1320		**1286**		2571
19:00:00	1041	1059		**1050**		2100
20:00:00	810	831		**821**		1641
21:00:00	546	519		**533**		1065
22:00:00	297	330		**314**		627
23:00:00	156	183		**170**		339
7am-7pm		17148		**17592**		35175
6am-10pm		19902		**20350**		40689
6am-12am		20415		**20834**		41655
12am-12am		20832		**21245**		42474
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1584	1500	**1614**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1854	1824		**1839**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2012 Raw Counts

Multi-Day Volume Report 057-0028 Tuesday, October 16, 2012 to Thursday, October 18, 2012						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2012-10-16**	**2012-10-17**	**2012-10-18**	**Workday**	**7 Day**	**Count**
00:00:00		71	61	**66**		132
01:00:00		43	41	**42**		84
02:00:00		41	39	**40**		80
03:00:00		24	34	**29**		58
04:00:00		56	36	**46**		92
05:00:00		147	155	**151**		302
06:00:00		368	336	**352**		704
07:00:00		849	819	**834**		1668
08:00:00		1096	1002	**1049**		2098
09:00:00	1174	1176		**1175**		2350
10:00:00	1352	1288		**1320**		2640
11:00:00	1528	1589		**1559**		3117
12:00:00	1722	1788		**1755**		3510
13:00:00	1711	1664		**1688**		3375
14:00:00	1595	1571		**1583**		3166
15:00:00	1554	1519		**1537**		3073
16:00:00	1571	1512		**1542**		3083
17:00:00	1528	1599		**1564**		3127
18:00:00	1311	1311		**1311**		2622
19:00:00	1011	944		**978**		1955
20:00:00	645	719		**682**		1364
21:00:00	372	435		**404**		807
22:00:00	244	261		**253**		505
23:00:00	136	141		**139**		277
7am-7pm		16962		**16917**		33829
6am-10pm		19428		**19333**		38659
6am-12am		19830		**19725**		39441
12am-12am		20212		**20099**		40189
am Peak		11:00:00	8:00:00	**11:00:00**		
Peak Volume		1589	1002	**1559**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1722	1788		**1755**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2014 Raw Counts

Multi-Day Volume Report 057-0028 Wednesday, March 19, 2014 to Friday, March 21, 2014						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2014-03-19**	**2014-03-20**	**2014-03-21**	**Workday**	**7 Day**	**Count**
00:00:00		93	81	**87**		174
01:00:00		48	66	**57**		114
02:00:00		30	48	**39**		78
03:00:00		33	36	**35**		69
04:00:00		51	48	**50**		99
05:00:00		177	156	**167**		333
06:00:00		363	381	**372**		744
07:00:00		915	1005	**960**		1920
08:00:00		1134	1095	**1115**		2229
09:00:00		1173	1308	**1241**		2481
10:00:00		1365	1521	**1443**		2886
11:00:00	1551	1626		**1589**		3177
12:00:00	1869	1962		**1916**		3831
13:00:00	1881	1860		**1871**		3741
14:00:00	1725	1749		**1737**		3474
15:00:00	1767	1818		**1793**		3585
16:00:00	1890	1965		**1928**		3855
17:00:00	1680	1758		**1719**		3438
18:00:00	1341	1410		**1376**		2751
19:00:00	1203	1296		**1250**		2499
20:00:00	840	882		**861**		1722
21:00:00	513	603		**558**		1116
22:00:00	303	351		**327**		654
23:00:00	180	198		**189**		378
7am-7pm		18735		**18688**		37368
6am-10pm		21879		**21729**		43449
6am-12am		22428		**22245**		44481
12am-12am		22860		**22680**		45348
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1626	1521	**1589**		
pm Peak	16:00:00	16:00:00		**16:00:00**		
Peak Volume	1890	1965		**1928**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2018 Raw Counts

Multi-Day Volume Report 057-0028 Tuesday, October 16, 2018 to Thursday, October 18, 2018						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-10-16**	**2018-10-17**	**2018-10-18**	**Workday**	**7 Day**	**Count**
00:00:00		75	66	**71**		141
01:00:00		38	49	**44**		87
02:00:00		30	25	**28**		55
03:00:00		26	29	**28**		55
04:00:00		43	42	**43**		85
05:00:00		171	153	**162**		324
06:00:00		376	416	**396**		792
07:00:00		868	800	**834**		1668
08:00:00		1156	1204	**1180**		2360
09:00:00		1151	1255	**1203**		2406
10:00:00		1364	1408	**1386**		2772
11:00:00		1637	1733	**1685**		3370
12:00:00		1877	2021	**1949**		3898
13:00:00		1795	1915	**1855**		3710
14:00:00	1545	1665		**1605**		3210
15:00:00	1729	1759		**1744**		3488
16:00:00	1739	1774		**1757**		3513
17:00:00	1772	1864		**1818**		3636
18:00:00	1398	1465		**1432**		2863
19:00:00	1167	1194		**1181**		2361
20:00:00	782	865		**824**		1647
21:00:00	466	467		**467**		933
22:00:00	298	308		**303**		606
23:00:00	140	144		**142**		284
7am-7pm		18375		**18448**		36894
6am-10pm		21277		**21316**		42627
6am-12am		21729		**21761**		43517
12am-12am		22112		**22137**		44264
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1637	1733	**1685**		
pm Peak	17:00:00	12:00:00		**12:00:00**		
Peak Volume	1772	1877		**1949**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2020 Raw Counts

Multi-Day Volume Report 057-0028 Tuesday, May 19, 2020 to Thursday, May 21, 2020						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Volume data					
Time Period	1 hour					
Exclude data:	None					
						Atypical (QC)
Time	**Tue**	**Wed**	**Thu**	**Average**		**Total**
Time	**2020-05-19**	**2020-05-20**	**2020-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		34	38	**36**		72
01:00:00		45	33	**39**		78
02:00:00		28	28	**28**		56
03:00:00		22	21	**22**		43
04:00:00		43	55	**49**		98
05:00:00		161	164	**163**		325
06:00:00		335	365	**350**		700
07:00:00		676	679	**678**		1355
08:00:00		806	785	**796**		1591
09:00:00		1056	999	**1028**		2055
10:00:00		1270	1219	**1245**		2489
11:00:00	1464	1566		**1515**		3030
12:00:00	1704	1722		**1713**		3426
13:00:00	1627	1621		**1624**		3248
14:00:00	1583	1524		**1554**		3107
15:00:00	1496	1536		**1516**		3032
16:00:00	1561	1542		**1552**		3103
17:00:00	1377	1409		**1393**		2786
18:00:00	1148	1221		**1185**		2369
19:00:00	881	878		**880**		1759
20:00:00	621	598		**610**		1219
21:00:00	342	324		**333**		666
22:00:00	213	221		**217**		434
23:00:00	97	86		**92**		183
7am-7pm		15949		**15799**		31591
6am-10pm		18084		**17972**		35935
6am-12am		18391		**18281**		36552
12am-12am		18724		**18618**		37224
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1566	1219	**1515**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1704	1722		**1713**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2012 Raw Counts

Multi-Day Volume Report 057-0030 Monday, October 15, 2012 to Wednesday, October 17, 2012						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2012-10-15**	**2012-10-16**	**2012-10-17**	**Workday**	**7 Day**	**Count**
00:00:00		26	25	**26**		51
01:00:00		19	14	**17**		33
02:00:00		16	16	**16**		32
03:00:00		15	19	**17**		34
04:00:00		47	47	**47**		94
05:00:00		185	200	**193**		385
06:00:00		398	436	**417**		834
07:00:00		746	755	**751**		1501
08:00:00		705	691	**698**		1396
09:00:00		538	549	**544**		1087
10:00:00		525	551	**538**		1076
11:00:00		641	662	**652**		1303
12:00:00		703	825	**764**		1528
13:00:00	704	679		**692**		1383
14:00:00	666	641		**654**		1307
15:00:00	693	645		**669**		1338
16:00:00	856	812		**834**		1668
17:00:00	946	967		**957**		1913
18:00:00	735	752		**744**		1487
19:00:00	520	507		**514**		1027
20:00:00	320	323		**322**		643
21:00:00	184	181		**183**		365
22:00:00	131	105		**118**		236
23:00:00	62	54		**58**		116
7am-7pm		8354		**8497**		16987
6am-10pm		9763		**9933**		19856
6am-12am		9922		**10109**		20208
12am-12am		10230		**10425**		20837
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		746	755	**751**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	946	967		**957**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2019 Raw Counts

Multi-Day Volume Report 057-0030 Tuesday, October 15, 2019 to Thursday, October 17, 2019						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-10-15**	**2019-10-16**	**2019-10-17**	**Workday**	**7 Day**	**Count**
00:00:00		48	52	**50**		100
01:00:00		25	45	**35**		70
02:00:00		42	32	**37**		74
03:00:00		40	33	**37**		73
04:00:00		84	73	**79**		157
05:00:00		250	266	**258**		516
06:00:00		625	627	**626**		1252
07:00:00		1060	1092	**1076**		2152
08:00:00		855	903	**879**		1758
09:00:00		662	689	**676**		1351
10:00:00	702	737		**720**		1439
11:00:00	866	924		**895**		1790
12:00:00	1060	1085		**1073**		2145
13:00:00	978	962		**970**		1940
14:00:00	873	904		**889**		1777
15:00:00	961	1005		**983**		1966
16:00:00	1114	796		**955**		1910
17:00:00	1256	1318		**1287**		2574
18:00:00	925	1012		**969**		1937
19:00:00	661	720		**691**		1381
20:00:00	472	500		**486**		972
21:00:00	245	344		**295**		589
22:00:00	169	162		**166**		331
23:00:00	106	125		**116**		231
7am-7pm		11320		**11372**		22739
6am-10pm		13509		**13470**		26933
6am-12am		13796		**13752**		27495
12am-12am		14285		**14248**		28485
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1060	1092	**1076**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1256	1318		**1287**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2021 Raw Counts

Multi-Day Volume Report 057-0030 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Volume data					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thu**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		50	56	**53**		106
01:00:00		43	38	**41**		81
02:00:00		27	52	**40**		79
03:00:00		65	65	**65**		130
04:00:00		97	113	**105**		210
05:00:00		242	272	**257**		514
06:00:00		683	685	**684**		1368
07:00:00		1083	1122	**1103**		2205
08:00:00		962	1044	**1003**		2006
09:00:00		814	929	**872**		1743
10:00:00		893	847	**870**		1740
11:00:00		954	1085	**1020**		2039
12:00:00	1015	1092		**1054**		2107
13:00:00	1001	1011		**1006**		2012
14:00:00	968	1059		**1014**		2027
15:00:00	1084	1162		**1123**		2246
16:00:00	1227	1299		**1263**		2526
17:00:00	1298	1403		**1351**		2701
18:00:00	920	1130		**1025**		2050
19:00:00	698	803		**751**		1501
20:00:00	482	634		**558**		1116
21:00:00	284	367		**326**		651
22:00:00	196	197		**197**		393
23:00:00	107	85		**96**		192
7am-7pm		12862		**12704**		25402
6am-10pm		15349		**15023**		30038
6am-12am		15631		**15316**		30623
12am-12am		16155		**15877**		31743
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1083	1122	**1103**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1298	1403		**1351**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2011 Raw Counts

Multi-Day Volume Report 057-0048 Monday, June 6, 2011 to Wednesdsay, June 8, 2011						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-06-06**	**2011-06-07**	**2011-06-08**	**Workday**	**7 Day**	**Count**
00:00:00		179	174	**177**		353
01:00:00		97	91	**94**		188
02:00:00		65	70	**68**		135
03:00:00		63	56	**60**		119
04:00:00		150	138	**144**		288
05:00:00		388	385	**387**		773
06:00:00		842	825	**834**		1667
07:00:00		1311	1353	**1332**		2664
08:00:00		1395	1410	**1403**		2805
09:00:00		1347	1387	**1367**		2734
10:00:00		1509	1459	**1484**		2968
11:00:00		1608	1578	**1593**		3186
12:00:00	1803	1771		**1787**		3574
13:00:00	1753	1753		**1753**		3506
14:00:00	1718	1657		**1688**		3375
15:00:00	1820	1921		**1871**		3741
16:00:00	1832	1841		**1837**		3673
17:00:00	1982	1920		**1951**		3902
18:00:00	1611	1616		**1614**		3227
19:00:00	1299	1239		**1269**		2538
20:00:00	922	966		**944**		1888
21:00:00	757	803		**780**		1560
22:00:00	475	491		**483**		966
23:00:00	301	299		**300**		600
7am-7pm		19649		**19680**		39355
6am-10pm		23499		**23507**		47008
6am-12am		24289		**24290**		48574
12am-12am		25231		**25220**		50430
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1608	1578	**1593**		
pm Peak	17:00:00	15:00:00		**17:00:00**		
Peak Volume	1982	1921		**1951**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2013 Raw Counts

Multi-Day Volume Report 057-0048 Wednesday, October 9, 2013 to Friday, October 11, 2013						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-10-09**	**2013-10-10**	**2013-10-11**	**Workday**	**7 Day**	**Count**
00:00:00		137	121	**129**		258
01:00:00		100	99	**100**		199
02:00:00		74	68	**71**		142
03:00:00		79	87	**83**		166
04:00:00		160	148	**154**		308
05:00:00		417	419	**418**		836
06:00:00		976	967	**972**		1943
07:00:00		1993	1983	**1988**		3976
08:00:00		2048	2001	**2025**		4049
09:00:00		1463	1557	**1510**		3020
10:00:00		1379	1680	**1530**		3059
11:00:00	1499	1606		**1553**		3105
12:00:00	1721	1717		**1719**		3438
13:00:00	1762	1766		**1764**		3528
14:00:00	1790	1827		**1809**		3617
15:00:00	2141	2180		**2161**		4321
16:00:00	2086	2139		**2113**		4225
17:00:00	2182	2417		**2300**		4599
18:00:00	1836	1896		**1866**		3732
19:00:00	1311	1439		**1375**		2750
20:00:00	1155	1269		**1212**		2424
21:00:00	730	666		**698**		1396
22:00:00	432	475		**454**		907
23:00:00	270	271		**271**		541
7am-7pm		22431		**22338**		44669
6am-10pm		26781		**26595**		53182
6am-12am		27527		**27320**		54630
12am-12am		28494		**28275**		56539
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		2048	2001	**2025**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2182	2417		**2300**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2015 Raw Counts

Multi-Day Volume Report 057-0048 Tuesday, May 19, 2015 to Thursday, May 21, 2015						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2015-05-19**	**2015-05-20**	**2015-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		143	152	**148**		295
01:00:00		81	93	**87**		174
02:00:00		77	84	**81**		161
03:00:00		69	84	**77**		153
04:00:00		145	144	**145**		289
05:00:00		438	427	**433**		865
06:00:00		1001	977	**989**		1978
07:00:00		1965	1996	**1981**		3961
08:00:00		2044	2037	**2041**		4081
09:00:00		1554	1550	**1552**		3104
10:00:00		1530	1603	**1567**		3133
11:00:00		1656	1770	**1713**		3426
12:00:00		1937	1851	**1894**		3788
13:00:00		1803	1924	**1864**		3727
14:00:00		1907	1967	**1937**		3874
15:00:00		2246	2344	**2295**		4590
16:00:00		2116	2426	**2271**		4542
17:00:00	2303	2307		**2305**		4610
18:00:00	1887	1870		**1879**		3757
19:00:00	1506	1527		**1517**		3033
20:00:00	1168	1188		**1178**		2356
21:00:00	911	847		**879**		1758
22:00:00	433	493		**463**		926
23:00:00	253	265		**259**		518
7am-7pm		22935		**23299**		46593
6am-10pm		27498		**27862**		55718
6am-12am		28256		**28584**		57162
12am-12am		29209		**29555**		59099
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		2044	2037	**2041**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2303	2307		**2305**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2018 Raw Counts

Multi-Day Volume Report 057-0048 Monday, October 29, 2018 to Wednesdsay, October 31, 201						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2018-10-29**	**2018-10-30**	**2018-10-31**	**Workday**	**7 Day**	**Count**
00:00:00		140	158	**149**		298
01:00:00		87	115	**101**		202
02:00:00		63	84	**74**		147
03:00:00		75	82	**79**		157
04:00:00		133	140	**137**		273
05:00:00		511	479	**495**		990
06:00:00		1128	1130	**1129**		2258
07:00:00		2188	2043	**2116**		4231
08:00:00		2000	1997	**1999**		3997
09:00:00		1489	1490	**1490**		2979
10:00:00		1537	1545	**1541**		3082
11:00:00		1705	1702	**1704**		3407
12:00:00		1858	1907	**1883**		3765
13:00:00		1851	1915	**1883**		3766
14:00:00		1976	1958	**1967**		3934
15:00:00		2277	2323	**2300**		4600
16:00:00	2230	2192		**2211**		4422
17:00:00	2356	2389		**2373**		4745
18:00:00	1877	2146		**2012**		4023
19:00:00	1402	1661		**1532**		3063
20:00:00	950	1070		**1010**		2020
21:00:00	689	812		**751**		1501
22:00:00	438	403		**421**		841
23:00:00	255	302		**279**		557
7am-7pm		23608		**23479**		46951
6am-10pm		28279		**27901**		55793
6am-12am		28984		**28601**		57191
12am-12am		29993		**29636**		59258
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2188	2043	**2116**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2356	2389		**2373**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2021 Raw Counts

Multi-Day Volume Report 057-0048 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		112	151	**132**		263
01:00:00		75	78	**77**		153
02:00:00		81	56	**69**		137
03:00:00		77	76	**77**		153
04:00:00		175	166	**171**		341
05:00:00		463	528	**496**		991
06:00:00		1211	1195	**1203**		2406
07:00:00		2089	2252	**2171**		4341
08:00:00		2131	2308	**2220**		4439
09:00:00		1557	1589	**1573**		3146
10:00:00		1623	1704	**1664**		3327
11:00:00		1749	1808	**1779**		3557
12:00:00	1817	2167		**1992**		3984
13:00:00	1864	2102		**1983**		3966
14:00:00	2050	2062		**2056**		4112
15:00:00	2283	2236		**2260**		4519
16:00:00	2271	2249		**2260**		4520
17:00:00	2412	2636		**2524**		5048
18:00:00	2038	2036		**2037**		4074
19:00:00	1505	1527		**1516**		3032
20:00:00	1077	1186		**1132**		2263
21:00:00	714	821		**768**		1535
22:00:00	456	473		**465**		929
23:00:00	276	260		**268**		536
7am-7pm		24637		**24519**		49033
6am-10pm		29382		**29138**		58269
6am-12am		30115		**29871**		59734
12am-12am		31098		**30893**		61772
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		2131	2308	**2220**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2412	2636		**2524**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2011 Raw Counts

Multi-Day Volume Report 057-0105 Tuesday, May 10, 2011 to Thursday, May 12, 2011						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2011-05-10**	**2011-05-11**	**2011-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		132	107	**120**		239
01:00:00		54	63	**59**		117
02:00:00		46	49	**48**		95
03:00:00		54	43	**49**		97
04:00:00		103	105	**104**		208
05:00:00		332	319	**326**		651
06:00:00		855	843	**849**		1698
07:00:00		1572	1566	**1569**		3138
08:00:00		1492	1502	**1497**		2994
09:00:00		1266	1232	**1249**		2498
10:00:00		1324	1316	**1320**		2640
11:00:00	1412	1507		**1460**		2919
12:00:00	1518	1528		**1523**		3046
13:00:00	1581	1558		**1570**		3139
14:00:00	1581	1583		**1582**		3164
15:00:00	1904	1745		**1825**		3649
16:00:00	1865	1783		**1824**		3648
17:00:00	2050	1943		**1997**		3993
18:00:00	1660	1538		**1599**		3198
19:00:00	1268	1306		**1287**		2574
20:00:00	1020	954		**987**		1974
21:00:00	725	689		**707**		1414
22:00:00	396	415		**406**		811
23:00:00	225	245		**235**		470
7am-7pm		18839		**19015**		38026
6am-10pm		22643		**22845**		45686
6am-12am		23303		**23486**		46967
12am-12am		24024		**24192**		48374
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1572	1566	**1569**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2050	1943		**1997**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2013 Raw Counts

Multi-Day Volume Report 057-0105 Tuesday, June 18, 2013 to Thursday, June 20, 2013						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2013-06-18**	**2013-06-19**	**2013-06-20**	**Workday**	**7 Day**	**Count**
00:00:00		135	154	**145**		289
01:00:00		81	79	**80**		160
02:00:00		55	46	**51**		101
03:00:00		44	61	**53**		105
04:00:00		99	104	**102**		203
05:00:00		353	359	**356**		712
06:00:00		813	833	**823**		1646
07:00:00		1301	1273	**1287**		2574
08:00:00		1285	1366	**1326**		2651
09:00:00		1320	1341	**1331**		2661
10:00:00		1387	1346	**1367**		2733
11:00:00		1490	1473	**1482**		2963
12:00:00		1668	1728	**1698**		3396
13:00:00		1488	1570	**1529**		3058
14:00:00		1544	1491	**1518**		3035
15:00:00		1635	1730	**1683**		3365
16:00:00		1807	1873	**1840**		3680
17:00:00		1890	1930	**1910**		3820
18:00:00		1656	1630	**1643**		3286
19:00:00		1269	1325	**1297**		2594
20:00:00		1070	969	**1020**		2039
21:00:00	636	787		**712**		1423
22:00:00	431	503		**467**		934
23:00:00	268	261		**265**		529
7am-7pm		18471		**18614**		37222
6am-10pm		22410		**22466**		44924
6am-12am		23174		**23198**		46387
12am-12am		23941		**23985**		47957
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1490	1473	**1482**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1890	1930	**1910**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2015 Raw Counts

Multi-Day Volume Report 057-0105 Monday, May 4, 2015 to Wednesday, May 6, 2015						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-04**	**2015-05-05**	**2015-05-06**	**Workday**	**7 Day**	**Count**
00:00:00		106	122	**114**		228
01:00:00		74	90	**82**		164
02:00:00		40	64	**52**		104
03:00:00		64	52	**58**		116
04:00:00		112	104	**108**		216
05:00:00		440	440	**440**		880
06:00:00		988	956	**972**		1944
07:00:00		1736	1672	**1704**		3408
08:00:00		1766	1796	**1781**		3562
09:00:00		1306	1352	**1329**		2658
10:00:00		1422	1354	**1388**		2776
11:00:00		1558	1572	**1565**		3130
12:00:00	1608	1646		**1627**		3254
13:00:00	1626	1776		**1701**		3402
14:00:00	1804	1690		**1747**		3494
15:00:00	2084	2074		**2079**		4158
16:00:00	1938	2004		**1971**		3942
17:00:00	1978	2068		**2023**		4046
18:00:00	1644	1786		**1715**		3430
19:00:00	1266	1380		**1323**		2646
20:00:00	976	1000		**988**		1976
21:00:00	718	824		**771**		1542
22:00:00	434	472		**453**		906
23:00:00	224	304		**264**		528
7am-7pm		20832		**20630**		41260
6am-10pm		25024		**24684**		49368
6am-12am		25800		**25401**		50802
12am-12am		26636		**26255**		52510
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		1766	1796	**1781**		
pm Peak	15:00:00	15:00:00		**15:00:00**		
Peak Volume	2084	2074		**2079**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2018 Raw Counts

Multi-Day Volume Report 057-0105 Monday, December 17, 2018 to Wednesday, December 19, 2						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2018-12-17**	**2018-12-18**	**2018-12-19**	**Workday**	**7 Day**	**Count**
00:00:00		52	76	**64**		128
01:00:00		42	44	**43**		86
02:00:00		39	59	**49**		98
03:00:00		108	124	**116**		232
04:00:00		377	408	**393**		785
05:00:00		885	889	**887**		1774
06:00:00		1525	1441	**1483**		2966
07:00:00		1618	1551	**1585**		3169
08:00:00		1479	1433	**1456**		2912
09:00:00		1661	1479	**1570**		3140
10:00:00		1600	1578	**1589**		3178
11:00:00		1742	1732	**1737**		3474
12:00:00	1609	1859		**1734**		3468
13:00:00	1680	1833		**1757**		3513
14:00:00	1848	1846		**1847**		3694
15:00:00	1958	1972		**1965**		3930
16:00:00	1966	1914		**1940**		3880
17:00:00	1489	1618		**1554**		3107
18:00:00	1024	1147		**1086**		2171
19:00:00	769	802		**786**		1571
20:00:00	503	629		**566**		1132
21:00:00	346	336		**341**		682
22:00:00	177	192		**185**		369
23:00:00	78	102		**90**		180
7am-7pm		20289		**19820**		39636
6am-10pm		23581		**22996**		45987
6am-12am		23875		**23271**		46536
12am-12am		25378		**24823**		49639
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1742	1732	**1737**		
pm Peak	16:00:00	15:00:00		**15:00:00**		
Peak Volume	1966	1972		**1965**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2021 Raw Counts

Multi-Day Volume Report 057-0105 Tuesday, June 22, 2021 to Thursday, June 24, 2021						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-06-22**	**2021-06-23**	**2021-06-24**	**Workday**	**7 Day**	**Count**
00:00:00		121	123	**122**		244
01:00:00		66	67	**67**		133
02:00:00		68	49	**59**		117
03:00:00		55	59	**57**		114
04:00:00		133	142	**138**		275
05:00:00		358	386	**372**		744
06:00:00		851	919	**885**		1770
07:00:00		1332	1387	**1360**		2719
08:00:00		1476	1359	**1418**		2835
09:00:00		1403	1392	**1398**		2795
10:00:00		1502	1361	**1432**		2863
11:00:00		1637	1588	**1613**		3225
12:00:00		1693	1689	**1691**		3382
13:00:00		1684	1779	**1732**		3463
14:00:00		1613	1714	**1664**		3327
15:00:00		1810	1776	**1793**		3586
16:00:00		1925	1908	**1917**		3833
17:00:00		2082	2094	**2088**		4176
18:00:00		1810	1906	**1858**		3716
19:00:00		1267	1388	**1328**		2655
20:00:00		1134	1115	**1125**		2249
21:00:00	787	848		**818**		1635
22:00:00	497	493		**495**		990
23:00:00	252	279		**266**		531
7am-7pm		19967		**19964**		39920
6am-10pm		24067		**24120**		48229
6am-12am		24839		**24881**		49750
12am-12am		25640		**25696**		51377
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1637	1588	**1613**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		2082	2094	**2088**		

APPENDIX E: GDOT TRAFFIC FACTORS

2012 Traffic Factors

Monthly Factors

Factor Group	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural_Local_Coll	1.06	1.01	0.95	0.98	0.97	1	1.03	1	0.99	0.96	1.01	1.06
02	Rural_Minor_Art	1.06	1.01	0.96	0.98	0.98	1	1.03	1	1	0.97	0.99	1.04
03	Rural_Major_Art	1.1	1.04	0.99	0.99	0.98	0.96	0.97	1	1.01	0.95	1	1.06
04	Rural_I-75	1.16	1.06	0.91	0.97	1	0.89	0.89	1.05	1.12	1.02	0.99	1.04
05	Rural_I-85	1.18	1.09	1.02	0.99	0.98	0.92	0.9	0.97	1.02	1.01	0.98	1
06	Rural_Int	1.19	1.09	0.98	0.95	0.97	0.9	0.89	1	1.05	1.01	1	1.04
07	Sm_Urb_Local_Coll	1.01	0.99	0.95	0.99	0.97	1.02	1.03	0.98	1	1	1.02	1.03
08	Sm_Urb_Art	1.06	0.98	0.96	0.99	0.98	0.99	1.01	1	1.02	1	1	1.02
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1.08	1.01	0.95	0.98	0.98	0.97	0.98	1.01	1.04	1	1	1.03
10	Urb_Local_Coll	1.04	0.99	0.95	0.98	0.97	1.02	1.05	0.99	1	0.97	1	1.05
11	Urb_Minor_Art (Not ATL)	1.03	0.95	0.95	0.98	0.98	1.02	1.06	0.99	1	0.99	1	1.06
12	Urb_Major_Art (Not ATL)	1.04	0.97	0.95	0.98	0.98	1	1.02	1	1.01	1	1.01	1.05
13	Urb_Minor_Art_ATL	1.07	1.01	0.96	0.99	0.97	0.99	1.02	0.98	0.99	0.98	1.01	1.05
14	Urb_Major_Art_ATL	1.05	1	0.96	0.99	0.97	0.99	1.02	0.99	1	0.99	1.01	1.05
15	Urb_Freeways_Int_ATL	1.07	1.02	0.97	0.99	0.98	0.97	0.99	0.99	1.01	0.99	1.01	1.03
16	Urb_I-285	1.06	1	0.97	0.99	0.96	0.97	0.99	1	1.02	1.01	1.01	1.04

Daily Factors

Factor Group	Functional_Class	Mon	Tue	Wed	Thu	Fri	Sat	Sun
01	Rural_Local_Coll	1	0.98	0.97	0.94	0.88	1.05	1.27
02	Rural_Minor_Art	0.99	0.97	0.96	0.93	0.87	1.07	1.3
03	Rural_Major_Art	1.02	1.01	1	0.95	0.85	1.03	1.21
04	Rural_I-75	1.09	1.12	1.08	0.98	0.85	0.95	0.99
05	Rural_I-85	1.07	1.1	1.07	0.99	0.84	0.99	0.99
06	Rural_Int	1.08	1.14	1.1	0.99	0.82	0.99	0.95
07	Sm_Urb_Local_Coll	0.98	0.97	0.93	0.93	0.89	1.12	1.27
08	Sm_Urb_Art	0.99	0.97	0.96	0.93	0.85	1.06	1.37
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1	0.99	0.98	0.93	0.86	1.08	1.24
10	Urb_Local_Coll	0.95	0.93	0.92	0.91	0.89	1.18	1.38
11	Urb_Minor_Art (Not ATL)	0.96	0.94	0.93	0.91	0.86	1.12	1.47
12	Urb_Major_Art (Not ATL)	0.98	0.94	0.94	0.92	0.86	1.1	1.46
13	Urb_Minor_Art_ATL	0.97	0.94	0.93	0.92	0.88	1.1	1.42
14	Urb_Major_Art_ATL	1	0.96	0.94	0.92	0.88	1.06	1.36
15	Urb_Freeways_Int_ATL	0.99	0.98	0.96	0.93	0.9	1.06	1.23
16	Urb_I-285	0.97	0.95	0.94	0.91	0.87	1.12	1.35

2012 Traffic Factors

Axle Factors

Factor Group	Functional_Class	Axle Factor
01	Rural_Local_Coll	0.97
02	Rural_Minor_Art	0.94
03	Rural_Major_Art	0.91
04	Rural_I-75	0.78
05	Rural_I-85	0.8
06	Rural_Int	0.78
07	Sm_Urb_Local_Coll	0.99
08	Sm_Urb_Art	0.96
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	0.89
10	Urb_Local_Coll	0.99
11	Urb_Minor_Art (Not ATL)	0.98
12	Urb_Major_Art (Not ATL)	0.97
13	Urb_Minor_Art_ATL	0.98
14	Urb_Major_Art_ATL	0.99
15	Urb_Freeways_Int_ATL	0.94
16	Urb_I-285	0.87

Growth Factors

Factor Group	Functional_Class	Growth Factor
01	Rural_Local_Coll	0.99
02	Rural_Minor_Art	0.99
03	Rural_Major_Art	0.99
04	Rural_I-75	1.01
05	Rural_I-85	1.02
06	Rural_Int	1
07	Sm_Urb_Local_Coll	1.01
08	Sm_Urb_Art	1
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1
10	Urb_Local_Coll	1
11	Urb_Minor_Art (Not ATL)	0.98
12	Urb_Major_Art (Not ATL)	0.99
13	Urb_Minor_Art_ATL	0.99
14	Urb_Major_Art_ATL	1.02
15	Urb_Freeways_Int_ATL	1.01
16	Urb_I-285	0.98

2013 Traffic Factors

Monthly Factors

Factor Group	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural_Local_Coll	1.1	1.06	1.02	0.98	0.96	1.01	0.99	0.97	0.97	0.93	1.01	1.04
02	Rural_Minor_Art	1.07	1.03	0.99	0.97	0.97	1.01	1.01	1	0.99	0.96	1	1.03
03	Rural_Major_Art	1.12	1.06	1.02	1	0.98	0.98	0.97	0.99	0.99	0.93	0.99	1.03
04	Rural_I-75	1.13	1.08	0.9	1.02	1.01	0.88	0.87	1.04	1.15	0.98	1.02	1.03
05	Rural_I-85	1.17	1.11	1.01	0.99	0.95	0.92	0.9	0.96	1.03	1	1.01	1
06	Rural_Int	1.17	1.11	0.98	0.97	0.95	0.9	0.89	0.97	1.05	1.01	1.03	1.03
07	Sm_Urb_Local_Coll	1.04	0.99	0.96	0.98	0.94	0.99	1.03	0.99	1.01	1.02	1.05	1.03
08	Sm_Urb_Art	1.06	1	0.97	0.99	0.96	1.02	1.02	1	1.02	0.99	0.99	1
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1.08	1.04	0.97	0.99	0.97	0.98	0.97	0.99	1.02	0.99	1	1.01
10	Urb_Local_Coll	1.06	1.02	0.99	0.98	0.96	1.04	1.03	0.98	0.97	0.96	1.01	1.03
11	Urb_Minor_Art (Not ATL)	1.04	1	0.98	0.98	0.97	1.03	1.03	1	0.98	0.98	1.01	1.03
12	Urb_Major_Art (Not ATL)	1.06	1.01	0.98	0.98	0.97	1	1	0.99	0.99	0.98	1.02	1.03
13	Urb_Minor_Art_ATL	1.05	1.01	0.98	0.96	0.97	1.02	1.02	1	0.99	0.97	1.01	1.05
14	Urb_Major_Art_ATL	1.07	1.02	0.99	0.99	0.96	0.99	1	0.99	1	0.98	1.01	1.03
15	Urb_Freeways_Int_ATL	1.07	1.03	0.98	0.99	0.97	0.99	0.97	0.99	1	0.98	1.01	1.02
16	Urb_I-285	1.07	1.03	1.00	0.98	0.97	0.97	0.97	0.99	1.01	0.99	1.01	1.02

Daily Factors

Factor Group	Functional_Class	Mon	Tue	Wed	Thu	Fri	Sat	Sun
01	Rural_Local_Coll	1	0.97	0.97	0.95	0.88	1.05	1.28
02	Rural_Minor_Art	0.99	0.97	0.96	0.93	0.87	1.08	1.3
03	Rural_Major_Art	1.01	1.01	0.99	0.95	0.86	1.03	1.23
04	Rural_I-75	1.08	1.16	1.1	0.99	0.85	0.93	0.96
05	Rural_I-85	1.07	1.12	1.08	1	0.83	0.98	0.97
06	Rural_Int	1.07	1.16	1.11	1	0.81	0.99	0.94
07	Sm_Urb_Local_Coll	0.99	0.97	0.95	0.93	0.87	1.06	1.33
08	Sm_Urb_Art	1	0.99	0.98	0.94	0.83	1.05	1.35
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1	1.01	0.98	0.94	0.86	1.06	1.22
10	Urb_Local_Coll	0.96	0.93	0.92	0.91	0.9	1.17	1.37
11	Urb_Minor_Art (Not ATL)	0.96	0.93	0.92	0.9	0.87	1.15	1.49
12	Urb_Major_Art (Not ATL)	0.98	0.95	0.93	0.91	0.87	1.1	1.43
13	Urb_Minor_Art_ATL	0.96	0.93	0.92	0.91	0.88	1.14	1.46
14	Urb_Major_Art_ATL	1	0.96	0.94	0.93	0.89	1.06	1.35
15	Urb_Freeways_Int_ATL	0.99	0.98	0.96	0.93	0.9	1.07	1.25
16	Urb_I-285	0.97	0.95	0.94	0.91	0.88	1.13	1.37

2013 Traffic Factors

Axle Factors

Factor Group	Functional_Class	Axle Factor
01	Rural_Local_Coll	0.95
02	Rural_Minor_Art	0.93
03	Rural_Major_Art	0.92
04	Rural_I-75	0.76
05	Rural_I-85	0.77
06	Rural_Int	0.77
07	Sm_Urb_Local_Coll	0.98
08	Sm_Urb_Art	0.93
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	0.87
10	Urb_Local_Coll	0.99
11	Urb_Minor_Art (Not ATL)	0.98
12	Urb_Major_Art (Not ATL)	0.97
13	Urb_Minor_Art_ATL	0.98
14	Urb_Major_Art_ATL	0.99
15	Urb_Freeways_Int_ATL	0.94
16	Urb_I-285	0.87

Growth Factors

Factor Group	Functional_Class	Growth Factor
01	Rural_Local_Coll	0.99
02	Rural_Minor_Art	1
03	Rural_Major_Art	1
04	Rural_I-75	1.02
05	Rural_I-85	1.02
06	Rural_Int	1.01
07	Sm_Urb_Local_Coll	0.97
08	Sm_Urb_Art	1
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1.01
10	Urb_Local_Coll	1.02
11	Urb_Minor_Art (Not ATL)	0.99
12	Urb_Major_Art (Not ATL)	1
13	Urb_Minor_Art_ATL	1
14	Urb_Major_Art_ATL	1
15	Urb_Freeways_Int_ATL	1.01
16	Urb_I-285	1.01

2014 Traffic Factors

Monthly Factors

Factor Group	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural_Local_Coll	1.18	1.08	1	0.97	0.95	1	0.99	0.95	0.97	0.91	1.01	1.03
02	Rural_Minor_Art	1.15	1.04	1	0.99	0.98	0.99	1.01	0.98	0.98	0.93	0.98	1.01
03	Rural_Major_Art	1.16	1.05	1	0.99	0.97	0.96	0.98	0.99	1.00	0.94	0.98	1.01
04	Rural_I-75	1.17	1.14	0.91	0.95	1.01	0.92	0.87	1.08	1.14	0.99	0.98	0.95
05	Rural_I-85	1.22	1.17	1.05	0.99	0.95	0.92	0.88	0.95	1.03	1	0.97	0.97
06	Rural_Int	1.19	1.13	1.01	0.96	0.96	0.93	0.89	0.99	1.03	1	0.98	1.01
07	Sm_Urb_Local_Coll	1.11	1.03	0.95	0.95	0.96	1.01	1.04	0.98	0.98	0.99	1.02	1.01
08	Sm_Urb_Art	1.11	0.98	0.96	0.97	0.96	0.98	1	1	1.02	1	1.01	1.01
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1.13	1.05	0.97	0.96	0.98	0.96	0.97	0.99	1.03	0.98	1.01	1.01
10	Urb_Local_Coll	1.11	1.03	0.95	0.97	0.95	1	1.05	0.98	0.98	0.95	1.02	1.05
11	Urb_Minor_Art (Not ATL)	1.11	1	0.97	0.97	0.97	1	1.03	0.98	0.98	0.96	1.02	1.03
12	Urb_Major_Art (Not ATL)	1.13	1	0.97	0.97	0.97	0.98	1.01	0.98	1	0.98	1.03	1.03
13	Urb_Minor_Art_ATL	1.12	1.05	0.97	0.98	0.97	0.98	1.01	0.96	0.97	0.96	1.03	1.03
14	Urb_Major_Art_ATL	1.11	1.01	0.97	0.98	0.97	0.99	1.02	0.98	0.99	0.98	1.02	1.01
15	Urb_Freeways_Int_ATL	1.13	1.03	0.99	0.99	0.98	0.97	0.98	0.97	0.99	0.97	1.01	1
16	Urb_I-285	1.10	1.01	0.98	0.98	0.98	0.98	1	0.98	0.99	0.99	1.02	1.01

Daily Factors

Factor Group	Functional_Class	Mon	Tue	Wed	Thu	Fri	Sat	Sun
01	Rural_Local_Coll	1.01	1	0.98	0.96	0.88	1.03	1.20
02	Rural_Minor_Art	0.98	0.97	0.97	0.94	0.86	1.08	1.30
03	Rural_Major_Art	1.01	1	1	0.95	0.85	1.05	1.22
04	Rural_I-75	1.10	1.20	1.15	1.03	0.85	0.89	0.91
05	Rural_I-85	1.07	1.15	1.09	1.02	0.84	0.98	0.92
06	Rural_Int	1.06	1.11	1.13	1.05	0.83	0.97	0.93
07	Sm_Urb_Local_Coll	0.98	0.96	0.98	0.95	0.86	1.04	1.36
08	Sm_Urb_Art	1	0.99	0.99	0.95	0.83	1.05	1.30
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1	1.01	1	0.96	0.86	1.05	1.18
10	Urb_Local_Coll	0.95	0.92	0.92	0.92	0.89	1.19	1.39
11	Urb_Minor_Art (Not ATL)	0.96	0.93	0.94	0.92	0.86	1.13	1.44
12	Urb_Major_Art (Not ATL)	0.97	0.94	0.95	0.92	0.86	1.11	1.41
13	Urb_Minor_Art_ATL	0.96	0.93	0.94	0.93	0.88	1.12	1.41
14	Urb_Major_Art_ATL	0.99	0.95	0.96	0.93	0.88	1.06	1.34
15	Urb_Freeways_Int_ATL	0.99	0.99	0.97	0.95	0.90	1.05	1.21
16	Urb_I-285	0.98	0.96	0.94	0.92	0.90	1.10	1.33

2014 Traffic Factors

Axle Factors

Factor Group	Functional_Class	Axle Factor
01	Rural_Local_Coll	0.94
02	Rural_Minor_Art	0.90
03	Rural_Major_Art	0.88
04	Rural_I-75	0.77
05	Rural_I-85	0.77
06	Rural_Int	0.80
07	Sm_Urb_Local_Coll	0.98
08	Sm_Urb_Art	0.92
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	0.88
10	Urb_Local_Coll	0.97
11	Urb_Minor_Art (Not ATL)	0.97
12	Urb_Major_Art (Not ATL)	0.97
13	Urb_Minor_Art_ATL	0.99
14	Urb_Major_Art_ATL	0.99
15	Urb_Freeways_Int_ATL	0.95
16	Urb_I-285	0.88

Growth Factors

Factor Group	Functional_Class	Growth Factor
01	Rural_Local_Coll	1
02	Rural_Minor_Art	1.01
03	Rural_Major_Art	1.02
04	Rural_I-75	1.05
05	Rural_I-85	1.04
06	Rural_Int	1.06
07	Sm_Urb_Local_Coll	0.97
08	Sm_Urb_Art	0.99
09	Sm_Urb/Urb_Freeways_Int (Not ATL)	1.02
10	Urb_Local_Coll	1.03
11	Urb_Minor_Art (Not ATL)	1.01
12	Urb_Major_Art (Not ATL)	0.99
13	Urb_Minor_Art_ATL	1.01
14	Urb_Major_Art_ATL	1.01
15	Urb_Freeways_Int_ATL	1.02
16	Urb_I-285	1.01

2016 Traffic Factors

Monthly Factors

Factor Groups	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural Local Collectors	1.10	1.09	0.99	0.99	0.96	0.98	0.97	0.96	0.97	0.90	1.07	1.07
02	Rural Minor & Major Arterials	1.11	1.03	0.99	0.98	0.97	0.98	0.99	1.00	0.99	0.92	1.01	1.05
03	Rural Interstates	1.17	1.12	0.97	0.98	0.96	0.92	0.88	1.02	1.03	0.99	1.00	1.04
04	Small Urban/Urban Local Collectors	1.08	1.01	0.96	0.97	0.96	1.00	1.02	0.95	0.98	0.98	1.06	1.06
05	Small Urban Arterials	1.10	1.01	0.98	0.98	0.96	0.98	0.99	0.97	1.00	0.96	1.04	1.05
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.10	1.04	0.96	0.97	0.97	0.96	0.94	1.00	1.02	1.01	1.03	1.03
07	Urban Minor/Major Arterials (Non-ATL)	1.07	0.98	0.96	0.96	0.97	1.00	1.01	0.98	1.00	1.00	1.04	1.05
08	Urban Minor/Major Arterials (ATL)	1.07	1.00	0.97	0.98	0.97	0.99	1.02	0.97	0.98	0.96	1.05	1.06
09	Urban Freeways/Interstates (ATL)	1.07	1.02	0.98	0.98	0.97	0.97	0.99	0.99	1.00	0.99	1.04	1.03

Daily Factors

Factor Groups	Functional_Class	Mon	Tue	Wed	Thu	Fri	Sat	Sun
01	Rural Local Collectors	1.01	0.98	0.98	0.94	0.89	1.04	1.22
02	Rural Minor & Major Arterials	1.01	0.99	0.98	0.94	0.88	1.05	1.22
03	Rural Interstates	1.08	1.15	1.10	1.01	0.85	0.97	0.92
04	Small Urban/Urban Local Collectors	0.97	0.92	0.92	0.91	0.90	1.17	1.37
05	Small Urban Arterials	1.00	0.99	0.98	0.94	0.87	1.04	1.26
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.02	1.01	0.99	0.95	0.88	1.04	1.16
07	Urban Minor/Major Arterials (Non-ATL)	0.98	0.93	0.92	0.92	0.88	1.13	1.43
08	Urban Minor/Major Arterials (ATL)	0.99	0.94	0.93	0.92	0.90	1.10	1.36
09	Urban Freeways/Interstates (ATL)	1.01	0.98	0.97	0.95	0.91	1.04	1.19

2016 Traffic Factors

Axle Factors

Factor Groups	Functional_Class	Axle Factor
01	Rural Local Collectors	0.94
02	Rural Minor & Major Arterials	0.89
03	Rural Interstates	0.78
04	Small Urban/Urban Local Collectors	0.96
05	Small Urban Arterials	0.93
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	0.89
07	Urban Minor/Major Arterials (Non-ATL)	0.97
08	Urban Minor/Major Arterials (ATL)	0.98
09	Urban Freeways/Interstates (ATL)	0.95

Growth Factors

Factor Groups	Functional_Class	Growth Factor
01	Rural Local Collectors	1.05
02	Rural Minor & Major Arterials	1.04
03	Rural Interstates	1.05
04	Small Urban/Urban Local Collectors	1.02
05	Small Urban Arterials	1.03
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.04
07	Urban Minor/Major Arterials (Non-ATL)	1.03
08	Urban Minor/Major Arterials (ATL)	1.03
09	Urban Freeways/Interstates (ATL)	1.04

2017 Traffic Factors

Monthly Factors

Factor Groups	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural Local Collectors	1.11	1.02	0.99	0.96	0.97	0.99	0.98	0.98	1.00	0.96	1.00	1.07
02	Rural Minor & Major Arterials	1.11	1.02	0.98	0.97	0.96	0.99	1.00	1.01	0.97	0.97	0.99	1.05
03	Rural Interstates	1.19	1.11	0.99	0.96	0.95	0.93	0.90	1.01	1.00	1.01	0.99	1.03
04	Small Urban/Urban Local Collectors	1.06	1.00	0.96	0.97	0.96	1.01	1.04	0.97	1.01	0.97	1.02	1.06
05	Small Urban Arterials	1.09	1.00	0.97	0.97	0.97	0.99	1.00	0.99	1.02	0.97	1.00	1.04
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.10	1.02	0.97	0.96	0.97	0.97	0.97	0.99	1.03	0.98	1.01	1.04
07	Urban Minor/Major Arterials (Non-ATL)	1.05	0.98	0.96	0.96	0.98	1.00	1.02	0.98	1.04	0.98	1.02	1.04
08	Urban Minor/Major Arterials (ATL)	1.05	1.01	0.97	0.97	0.97	0.99	1.02	0.97	1.00	0.98	1.04	1.06
09	Urban Freeways/Interstates (ATL)	1.08	1.02	0.98	0.98	0.97	0.97	0.97	0.98	1.01	0.99	1.03	1.04

Daily Factors

Factor Groups	Functional_Class	Sun	Mon	Tue	Wed	Thu	Fri	Sat
01	Rural Local Collectors	1.26	1.01	0.97	0.96	0.94	0.88	1.06
02	Rural Minor & Major Arterials	1.25	1.03	0.99	0.98	0.93	0.85	1.06
03	Rural Interstates	0.96	1.07	1.14	1.09	1.00	0.83	0.99
04	Small Urban/Urban Local Collectors	1.40	0.98	0.93	0.92	0.90	0.88	1.17
05	Small Urban Arterials	1.27	1.02	0.99	0.98	0.94	0.84	1.05
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.27	1.01	0.99	0.96	0.92	0.85	1.11
07	Urban Minor/Major Arterials (Non-ATL)	1.43	1.00	0.94	0.93	0.91	0.86	1.12
08	Urban Minor/Major Arterials (ATL)	1.36	1.00	0.94	0.92	0.92	0.88	1.11
09	Urban Freeways/Interstates (ATL)	1.20	1.02	0.98	0.96	0.94	0.90	1.05

2017 Traffic Factors

Axle Factor

Factor Groups	Functional_Class	Axle Factor
01	Rural Local Collectors	0.95
02	Rural Minor & Major Arterials	0.89
03	Rural Interstates	0.79
04	Small Urban/Urban Local Collectors	0.96
05	Small Urban Arterials	0.92
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	0.89
07	Urban Minor/Major Arterials (Non-ATL)	0.97
08	Urban Minor/Major Arterials (ATL)	0.99
09	Urban Freeways/Interstates (ATL)	0.93

Growth Factor

Factor Groups	Functional_Class	Growth Factor
01	Rural Local Collectors	1.03
02	Rural Minor & Major Arterials	1.03
03	Rural Interstates	1.03
04	Small Urban/Urban Local Collectors	1.02
05	Small Urban Arterials	1.02
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.03
07	Urban Minor/Major Arterials (Non-ATL)	1.01
08	Urban Minor/Major Arterials (ATL)	1.06
09	Urban Freeways/Interstates (ATL)	1.05

2018 Traffic Factors

Monthly Factors

Factor Groups	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural Local Collectors	1.15	1.05	1.00	0.98	0.97	0.98	0.98	0.96	0.97	0.95	1.01	1.09
02	Rural Minor & Major Arterials	1.13	1.03	0.98	0.98	0.99	0.98	1.00	0.99	0.99	0.95	0.98	1.05
03	Rural Interstates	1.21	1.12	0.97	0.98	0.97	0.92	0.90	1.01	1.04	1.00	0.96	1.02
04	Small Urban/Urban Local Collectors	1.10	1.00	0.96	0.96	0.97	1.01	1.05	0.97	0.98	0.97	1.03	1.06
05	Small Urban Arterials	1.08	0.99	0.95	0.96	0.99	1.00	1.06	1.00	1.01	0.99	0.98	1.02
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.14	1.04	0.96	0.97	0.99	0.96	0.97	1.00	1.02	0.99	0.99	1.03
07	Urban Minor/Major Arterials (Non-ATL)	1.09	0.98	0.96	0.96	0.99	1.00	1.03	0.98	0.99	0.98	1.02	1.04
08	Urban Minor/Major Arterials (ATL)	1.09	1.00	0.97	0.99	0.98	0.98	1.01	0.96	0.99	0.98	1.02	1.05
09	Urban Freeways/Interstates (ATL)	1.11	1.01	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.97	1.02	1.05

Daily Factors

Factor Groups	Functional_Class	Sun	Mon	Tue	Wed	Thu	Fri	Sat
01	Rural Local Collectors	1.27	1.01	0.97	0.97	0.94	0.88	1.07
02	Rural Minor & Major Arterials	1.24	1.02	0.99	0.99	0.95	0.85	1.06
03	Rural Interstates	0.94	1.08	1.13	1.11	1.01	0.84	0.98
04	Small Urban/Urban Local Collectors	1.29	1.00	0.95	0.95	0.94	0.89	1.10
05	Small Urban Arterials	1.36	1.00	0.95	0.96	0.93	0.85	1.08
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.21	1.02	1.01	1.00	0.95	0.86	1.06
07	Urban Minor/Major Arterials (Non-ATL)	1.49	0.98	0.93	0.93	0.91	0.86	1.17
08	Urban Minor/Major Arterials (ATL)	1.35	1.00	0.93	0.94	0.93	0.89	1.10
09	Urban Freeways/Interstates (ATL)	1.19	1.01	0.98	0.99	0.96	0.92	1.02

2018 Traffic Factors

Axle Factor

Factor Groups	Functional_Class	Axle Factor
01	Rural Local Collectors	0.94
02	Rural Minor & Major Arterials	0.88
03	Rural Interstates	0.75
04	Small Urban/Urban Local Collectors	0.98
05	Small Urban Arterials	0.93
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	0.88
07	Urban Minor/Major Arterials (Non-ATL)	0.96
08	Urban Minor/Major Arterials (ATL)	0.98
09	Urban Freeways/Interstates (ATL)	0.94

Growth Factor

Factor Groups	Functional_Class	Growth Factor
01	Rural Local Collectors	0.99
02	Rural Minor & Major Arterials	1.00
03	Rural Interstates	1.02
04	Small Urban/Urban Local Collectors	1.02
05	Small Urban Arterials	1.02
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.00
07	Urban Minor/Major Arterials (Non-ATL)	0.99
08	Urban Minor/Major Arterials (ATL)	1.00
09	Urban Freeways/Interstates (ATL)	1.00

2019 Traffic Factors

Monthly Factors

Factor Groups	Functional_Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	Rural Local Collectors	1.09	1.04	0.98	0.97	0.95	1.01	1.01	0.98	0.97	0.96	1.02	1.07
02	Rural Minor & Major Arterials	1.10	1.05	0.99	0.99	0.97	0.97	0.99	0.99	0.98	0.96	1.00	1.07
03	Rural Interstates	1.17	1.12	0.98	0.97	0.95	0.92	0.89	1.01	1.03	1.00	0.98	1.06
04	Small Urban/Urban Local Collectors	1.07	1.01	0.96	0.96	0.96	1.01	1.04	0.96	0.97	0.96	1.05	1.09
05	Small Urban Arterials	1.07	1.01	0.97	0.98	0.97	0.99	1.02	0.98	0.99	0.98	1.01	1.05
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.08	1.04	0.96	0.98	0.97	0.97	0.97	0.99	1.03	0.99	1.01	1.05
07	Urban Minor/Major Arterials (Non-ATL)	1.05	0.99	0.96	0.96	0.98	1.00	1.03	0.98	1.00	0.99	1.03	1.07
08	Urban Minor/Major Arterials (ATL)	1.07	1.01	0.97	0.98	0.97	0.98	1.01	0.96	0.98	0.98	1.04	1.07
09	Urban Freeways/Interstates (ATL)	1.06	1.01	0.97	0.98	0.98	0.98	0.99	0.98	0.99	0.99	1.03	1.06

Daily Factors

Factor Groups	Functional_Class	Sun	Mon	Tue	Wed	Thu	Fri	Sat
01	Rural Local Collectors	1.28	1.00	0.99	0.95	0.94	0.88	1.09
02	Rural Minor & Major Arterials	1.23	1.01	1.01	0.97	0.94	0.86	1.07
03	Rural Interstates	0.94	1.07	1.15	1.08	1.00	0.83	1.00
04	Small Urban/Urban Local Collectors	1.26	0.99	0.97	0.95	0.94	0.90	1.09
05	Small Urban Arterials	1.31	1.00	0.98	0.96	0.93	0.86	1.07
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.24	1.00	1.02	0.97	0.94	0.86	1.09
07	Urban Minor/Major Arterials (Non-ATL)	1.50	0.96	0.94	0.92	0.91	0.87	1.18
08	Urban Minor/Major Arterials (ATL)	1.37	0.98	0.95	0.92	0.92	0.89	1.12
09	Urban Freeways/Interstates (ATL)	1.19	1.00	0.99	0.96	0.95	0.92	1.04

2019 Traffic Factors

Axle Factor

Factor Groups	Functional_Class	Axle Factor
01	Rural Local Collectors	0.93
02	Rural Minor & Major Arterials	0.87
03	Rural Interstates	0.75
04	Small Urban/Urban Local Collectors	0.98
05	Small Urban Arterials	0.93
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	0.88
07	Urban Minor/Major Arterials (Non-ATL)	0.96
08	Urban Minor/Major Arterials (ATL)	0.97
09	Urban Freeways/Interstates (ATL)	0.94

Growth Factor

Factor Groups	Functional_Class	Growth Factor
01	Rural Local Collectors	1.00
02	Rural Minor & Major Arterials	1.03
03	Rural Interstates	1.01
04	Small Urban/Urban Local Collectors	1.02
05	Small Urban Arterials	0.99
06	Small Urban/Urban Freeways & Interstates (Non-ATL)	1.01
07	Urban Minor/Major Arterials (Non-ATL)	1.01
08	Urban Minor/Major Arterials (ATL)	1.01
09	Urban Freeways/Interstates (ATL)	1.02

APPENDIX F: ADJUSTED TRAFFIC COUNTS

ADT #39 - Main St, south of Meadow Ln
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 39										
Location 1: MAIN ST SOUTH OF MEADOW LN										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	4	211		12:00	11	173		12:00	15	384
12:15	7	216		12:15	9	218		12:15	16	434
12:30	7	194		12:30	12	209		12:30	19	403
12:45	7	192		12:45	9	199		12:45	16	391
01:00	8	212		01:00	6	208		01:00	14	420
01:15	7	194		01:15	3	186		01:15	10	380
01:30	3	191		01:30	4	210		01:30	7	401
01:45	2	202		01:45	5	214		01:45	7	416
02:00	3	193		02:00	3	167		02:00	6	360
02:15	5	191		02:15	6	176		02:15	11	367
02:30	4	206		02:30	5	190		02:30	9	396
02:45	2	226		02:45	3	191		02:45	5	417
03:00	6	232		03:00	3	231		03:00	9	463
03:15	4	252		03:15	8	179		03:15	12	431
03:30	4	227		03:30	7	222		03:30	11	449
03:45	5	270		03:45	7	203		03:45	12	473
04:00	9	257		04:00	7	185		04:00	16	442
04:15	9	275		04:15	12	190		04:15	21	465
04:30	12	299		04:30	14	215		04:30	26	514
04:45	16	273		04:45	18	233		04:45	34	506
05:00	19	343		05:00	19	237		05:00	38	580
05:15	23	326		05:15	25	224		05:15	48	550
05:30	33	336		05:30	51	211		05:30	84	547
05:45	37	314		05:45	82	203		05:45	119	517
06:00	41	285		06:00	80	181		06:00	121	466
06:15	59	272		06:15	126	214		06:15	185	486
06:30	91	273		06:30	145	159		06:30	236	432
06:45	97	195		06:45	202	164		06:45	299	359
07:00	113	161		07:00	246	142		07:00	359	303
07:15	124	131		07:15	263	153		07:15	387	284
07:30	171	146		07:30	305	129		07:30	476	275
07:45	185	114		07:45	300	107		07:45	485	221
08:00	166	87		08:00	304	127		08:00	470	214
08:15	166	84		08:15	268	106		08:15	434	190
08:30	161	71		08:30	304	91		08:30	465	162
08:45	184	85		08:45	276	86		08:45	460	171
09:00	171	77		09:00	202	80		09:00	373	157
09:15	156	66		09:15	175	74		09:15	331	140
09:30	148	47		09:30	169	54		09:30	317	101
09:45	159	45		09:45	192	50		09:45	351	95
10:00	152	46		10:00	143	47		10:00	295	93
10:15	149	29		10:15	170	25		10:15	319	54
10:30	149	33		10:30	154	27		10:30	303	60
10:45	167	24		10:45	177	31		10:45	344	55
11:00	173	20		11:00	149	23		11:00	322	43
11:15	171	16		11:15	166	20		11:15	337	36
11:30	185	15		11:30	198	17		11:30	383	32
11:45	191	11		11:45	170	17		11:45	361	28
24-HR TOTALS	***11,930***			***24-HR TOTALS***	***12,211***			***24-HR TOTALS***	***24,141***	

ADT #40 - Main St, north of Johnston Farm Ln
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 40										
Location 1: MAIN ST NORTH OF JOHNSTON FARM LN										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	9	177		12:00	8	188		12:00	17	365
12:15	8	149		12:15	4	159		12:15	12	308
12:30	4	173		12:30	4	187		12:30	8	360
12:45	6	157		12:45	3	163		12:45	9	320
01:00	3	183		01:00	3	191		01:00	6	374
01:15	4	195		01:15	0	163		01:15	4	358
01:30	4	159		01:30	1	149		01:30	5	308
01:45	4	174		01:45	3	171		01:45	7	345
02:00	4	169		02:00	2	158		02:00	6	327
02:15	3	165		02:15	1	147		02:15	4	312
02:30	1	173		02:30	3	169		02:30	4	342
02:45	1	175		02:45	1	163		02:45	2	338
03:00	1	175		03:00	3	188		03:00	4	363
03:15	2	180		03:15	13	126		03:15	15	306
03:30	3	181		03:30	14	158		03:30	17	339
03:45	4	182		03:45	8	176		03:45	12	358
04:00	1	201		04:00	8	185		04:00	9	386
04:15	7	207		04:15	8	202		04:15	15	409
04:30	6	194		04:30	22	198		04:30	28	392
04:45	14	207		04:45	20	192		04:45	34	399
05:00	11	218		05:00	24	216		05:00	35	434
05:15	10	233		05:15	28	213		05:15	38	446
05:30	14	226		05:30	38	185		05:30	52	411
05:45	26	174		05:45	54	177		05:45	80	351
06:00	49	194		06:00	76	191		06:00	125	385
06:15	71	186		06:15	93	142		06:15	164	328
06:30	70	176		06:30	123	133		06:30	193	309
06:45	114	165		06:45	128	125		06:45	242	290
07:00	107	153		07:00	149	113		07:00	256	266
07:15	113	141		07:15	214	103		07:15	327	244
07:30	130	98		07:30	234	92		07:30	364	190
07:45	139	101		07:45	192	53		07:45	331	154
08:00	134	107		08:00	212	58		08:00	346	165
08:15	124	82		08:15	206	66		08:15	330	148
08:30	138	81		08:30	192	73		08:30	330	154
08:45	156	88		08:45	182	60		08:45	338	148
09:00	127	69		09:00	156	54		09:00	283	123
09:15	129	69		09:15	170	62		09:15	299	131
09:30	121	51		09:30	171	36		09:30	292	87
09:45	140	43		09:45	160	25		09:45	300	68
10:00	88	35		10:00	149	22		10:00	237	57
10:15	130	26		10:15	137	25		10:15	267	51
10:30	111	25		10:30	177	26		10:30	288	51
10:45	126	13		10:45	141	11		10:45	267	24
11:00	120	11		11:00	146	19		11:00	266	30
11:15	113	11		11:15	148	8		11:15	261	19
11:30	147	12		11:30	152	7		11:30	299	19
11:45	149	11		11:45	161	11		11:45	310	22
24-HR TOTALS	***9,371***			***24-HR TOTALS***	***9,881***			***24-HR TOTALS***	***19,252***	

ADT #41 - Holly Springs Pkwy, north of Rabbit Hill Rd
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 41										
Location 1: HOLLY SPRINGS PKWY NORTH OF RABBIT HILL RD										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	6	101		12:00	5	112		12:00	11	213
12:15	2	104		12:15	8	103		12:15	10	207
12:30	3	101		12:30	1	105		12:30	4	206
12:45	4	111		12:45	2	89		12:45	6	200
01:00	3	86		01:00	4	91		01:00	7	177
01:15	1	93		01:15	2	81		01:15	3	174
01:30	1	87		01:30	4	100		01:30	5	187
01:45	1	93		01:45	2	75		01:45	3	168
02:00	2	105		02:00	2	89		02:00	4	194
02:15	1	97		02:15	2	83		02:15	3	180
02:30	3	98		02:30	2	88		02:30	5	186
02:45	4	80		02:45	3	76		02:45	7	156
03:00	2	104		03:00	2	81		03:00	4	185
03:15	3	101		03:15	2	81		03:15	5	182
03:30	1	85		03:30	6	89		03:30	7	174
03:45	1	107		03:45	2	81		03:45	3	188
04:00	4	123		04:00	4	110		04:00	8	233
04:15	2	122		04:15	7	91		04:15	9	213
04:30	4	115		04:30	16	110		04:30	20	225
04:45	11	122		04:45	23	100		04:45	34	222
05:00	10	112		05:00	25	83		05:00	35	195
05:15	9	114		05:15	30	102		05:15	39	216
05:30	17	120		05:30	42	97		05:30	59	217
05:45	31	104		05:45	48	106		05:45	79	210
06:00	24	117		06:00	45	95		06:00	69	212
06:15	27	111		06:15	57	96		06:15	84	207
06:30	40	104		06:30	90	83		06:30	130	187
06:45	58	65		06:45	98	49		06:45	156	114
07:00	54	62		07:00	109	56		07:00	163	118
07:15	61	61		07:15	149	50		07:15	210	111
07:30	77	60		07:30	167	32		07:30	244	92
07:45	78	52		07:45	143	32		07:45	221	84
08:00	69	59		08:00	124	45		08:00	193	104
08:15	69	42		08:15	122	25		08:15	191	67
08:30	77	45		08:30	108	30		08:30	185	75
08:45	73	38		08:45	91	25		08:45	164	63
09:00	62	45		09:00	127	25		09:00	189	70
09:15	69	32		09:15	105	24		09:15	174	56
09:30	90	40		09:30	120	18		09:30	210	58
09:45	89	24		09:45	91	14		09:45	180	38
10:00	80	18		10:00	74	15		10:00	154	33
10:15	80	19		10:15	87	17		10:15	167	36
10:30	91	26		10:30	93	6		10:30	184	32
10:45	78	14		10:45	87	10		10:45	165	24
11:00	73	16		11:00	76	4		11:00	149	20
11:15	84	11		11:15	130	4		11:15	214	15
11:30	115	6		11:30	91	8		11:30	206	14
11:45	90	12		11:45	91	3		11:45	181	15
24-HR TOTALS	***5,398***			***24-HR TOTALS***	***5,708***			***24-HR TOTALS***	***11,106***	

ADT #42 - Holly Springs Pkwy, north of Barrett Rd
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 42										
Location 1: HOLLY SPRINGS PKWY NORTH OF BARRETT RD										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	5	125		12:00	5	113		12:00	10	238
12:15	3	134		12:15	4	112		12:15	7	246
12:30	1	118		12:30	3	103		12:30	4	221
12:45	1	130		12:45	3	127		12:45	4	257
01:00	1	122		01:00	1	118		01:00	2	240
01:15	5	111		01:15	4	116		01:15	9	227
01:30	2	127		01:30	6	118		01:30	8	245
01:45	1	122		01:45	2	118		01:45	3	240
02:00	2	133		02:00	3	110		02:00	5	243
02:15	1	109		02:15	1	124		02:15	2	233
02:30	0	168		02:30	1	115		02:30	1	283
02:45	2	105		02:45	2	123		02:45	4	228
03:00	3	126		03:00	3	126		03:00	6	252
03:15	1	125		03:15	3	133		03:15	4	258
03:30	2	140		03:30	6	144		03:30	8	284
03:45	5	142		03:45	4	111		03:45	9	253
04:00	4	171		04:00	3	140		04:00	7	311
04:15	4	182		04:15	5	130		04:15	9	312
04:30	7	152		04:30	7	143		04:30	14	295
04:45	20	171		04:45	8	135		04:45	28	306
05:00	20	191		05:00	11	115		05:00	31	306
05:15	18	173		05:15	15	143		05:15	33	316
05:30	30	174		05:30	33	125		05:30	63	299
05:45	38	152		05:45	41	164		05:45	79	316
06:00	38	158		06:00	37	116		06:00	75	274
06:15	56	136		06:15	56	146		06:15	112	282
06:30	78	120		06:30	63	147		06:30	141	267
06:45	80	74		06:45	109	79		06:45	189	153
07:00	99	68		07:00	115	97		07:00	214	165
07:15	122	88		07:15	138	58		07:15	260	146
07:30	144	54		07:30	171	75		07:30	315	129
07:45	139	54		07:45	138	56		07:45	277	110
08:00	113	41		08:00	113	59		08:00	226	100
08:15	111	48		08:15	126	42		08:15	237	90
08:30	110	36		08:30	118	64		08:30	228	100
08:45	124	37		08:45	99	58		08:45	223	95
09:00	112	39		09:00	99	51		09:00	211	90
09:15	101	23		09:15	86	33		09:15	187	56
09:30	78	29		09:30	108	23		09:30	186	52
09:45	122	26		09:45	85	21		09:45	207	47
10:00	110	17		10:00	96	32		10:00	206	49
10:15	106	23		10:15	79	22		10:15	185	45
10:30	123	11		10:30	108	15		10:30	231	26
10:45	115	7		10:45	97	14		10:45	212	21
11:00	105	9		11:00	80	13		11:00	185	22
11:15	120	4		11:15	112	5		11:15	232	9
11:30	130	7		11:30	105	13		11:30	235	20
11:45	126	7		11:45	108	6		11:45	234	13
24-HR TOTALS	***7,257***			***24-HR TOTALS***	***6,871***			***24-HR TOTALS***	***14,128***	

ADT #43 - Marietta Hwy, north of Goodwin Rd
Adjusted Counts

Start Date: 11/16/2021								Latitude: 0' 0.0000 Undefined		
Start Time: 12:00:00 AM								Longitude: 0' 0.0000 Undefined		
Site Code: 43										
Location 1: MARIETTA HWY NORTH OF GOODWIN RD										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	6	125		12:00	7	114		12:00	13	239
12:15	3	114		12:15	2	114		12:15	5	228
12:30	7	106		12:30	3	103		12:30	10	209
12:45	3	106		12:45	6	100		12:45	9	206
01:00	2	100		01:00	2	108		01:00	4	208
01:15	5	112		01:15	3	105		01:15	8	217
01:30	3	97		01:30	3	111		01:30	6	208
01:45	0	104		01:45	3	99		01:45	3	203
02:00	1	110		02:00	4	83		02:00	5	193
02:15	3	96		02:15	4	96		02:15	7	192
02:30	3	132		02:30	3	98		02:30	6	230
02:45	4	97		02:45	5	102		02:45	9	199
03:00	1	92		03:00	0	114		03:00	1	206
03:15	3	94		03:15	2	111		03:15	5	205
03:30	0	102		03:30	0	100		03:30	0	202
03:45	5	129		03:45	4	117		03:45	9	246
04:00	5	120		04:00	1	138		04:00	6	258
04:15	4	112		04:15	7	129		04:15	11	241
04:30	7	113		04:30	7	132		04:30	14	245
04:45	7	118		04:45	11	120		04:45	18	238
05:00	9	129		05:00	15	135		05:00	24	264
05:15	13	125		05:15	21	152		05:15	34	277
05:30	20	125		05:30	36	99		05:30	56	224
05:45	26	129		05:45	34	86		05:45	60	215
06:00	36	84		06:00	39	98		06:00	75	182
06:15	34	86		06:15	48	85		06:15	82	171
06:30	34	73		06:30	55	75		06:30	89	148
06:45	67	72		06:45	123	67		06:45	190	139
07:00	69	68		07:00	111	68		07:00	180	136
07:15	99	51		07:15	87	69		07:15	186	120
07:30	86	53		07:30	97	55		07:30	183	108
07:45	123	45		07:45	112	56		07:45	235	101
08:00	99	46		08:00	99	49		08:00	198	95
08:15	88	48		08:15	106	47		08:15	194	95
08:30	84	37		08:30	103	44		08:30	187	81
08:45	112	24		08:45	81	34		08:45	193	58
09:00	94	33		09:00	100	40		09:00	194	73
09:15	70	27		09:15	67	42		09:15	137	69
09:30	92	32		09:30	85	33		09:30	177	65
09:45	92	22		09:45	108	33		09:45	200	55
10:00	86	27		10:00	81	35		10:00	167	62
10:15	101	18		10:15	82	24		10:15	183	42
10:30	73	18		10:30	73	19		10:30	146	37
10:45	102	13		10:45	87	13		10:45	189	26
11:00	87	16		11:00	82	14		11:00	169	30
11:15	104	10		11:15	94	9		11:15	198	19
11:30	122	9		11:30	117	7		11:30	239	16
11:45	91	4		11:45	112	7		11:45	203	11
24-HR TOTALS	***5,788***			***24-HR TOTALS***	***6,021***			***24-HR TOTALS***	***11,809***	

ADT #44 - Marietta Hwy, south of Hickory Flat Hwy
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 44										
Location 1: MARIETTA HWY SOUTH OF HICKORY FLAT HWY										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	13	205		12:00	10	214		12:00	23	419
12:15	16	199		12:15	10	238		12:15	26	437
12:30	15	236		12:30	9	238		12:30	24	474
12:45	12	224		12:45	10	216		12:45	22	440
01:00	5	166		01:00	7	189		01:00	12	355
01:15	9	206		01:15	8	195		01:15	17	401
01:30	4	192		01:30	7	232		01:30	11	424
01:45	8	225		01:45	2	206		01:45	10	431
02:00	3	187		02:00	8	203		02:00	11	390
02:15	5	217		02:15	6	221		02:15	11	438
02:30	7	239		02:30	6	230		02:30	13	469
02:45	7	294		02:45	7	186		02:45	14	480
03:00	4	256		03:00	5	225		03:00	9	481
03:15	7	265		03:15	9	213		03:15	16	478
03:30	2	250		03:30	8	330		03:30	10	580
03:45	6	260		03:45	4	322		03:45	10	582
04:00	9	287		04:00	7	323		04:00	16	610
04:15	7	276		04:15	20	254		04:15	27	530
04:30	12	281		04:30	35	249		04:30	47	530
04:45	16	247		04:45	19	261		04:45	35	508
05:00	19	302		05:00	49	365		05:00	68	667
05:15	21	290		05:15	49	248		05:15	70	538
05:30	30	328		05:30	86	257		05:30	116	585
05:45	46	268		05:45	89	267		05:45	135	535
06:00	58	275		06:00	119	239		06:00	177	514
06:15	70	292		06:15	142	200		06:15	212	492
06:30	119	208		06:30	165	163		06:30	284	371
06:45	125	176		06:45	240	189		06:45	365	365
07:00	151	175		07:00	260	149		07:00	411	324
07:15	187	164		07:15	216	152		07:15	403	316
07:30	303	125		07:30	178	73		07:30	481	198
07:45	384	134		07:45	220	86		07:45	604	220
08:00	335	99		08:00	257	84		08:00	592	183
08:15	345	110		08:15	269	99		08:15	614	209
08:30	177	110		08:30	230	90		08:30	407	200
08:45	174	98		08:45	161	107		08:45	335	205
09:00	176	79		09:00	185	108		09:00	361	187
09:15	182	75		09:15	190	89		09:15	372	164
09:30	145	73		09:30	165	64		09:30	310	137
09:45	170	81		09:45	194	56		09:45	364	137
10:00	187	59		10:00	191	56		10:00	378	115
10:15	166	37		10:15	186	59		10:15	352	96
10:30	171	33		10:30	159	46		10:30	330	79
10:45	174	32		10:45	193	21		10:45	367	53
11:00	208	34		11:00	208	39		11:00	416	73
11:15	191	31		11:15	192	17		11:15	383	48
11:30	204	22		11:30	246	14		11:30	450	36
11:45	183	17		11:45	210	12		11:45	393	29
24-HR TOTALS	***13,307***			***24-HR TOTALS***	***13,340***			***24-HR TOTALS***	***26,647***	

ADT #45 - Riverstone Pkwy, north of Juniper St
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 45										
Location 1: RIVERSTONE PKWY NORTH OF JUNIPER ST										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	9	201		12:00	10	208		12:00	19	409
12:15	7	215		12:15	9	220		12:15	16	435
12:30	4	232		12:30	7	227		12:30	11	459
12:45	1	199		12:45	8	219		12:45	9	418
01:00	1	192		01:00	6	214		01:00	7	406
01:15	3	194		01:15	3	199		01:15	6	393
01:30	2	231		01:30	7	217		01:30	9	448
01:45	7	215		01:45	8	204		01:45	15	419
02:00	1	205		02:00	1	211		02:00	2	416
02:15	2	209		02:15	6	216		02:15	8	425
02:30	7	211		02:30	6	181		02:30	13	392
02:45	4	192		02:45	5	199		02:45	9	391
03:00	3	192		03:00	8	209		03:00	11	401
03:15	2	210		03:15	7	178		03:15	9	388
03:30	6	215		03:30	5	193		03:30	11	408
03:45	4	270		03:45	2	201		03:45	6	471
04:00	4	213		04:00	7	222		04:00	11	435
04:15	12	227		04:15	5	192		04:15	17	419
04:30	8	200		04:30	4	195		04:30	12	395
04:45	20	222		04:45	12	201		04:45	32	423
05:00	25	238		05:00	5	239		05:00	30	477
05:15	20	235		05:15	14	216		05:15	34	451
05:30	35	226		05:30	16	184		05:30	51	410
05:45	44	214		05:45	13	175		05:45	57	389
06:00	36	200		06:00	21	180		06:00	57	380
06:15	49	194		06:15	28	160		06:15	77	354
06:30	68	169		06:30	57	171		06:30	125	340
06:45	91	150		06:45	71	150		06:45	162	300
07:00	82	110		07:00	72	141		07:00	154	251
07:15	94	123		07:15	112	140		07:15	206	263
07:30	130	88		07:30	132	109		07:30	262	197
07:45	168	152		07:45	165	87		07:45	333	239
08:00	152	92		08:00	131	96		08:00	283	188
08:15	130	70		08:15	164	86		08:15	294	156
08:30	151	76		08:30	141	86		08:30	292	162
08:45	134	54		08:45	125	84		08:45	259	138
09:00	125	41		09:00	137	84		09:00	262	125
09:15	138	42		09:15	138	57		09:15	276	99
09:30	160	32		09:30	151	47		09:30	311	79
09:45	156	31		09:45	165	33		09:45	321	64
10:00	175	35		10:00	145	50		10:00	320	85
10:15	161	30		10:15	147	25		10:15	308	55
10:30	150	20		10:30	166	27		10:30	316	47
10:45	178	10		10:45	165	28		10:45	343	38
11:00	161	12		11:00	155	26		11:00	316	38
11:15	215	17		11:15	190	16		11:15	405	33
11:30	219	14		11:30	200	16		11:30	419	30
11:45	203	7		11:45	203	13		11:45	406	20
24-HR TOTALS	***10,484***			***24-HR TOTALS***	***10,187***			***24-HR TOTALS***	***20,671***	

ADT #46 - Ball Ground Hwy, north of Roland Dr
Adjusted Counts

Start Date: 11/16/2021							Latitude: 0' 0.0000 Undefined			
Start Time: 12:00:00 AM							Longitude: 0' 0.0000 Undefined			
Site Code: 46										
Location 1: BALL GROUND HWY NORTH OF ROLAND DR										
Northbound				**Southbound**				**Both Directions**		
Time	Morning	Afternoon		Time	Morning	Afternoon		Time	Morning	Afternoon
Tuesday, 11/16/2021										
12:00	5	106		12:00	1	138		12:00	6	244
12:15	6	148		12:15	4	124		12:15	10	272
12:30	7	117		12:30	1	108		12:30	8	225
12:45	2	127		12:45	4	118		12:45	6	245
01:00	4	117		01:00	3	104		01:00	7	221
01:15	5	112		01:15	3	110		01:15	8	222
01:30	3	125		01:30	3	111		01:30	6	236
01:45	3	112		01:45	3	88		01:45	6	200
02:00	0	125		02:00	1	79		02:00	1	204
02:15	4	125		02:15	6	90		02:15	10	215
02:30	4	134		02:30	14	112		02:30	18	246
02:45	0	138		02:45	2	115		02:45	2	253
03:00	1	112		03:00	9	98		03:00	10	210
03:15	4	112		03:15	5	102		03:15	9	214
03:30	3	157		03:30	9	99		03:30	12	256
03:45	4	179		03:45	4	119		03:45	8	298
04:00	3	159		04:00	7	133		04:00	10	292
04:15	7	169		04:15	14	116		04:15	21	285
04:30	5	161		04:30	20	138		04:30	25	299
04:45	6	178		04:45	23	114		04:45	29	292
05:00	9	210		05:00	22	146		05:00	31	356
05:15	11	210		05:15	38	112		05:15	49	322
05:30	22	193		05:30	44	116		05:30	66	309
05:45	32	156		05:45	46	121		05:45	78	277
06:00	25	138		06:00	69	105		06:00	94	243
06:15	37	138		06:15	93	114		06:15	130	252
06:30	63	124		06:30	125	76		06:30	188	200
06:45	56	130		06:45	120	58		06:45	176	188
07:00	39	108		07:00	150	58		07:00	189	166
07:15	94	83		07:15	170	59		07:15	264	142
07:30	90	99		07:30	140	36		07:30	230	135
07:45	103	80		07:45	180	36		07:45	283	116
08:00	79	69		08:00	134	32		08:00	213	101
08:15	89	69		08:15	157	23		08:15	246	92
08:30	107	65		08:30	132	25		08:30	239	90
08:45	72	60		08:45	117	21		08:45	189	81
09:00	59	53		09:00	102	20		09:00	161	73
09:15	68	61		09:15	121	22		09:15	189	83
09:30	57	44		09:30	100	22		09:30	157	66
09:45	78	44		09:45	101	10		09:45	179	54
10:00	83	24		10:00	84	13		10:00	167	37
10:15	79	32		10:15	115	13		10:15	194	45
10:30	60	20		10:30	105	11		10:30	165	31
10:45	83	16		10:45	96	18		10:45	179	34
11:00	81	37		11:00	98	3		11:00	179	40
11:15	96	20		11:15	98	3		11:15	194	23
11:30	86	11		11:30	110	7		11:30	196	18
11:45	92	9		11:45	129	1		11:45	221	10
24-HR TOTALS	***6,942***			***24-HR TOTALS***	***6,629***			***24-HR TOTALS***	***13,571***	

057-0003 Main St, south of Meadow Ln
2010 Adjusted Counts

Multi-Day Volume Report 057-0003 Tuesday, April 27, 2010 to Thursday, April 29, 2010						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-27**	**2010-04-28**	**2010-04-29**	**Workday**	**7 Day**	**Count**
00:00:00		85	73	**79**		158
01:00:00		51	43	**47**		94
02:00:00		37	43	**40**		80
03:00:00		34	24	**29**		58
04:00:00		55	57	**56**		112
05:00:00		191	189	**190**		380
06:00:00		889	947	**918**		1836
07:00:00		1878	1876	**1877**		3754
08:00:00		1487	1547	**1517**		3034
09:00:00		1160	1123	**1142**		2283
10:00:00		1102	1094	**1098**		2196
11:00:00	1183	1137		**1160**		2320
12:00:00	1310	1324		**1317**		2634
13:00:00	1301	1220		**1261**		2521
14:00:00	1306	1351		**1329**		2657
15:00:00	1444	1411		**1428**		2855
16:00:00	1721	1740		**1731**		3461
17:00:00	2060	2122		**2091**		4182
18:00:00	1487	1620		**1554**		3107
19:00:00	1072	1163		**1118**		2235
20:00:00	818	921		**870**		1739
21:00:00	524	578		**551**		1102
22:00:00	281	288		**285**		569
23:00:00	141	170		**156**		311
7am-7pm		17552		**17505**		35004
6am-10pm		21103		**20962**		41916
6am-12am		21561		**21403**		42796
12am-12am		22014		**21844**		43678
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1878	1876	**1877**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2060	2122		**2091**		

057-0003 Main St, south of Meadow Ln
2011 Adjusted Counts

Multi-Day Volume Report 057-0003 Monday, May 2, 2011 to Wednesday, May 4, 2011						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-05-02**	**2011-05-03**	**2011-05-04**	**Workday**	**7 Day**	**Count**
00:00:00		59	50	**55**		109
01:00:00		44	44	**44**		88
02:00:00		37	28	**33**		65
03:00:00		41	28	**35**		69
04:00:00		53	66	**60**		119
05:00:00		203	179	**191**		382
06:00:00		1083	1024	**1054**		2107
07:00:00		2170	2240	**2205**		4410
08:00:00		1601	1678	**1640**		3279
09:00:00		1245	1325	**1285**		2570
10:00:00		1107	1161	**1134**		2268
11:00:00		1236	1266	**1251**		2502
12:00:00		1446	1459	**1453**		2905
13:00:00		1398	1413	**1406**		2811
14:00:00		1369	1356	**1363**		2725
15:00:00		1627	1553	**1590**		3180
16:00:00		1852	1789	**1821**		3641
17:00:00	2139	2124		**2132**		4263
18:00:00	1603	1697		**1650**		3300
19:00:00	1093	1198		**1146**		2291
20:00:00	792	735		**764**		1527
21:00:00	555	453		**504**		1008
22:00:00	290	243		**267**		533
23:00:00	135	123		**129**		258
7am-7pm		18872		**18930**		37854
6am-10pm		22341		**22398**		44787
6am-12am		22707		**22794**		45578
12am-12am		23144		**23212**		46410
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2170	2240	**2205**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2139	2124		**2132**		

057-0003 Main St, south of Meadow Ln
2015 Adjusted Counts

Multi-Day Volume Report 057-0003 Monday, May 4, 2015 to Wednesday, May 6, 2015						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-04**	**2015-05-05**	**2015-05-06**	**Workday**	**7 Day**	**Count**
00:00:00		84	100	**92**		184
01:00:00		46	57	**52**		103
02:00:00		26	28	**27**		54
03:00:00		28	40	**34**		68
04:00:00		60	73	**67**		133
05:00:00		275	253	**264**		528
06:00:00		1314	1288	**1301**		2602
07:00:00		2016	1852	**1934**		3868
08:00:00		1612	1629	**1621**		3241
09:00:00		1243	1257	**1250**		2500
10:00:00		1118	1186	**1152**		2304
11:00:00		1248	1260	**1254**		2508
12:00:00	1453	1381		**1417**		2834
13:00:00	1464	1330		**1397**		2794
14:00:00	1333	1419		**1376**		2752
15:00:00	1566	1489		**1528**		3055
16:00:00	1931	1899		**1915**		3830
17:00:00	2254	2195		**2225**		4449
18:00:00	1809	1853		**1831**		3662
19:00:00	1158	1295		**1227**		2453
20:00:00	885	947		**916**		1832
21:00:00	579	672		**626**		1251
22:00:00	286	368		**327**		654
23:00:00	201	201		**201**		402
7am-7pm		18803		**18900**		37797
6am-10pm		23031		**22970**		45935
6am-12am		23600		**23498**		46991
12am-12am		24119		**24034**		48061
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2016	1852	**1934**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2254	2195		**2225**		

057-0003 Main St, south of Meadow Ln
2018 Adjusted Counts

Multi-Day Volume Report 057-0003 Wednesday, June 6, 2018 to Friday, June 8, 2018						
Site Name	057-0003					
Site ID	0000057_0003					
Description	BEG COBB 067					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2018-06-06**	**2018-06-07**	**2018-06-08**	**Workday**	**7 Day**	**Count**
00:00:00		91	117	**104**		208
01:00:00	59	59		**59**		118
02:00:00	43	31		**37**		74
03:00:00	37	33		**35**		70
04:00:00	76	81		**79**		157
05:00:00	286	458		**372**		744
06:00:00	1287	1680		**1484**		2967
07:00:00	1862	1965		**1914**		3827
08:00:00	1744	1746		**1745**		3490
09:00:00	1504	1391		**1448**		2895
10:00:00	1308	1321		**1315**		2629
11:00:00	1491	1411		**1451**		2902
12:00:00	1587	1546		**1567**		3133
13:00:00	1472	1503		**1488**		2975
14:00:00	1535	1360		**1448**		2895
15:00:00	1736	1622		**1679**		3358
16:00:00	2122	1958		**2040**		4080
17:00:00	2281	2143		**2212**		4424
18:00:00	1876	2008		**1942**		3884
19:00:00	1318	1373		**1346**		2691
20:00:00	1095	1008		**1052**		2103
21:00:00	737	797		**767**		1534
22:00:00	428	422		**425**		850
23:00:00	203	229		**216**		432
7am-7pm		19974		**20249**		40492
6am-10pm		24832		**24898**		49787
6am-12am		25483		**25539**		51069
12am-12am		26236		**26225**		52440
am Peak	7:00:00	7:00:00		**7:00:00**		
Peak Volume	1862	1965		**1914**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2281	2143		**2212**		

057-0004 Main St, south of SR 92/Alabama Rd
2012 Adjusted Counts

Multi-Day Volume Report 057-0004 Monday, October 22, 2012 to Wednesday, October 24, 201						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2012-10-22**	**2012-10-23**	**2012-10-24**	**Workday**	**7 Day**	**Count**
00:00:00		88	81	**85**		169
01:00:00		71	43	**57**		114
02:00:00		32	42	**37**		74
03:00:00		43	39	**41**		82
04:00:00		56	64	**60**		120
05:00:00		255	211	**233**		466
06:00:00		1130	1103	**1117**		2233
07:00:00		2114	2140	**2127**		4254
08:00:00		1724	1810	**1767**		3534
09:00:00		1316	1377	**1347**		2693
10:00:00		1076	1141	**1109**		2217
11:00:00		1191	1305	**1248**		2496
12:00:00	1499	1500		**1500**		2999
13:00:00	1487	1428		**1458**		2915
14:00:00	1463	1321		**1392**		2784
15:00:00	1615	1522		**1569**		3137
16:00:00	2357	1933		**2145**		4290
17:00:00	2380	2147		**2264**		4527
18:00:00	1970	1722		**1846**		3692
19:00:00	1447	1105		**1276**		2552
20:00:00	736	780		**758**		1516
21:00:00	515	495		**505**		1010
22:00:00	265	274		**270**		539
23:00:00	132	123		**128**		255
7am-7pm		18994		**19772**		39538
6am-10pm		22504		**23428**		46849
6am-12am		22901		**23826**		47643
12am-12am		23446		**24339**		48668
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2114	2140	**2127**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2380	2147		**2264**		

057-0004 Main St, south of SR 92/Alabama Rd
2016 Adjusted Counts

Multi-Day Volume Report 057-0004 Tuesday, May 10, 2016 to Thursday, May 12, 2016						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2016-05-10**	**2016-05-11**	**2016-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		100	124	**112**		224
01:00:00		65	60	**63**		125
02:00:00		37	36	**37**		73
03:00:00		38	42	**40**		80
04:00:00		83	82	**83**		165
05:00:00		389	375	**382**		764
06:00:00		1758	1773	**1766**		3531
07:00:00		2458	2355	**2407**		4813
08:00:00		2288	2270	**2279**		4558
09:00:00		1801	1828	**1815**		3629
10:00:00		1591	1601	**1596**		3192
11:00:00		1730	1678	**1704**		3408
12:00:00		1887	1874	**1881**		3761
13:00:00		1876	1758	**1817**		3634
14:00:00		1772	1801	**1787**		3573
15:00:00		1939	2119	**2029**		4058
16:00:00		2419	2511	**2465**		4930
17:00:00		2645	2774	**2710**		5419
18:00:00	1992	2264		**2128**		4256
19:00:00	1364	1448		**1406**		2812
20:00:00	997	1065		**1031**		2062
21:00:00	713	795		**754**		1508
22:00:00	359	409		**384**		768
23:00:00	169	219		**194**		388
7am-7pm		24670		**24618**		49231
6am-10pm		29736		**29575**		59144
6am-12am		30364		**30153**		60300
12am-12am		31076		**30870**		61731
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		2458	2355	**2407**		
pm Peak	18:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	1992	2645	2774	**2710**		

057-0004 Main St, south of SR 92/Alabama Rd
2019 Adjusted Counts

Multi-Day Volume Report 057-0004 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0004					
Site ID	0000057_0004					
Description	CR 187400 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		103	121	**112**		224
01:00:00		63	62	**63**		125
02:00:00		33	21	**27**		54
03:00:00		48	40	**44**		88
04:00:00		102	95	**99**		197
05:00:00		340	366	**353**		706
06:00:00	944	957		**951**		1901
07:00:00	1594	1723		**1659**		3317
08:00:00	1637	1522		**1580**		3159
09:00:00	1333	1376		**1355**		2709
10:00:00	1281	1265		**1273**		2546
11:00:00	1369	1397		**1383**		2766
12:00:00	1555	1531		**1543**		3086
13:00:00	1464	1442		**1453**		2906
14:00:00	1502	1475		**1489**		2977
15:00:00	1637	1553		**1595**		3190
16:00:00	1768	1781		**1775**		3549
17:00:00	2009	1786		**1898**		3795
18:00:00	1605	1584		**1595**		3189
19:00:00	1195	1210		**1203**		2405
20:00:00	985	994		**990**		1979
21:00:00	691	684		**688**		1375
22:00:00	386	418		**402**		804
23:00:00	193	183		**188**		376
7am-7pm		18435		**18598**		37189
6am-10pm		22280		**22430**		44849
6am-12am		22881		**23020**		46029
12am-12am		23570		**23718**		47423
am Peak	8:00:00	7:00:00	5:00:00	**7:00:00**		
Peak Volume	1637	1723	366	**1659**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2009	1786		**1898**		

057-0007 Main St, south of Barnesdale Terrace
2013 Adjusted Counts

Multi-Day Volume Report 057-0007 Tuesday, June 18, 2013 to Thursday, June 20, 2013						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2013-06-18**	**2013-06-19**	**2013-06-20**	**Workday**	**7 Day**	**Count**
00:00:00		63	65	**64**		128
01:00:00		29	25	**27**		54
02:00:00		20	34	**27**		54
03:00:00		20	20	**20**		40
04:00:00		44	36	**40**		80
05:00:00		124	134	**129**		258
06:00:00		612	572	**592**		1184
07:00:00		1214	1099	**1157**		2313
08:00:00		1026	1017	**1022**		2043
09:00:00		910	858	**884**		1768
10:00:00		918	838	**878**		1756
11:00:00	912	930		**921**		1842
12:00:00	1021	1072		**1047**		2093
13:00:00	1020	1161		**1091**		2181
14:00:00	1016	1042		**1029**		2058
15:00:00	1091	1108		**1100**		2199
16:00:00	1176	1167		**1172**		2343
17:00:00	1352	1334		**1343**		2686
18:00:00	1170	1168		**1169**		2338
19:00:00	898	920		**909**		1818
20:00:00	541	511		**526**		1052
21:00:00	387	396		**392**		783
22:00:00	246	217		**232**		463
23:00:00	132	161		**147**		293
7am-7pm		13050		**12813**		25620
6am-10pm		15489		**15232**		30457
6am-12am		15867		**15611**		31213
12am-12am		16167		**15918**		31827
am Peak	11:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	912	1214	1099	**1157**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1352	1334		**1343**		

057-0007 Main St, south of Barnesdale Terrace
2019 Adjusted Counts

Multi-Day Volume Report 057-0007 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		57	76	**67**		133
01:00:00		35	44	**40**		79
02:00:00		23	15	**19**		38
03:00:00		29	32	**31**		61
04:00:00		51	56	**54**		107
05:00:00		191	186	**189**		377
06:00:00	526	567		**547**		1093
07:00:00	1026	1033		**1030**		2059
08:00:00	1087	1053		**1070**		2140
09:00:00	937	959		**948**		1896
10:00:00	894	916		**905**		1810
11:00:00	964	987		**976**		1951
12:00:00	1113	1113		**1113**		2226
13:00:00	1038	1052		**1045**		2090
14:00:00	1028	1071		**1050**		2099
15:00:00	1092	1120		**1106**		2212
16:00:00	1303	1278		**1291**		2581
17:00:00	1330	1476		**1403**		2806
18:00:00	1143	1142		**1143**		2285
19:00:00	913	892		**903**		1805
20:00:00	716	720		**718**		1436
21:00:00	510	546		**528**		1056
22:00:00	304	369		**337**		673
23:00:00	160	184		**172**		344
7am-7pm		13200		**13080**		26155
6am-10pm		15925		**15776**		31545
6am-12am		16478		**16285**		32562
12am-12am		16864		**16685**		33357
am Peak	8:00:00	8:00:00	5:00:00	**8:00:00**		
Peak Volume	1087	1053	186	**1070**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1330	1476		**1403**		

057-0007 Main St, south of Barnesdale Terrace
2020 Adjusted Counts

Multi-Day Volume Report 057-0007 Monday, August 3, 2020 to Wednesday, August 5, 2020						
Site Name	057-0007					
Site ID	0000057_0007					
Description	SR 009200 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-08-03**	**2020-08-04**	**2020-08-05**	**Workday**	**7 Day**	**Count**
00:00:00		42	46	**44**		88
01:00:00		13	17	**15**		30
02:00:00		16	10	**13**		26
03:00:00		22	20	**21**		42
04:00:00		30	32	**31**		62
05:00:00		126	126	**126**		252
06:00:00		438	383	**411**		821
07:00:00		853	811	**832**		1664
08:00:00		856	842	**849**		1698
09:00:00		774	797	**786**		1571
10:00:00		837	883	**860**		1720
11:00:00		964	1020	**992**		1984
12:00:00		1031	1025	**1028**		2056
13:00:00		1116	1038	**1077**		2154
14:00:00		1081	1035	**1058**		2116
15:00:00		1075	1099	**1087**		2174
16:00:00		1138	1211	**1175**		2349
17:00:00		1183	1223	**1203**		2406
18:00:00		975	939	**957**		1914
19:00:00		725	765	**745**		1490
20:00:00		573	606	**590**		1179
21:00:00		383	422	**403**		805
22:00:00	198	217		**208**		415
23:00:00	97	100		**99**		197
7am-7pm		11883		**11904**		23806
6am-10pm		14002		**14053**		28101
6am-12am		14319		**14360**		28713
12am-12am		14568		**14610**		29213
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		964	1020	**992**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1183	1223	**1203**		

057-0010 Main St, north of Johnston Farm Ln
2010 Adjusted Counts

Multi-Day Volume Report 057-0010 Wednesday, April 21, 2010 to Friday, April 23, 2010						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2010-04-21**	**2010-04-22**	**2010-04-23**	**Workday**	**7 Day**	**Count**
00:00:00		43	54	**49**		97
01:00:00		29	28	**29**		57
02:00:00		19	19	**19**		38
03:00:00		27	26	**27**		53
04:00:00		52	59	**56**		111
05:00:00		169	155	**162**		324
06:00:00		656	553	**605**		1209
07:00:00		1453	1111	**1282**		2564
08:00:00		1015	821	**918**		1836
09:00:00		760	669	**715**		1429
10:00:00		711	634	**673**		1345
11:00:00		655	732	**694**		1387
12:00:00	804	789		**797**		1593
13:00:00	769	796		**783**		1565
14:00:00	838	813		**826**		1651
15:00:00	819	821		**820**		1640
16:00:00	1047	989		**1018**		2036
17:00:00	1151	1180		**1166**		2331
18:00:00	1029	1015		**1022**		2044
19:00:00	694	778		**736**		1472
20:00:00	578	560		**569**		1138
21:00:00	386	471		**429**		857
22:00:00	232	202		**217**		434
23:00:00	90	126		**108**		216
7am-7pm		10997		**10714**		21421
6am-10pm		13462		**13053**		26097
6am-12am		13790		**13378**		26747
12am-12am		14129		**13720**		27427
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1453	1111	**1282**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1151	1180		**1166**		

057-0010 Main St, north of Johnston Farm Ln
2014 Adjusted Counts

Multi-Day Volume Report 057-0010 Monday, April 14, 2014 to Wednesday, April 16, 2014						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2014-04-14**	**2014-04-15**	**2014-04-16**	**Workday**	**7 Day**	**Count**
00:00:00		45	43	**44**		88
01:00:00		19	22	**21**		41
02:00:00		21	19	**20**		40
03:00:00		78	26	**52**		104
04:00:00		57	104	**81**		161
05:00:00		235	220	**228**		455
06:00:00		764	762	**763**		1526
07:00:00		968	987	**978**		1955
08:00:00		869	885	**877**		1754
09:00:00		672	717	**695**		1389
10:00:00		707	714	**711**		1421
11:00:00		805	866	**836**		1671
12:00:00		895	866	**881**		1761
13:00:00		840	875	**858**		1715
14:00:00		868	921	**895**		1789
15:00:00	917	961		**939**		1878
16:00:00	1303	1288		**1296**		2591
17:00:00	1231	1265		**1248**		2496
18:00:00	1001	1089		**1045**		2090
19:00:00	616	704		**660**		1320
20:00:00	484	512		**498**		996
21:00:00	302	365		**334**		667
22:00:00	182	175		**179**		357
23:00:00	94	92		**93**		186
7am-7pm		11227		**11259**		22510
6am-10pm		13572		**13514**		27019
6am-12am		13839		**13786**		27562
12am-12am		14294		**14232**		28451
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		968	987	**978**		
pm Peak	16:00:00	16:00:00		**16:00:00**		
Peak Volume	1303	1288		**1296**		

057-0010 Main St, north of Johnston Farm Ln
2020 Adjusted Counts

Multi-Day Volume Report 057-0010 Monday, July 27, 2020 to Wednesday, July 29, 2020						
Site Name	057-0010					
Site ID	0000057_0010					
Description	CS 099813 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-07-27**	**2020-07-28**	**2020-07-29**	**Workday**	**7 Day**	**Count**
00:00:00		39	41	**40**		80
01:00:00		24	27	**26**		51
02:00:00		26	27	**27**		53
03:00:00		44	54	**49**		98
04:00:00		76	71	**74**		147
05:00:00		204	194	**199**		398
06:00:00		632	589	**611**		1221
07:00:00		1001	949	**975**		1950
08:00:00		935	974	**955**		1909
09:00:00		890	892	**891**		1782
10:00:00		947	989	**968**		1936
11:00:00		1120	1112	**1116**		2232
12:00:00		1214	1211	**1213**		2425
13:00:00		1165	1174	**1170**		2339
14:00:00		1118	1127	**1123**		2245
15:00:00		1129	1219	**1174**		2348
16:00:00		1350	1396	**1373**		2746
17:00:00		1367	1399	**1383**		2766
18:00:00		1011	1103	**1057**		2114
19:00:00		782	770	**776**		1552
20:00:00		544	643	**594**		1187
21:00:00	280	337		**309**		617
22:00:00	142	185		**164**		327
23:00:00	83	99		**91**		182
7am-7pm		13247		**13398**		26792
6am-10pm		15542		**15688**		31369
6am-12am		15826		**15943**		31878
12am-12am		16239		**16358**		32705
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1120	1112	**1116**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1367	1399	**1383**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2012 Adjusted Counts

Multi-Day Volume Report 057-0012 Tuesday, October 23, 2012 to Thursday, October 25, 2012						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2012-10-23**	**2012-10-24**	**2012-10-25**	**Workday**	**7 Day**	**Count**
00:00:00		65	84	**75**		149
01:00:00		42	36	**39**		78
02:00:00		31	30	**31**		61
03:00:00		25	32	**29**		57
04:00:00		56	55	**56**		111
05:00:00		180	190	**185**		370
06:00:00		692	661	**677**		1353
07:00:00		1369	1753	**1561**		3122
08:00:00		1175	1528	**1352**		2703
09:00:00		840	877	**859**		1717
10:00:00		753	735	**744**		1488
11:00:00	870	817		**844**		1687
12:00:00	1001	891		**946**		1892
13:00:00	988	977		**983**		1965
14:00:00	982	995		**989**		1977
15:00:00	1162	1163		**1163**		2325
16:00:00	1338	1373		**1356**		2711
17:00:00	1638	1604		**1621**		3242
18:00:00	1390	1381		**1386**		2771
19:00:00	1082	935		**1009**		2017
20:00:00	753	779		**766**		1532
21:00:00	466	513		**490**		979
22:00:00	264	264		**264**		528
23:00:00	101	112		**107**		213
7am-7pm		13338		**13804**		27600
6am-10pm		16257		**16746**		33481
6am-12am		16633		**17117**		34222
12am-12am		17032		**17532**		35048
am Peak	11:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	870	1369	1753	**1561**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1638	1604		**1621**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2017 Adjusted Counts

Multi-Day Volume Report 057-0012 Tuesday, September 5, 2017 to Thursday, September 7, 201						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2017-09-05**	**2017-09-06**	**2017-09-07**	**Workday**	**7 Day**	**Count**
00:00:00	0	54	49	**52**		103
01:00:00	0	27	31	**29**		58
02:00:00	0	25	19	**22**		44
03:00:00	0	26	28	**27**		54
04:00:00	0	70	67	**69**		137
05:00:00	0	236	228	**232**		464
06:00:00	0	751	724	**738**		1475
07:00:00	0	1216	1149	**1183**		2365
08:00:00	0	972	585	**779**		1557
09:00:00	0	776	264	**520**		1040
10:00:00	0	681	431	**556**		1112
11:00:00	0	743	232	**488**		975
12:00:00	0	911	466	**689**		1377
13:00:00	0	724	790	**757**		1514
14:00:00	0	826	890	**858**		1716
15:00:00	0	888	1052	**970**		1940
16:00:00	0	1157	150	**654**		1307
17:00:00	0	1252	295	**774**		1547
18:00:00	0	1139	1242	**1191**		2381
19:00:00	0	954	1047	**1001**		2001
20:00:00	498	814	0	**656**		1312
21:00:00	336	409	0	**373**		745
22:00:00	175	191	0	**183**		366
23:00:00	101	95	0	**98**		196
7am-7pm		11285		**9419**		18831
6am-10pm		14213		**12187**		24364
6am-12am		14499		**12468**		24926
12am-12am		14937		**12899**		25786
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1216	1149	**1183**		
pm Peak		17:00:00	18:00:00	**18:00:00**		
Peak Volume		1252	1242	**1191**		

057-0012 Holly Springs Pkwy, south of Stoney Creek Pkwy
2020 Adjusted Counts

Multi-Day Volume Report 057-0012 Monday, November 9, 2020 to Wednesday, November 11,						
Site Name	057-0012					
Site ID	0000057_0012					
Description	CRT 076500 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2020-11-09**	**2020-11-10**	**2020-11-11**	**Workday**	**7 Day**	**Count**
00:00:00		44	30	**37**		74
01:00:00		22	18	**20**		40
02:00:00		19	14	**17**		33
03:00:00		29	25	**27**		54
04:00:00		58	61	**60**		119
05:00:00		182	190	**186**		372
06:00:00		576	540	**558**		1116
07:00:00		1102	1042	**1072**		2144
08:00:00		1034	925	**980**		1959
09:00:00		783	726	**755**		1509
10:00:00		736	756	**746**		1492
11:00:00		846	867	**857**		1713
12:00:00		987	950	**969**		1937
13:00:00	1003	933		**968**		1936
14:00:00	943	1014		**979**		1957
15:00:00	1103	1172		**1138**		2275
16:00:00	1288	1249		**1269**		2537
17:00:00	1416	1329		**1373**		2745
18:00:00	1042	1024		**1033**		2066
19:00:00	644	674		**659**		1318
20:00:00	412	435		**424**		847
21:00:00	270	286		**278**		556
22:00:00	143	160		**152**		303
23:00:00	66	68		**67**		134
7am-7pm		12209		**12139**		24270
6am-10pm		14180		**14058**		28107
6am-12am		14408		**14277**		28544
12am-12am		14762		**14624**		29236
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1102	1042	**1072**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1416	1329		**1373**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2013 Adjusted Counts

Multi-Day Volume Report 057-0014 Wednesday, June 19, 2013 to Friday, June 21, 2013						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-06-19**	**2013-06-20**	**2013-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		38	51	**45**		89
01:00:00		28	21	**25**		49
02:00:00		21	16	**19**		37
03:00:00		13	20	**17**		33
04:00:00		50	34	**42**		84
05:00:00		130	114	**122**		244
06:00:00		303	266	**285**		569
07:00:00		404	394	**399**		798
08:00:00		429	230	**330**		659
09:00:00	386	397		**392**		783
10:00:00	404	404		**404**		808
11:00:00	453	460		**457**		913
12:00:00	516	528		**522**		1044
13:00:00	465	521		**493**		986
14:00:00	439	490		**465**		929
15:00:00	494	561		**528**		1055
16:00:00	565	669		**617**		1234
17:00:00	637	639		**638**		1276
18:00:00	528	535		**532**		1063
19:00:00	381	389		**385**		770
20:00:00	327	316		**322**		643
21:00:00	212	211		**212**		423
22:00:00	133	135		**134**		268
23:00:00	73	76		**75**		149
7am-7pm		6037		**5777**		11548
6am-10pm		7256		**6981**		13953
6am-12am		7467		**7190**		14370
12am-12am		7747		**7460**		14906
am Peak		11:00:00	7:00:00	**11:00:00**		
Peak Volume		460	394	**457**		
pm Peak	17:00:00	16:00:00		**17:00:00**		
Peak Volume	637	669		**638**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2016 Adjusted Counts

Multi-Day Volume Report 057-0014 Tuesday, May 10, 2016 to Thursday, May 12, 2016						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2016-05-10**	**2016-05-11**	**2016-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		30	44	**37**		74
01:00:00		32	34	**33**		66
02:00:00		22	15	**19**		37
03:00:00		20	26	**23**		46
04:00:00		44	47	**46**		91
05:00:00		196	187	**192**		383
06:00:00		345	341	**343**		686
07:00:00		531	524	**528**		1055
08:00:00		455	437	**446**		892
09:00:00		415	396	**406**		811
10:00:00		415	391	**403**		806
11:00:00		438	409	**424**		847
12:00:00		513	555	**534**		1068
13:00:00		477	450	**464**		927
14:00:00		472	427	**450**		899
15:00:00		501	518	**510**		1019
16:00:00		572	691	**632**		1263
17:00:00		618	683	**651**		1301
18:00:00		587	518	**553**		1105
19:00:00	415	465		**440**		880
20:00:00	282	359		**321**		641
21:00:00	200	205		**203**		405
22:00:00	91	129		**110**		220
23:00:00	53	66		**60**		119
7am-7pm		5994		**6001**		11993
6am-10pm		7368		**7308**		14605
6am-12am		7563		**7478**		14944
12am-12am		7907		**7828**		15641
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		531	524	**528**		
pm Peak	19:00:00	17:00:00	16:00:00	**17:00:00**		
Peak Volume	415	618	691	**651**		

057-0014 Holly Springs Pkwy, north of Rabbit Hill Rd
2019 Adjusted Counts

Multi-Day Volume Report 057-0014 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0014					
Site ID	0000057_0014					
Description	CR 106100 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		38	29	**34**		67
01:00:00		21	26	**24**		47
02:00:00		17	11	**14**		28
03:00:00		20	19	**20**		39
04:00:00		52	60	**56**		112
05:00:00		168	151	**160**		319
06:00:00	331	328		**330**		659
07:00:00	535	646		**591**		1181
08:00:00	494	823		**659**		1317
09:00:00	472	655		**564**		1127
10:00:00	485	474		**480**		959
11:00:00	578	544		**561**		1122
12:00:00	607	598		**603**		1205
13:00:00	532	564		**548**		1096
14:00:00	563	571		**567**		1134
15:00:00	569	581		**575**		1150
16:00:00	668	663		**666**		1331
17:00:00	730	764		**747**		1494
18:00:00	605	606		**606**		1211
19:00:00	438	430		**434**		868
20:00:00	339	368		**354**		707
21:00:00	263	256		**260**		519
22:00:00	130	138		**134**		268
23:00:00	95	89		**92**		184
7am-7pm		7489		**7167**		14327
6am-10pm		8871		**8545**		17080
6am-12am		9098		**8771**		17532
12am-12am		9414		**9079**		18144
am Peak	11:00:00	8:00:00	5:00:00	**8:00:00**		
Peak Volume	578	823	151	**659**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	730	764		**747**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2010 Adjusted Counts

Multi-Day Volume Report 057-0016 Tuesday, April 27, 2010 to Thursday, April 29, 2010						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-27**	**2010-04-28**	**2010-04-29**	**Workday**	**7 Day**	**Count**
00:00:00		51	66	**59**		117
01:00:00		25	45	**35**		70
02:00:00		19	20	**20**		39
03:00:00		34	26	**30**		60
04:00:00		52	55	**54**		107
05:00:00		167	183	**175**		350
06:00:00		562	588	**575**		1150
07:00:00		1130	1078	**1104**		2208
08:00:00		857	882	**870**		1739
09:00:00		610	665	**638**		1275
10:00:00		677	697	**687**		1374
11:00:00	711	715		**713**		1426
12:00:00	877	760		**819**		1637
13:00:00	783	811		**797**		1594
14:00:00	840	805		**823**		1645
15:00:00	1026	944		**985**		1970
16:00:00	1104	993		**1049**		2097
17:00:00	1218	1032		**1125**		2250
18:00:00	907	906		**907**		1813
19:00:00	691	618		**655**		1309
20:00:00	575	583		**579**		1158
21:00:00	362	419		**391**		781
22:00:00	203	192		**198**		395
23:00:00	138	135		**137**		273
7am-7pm		10240		**10517**		21028
6am-10pm		12422		**12717**		25426
6am-12am		12749		**13052**		26094
12am-12am		13097		**13425**		26837
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1130	1078	**1104**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1218	1032		**1125**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2014 Adjusted Counts

Multi-Day Volume Report 057-0016 Wednesday, March 19, 2014 to Friday, March 21, 2014						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2014-03-19**	**2014-03-20**	**2014-03-21**	**Workday**	**7 Day**	**Count**
00:00:00		26	45	**36**		71
01:00:00		12	13	**13**		25
02:00:00		23	11	**17**		34
03:00:00		16	6	**11**		22
04:00:00		26	29	**28**		55
05:00:00		121	104	**113**		225
06:00:00		327	293	**310**		620
07:00:00		516	477	**497**		993
08:00:00		647	583	**615**		1230
09:00:00		552	418	**485**		970
10:00:00		393	426	**410**		819
11:00:00		426	414	**420**		840
12:00:00	455	436		**446**		891
13:00:00	483	483		**483**		966
14:00:00	591	566		**579**		1157
15:00:00	532	554		**543**		1086
16:00:00	708	656		**682**		1364
17:00:00	794	788		**791**		1582
18:00:00	633	613		**623**		1246
19:00:00	511	540		**526**		1051
20:00:00	375	402		**389**		777
21:00:00	228	260		**244**		488
22:00:00	145	185		**165**		330
23:00:00	55	69		**62**		124
7am-7pm		6630		**6574**		13144
6am-10pm		8159		**8043**		16080
6am-12am		8413		**8270**		16534
12am-12am		8637		**8488**		16966
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		647	583	**615**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	794	788		**791**		

057-0016 Holly Springs Pkwy, south of Barrett Rd
2018 Adjusted Counts

Multi-Day Volume Report 057-0016 Tuesday, July 17, 2018 to Thursday, July 19, 2018						
Site Name	057-0016					
Site ID	0000057_0016					
Description	CS 106105 BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-07-17**	**2018-07-18**	**2018-07-19**	**Workday**	**7 Day**	**Count**
00:00:00		58	61	**60**		119
01:00:00		37	40	**39**		77
02:00:00		21	26	**24**		47
03:00:00		34	32	**33**		66
04:00:00		51	62	**57**		113
05:00:00		245	240	**243**		485
06:00:00		487	474	**481**		961
07:00:00		721	765	**743**		1486
08:00:00		779	741	**760**		1520
09:00:00		699	661	**680**		1360
10:00:00		723	678	**701**		1401
11:00:00		779	743	**761**		1522
12:00:00		894	852	**873**		1746
13:00:00		824	831	**828**		1655
14:00:00		761	763	**762**		1524
15:00:00	840	879		**860**		1719
16:00:00	913	987		**950**		1900
17:00:00	1001	1064		**1033**		2065
18:00:00	829	861		**845**		1690
19:00:00	665	656		**661**		1321
20:00:00	463	498		**481**		961
21:00:00	300	374		**337**		674
22:00:00	176	221		**199**		397
23:00:00	102	124		**113**		226
7am-7pm		9971		**9796**		19588
6am-10pm		11986		**11756**		23505
6am-12am		12331		**12068**		24128
12am-12am		12777		**12524**		25035
am Peak		8:00:00	7:00:00	**11:00:00**		
Peak Volume		779	765	**761**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1001	1064		**1033**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2011 Adjusted Counts

Multi-Day Volume Report 057-0018 Monday, May 9, 2011 to Wednesday, May 11, 2011						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-05-09**	**2011-05-10**	**2011-05-11**	**Workday**	**7 Day**	**Count**
00:00:00		81	103	**92**		184
01:00:00		39	46	**43**		85
02:00:00		28	53	**41**		81
03:00:00		35	42	**39**		77
04:00:00		87	77	**82**		164
05:00:00		265	282	**274**		547
06:00:00		586	649	**618**		1235
07:00:00		1021	1026	**1024**		2047
08:00:00		1085	1076	**1081**		2161
09:00:00		958	879	**919**		1837
10:00:00		958	964	**961**		1922
11:00:00		1093	1059	**1076**		2152
12:00:00		1152	1152	**1152**		2304
13:00:00		1059	1083	**1071**		2142
14:00:00		1137	1150	**1144**		2287
15:00:00	1263	1297		**1280**		2560
16:00:00	1330	1279		**1305**		2609
17:00:00	1402	1339		**1371**		2741
18:00:00	1159	1196		**1178**		2355
19:00:00	896	965		**931**		1861
20:00:00	687	739		**713**		1426
21:00:00	469	494		**482**		963
22:00:00	309	317		**313**		626
23:00:00	145	158		**152**		303
7am-7pm		13574		**13562**		27117
6am-10pm		16358		**16306**		32602
6am-12am		16833		**16771**		33531
12am-12am		17368		**17342**		34669
am Peak		11:00:00	8:00:00	**8:00:00**		
Peak Volume		1093	1076	**1081**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1402	1339		**1371**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2015 Adjusted Counts

Multi-Day Volume Report 057-0018 Monday, May 11, 2015 to Wednesday, May 13, 2015						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-11**	**2015-05-12**	**2015-05-13**	**Workday**	**7 Day**	**Count**
00:00:00		81	76	**79**		157
01:00:00		42	42	**42**		84
02:00:00		35	24	**30**		59
03:00:00		39	42	**41**		81
04:00:00		84	80	**82**		164
05:00:00		368	357	**363**		725
06:00:00		662	679	**671**		1341
07:00:00		1250	1219	**1235**		2469
08:00:00		1141	1063	**1102**		2204
09:00:00		966	921	**944**		1887
10:00:00		907	945	**926**		1852
11:00:00		1008	1035	**1022**		2043
12:00:00		1054	1150	**1102**		2204
13:00:00		1089	1122	**1106**		2211
14:00:00		1162	1132	**1147**		2294
15:00:00		1197	1226	**1212**		2423
16:00:00	1379	1397		**1388**		2776
17:00:00	1394	1579		**1487**		2973
18:00:00	1132	1155		**1144**		2287
19:00:00	952	942		**947**		1894
20:00:00	704	763		**734**		1467
21:00:00	502	536		**519**		1038
22:00:00	262	280		**271**		542
23:00:00	144	140		**142**		284
7am-7pm		13905		**13815**		27623
6am-10pm		16808		**16686**		33363
6am-12am		17228		**17099**		34189
12am-12am		17877		**17736**		35459
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1250	1219	**1235**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1394	1579		**1487**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2019 Adjusted Counts

Multi-Day Volume Report 057-0018 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		76	83	**80**		159
01:00:00		46	47	**47**		93
02:00:00		34	40	**37**		74
03:00:00		47	41	**44**		88
04:00:00		112	110	**111**		222
05:00:00		344	326	**335**		670
06:00:00	658	665		**662**		1323
07:00:00	983	978		**981**		1961
08:00:00	966	1021		**994**		1987
09:00:00	960	1066		**1013**		2026
10:00:00	977	953		**965**		1930
11:00:00	1078	1055		**1067**		2133
12:00:00	1151	1153		**1152**		2304
13:00:00	1086	1092		**1089**		2178
14:00:00	1079	1096		**1088**		2175
15:00:00	1193	1111		**1152**		2304
16:00:00	1298	1290		**1294**		2588
17:00:00	1358	1304		**1331**		2662
18:00:00	1077	1134		**1106**		2211
19:00:00	779	859		**819**		1638
20:00:00	648	700		**674**		1348
21:00:00	564	610		**587**		1174
22:00:00	325	309		**317**		634
23:00:00	178	173		**176**		351
7am-7pm		13253		**13232**		26459
6am-10pm		16087		**15974**		31942
6am-12am		16569		**16467**		32927
12am-12am		17228		**17121**		34233
am Peak	11:00:00	9:00:00	5:00:00	**11:00:00**		
Peak Volume	1078	1066	326	**1067**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1358	1304		**1331**		

057-0018 Marietta Hwy, just north of Goodwin Rd
2021 Adjusted Counts

Multi-Day Volume Report 057-0018 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0018					
Site ID	0000057_0018					
Description	-					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		55	51	**53**		106
01:00:00		31	32	**32**		63
02:00:00		29	29	**29**		58
03:00:00		44	45	**45**		89
04:00:00		115	93	**104**		208
05:00:00		282	285	**284**		567
06:00:00		699	714	**707**		1413
07:00:00		1009	1060	**1035**		2069
08:00:00		1079	1052	**1066**		2131
09:00:00		951	971	**961**		1922
10:00:00		982	1012	**997**		1994
11:00:00		1104	1105	**1105**		2209
12:00:00		1210	1148	**1179**		2358
13:00:00		1243	1139	**1191**		2382
14:00:00	1211	1198		**1205**		2409
15:00:00	1189	1221		**1205**		2410
16:00:00	1355	1302		**1329**		2657
17:00:00	1296	1402		**1349**		2698
18:00:00	1107	1187		**1147**		2294
19:00:00	866	913		**890**		1779
20:00:00	680	701		**691**		1381
21:00:00	467	502		**485**		969
22:00:00	298	299		**299**		597
23:00:00	144	113		**129**		257
7am-7pm		13888		**13769**		27533
6am-10pm		16703		**16542**		33075
6am-12am		17115		**16970**		33929
12am-12am		17671		**17517**		35020
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1104	1105	**1105**		
pm Peak	16:00:00	17:00:00		**17:00:00**		
Peak Volume	1355	1402		**1349**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2013 Adjusted Counts

Multi-Day Volume Report 057-0020 Wednesday, June 19, 2013 to Friday, June 21, 2013						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-06-19**	**2013-06-20**	**2013-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		76	90	**83**		166
01:00:00		44	38	**41**		82
02:00:00		26	32	**29**		58
03:00:00		34	32	**33**		66
04:00:00		49	56	**53**		105
05:00:00		154	137	**146**		291
06:00:00		386	364	**375**		750
07:00:00		648	630	**639**		1278
08:00:00		703	745	**724**		1448
09:00:00		720	854	**787**		1574
10:00:00		795	846	**821**		1641
11:00:00		902	996	**949**		1898
12:00:00	984	1022		**1003**		2006
13:00:00	914	967		**941**		1881
14:00:00	954	903		**929**		1857
15:00:00	972	932		**952**		1904
16:00:00	949	951		**950**		1900
17:00:00	976	1086		**1031**		2062
18:00:00	778	762		**770**		1540
19:00:00	587	644		**616**		1231
20:00:00	551	521		**536**		1072
21:00:00	437	417		**427**		854
22:00:00	248	233		**241**		481
23:00:00	131	135		**133**		266
7am-7pm		10391		**10496**		20989
6am-10pm		12359		**12450**		24896
6am-12am		12727		**12824**		25643
12am-12am		13110		**13209**		26411
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		902	996	**949**		
pm Peak	12:00:00	17:00:00		**17:00:00**		
Peak Volume	984	1086		**1031**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2019 Adjusted Counts

Multi-Day Volume Report 057-0020 Tuesday, July 23, 2019 to Thursday, July 25, 2019						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-07-23**	**2019-07-24**	**2019-07-25**	**Workday**	**7 Day**	**Count**
00:00:00		59	53	**56**		112
01:00:00		27	42	**35**		69
02:00:00		43	36	**40**		79
03:00:00		29	43	**36**		72
04:00:00		66	53	**60**		119
05:00:00		196	169	**183**		365
06:00:00	386	377		**382**		763
07:00:00	612	675		**644**		1287
08:00:00	603	674		**639**		1277
09:00:00	603	696		**650**		1299
10:00:00	707	702		**705**		1409
11:00:00	792	778		**785**		1570
12:00:00	833	805		**819**		1638
13:00:00	812	802		**807**		1614
14:00:00	785	804		**795**		1589
15:00:00	921	771		**846**		1692
16:00:00	916	873		**895**		1789
17:00:00	920	909		**915**		1829
18:00:00	643	664		**654**		1307
19:00:00	483	514		**499**		997
20:00:00	424	450		**437**		874
21:00:00	336	387		**362**		723
22:00:00	209	210		**210**		419
23:00:00	105	128		**117**		233
7am-7pm		9153		**9154**		18300
6am-10pm		10881		**10834**		21657
6am-12am		11219		**11161**		22309
12am-12am		11639		**11571**		23125
am Peak	11:00:00	11:00:00	5:00:00	**11:00:00**		
Peak Volume	792	778	169	**785**		
pm Peak	15:00:00	17:00:00		**17:00:00**		
Peak Volume	921	909		**915**		

057-0020 Marietta Hwy, north of Ridge Pine Dr
2020 Adjusted Counts

Multi-Day Volume Report 057-0020 Tuesday, May 19, 2020 to Thursday, May 21, 2020						
Site Name	057-0020					
Site ID	0000057_0020					
Description	CSX 006503LCR0309R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2020-05-19**	**2020-05-20**	**2020-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		44	30	**37**		74
01:00:00		28	40	**34**		68
02:00:00		34	37	**36**		71
03:00:00		39	23	**31**		62
04:00:00		62	56	**59**		118
05:00:00		172	166	**169**		338
06:00:00		368	383	**376**		751
07:00:00		618	576	**597**		1194
08:00:00		557	523	**540**		1080
09:00:00		697	629	**663**		1326
10:00:00	716	796		**756**		1512
11:00:00	832	856		**844**		1688
12:00:00	931	865		**898**		1796
13:00:00	833	882		**858**		1715
14:00:00	856	890		**873**		1746
15:00:00	891	910		**901**		1801
16:00:00	937	858		**898**		1795
17:00:00	929	816		**873**		1745
18:00:00	668	629		**649**		1297
19:00:00	597	523		**560**		1120
20:00:00	405	371		**388**		776
21:00:00	284	218		**251**		502
22:00:00	151	146		**149**		297
23:00:00	73	65		**69**		138
7am-7pm		9374		**9350**		18695
6am-10pm		10854		**10925**		21844
6am-12am		11065		**11143**		22279
12am-12am		11444		**11509**		23010
am Peak		11:00:00	9:00:00	**11:00:00**		
Peak Volume		856	629	**844**		
pm Peak	16:00:00	15:00:00		**15:00:00**		
Peak Volume	937	910		**901**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2010 Adjusted Counts

Multi-Day Volume Report 057-0022 Tuesday, April 6, 2010 to Thursday, April 8, 2010						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2010-04-06**	**2010-04-07**	**2010-04-08**	**Workday**	**7 Day**	**Count**
00:00:00		68	70	**69**		138
01:00:00		46	40	**43**		86
02:00:00		24	30	**27**		54
03:00:00		26	23	**25**		49
04:00:00		36	50	**43**		86
05:00:00		107	101	**104**		208
06:00:00		265	255	**260**		520
07:00:00		478	485	**482**		963
08:00:00		562	536	**549**		1098
09:00:00		679	559	**619**		1238
10:00:00		753	625	**689**		1378
11:00:00	801	834		**818**		1635
12:00:00	930	901		**916**		1831
13:00:00	921	844		**883**		1765
14:00:00	874	860		**867**		1734
15:00:00	865	899		**882**		1764
16:00:00	905	898		**902**		1803
17:00:00	900	869		**885**		1769
18:00:00	807	745		**776**		1552
19:00:00	670	627		**649**		1297
20:00:00	562	499		**531**		1061
21:00:00	387	386		**387**		773
22:00:00	214	240		**227**		454
23:00:00	138	158		**148**		296
7am-7pm		9322		**9268**		18530
6am-10pm		11099		**11095**		22181
6am-12am		11497		**11470**		22931
12am-12am		11804		**11781**		23552
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		834	625	**818**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	930	901		**916**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2014 Adjusted Counts

Multi-Day Volume Report 057-0022 Monday, September 15, 2014 to Wednesday, September 1						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2014-09-15**	**2014-09-16**	**2014-09-17**	**Workday**	**7 Day**	**Count**
00:00:00		71	75	**73**		146
01:00:00		34	41	**38**		75
02:00:00		30	34	**32**		64
03:00:00		39	34	**37**		73
04:00:00		53	46	**50**		99
05:00:00		161	138	**150**		299
06:00:00		348	304	**326**		652
07:00:00		615	638	**627**		1253
08:00:00		642	586	**614**		1228
09:00:00		651	711	**681**		1362
10:00:00		734	713	**724**		1447
11:00:00		822	822	**822**		1644
12:00:00		988	928	**958**		1916
13:00:00		895	872	**884**		1767
14:00:00		904	819	**862**		1723
15:00:00		859	877	**868**		1736
16:00:00		900	874	**887**		1774
17:00:00		916	986	**951**		1902
18:00:00		778	761	**770**		1539
19:00:00		619	572	**596**		1191
20:00:00		431	491	**461**		922
21:00:00	274	295		**285**		569
22:00:00	212	214		**213**		426
23:00:00	99	122		**111**		221
7am-7pm		9704		**9648**		19291
6am-10pm		11397		**11316**		22625
6am-12am		11733		**11640**		23272
12am-12am		12121		**12020**		24028
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		822	822	**822**		
pm Peak		12:00:00	17:00:00	**12:00:00**		
Peak Volume		988	986	**958**		

057-0022 Marietta Hwy, north of Bells Ferry Rd
2018 Adjusted Counts

Multi-Day Volume Report 057-0022 Tuesday, June 19, 2018 to Thursday, June 21, 2018						
Site Name	057-0022					
Site ID	0000057_0022					
Description	CRX 077000LCS0677R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-06-19**	**2018-06-20**	**2018-06-21**	**Workday**	**7 Day**	**Count**
00:00:00		70	82	**76**		152
01:00:00		39	42	**41**		81
02:00:00		38	26	**32**		64
03:00:00		41	41	**41**		82
04:00:00		49	38	**44**		87
05:00:00		159	166	**163**		325
06:00:00		389	329	**359**		718
07:00:00		617	637	**627**		1254
08:00:00		660	614	**637**		1274
09:00:00		679	717	**698**		1396
10:00:00		719	750	**735**		1469
11:00:00		728	767	**748**		1495
12:00:00	862	829		**846**		1691
13:00:00	790	774		**782**		1564
14:00:00	814	827		**821**		1641
15:00:00	787	791		**789**		1578
16:00:00	908	841		**875**		1749
17:00:00	911	896		**904**		1807
18:00:00	777	770		**774**		1547
19:00:00	612	624		**618**		1236
20:00:00	561	527		**544**		1088
21:00:00	402	424		**413**		826
22:00:00	246	253		**250**		499
23:00:00	112	146		**129**		258
7am-7pm		9131		**9236**		18465
6am-10pm		11095		**11170**		22333
6am-12am		11494		**11549**		23090
12am-12am		11890		**11946**		23881
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		728	767	**748**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	911	896		**904**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2010 Adjusted Counts

Multi-Day Volume Report 057-0028 Wednesday, April 21, 2010 to Friday, April 23, 2010						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2010-04-21**	**2010-04-22**	**2010-04-23**	**Workday**	**7 Day**	**Count**
00:00:00		75	69	**72**		144
01:00:00		52	39	**46**		91
02:00:00		34	25	**30**		59
03:00:00		29	22	**26**		51
04:00:00		29	56	**43**		85
05:00:00		143	118	**131**		261
06:00:00		299	297	**298**		596
07:00:00		729	732	**731**		1461
08:00:00		901	918	**910**		1819
09:00:00		966	1033	**1000**		1999
10:00:00		1098	1227	**1163**		2325
11:00:00	1453	1371		**1412**		2824
12:00:00	1639	1578		**1609**		3217
13:00:00	1570	1482		**1526**		3052
14:00:00	1461	1313		**1387**		2774
15:00:00	1520	1391		**1456**		2911
16:00:00	1552	1412		**1482**		2964
17:00:00	1411	1454		**1433**		2865
18:00:00	1106	1142		**1124**		2248
19:00:00	920	916		**918**		1836
20:00:00	716	719		**718**		1435
21:00:00	483	449		**466**		932
22:00:00	263	286		**275**		549
23:00:00	138	158		**148**		296
7am-7pm		14837		**15233**		30459
6am-10pm		17220		**17633**		35258
6am-12am		17664		**18056**		36103
12am-12am		18026		**18404**		36794
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1371	1227	**1412**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1639	1578		**1609**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2012 Adjusted Counts

Multi-Day Volume Report 057-0028 Tuesday, October 16, 2012 to Thursday, October 18, 2012						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2012-10-16**	**2012-10-17**	**2012-10-18**	**Workday**	**7 Day**	**Count**
00:00:00		64	54	**59**		118
01:00:00		39	36	**38**		75
02:00:00		37	34	**36**		71
03:00:00		22	30	**26**		52
04:00:00		51	32	**42**		83
05:00:00		133	137	**135**		270
06:00:00		332	297	**315**		629
07:00:00		766	723	**745**		1489
08:00:00		989	885	**937**		1874
09:00:00	1071	1061		**1066**		2132
10:00:00	1233	1162		**1198**		2395
11:00:00	1394	1434		**1414**		2828
12:00:00	1570	1613		**1592**		3183
13:00:00	1560	1501		**1531**		3061
14:00:00	1455	1417		**1436**		2872
15:00:00	1417	1371		**1394**		2788
16:00:00	1433	1364		**1399**		2797
17:00:00	1394	1443		**1419**		2837
18:00:00	1196	1183		**1190**		2379
19:00:00	922	852		**887**		1774
20:00:00	588	649		**619**		1237
21:00:00	339	392		**366**		731
22:00:00	223	235		**229**		458
23:00:00	124	127		**126**		251
7am-7pm		15304		**15321**		30635
6am-10pm		17529		**17508**		35006
6am-12am		17891		**17863**		35715
12am-12am		18237		**18199**		36384
am Peak		11:00:00	8:00:00	**11:00:00**		
Peak Volume		1434	885	**1414**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1570	1613		**1592**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2014 Adjusted Counts

Multi-Day Volume Report 057-0028 Wednesday, March 19, 2014 to Friday, March 21, 2014						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2014-03-19**	**2014-03-20**	**2014-03-21**	**Workday**	**7 Day**	**Count**
00:00:00		81	66	**74**		147
01:00:00		42	53	**48**		95
02:00:00		26	39	**33**		65
03:00:00		29	29	**29**		58
04:00:00		44	39	**42**		83
05:00:00		153	126	**140**		279
06:00:00		314	308	**311**		622
07:00:00		792	813	**803**		1605
08:00:00		982	886	**934**		1868
09:00:00		1015	1058	**1037**		2073
10:00:00		1182	1231	**1207**		2413
11:00:00	1372	1408		**1390**		2780
12:00:00	1653	1698		**1676**		3351
13:00:00	1664	1610		**1637**		3274
14:00:00	1526	1514		**1520**		3040
15:00:00	1563	1574		**1569**		3137
16:00:00	1672	1701		**1687**		3373
17:00:00	1486	1522		**1504**		3008
18:00:00	1186	1221		**1204**		2407
19:00:00	1064	1122		**1093**		2186
20:00:00	743	763		**753**		1506
21:00:00	454	522		**488**		976
22:00:00	268	304		**286**		572
23:00:00	159	171		**165**		330
7am-7pm		16219		**16168**		32329
6am-10pm		18940		**18813**		37619
6am-12am		19415		**19264**		38521
12am-12am		19790		**19630**		39248
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1408	1231	**1390**		
pm Peak	16:00:00	16:00:00		**16:00:00**		
Peak Volume	1672	1701		**1687**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2018 Adjusted Counts

Multi-Day Volume Report 057-0028 Tuesday, October 16, 2018 to Thursday, October 18, 2018						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2018-10-16**	**2018-10-17**	**2018-10-18**	**Workday**	**7 Day**	**Count**
00:00:00		66	57	**62**		123
01:00:00		33	42	**38**		75
02:00:00		26	21	**24**		47
03:00:00		23	25	**24**		48
04:00:00		38	36	**37**		74
05:00:00		150	131	**141**		281
06:00:00		329	356	**343**		685
07:00:00		759	685	**722**		1444
08:00:00		1011	1031	**1021**		2042
09:00:00		1007	1074	**1041**		2081
10:00:00		1193	1205	**1199**		2398
11:00:00		1432	1484	**1458**		2916
12:00:00		1642	1730	**1686**		3372
13:00:00		1571	1639	**1605**		3210
14:00:00	1352	1457		**1405**		2809
15:00:00	1513	1539		**1526**		3052
16:00:00	1522	1552		**1537**		3074
17:00:00	1550	1631		**1591**		3181
18:00:00	1223	1282		**1253**		2505
19:00:00	1021	1045		**1033**		2066
20:00:00	684	757		**721**		1441
21:00:00	408	409		**409**		817
22:00:00	261	269		**265**		530
23:00:00	122	126		**124**		248
7am-7pm		16076		**16044**		32084
6am-10pm		18616		**18550**		37093
6am-12am		19011		**18939**		37871
12am-12am		19347		**19265**		38519
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1432	1484	**1458**		
pm Peak	17:00:00	12:00:00		**12:00:00**		
Peak Volume	1550	1642		**1686**		

057-0028 SR 5 BUS/Riverstone Pkwy, just north of Juniper St
2020 Adjusted Counts

Multi-Day Volume Report 057-0028 Tuesday, May 19, 2020 to Thursday, May 21, 2020						
Site Name	057-0028					
Site ID	0000057_0028					
Description	SRX 014000LCS0684R					
Lanes	Each Lane					
Bins	Volume data					
Time Period	1 hour					
Exclude data:	None					
						Atypical (QC)
Time	**Tue**	**Wed**	**Thu**	**Average**		**Total**
Time	**2020-05-19**	**2020-05-20**	**2020-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		33	36	**35**		69
01:00:00		43	31	**37**		74
02:00:00		27	26	**27**		53
03:00:00		21	20	**21**		41
04:00:00		41	52	**47**		93
05:00:00		155	155	**155**		310
06:00:00		323	344	**334**		667
07:00:00		651	640	**646**		1291
08:00:00		776	740	**758**		1516
09:00:00		1017	941	**979**		1958
10:00:00		1223	1149	**1186**		2372
11:00:00	1410	1508		**1459**		2918
12:00:00	1641	1658		**1650**		3299
13:00:00	1567	1561		**1564**		3128
14:00:00	1524	1468		**1496**		2992
15:00:00	1441	1479		**1460**		2920
16:00:00	1503	1485		**1494**		2988
17:00:00	1326	1357		**1342**		2683
18:00:00	1106	1176		**1141**		2282
19:00:00	848	846		**847**		1694
20:00:00	598	576		**587**		1174
21:00:00	329	312		**321**		641
22:00:00	205	213		**209**		418
23:00:00	93	83		**88**		176
7am-7pm		15359		**15175**		30347
6am-10pm		17416		**17264**		34523
6am-12am		17712		**17561**		35117
12am-12am		18032		**17883**		35757
am Peak		11:00:00	10:00:00	**11:00:00**		
Peak Volume		1508	1149	**1459**		
pm Peak	12:00:00	12:00:00		**12:00:00**		
Peak Volume	1641	1658		**1650**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2012 Adjusted Counts

Multi-Day Volume Report 057-0030 Monday, October 15, 2012 to Wednesday, October 17, 2012						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2012-10-15**	**2012-10-16**	**2012-10-17**	**Workday**	**7 Day**	**Count**
00:00:00		24	23	**24**		47
01:00:00		17	13	**15**		30
02:00:00		15	14	**15**		29
03:00:00		14	17	**16**		31
04:00:00		43	42	**43**		85
05:00:00		169	180	**175**		349
06:00:00		363	393	**378**		756
07:00:00		680	681	**681**		1361
08:00:00		643	623	**633**		1266
09:00:00		491	495	**493**		986
10:00:00		479	497	**488**		976
11:00:00		585	597	**591**		1182
12:00:00		641	744	**693**		1385
13:00:00	656	619		**638**		1275
14:00:00	620	585		**603**		1205
15:00:00	645	588		**617**		1233
16:00:00	797	741		**769**		1538
17:00:00	881	882		**882**		1763
18:00:00	685	686		**686**		1371
19:00:00	484	462		**473**		946
20:00:00	298	295		**297**		593
21:00:00	171	165		**168**		336
22:00:00	122	96		**109**		218
23:00:00	58	49		**54**		107
7am-7pm		7620		**7774**		15541
6am-10pm		8905		**9090**		18172
6am-12am		9050		**9253**		18497
12am-12am		9332		**9541**		19068
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		680	681	**681**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	881	882		**882**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2019 Adjusted Counts

Multi-Day Volume Report 057-0030 Tuesday, October 15, 2019 to Thursday, October 17, 2019						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2019-10-15**	**2019-10-16**	**2019-10-17**	**Workday**	**7 Day**	**Count**
00:00:00		42	45	**44**		87
01:00:00		22	39	**31**		61
02:00:00		37	28	**33**		65
03:00:00		35	29	**32**		64
04:00:00		73	63	**68**		136
05:00:00		219	230	**225**		449
06:00:00		546	542	**544**		1088
07:00:00		927	944	**936**		1871
08:00:00		748	781	**765**		1529
09:00:00		579	596	**588**		1175
10:00:00	627	644		**636**		1271
11:00:00	774	808		**791**		1582
12:00:00	947	949		**948**		1896
13:00:00	874	841		**858**		1715
14:00:00	780	790		**785**		1570
15:00:00	859	879		**869**		1738
16:00:00	995	696		**846**		1691
17:00:00	1122	1152		**1137**		2274
18:00:00	826	885		**856**		1711
19:00:00	591	630		**611**		1221
20:00:00	422	437		**430**		859
21:00:00	219	301		**260**		520
22:00:00	151	142		**147**		293
23:00:00	95	109		**102**		204
7am-7pm		9898		**10015**		20023
6am-10pm		11812		**11860**		23711
6am-12am		12063		**12109**		24208
12am-12am		12491		**12542**		25070
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		927	944	**936**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1122	1152		**1137**		

057-0030 Ball Ground Hwy, just north of Roland Dr
2021 Adjusted Counts

Multi-Day Volume Report 057-0030 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0030					
Site ID	0000057_0030					
Description	SR 0005BU BEG AT					
Lanes	Each Lane					
Bins	Volume data					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thu**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		44	48	**46**		92
01:00:00		38	33	**36**		71
02:00:00		24	45	**35**		69
03:00:00		57	56	**57**		113
04:00:00		85	98	**92**		183
05:00:00		212	235	**224**		447
06:00:00		597	592	**595**		1189
07:00:00		947	970	**959**		1917
08:00:00		841	903	**872**		1744
09:00:00		712	803	**758**		1515
10:00:00		781	733	**757**		1514
11:00:00		834	938	**886**		1772
12:00:00	907	955		**931**		1862
13:00:00	894	884		**889**		1778
14:00:00	865	926		**896**		1791
15:00:00	968	1016		**992**		1984
16:00:00	1096	1136		**1116**		2232
17:00:00	1160	1227		**1194**		2387
18:00:00	822	988		**905**		1810
19:00:00	624	702		**663**		1326
20:00:00	431	554		**493**		985
21:00:00	254	321		**288**		575
22:00:00	175	172		**174**		347
23:00:00	96	74		**85**		170
7am-7pm		11247		**11155**		22306
6am-10pm		13421		**13194**		26381
6am-12am		13667		**13453**		26898
12am-12am		14127		**13943**		27873
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		947	970	**959**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1160	1227		**1194**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2011 Adjusted Counts

Multi-Day Volume Report 057-0048 Monday, June 6, 2011 to Wednesdsay, June 8, 2011						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2011-06-06**	**2011-06-07**	**2011-06-08**	**Workday**	**7 Day**	**Count**
00:00:00		165	159	**162**		324
01:00:00		89	83	**86**		172
02:00:00		60	64	**62**		124
03:00:00		58	51	**55**		109
04:00:00		138	126	**132**		264
05:00:00		358	351	**355**		709
06:00:00		776	752	**764**		1528
07:00:00		1208	1234	**1221**		2442
08:00:00		1285	1286	**1286**		2571
09:00:00		1241	1265	**1253**		2506
10:00:00		1391	1330	**1361**		2721
11:00:00		1482	1439	**1461**		2921
12:00:00	1696	1632		**1664**		3328
13:00:00	1649	1615		**1632**		3264
14:00:00	1616	1527		**1572**		3143
15:00:00	1712	1770		**1741**		3482
16:00:00	1724	1696		**1710**		3420
17:00:00	1865	1769		**1817**		3634
18:00:00	1516	1489		**1503**		3005
19:00:00	1222	1142		**1182**		2364
20:00:00	868	890		**879**		1758
21:00:00	712	740		**726**		1452
22:00:00	447	452		**450**		899
23:00:00	283	276		**280**		559
7am-7pm		18105		**18221**		36437
6am-10pm		21653		**21772**		43539
6am-12am		22381		**22502**		44997
12am-12am		23249		**23354**		46699
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1482	1439	**1461**		
pm Peak	17:00:00	15:00:00		**17:00:00**		
Peak Volume	1865	1770		**1817**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2013 Adjusted Counts

Multi-Day Volume Report 057-0048 Wednesday, October 9, 2013 to Friday, October 11, 2013						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Wed**	**Thur**	**Fri**	**Average**		**Total**
Time	**2013-10-09**	**2013-10-10**	**2013-10-11**	**Workday**	**7 Day**	**Count**
00:00:00		119	100	**110**		219
01:00:00		87	82	**85**		169
02:00:00		64	56	**60**		120
03:00:00		68	72	**70**		140
04:00:00		138	122	**130**		260
05:00:00		361	347	**354**		708
06:00:00		844	800	**822**		1644
07:00:00		1724	1640	**1682**		3364
08:00:00		1772	1655	**1714**		3427
09:00:00		1266	1288	**1277**		2554
10:00:00		1193	1389	**1291**		2582
11:00:00	1325	1389		**1357**		2714
12:00:00	1521	1485		**1503**		3006
13:00:00	1558	1528		**1543**		3086
14:00:00	1582	1580		**1581**		3162
15:00:00	1893	1886		**1890**		3779
16:00:00	1844	1850		**1847**		3694
17:00:00	1929	2091		**2010**		4020
18:00:00	1623	1640		**1632**		3263
19:00:00	1159	1245		**1202**		2404
20:00:00	1021	1098		**1060**		2119
21:00:00	645	576		**611**		1221
22:00:00	382	411		**397**		793
23:00:00	239	234		**237**		473
7am-7pm		19404		**19327**		38651
6am-10pm		23167		**23022**		46039
6am-12am		23812		**23656**		47305
12am-12am		24649		**24465**		48921
am Peak	7:00:00	7:00:00	7:00:00	**7:00:00**		
Peak Volume	1325	1772	1655	**1714**		
pm Peak	17:00:00	17:00:00	17:00:00	**17:00:00**		
Peak Volume	1929	2091	0	**2010**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2015 Adjusted Counts

Multi-Day Volume Report 057-0048 Tuesday, May 19, 2015 to Thursday, May 21, 2015						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2015-05-19**	**2015-05-20**	**2015-05-21**	**Workday**	**7 Day**	**Count**
00:00:00		124	132	**128**		256
01:00:00		70	81	**76**		151
02:00:00		67	73	**70**		140
03:00:00		60	73	**67**		133
04:00:00		126	125	**126**		251
05:00:00		379	370	**375**		749
06:00:00		866	846	**856**		1712
07:00:00		1701	1728	**1715**		3429
08:00:00		1769	1763	**1766**		3532
09:00:00		1345	1342	**1344**		2687
10:00:00		1324	1388	**1356**		2712
11:00:00		1433	1532	**1483**		2965
12:00:00		1677	1602	**1640**		3279
13:00:00		1561	1665	**1613**		3226
14:00:00		1651	1703	**1677**		3354
15:00:00		1944	2029	**1987**		3973
16:00:00		1832	2100	**1966**		3932
17:00:00	2015	1997		**2006**		4012
18:00:00	1651	1619		**1635**		3270
19:00:00	1318	1322		**1320**		2640
20:00:00	1022	1028		**1025**		2050
21:00:00	797	733		**765**		1530
22:00:00	379	427		**403**		806
23:00:00	221	229		**225**		450
7am-7pm		19853		**20188**		40371
6am-10pm		23802		**24154**		48303
6am-12am		24458		**24782**		49559
12am-12am		25284		**25624**		51239
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		1769	1763	**1766**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2015	1997		**2006**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2018 Adjusted Counts

Multi-Day Volume Report 057-0048 Monday, October 29, 2018 to Wednesdsay, October 31, 20						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2018-10-29**	**2018-10-30**	**2018-10-31**	**Workday**	**7 Day**	**Count**
00:00:00		122	138	**130**		260
01:00:00		76	101	**89**		177
02:00:00		55	73	**64**		128
03:00:00		66	72	**69**		138
04:00:00		116	122	**119**		238
05:00:00		447	419	**433**		866
06:00:00		987	989	**988**		1976
07:00:00		1914	1788	**1851**		3702
08:00:00		1750	1747	**1749**		3497
09:00:00		1303	1304	**1304**		2607
10:00:00		1345	1352	**1349**		2697
11:00:00		1492	1489	**1491**		2981
12:00:00		1626	1669	**1648**		3295
13:00:00		1620	1676	**1648**		3296
14:00:00		1729	1713	**1721**		3442
15:00:00		1992	2032	**2012**		4024
16:00:00	2056	1918		**1987**		3974
17:00:00	2172	2090		**2131**		4262
18:00:00	1731	1878		**1805**		3609
19:00:00	1293	1453		**1373**		2746
20:00:00	876	936		**906**		1812
21:00:00	635	710		**673**		1345
22:00:00	404	353		**379**		757
23:00:00	235	264		**250**		499
7am-7pm		20657		**20696**		41386
6am-10pm		24743		**24636**		49265
6am-12am		25360		**25265**		50521
12am-12am		26242		**26169**		52328
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1914	1788	**1851**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2172	2090		**2131**		

057-0048 SR 20/Marietta Hwy, between SR 20 and SR 140/Hickory Flat Hwy
2021 Adjusted Counts

Multi-Day Volume Report 057-0048 Tuesday, October 12, 2021 to Thursday, October 14, 2021						
Site Name	057-0048					
Site ID	0000057_0048					
Description	CST 107803 R					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-10-12**	**2021-10-13**	**2021-10-14**	**Workday**	**7 Day**	**Count**
00:00:00		98	131	**115**		229
01:00:00		66	67	**67**		133
02:00:00		71	48	**60**		119
03:00:00		67	66	**67**		133
04:00:00		153	144	**149**		297
05:00:00		405	457	**431**		862
06:00:00		1059	1034	**1047**		2093
07:00:00		1827	1948	**1888**		3775
08:00:00		1863	1996	**1930**		3859
09:00:00		1361	1374	**1368**		2735
10:00:00		1419	1474	**1447**		2893
11:00:00		1529	1564	**1547**		3093
12:00:00	1623	1895		**1759**		3518
13:00:00	1665	1838		**1752**		3503
14:00:00	1831	1803		**1817**		3634
15:00:00	2040	1955		**1998**		3995
16:00:00	2029	1966		**1998**		3995
17:00:00	2155	2305		**2230**		4460
18:00:00	1821	1780		**1801**		3601
19:00:00	1345	1335		**1340**		2680
20:00:00	962	1037		**1000**		1999
21:00:00	638	718		**678**		1356
22:00:00	407	414		**411**		821
23:00:00	247	227		**237**		474
7am-7pm		21541		**21535**		43061
6am-10pm		25690		**25600**		51189
6am-12am		26331		**26248**		52484
12am-12am		27191		**27137**		54257
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		1863	1996	**1930**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	2155	2305		**2230**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2011 Adjusted Counts

Multi-Day Volume Report 057-0105 Tuesday, May 10, 2011 to Thursday, May 12, 2011						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2011-05-10**	**2011-05-11**	**2011-05-12**	**Workday**	**7 Day**	**Count**
00:00:00		122	96	**109**		218
01:00:00		50	57	**54**		107
02:00:00		42	44	**43**		86
03:00:00		50	39	**45**		89
04:00:00		95	95	**95**		190
05:00:00		306	288	**297**		594
06:00:00		788	760	**774**		1548
07:00:00		1448	1412	**1430**		2860
08:00:00		1374	1354	**1364**		2728
09:00:00		1166	1111	**1139**		2277
10:00:00		1220	1187	**1204**		2407
11:00:00	1301	1388		**1345**		2689
12:00:00	1398	1408		**1403**		2806
13:00:00	1456	1435		**1446**		2891
14:00:00	1456	1458		**1457**		2914
15:00:00	1754	1607		**1681**		3361
16:00:00	1718	1642		**1680**		3360
17:00:00	1888	1790		**1839**		3678
18:00:00	1529	1417		**1473**		2946
19:00:00	1168	1203		**1186**		2371
20:00:00	940	879		**910**		1819
21:00:00	668	635		**652**		1303
22:00:00	365	382		**374**		747
23:00:00	207	226		**217**		433
7am-7pm		17353		**17461**		34917
6am-10pm		20858		**20983**		41958
6am-12am		21466		**21574**		43138
12am-12am		22131		**22217**		44422
am Peak		7:00:00	7:00:00	**7:00:00**		
Peak Volume		1448	1412	**1430**		
pm Peak	17:00:00	17:00:00		**17:00:00**		
Peak Volume	1888	1790		**1839**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2013 Adjusted Counts

Multi-Day Volume Report 057-0105 Tuesday, June 18, 2013 to Thursday, June 20, 2013						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2013-06-18**	**2013-06-19**	**2013-06-20**	**Workday**	**7 Day**	**Count**
00:00:00		125	140	**133**		265
01:00:00		75	72	**74**		147
02:00:00		51	42	**47**		93
03:00:00		41	55	**48**		96
04:00:00		92	94	**93**		186
05:00:00		328	326	**327**		654
06:00:00		755	757	**756**		1512
07:00:00		1208	1156	**1182**		2364
08:00:00		1193	1241	**1217**		2434
09:00:00		1226	1218	**1222**		2444
10:00:00		1288	1223	**1256**		2511
11:00:00		1384	1338	**1361**		2722
12:00:00		1549	1570	**1560**		3119
13:00:00		1382	1426	**1404**		2808
14:00:00		1434	1355	**1395**		2789
15:00:00		1518	1572	**1545**		3090
16:00:00		1678	1702	**1690**		3380
17:00:00		1755	1753	**1754**		3508
18:00:00		1538	1481	**1510**		3019
19:00:00		1178	1204	**1191**		2382
20:00:00		994	880	**937**		1874
21:00:00	597	731		**664**		1328
22:00:00	405	467		**436**		872
23:00:00	252	242		**247**		494
7am-7pm		17153		**17096**		34188
6am-10pm		20811		**20644**		41284
6am-12am		21520		**21327**		42650
12am-12am		22232		**22049**		44091
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1384	1338	**1361**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1755	1753	**1754**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2015 Adjusted Counts

Multi-Day Volume Report 057-0105 Monday, May 4, 2015 to Wednesday, May 6, 2015						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2015-05-04**	**2015-05-05**	**2015-05-06**	**Workday**	**7 Day**	**Count**
00:00:00		93	106	**100**		199
01:00:00		65	78	**72**		143
02:00:00		35	55	**45**		90
03:00:00		56	45	**51**		101
04:00:00		98	90	**94**		188
05:00:00		385	381	**383**		766
06:00:00		865	828	**847**		1693
07:00:00		1519	1447	**1483**		2966
08:00:00		1545	1555	**1550**		3100
09:00:00		1143	1170	**1157**		2313
10:00:00		1244	1172	**1208**		2416
11:00:00		1363	1361	**1362**		2724
12:00:00	1483	1440		**1462**		2923
13:00:00	1499	1554		**1527**		3053
14:00:00	1663	1479		**1571**		3142
15:00:00	1922	1815		**1869**		3737
16:00:00	1787	1754		**1771**		3541
17:00:00	1824	1810		**1817**		3634
18:00:00	1516	1563		**1540**		3079
19:00:00	1167	1208		**1188**		2375
20:00:00	900	875		**888**		1775
21:00:00	662	721		**692**		1383
22:00:00	400	413		**407**		813
23:00:00	207	266		**237**		473
7am-7pm		18229		**18317**		36628
6am-10pm		21898		**21932**		43854
6am-12am		22577		**22576**		45140
12am-12am		23309		**23321**		46627
am Peak		8:00:00	8:00:00	**8:00:00**		
Peak Volume		1545	1555	**1550**		
pm Peak	15:00:00	15:00:00		**15:00:00**		
Peak Volume	1922	1815		**1869**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2018 Adjusted Counts

Multi-Day Volume Report 057-0105 Monday, December 17, 2018 to Wednesday, December 19,						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Mon**	**Tue**	**Wed**	**Average**		**Total**
Time	**2018-12-17**	**2018-12-18**	**2018-12-19**	**Workday**	**7 Day**	**Count**
00:00:00		48	71	**60**		119
01:00:00		39	41	**40**		80
02:00:00		36	55	**46**		91
03:00:00		100	115	**108**		215
04:00:00		350	379	**365**		729
05:00:00		822	825	**824**		1647
06:00:00		1416	1338	**1377**		2754
07:00:00		1502	1440	**1471**		2942
08:00:00		1373	1331	**1352**		2704
09:00:00		1542	1373	**1458**		2915
10:00:00		1486	1465	**1476**		2951
11:00:00		1617	1608	**1613**		3225
12:00:00	1574	1726		**1650**		3300
13:00:00	1644	1702		**1673**		3346
14:00:00	1808	1714		**1761**		3522
15:00:00	1916	1831		**1874**		3747
16:00:00	1924	1777		**1851**		3701
17:00:00	1457	1502		**1480**		2959
18:00:00	1002	1065		**1034**		2067
19:00:00	752	745		**749**		1497
20:00:00	492	584		**538**		1076
21:00:00	339	312		**326**		651
22:00:00	173	178		**176**		351
23:00:00	76	95		**86**		171
7am-7pm		18837		**18693**		37379
6am-10pm		21894		**21683**		43357
6am-12am		22167		**21945**		43879
12am-12am		23562		**23388**		46760
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1617	1608	**1613**		
pm Peak	16:00:00	15:00:00		**15:00:00**		
Peak Volume	1924	1831		**1874**		

057-0105 SR 5 BUS/Marietta Hwy, north of School Dr
2021 Adjusted Counts

Multi-Day Volume Report 057-0105 Tuesday, June 22, 2021 to Thursday, June 24, 2021						
Site Name	057-0105					
Site ID	0000057_0105					
Description	SRT 0005BU L					
Lanes	Each Lane					
Bins	Total					
Time Period	1 hour					
Exclude data:	None					
Time	**Tue**	**Wed**	**Thur**	**Average**		**Total**
Time	**2021-06-22**	**2021-06-23**	**2021-06-24**	**Workday**	**7 Day**	**Count**
00:00:00		107	107	**107**		214
01:00:00		58	59	**59**		117
02:00:00		60	43	**52**		103
03:00:00		49	52	**51**		101
04:00:00		117	124	**121**		241
05:00:00		316	337	**327**		653
06:00:00		752	803	**778**		1555
07:00:00		1176	1212	**1194**		2388
08:00:00		1304	1187	**1246**		2491
09:00:00		1239	1216	**1228**		2455
10:00:00		1327	1189	**1258**		2516
11:00:00		1446	1387	**1417**		2833
12:00:00		1495	1476	**1486**		2971
13:00:00		1487	1554	**1521**		3041
14:00:00		1425	1497	**1461**		2922
15:00:00		1599	1552	**1576**		3151
16:00:00		1700	1667	**1684**		3367
17:00:00		1839	1829	**1834**		3668
18:00:00		1599	1665	**1632**		3264
19:00:00		1119	1213	**1166**		2332
20:00:00		1002	974	**988**		1976
21:00:00	710	749		**730**		1459
22:00:00	448	435		**442**		883
23:00:00	227	246		**237**		473
7am-7pm		17636		**17537**		35067
6am-10pm		21258		**21199**		42389
6am-12am		21939		**21878**		43745
12am-12am		22646		**22595**		45174
am Peak		11:00:00	11:00:00	**11:00:00**		
Peak Volume		1446	1387	**1417**		
pm Peak		17:00:00	17:00:00	**17:00:00**		
Peak Volume		1839	1829	**1834**		

APPENDIX G: GROWTH RATE CALCULATIONS

Growth Rates Based on Adjusted GDOT AADT

GDOT Count Station ID	Location	Adjusted GDOT AADT										Forecast		Compounded Growth Rate per Year	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Opening Year 2028	Design Year 2048	Year of Last Count to 2028	2028 to 2048
057-0003	Main St, south of Meadow Ln				24,034			26,225				33,528	48,135	2.49%	1.82%
057-0004	Main St, south of SR 92/Alabama Rd	24,339				30,870			23,718			26,363	26,449	1.18%	0.02%
057-0007	Main St, south of Barnesdale Terrace		15,918						16,685			17,836	20,392	0.74%	0.67%
057-0014	Holly Springs Pkwy, north of Rabbit Hill Rd		7,460			7,828			9,079			11,360	16,757	2.52%	1.96%
057-0016	Holly Springs Pkwy, south of Barrett Rd			8,488				12,524				22,614	42,794	6.09%	3.24%
057-0018	Marietta Hwy, just north of Goodwin Rd				17,736				17,121		17,517	16,943	15,878	-0.47%	-0.32%
057-0022	Marietta Hwy, north of Bells Ferry Rd			12,020				11,946				11,761	11,391	-0.16%	-0.16%
057-0048	SR 20/Marietta Hwy, west of SR 140/Hickory Flat Hwy		24,465		25,624			26,169			27,137	29,356	35,592	1.13%	0.97%
057-0105	SR 5 Bus/Marietta Hwy, north of School Dr		22,049		23,321			23,388			22,595	23,380	24,342	0.49%	0.20%
057-0028	SR 5 Bus/Riverstone Pkwy, just north of Juniper St	18,199		19,630				19,265				20,888	23,673	0.81%	0.63%
057-0030	Ball Ground Hwy, just north of Roland Dr	9,541							12,542		13,943	17,058	26,524	2.92%	2.23%
	Total											231,087	291,927		1.18%

Growth Rates Based on U.S. Census Bureau's Annual Estimates of the Resident Population

County	Annual Estimates of the Resident Population[1]											Forecast		Compounded Growth Rate per Year	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Opening Year 2028	Design Year 2048	2020 to 2028	2028 to 2048
Cherokee	215,226	217,769	220,690	224,372	230,239	235,424	241,929	247,944	254,277	259,475	265,274	304,110	406,889	1.72%	1.47%

[1]*Annual Resident Population Estimates for States and Counties: April 1, 2010 to July 1, 2019; April 1, 2020; and July 1, 2020,* U.S. Census Bureau

Growth Rates Based on Governor's Office of Planning and Budget's County Residential Projections

County	County Residental Population Projections[1]			Compounded Growth Rate per Year	
	2021	2028	2048	2021 to 2028	2028 to 2048
Cherokee	262,055	279,250	326,785	0.91%	0.79%

[1]*Georgia Residential Population Projections by County: Georgia Counties, 2020-2065*, Governor's Office of Planning and Budget

Growth Rates Based on ARC's Series 16 Population Forecast Data

County	Series 16 Population Forecast[1]		Compounded Growth Rate per Year
	2015	2050	2015 to 2050
Cherokee	235,899	374,821	1.33%

[1]*Series 16 Forecast 2015/2050*, Atlanta Regional Commission

APPENDIX H: NO-BUILD CAPACITY ANALYSIS REPORTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	17	0	13	4	0	3	6	21	794	1	26	17
Future Volume (vph)	17	0	13	4	0	3	6	21	794	1	26	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.94			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00			0.95
Satd. Flow (prot)		1805	1615		1740			1796	4847			1783
Flt Permitted		1.00	1.00		1.00			0.15	1.00			0.33
Satd. Flow (perm)		1900	1615		1790			281	4847			612
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	18	0	13	4	0	3	7	22	819	1	28	18
RTOR Reduction (vph)	0	0	13	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	18	0	0	0	0	0	29	820	0	0	46
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	7%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		2.9	2.9		2.9			57.6	55.4			59.2
Effective Green, g (s)		2.9	2.9		2.9			57.6	55.4			59.2
Actuated g/C Ratio		0.04	0.04		0.04			0.72	0.69			0.74
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		68	58		64			243	3356			496
v/s Ratio Prot								0.00	0.17			c0.00
v/s Ratio Perm		c0.01	0.00		0.00			0.08				0.07
v/c Ratio		0.26	0.01		0.00			0.12	0.24			0.09
Uniform Delay, d1		37.5	37.2		37.2			4.0	4.6			2.8
Progression Factor		1.00	1.00		1.00			1.00	1.00			1.43
Incremental Delay, d2		1.5	0.0		0.0			0.1	0.2			0.0
Delay (s)		39.0	37.2		37.2			4.1	4.7			4.0
Level of Service		D	D		D			A	A			A
Approach Delay (s)		38.3			37.2				4.7			
Approach LOS		D			D				A			

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1393	6
Future Volume (vph)	1393	6
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3374	1599
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3374	1599
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1436	6
RTOR Reduction (vph)	0	2
Lane Group Flow (vph)	1436	4
Heavy Vehicles (%)	7%	1%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	56.2	56.2
Effective Green, g (s)	56.2	56.2
Actuated g/C Ratio	0.70	0.70
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2370	1123
v/s Ratio Prot	c0.43	
v/s Ratio Perm		0.00
v/c Ratio	0.61	0.00
Uniform Delay, d1	6.2	3.5
Progression Factor	2.08	1.00
Incremental Delay, d2	0.4	0.0
Delay (s)	13.2	3.6
Level of Service	B	A
Approach Delay (s)	12.9	
Approach LOS	B	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	98	1836	579	341	1519	200	404	242	194	322	522
Future Volume (vph)	2	98	1836	579	341	1519	200	404	242	194	322	522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Peak-hour factor, PHF	0.92	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)	2	105	1974	623	367	1633	215	434	260	209	346	561
RTOR Reduction (vph)	0	0	0	173	0	0	67	0	0	155	0	0
Lane Group Flow (vph)	0	107	1974	450	367	1633	148	434	260	54	346	561
Heavy Vehicles (%)	2%	2%	22%	9%	0%	13%	0%	5%	1%	1%	0%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		3	8		7	4
Permitted Phases				6			2			8		
Actuated Green, G (s)		7.4	70.8	70.8	16.5	80.9	80.9	19.0	29.4	29.4	12.3	22.4
Effective Green, g (s)		7.4	70.8	70.8	16.5	80.9	80.9	19.0	29.4	29.4	12.3	22.4
Actuated g/C Ratio		0.05	0.44	0.44	0.10	0.51	0.51	0.12	0.18	0.18	0.08	0.14
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0	2.5	3.0	3.0	2.5	3.0
Lane Grp Cap (vph)		158	1881	655	361	2320	816	396	656	293	269	500
v/s Ratio Prot		0.03	c0.46		c0.10	c0.36		c0.13	c0.07		0.10	c0.16
v/s Ratio Perm				0.30			0.09			0.03		
v/c Ratio		0.68	1.05	0.69	1.02	0.70	0.18	1.10	0.40	0.18	1.29	1.12
Uniform Delay, d1		75.1	44.6	35.7	71.8	30.4	21.5	70.5	57.5	55.2	73.8	68.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.96	1.29	1.05	0.96
Incremental Delay, d2		10.0	35.1	5.8	51.6	1.8	0.5	73.4	0.4	0.3	152.8	77.2
Delay (s)		85.1	79.7	41.5	123.4	32.2	22.0	145.0	55.4	71.7	230.5	143.6
Level of Service		F	E	D	F	C	C	F	E	E	F	F
Approach Delay (s)			71.1			46.3			102.2			166.5
Approach LOS			E			D			F			F

Intersection Summary			
HCM 2000 Control Delay	82.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	184
Future Volume (vph)	184
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	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	0.93
Adj. Flow (vph)	198
RTOR Reduction (vph)	163
Lane Group Flow (vph)	35
Heavy Vehicles (%)	2%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	22.4
Effective Green, g (s)	22.4
Actuated g/C Ratio	0.14
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	221
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.16
Uniform Delay, d1	60.5
Progression Factor	1.97
Incremental Delay, d2	0.3
Delay (s)	119.6
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	21	17	14	15	511	997	47
Future Volume (vph)	21	17	14	15	511	997	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1737			1787	3505	3486	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1737			1787	3505	3486	
Peak-hour factor, PHF	0.97	0.97	0.92	0.97	0.97	0.97	0.97
Adj. Flow (vph)	22	18	15	15	527	1028	48
RTOR Reduction (vph)	17	0	0	0	0	3	0
Lane Group Flow (vph)	23	0	0	30	527	1073	0
Heavy Vehicles (%)	0%	0%	2%	0%	3%	3%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	4.0			2.9	64.1	55.5	
Effective Green, g (s)	4.0			2.9	64.1	55.5	
Actuated g/C Ratio	0.05			0.04	0.80	0.69	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	86			64	2808	2418	
v/s Ratio Prot	c0.01			c0.02	0.15	c0.31	
v/s Ratio Perm							
v/c Ratio	0.27			0.47	0.19	0.44	
Uniform Delay, d1	36.6			37.8	1.9	5.4	
Progression Factor	1.00			0.84	2.00	0.44	
Incremental Delay, d2	0.7			2.2	0.1	0.4	
Delay (s)	37.3			33.9	3.9	2.8	
Level of Service	D			C	A	A	
Approach Delay (s)	37.3				5.5	2.8	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	5	63	1	40	4	496	29	34	976	8
Future Volume (vph)	8	0	5	63	1	40	4	496	29	34	976	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1748			1811	1615	1805	1866		1805	1845	1615
Flt Permitted		0.77			0.72	1.00	0.13	1.00		0.40	1.00	1.00
Satd. Flow (perm)		1392			1368	1615	251	1866		757	1845	1615
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)	8	0	5	66	1	42	4	522	31	36	1027	8
RTOR Reduction (vph)	0	12	0	0	0	38	0	2	0	0	0	3
Lane Group Flow (vph)	0	1	0	0	67	4	4	551	0	36	1027	5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		7.2			7.6	7.6	54.2	51.0		54.2	53.2	53.2
Effective Green, g (s)		7.2			7.6	7.6	54.2	51.0		54.2	53.2	53.2
Actuated g/C Ratio		0.09			0.09	0.09	0.68	0.64		0.68	0.67	0.67
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		125			129	153	189	1189		554	1226	1073
v/s Ratio Prot							0.00	0.30		c0.00	c0.56	
v/s Ratio Perm		0.00			c0.05	0.00	0.01			0.04		0.00
v/c Ratio		0.01			0.52	0.03	0.02	0.46		0.06	0.84	0.00
Uniform Delay, d1		33.2			34.5	32.8	9.6	7.5		4.5	10.1	4.5
Progression Factor		1.00			1.00	1.00	1.39	2.20		1.31	1.77	1.00
Incremental Delay, d2		0.0			1.7	0.0	0.0	1.3		0.0	5.2	0.0
Delay (s)		33.2			36.2	32.9	13.4	17.7		5.9	23.1	4.5
Level of Service		C			D	C	B	B		A	C	A
Approach Delay (s)		33.2			34.9			17.7			22.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	317	216	328	701	44
Future Volume (vph)	58	317	216	328	701	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1670		1805	1900	1850	
Flt Permitted	0.99		0.19	1.00	1.00	
Satd. Flow (perm)	1670		352	1900	1850	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	334	227	345	738	46
RTOR Reduction (vph)	154	0	0	0	1	0
Lane Group Flow (vph)	241	0	227	345	783	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	28.2		120.7	120.7	94.9	
Effective Green, g (s)	28.2		120.7	120.7	94.9	
Actuated g/C Ratio	0.18		0.75	0.75	0.59	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	294		452	1433	1097	
v/s Ratio Prot	c0.14		c0.06	0.18	c0.42	
v/s Ratio Perm			0.31			
v/c Ratio	0.82		0.50	0.24	0.71	
Uniform Delay, d1	63.5		17.0	5.9	23.0	
Progression Factor	1.00		2.91	1.77	0.59	
Incremental Delay, d2	16.2		0.4	0.4	3.7	
Delay (s)	79.7		49.8	10.8	17.3	
Level of Service	E		D	B	B	
Approach Delay (s)	79.7			26.3	17.3	
Approach LOS	E			C	B	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	87.9%	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 (vph)	8	13	26	45	6	14	8	326	52	22	674	7
Future Volume (vph)	8	13	26	45	6	14	8	326	52	22	674	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1744			1819	1615	1805	1845		1805	1878	
Flt Permitted		0.93			0.70	1.00	0.36	1.00		0.52	1.00	
Satd. Flow (perm)		1641			1330	1615	688	1845		992	1878	
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)	9	14	28	48	6	15	9	351	56	24	725	8
RTOR Reduction (vph)	0	26	0	0	0	14	0	2	0	0	0	0
Lane Group Flow (vph)	0	25	0	0	54	1	9	405	0	24	733	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		10.3			10.3	10.3	138.4	138.4		138.4	138.4	
Effective Green, g (s)		10.3			10.3	10.3	138.4	138.4		138.4	138.4	
Actuated g/C Ratio		0.06			0.06	0.06	0.87	0.87		0.87	0.87	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		105			85	103	595	1595		858	1624	
v/s Ratio Prot								0.22			c0.39	
v/s Ratio Perm		0.02			c0.04	0.00	0.01			0.02		
v/c Ratio		0.24			0.64	0.01	0.02	0.25		0.03	0.45	
Uniform Delay, d1		71.1			73.0	70.1	1.5	1.9		1.5	2.4	
Progression Factor		1.00			1.00	1.00	1.18	1.27		0.46	0.30	
Incremental Delay, d2		1.2			14.5	0.0	0.0	0.4		0.1	0.8	
Delay (s)		72.3			87.5	70.1	1.8	2.7		0.7	1.6	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		72.3			83.7			2.7			1.5	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	344	24	90	412	44	52	231	70	94	526	167
Future Volume (vph)	1	344	24	90	412	44	52	231	70	94	526	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1864		1805	1856		1805	1806		1805	1900	1615
Flt Permitted		1.00		0.20	1.00		0.29	1.00		0.45	1.00	1.00
Satd. Flow (perm)		1862		384	1856		542	1806		850	1900	1615
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)	1	366	26	96	438	47	55	246	74	100	560	178
RTOR Reduction (vph)	0	2	0	0	3	0	0	6	0	0	0	73
Lane Group Flow (vph)	0	391	0	96	482	0	55	314	0	100	560	105
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		38.2		56.6	56.6		78.0	73.0		85.8	76.9	76.9
Effective Green, g (s)		38.2		56.6	56.6		78.0	73.0		85.8	76.9	76.9
Actuated g/C Ratio		0.24		0.35	0.35		0.49	0.46		0.54	0.48	0.48
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		444		223	656		303	823		508	913	776
v/s Ratio Prot				0.03	c0.26		0.01	0.17		c0.01	c0.29	
v/s Ratio Perm		c0.21		0.13			0.08			0.09		0.07
v/c Ratio		0.88		0.43	0.74		0.18	0.38		0.20	0.61	0.14
Uniform Delay, d1		58.7		38.9	45.2		24.1	28.6		19.1	30.6	23.1
Progression Factor		1.00		1.00	1.00		1.03	0.90		1.00	1.00	1.00
Incremental Delay, d2		18.3		1.4	4.3		0.1	1.3		0.1	3.1	0.4
Delay (s)		77.0		40.3	49.5		24.9	27.1		19.2	33.7	23.4
Level of Service		E		D	D		C	C		B	C	C
Approach Delay (s)		77.0			48.0			26.8			29.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	475	316	71	222	494	507
Future Volume (vph)	475	316	71	222	494	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	1538
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	1538
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	586	390	88	274	610	626
RTOR Reduction (vph)	0	270	0	0	0	306
Lane Group Flow (vph)	586	120	88	274	610	320
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	25.1	25.1	6.0	62.6	51.1	51.1
Effective Green, g (s)	25.1	25.1	6.0	62.6	51.1	51.1
Actuated g/C Ratio	0.25	0.25	0.06	0.63	0.51	0.51
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	821	397	210	1189	970	785
v/s Ratio Prot	c0.18	0.08	c0.03	0.14	c0.32	0.21
v/s Ratio Perm						
v/c Ratio	0.71	0.30	0.42	0.23	0.63	0.41
Uniform Delay, d1	34.2	30.3	45.3	8.2	17.6	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.9	0.6	0.5	1.9	0.7
Delay (s)	37.9	31.3	45.9	8.6	19.5	15.8
Level of Service	D	C	D	A	B	B
Approach Delay (s)	35.3			17.7	17.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
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 (vph)	9	22	12	613	23	427	10	172	335	738	531	3
Future Volume (vph)	9	22	12	613	23	427	10	172	335	738	531	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1800		1715	1725	1599	1805	1810	1583	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1800		1715	1725	1599	1805	1810	1583	3467	1826	
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)	10	24	13	659	25	459	11	185	360	794	571	3
RTOR Reduction (vph)	0	12	0	0	0	356	0	0	263	0	0	0
Lane Group Flow (vph)	10	25	0	343	341	103	11	185	97	794	574	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		29.1	29.1	29.1	2.6	35.2	35.2	34.2	66.2	
Effective Green, g (s)	6.5	6.5		29.1	29.1	29.1	2.6	35.2	35.2	34.2	66.2	
Actuated g/C Ratio	0.05	0.05		0.22	0.22	0.22	0.02	0.27	0.27	0.26	0.51	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	90	90		383	386	357	36	490	428	912	929	
v/s Ratio Prot	0.01	c0.01		c0.20	0.20		0.01	0.10		c0.23	c0.31	
v/s Ratio Perm						0.06			0.06			
v/c Ratio	0.11	0.27		0.90	0.88	0.29	0.31	0.38	0.23	0.87	0.62	
Uniform Delay, d1	59.0	59.5		49.0	48.8	41.9	62.8	38.5	36.8	45.8	22.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.57	
Incremental Delay, d2	0.2	0.6		22.5	20.5	0.4	1.8	1.0	0.6	5.0	1.6	
Delay (s)	59.2	60.1		71.4	69.3	42.3	64.6	39.5	37.4	48.1	14.6	
Level of Service	E	E		E	E	D	E	D	D	D	B	
Approach Delay (s)		59.9			59.1			38.6			34.0	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
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 (vph)	24	1	68	50	3	32	34	545	29	8	1154	4
Future Volume (vph)	24	1	68	50	3	32	34	545	29	8	1154	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1619		1805	1638		1805	1792	1615	1805	1792	1615
Flt Permitted	0.73	1.00		0.71	1.00		0.07	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1391	1619		1344	1638		127	1792	1615	765	1792	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	26	1	75	55	3	35	37	599	32	9	1268	4
RTOR Reduction (vph)	0	70	0	0	32	0	0	0	7	0	0	1
Lane Group Flow (vph)	26	6	0	55	6	0	37	599	25	9	1268	3
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	9.5	9.5		9.5	9.5		102.2	100.9	100.9	101.9	98.0	98.0
Effective Green, g (s)	9.5	9.5		9.5	9.5		102.2	100.9	100.9	101.9	98.0	98.0
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.79	0.78	0.78	0.78	0.75	0.75
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	101	118		98	119		154	1390	1253	607	1350	1217
v/s Ratio Prot		0.00			0.00		c0.01	c0.33		0.00	c0.71	
v/s Ratio Perm	0.02			c0.04			0.18		0.02	0.01		0.00
v/c Ratio	0.26	0.05		0.56	0.05		0.24	0.43	0.02	0.01	0.94	0.00
Uniform Delay, d1	56.9	56.1		58.2	56.0		23.6	4.9	3.3	3.3	13.5	3.9
Progression Factor	1.00	1.00		1.00	1.00		0.96	0.56	1.00	0.68	0.83	1.00
Incremental Delay, d2	1.4	0.2		7.2	0.2		0.3	0.8	0.0	0.0	8.5	0.0
Delay (s)	58.3	56.3		65.4	56.2		22.9	3.6	3.3	2.3	19.8	3.9
Level of Service	E	E		E	E		C	A	A	A	B	A
Approach Delay (s)		56.8			61.6			4.6			19.6	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.8%	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 (vph)	34	3	18	194	2	382	10	584	89	187	982	19
Future Volume (vph)	34	3	18	194	2	382	10	584	89	187	982	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1760			1810	1568	1805	1845	1615	1787	1789	
Flt Permitted		0.59			0.72	1.00	0.15	1.00	1.00	0.30	1.00	
Satd. Flow (perm)		1062			1361	1568	278	1845	1615	559	1789	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	37	3	20	213	2	420	11	642	98	205	1079	21
RTOR Reduction (vph)	0	15	0	0	0	296	0	0	26	0	1	0
Lane Group Flow (vph)	0	45	0	0	215	124	11	642	72	205	1099	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	6%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		25.1			25.1	25.1	78.1	78.1	78.1	88.3	93.4	
Effective Green, g (s)		25.1			25.1	25.1	78.1	78.1	78.1	88.3	93.4	
Actuated g/C Ratio		0.19			0.19	0.19	0.60	0.60	0.60	0.68	0.72	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		205			262	302	167	1108	970	476	1285	
v/s Ratio Prot								0.35		0.03	c0.61	
v/s Ratio Perm		0.04			c0.16	0.08	0.04		0.04	0.26		
v/c Ratio		0.22			0.82	0.41	0.07	0.58	0.07	0.43	0.86	
Uniform Delay, d1		44.2			50.3	46.0	10.8	15.9	10.8	10.3	13.4	
Progression Factor		1.00			1.00	1.00	1.37	1.50	1.94	0.78	0.44	
Incremental Delay, d2		0.5			18.3	0.9	0.7	2.1	0.1	0.4	4.4	
Delay (s)		44.8			68.5	46.9	15.5	26.0	21.2	8.3	10.2	
Level of Service		D			E	D	B	C	C	A	B	
Approach Delay (s)		44.8			54.2			25.2			9.9	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	127	38	962	1061	63
Future Volume (vph)	143	127	38	962	1061	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	1792	1769	
Flt Permitted	0.95	1.00	0.09	1.00	1.00	
Satd. Flow (perm)	1805	1615	163	1792	1769	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	149	132	40	1002	1105	66
RTOR Reduction (vph)	0	117	0	0	1	0
Lane Group Flow (vph)	149	15	40	1002	1170	0
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	14.9	14.9	97.7	103.6	93.3	
Effective Green, g (s)	14.9	14.9	97.7	103.6	93.3	
Actuated g/C Ratio	0.11	0.11	0.75	0.80	0.72	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	206	185	178	1428	1269	
v/s Ratio Prot	c0.08		0.01	c0.56	c0.66	
v/s Ratio Perm		0.01	0.16			
v/c Ratio	0.72	0.08	0.22	0.70	0.92	
Uniform Delay, d1	55.6	51.4	20.3	6.1	15.3	
Progression Factor	1.00	1.00	0.61	0.66	0.72	
Incremental Delay, d2	10.3	0.1	0.2	2.3	8.2	
Delay (s)	65.9	51.5	12.7	6.4	19.3	
Level of Service	E	D	B	A	B	
Approach Delay (s)	59.1			6.6	19.3	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	77.2%	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 (vph)	162	57	684	62	80	27	869	234	2	36	378	567
Future Volume (vph)	162	57	684	62	80	27	869	234	2	36	378	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1881	1524	1805	1828		3367	1879		1805	1900	1599
Flt Permitted	0.65	1.00	1.00	0.72	1.00		0.95	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1192	1881	1524	1365	1828		3367	1879		1118	1900	1599
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)	169	59	712	65	83	28	905	244	2	38	394	591
RTOR Reduction (vph)	0	0	594	0	10	0	0	0	0	0	0	217
Lane Group Flow (vph)	169	59	119	65	101	0	905	246	0	38	394	374
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	23.7	17.1	17.1	23.9	14.4		45.1	76.5		81.1	36.4	36.4
Effective Green, g (s)	23.7	17.1	17.1	23.9	14.4		45.1	76.5		81.1	36.4	36.4
Actuated g/C Ratio	0.18	0.13	0.13	0.18	0.11		0.35	0.59		0.62	0.28	0.28
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	256	247	200	273	202		1168	1105		721	532	447
v/s Ratio Prot	c0.05	0.03		0.01	0.06		c0.27	0.13		0.00	0.21	
v/s Ratio Perm	0.07		c0.08	0.03						0.03		c0.23
v/c Ratio	0.66	0.24	0.59	0.24	0.50		0.77	0.22		0.05	0.74	0.84
Uniform Delay, d1	48.4	50.6	53.2	44.9	54.4		37.9	12.7		9.4	42.5	44.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.88	0.74		0.30	0.86	0.72
Incremental Delay, d2	4.9	0.2	3.1	0.2	0.7		3.7	0.3		0.0	6.3	13.4
Delay (s)	53.2	50.8	56.3	45.1	55.1		36.9	9.8		2.9	42.9	45.2
Level of Service	D	D	E	D	E		D	A		A	D	D
Approach Delay (s)		55.4			51.4			31.1			42.7	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	82.5%	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 (vph)	42	0	40	0	0	0	64	359	0	2	941	79
Future Volume (vph)	42	0	40	0	0	0	64	359	0	2	941	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1599				1787	3471		1805	3610	1615
Flt Permitted	0.95		1.00				0.25	1.00		0.52	1.00	1.00
Satd. Flow (perm)	1805		1599				474	3471		982	3610	1615
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)	47	0	44	0	0	0	71	399	0	2	1046	88
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	47	0	3	0	0	0	71	399	0	2	1046	67
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	7.8		7.8				104.6	110.6		98.5	98.5	98.5
Effective Green, g (s)	7.8		7.8				104.6	110.6		98.5	98.5	98.5
Actuated g/C Ratio	0.06		0.06				0.80	0.85		0.76	0.76	0.76
Clearance Time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	108		95				442	2953		744	2735	1223
v/s Ratio Prot	c0.03		0.00				0.01	c0.11			c0.29	
v/s Ratio Perm							0.12			0.00		0.04
v/c Ratio	0.44		0.03				0.16	0.14		0.00	0.38	0.05
Uniform Delay, d1	59.0		57.5				2.9	1.6		3.8	5.4	4.0
Progression Factor	1.00		1.00				0.71	0.71		1.00	1.00	1.00
Incremental Delay, d2	2.8		0.1				0.2	0.1		0.0	0.4	0.1
Delay (s)	61.8		57.6				2.2	1.2		3.8	5.8	4.1
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		59.8			0.0			1.4			5.6	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	29	0	95	48	1	15	21	372	8	2	7	879
Future Volume (vph)	29	0	95	48	1	15	21	372	8	2	7	879
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1811	1615	1805	3438	1615		1798	1900
Flt Permitted		0.72	1.00		0.71	1.00	0.18	1.00	1.00		0.51	1.00
Satd. Flow (perm)		1369	1615		1341	1615	344	3438	1615		956	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88
Adj. Flow (vph)	33	0	108	55	1	17	24	423	9	2	8	999
RTOR Reduction (vph)	0	0	96	0	0	15	0	0	3	0	0	0
Lane Group Flow (vph)	0	33	12	0	56	2	24	423	6	0	10	999
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	2%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		7.2	7.2		7.2	7.2	46.8	46.8	46.8		46.8	46.8
Effective Green, g (s)		7.2	7.2		7.2	7.2	46.8	46.8	46.8		46.8	46.8
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.70	0.70	0.70		0.70	0.70
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		147	173		144	173	240	2401	1128		667	1327
v/s Ratio Prot								0.12				c0.53
v/s Ratio Perm		0.02	0.01		c0.04	0.00	0.07		0.00		0.01	
v/c Ratio		0.22	0.07		0.39	0.01	0.10	0.18	0.01		0.01	0.75
Uniform Delay, d1		27.3	26.9		27.9	26.7	3.3	3.5	3.1		3.1	6.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.2		1.7	0.0	0.4	0.1	0.0		0.0	2.9
Delay (s)		28.1	27.0		29.6	26.7	3.7	3.5	3.1		3.1	9.4
Level of Service		C	C		C	C	A	A	A		A	A
Approach Delay (s)		27.3			28.9			3.5				9.2
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	10
RTOR Reduction (vph)	3
Lane Group Flow (vph)	7
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	46.8
Effective Green, g (s)	46.8
Actuated g/C Ratio	0.70
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1128
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	3.1
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Future Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00	1.00	0.40	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	344	1881	1583	736	1851	
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)	163	251	103	385	143	340	25	198	232	343	487	93
RTOR Reduction (vph)	0	0	87	0	0	220	0	0	186	0	6	0
Lane Group Flow (vph)	163	251	16	385	143	120	25	198	46	343	574	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	17.4	17.4	17.4	39.5	39.5	39.5	25.7	22.1	22.1	37.1	28.0	
Effective Green, g (s)	17.4	17.4	17.4	39.5	39.5	39.5	25.7	22.1	22.1	37.1	28.0	
Actuated g/C Ratio	0.16	0.16	0.16	0.35	0.35	0.35	0.23	0.20	0.20	0.33	0.25	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	280	295	251	637	671	533	126	371	312	328	463	
v/s Ratio Prot	0.09	c0.13		c0.21	0.08		0.01	0.11		c0.09	c0.31	
v/s Ratio Perm			0.01			0.08	0.04		0.03	0.26		
v/c Ratio	0.58	0.85	0.06	0.60	0.21	0.23	0.20	0.53	0.15	1.05	1.24	
Uniform Delay, d1	43.8	45.9	40.3	29.7	25.3	25.4	35.1	40.2	37.1	36.6	41.9	
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	2.5	20.1	0.1	4.2	0.7	1.0	0.3	3.5	0.6	62.1	125.2	
Delay (s)	46.4	66.0	40.3	33.9	26.0	26.4	35.4	43.7	37.7	98.7	167.1	
Level of Service	D	E	D	C	C	C	D	D	D	F	F	
Approach Delay (s)		54.7			29.7			40.2			141.7	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	23.5
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	3	30	77	12	51	22	570	53	51	743	23
Future Volume (vph)	20	3	30	77	12	51	22	570	53	51	743	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1722			1821	1615	1805	3321		1787	1810	1615
Flt Permitted		0.83			0.71	1.00	0.25	1.00		0.36	1.00	1.00
Satd. Flow (perm)		1457			1355	1615	468	3321		685	1810	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	23	3	34	88	14	58	25	648	60	58	844	26
RTOR Reduction (vph)	0	30	0	0	0	50	0	6	0	0	0	9
Lane Group Flow (vph)	0	30	0	0	102	8	25	702	0	58	844	17
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	8%	0%	1%	5%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		7.9			8.8	8.8	42.1	32.2		35.4	42.1	42.1
Effective Green, g (s)		7.9			8.8	8.8	42.1	32.2		35.4	42.1	42.1
Actuated g/C Ratio		0.12			0.14	0.14	0.66	0.51		0.56	0.66	0.66
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		180			187	223	309	1678		436	1196	1067
v/s Ratio Prot								0.21		0.01	c0.47	
v/s Ratio Perm		0.02			c0.08	0.00	0.05			0.07		0.01
v/c Ratio		0.17			0.55	0.04	0.08	0.42		0.13	0.71	0.02
Uniform Delay, d1		25.0			25.6	23.8	3.9	9.9		6.5	6.9	3.7
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			1.7	0.0	0.2	0.2		0.1	2.1	0.0
Delay (s)		25.1			27.3	23.8	4.0	10.1		6.6	8.9	3.7
Level of Service		C			C	C	A	B		A	A	A
Approach Delay (s)		25.1			26.0			9.9			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	20.4
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 (vph)	48	2	44	66	3	70	62	547	32	28	707	10
Future Volume (vph)	48	2	44	66	3	70	62	547	32	28	707	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1725	1615	1805	1900	1599	1805	3312	1615	1787	3438	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.26	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1715	1725	1615	1805	1900	1599	485	3312	1615	749	3438	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	55	2	50	75	3	80	70	622	36	32	803	11
RTOR Reduction (vph)	0	0	46	0	0	70	0	0	21	0	0	7
Lane Group Flow (vph)	29	28	4	75	3	10	70	622	15	32	803	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	9%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	5.2	5.2	5.2	9.0	9.0	9.0	36.3	31.3	31.3	33.3	29.8	29.8
Effective Green, g (s)	5.2	5.2	5.2	9.0	9.0	9.0	36.3	31.3	31.3	33.3	29.8	29.8
Actuated g/C Ratio	0.07	0.07	0.07	0.12	0.12	0.12	0.49	0.42	0.42	0.45	0.40	0.40
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	120	121	113	219	231	194	327	1400	683	386	1384	650
v/s Ratio Prot	c0.02	0.02		c0.04	0.00		c0.01	0.19		0.00	c0.23	
v/s Ratio Perm			0.00			0.01	0.09		0.01	0.03		0.00
v/c Ratio	0.24	0.23	0.03	0.34	0.01	0.05	0.21	0.44	0.02	0.08	0.58	0.01
Uniform Delay, d1	32.5	32.5	32.1	29.8	28.6	28.7	10.5	15.2	12.4	11.4	17.2	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	0.1	0.7	0.0	0.1	0.2	0.5	0.0	0.1	0.4	0.0
Delay (s)	33.3	33.2	32.1	30.5	28.6	28.8	10.8	15.6	12.5	11.5	17.6	13.2
Level of Service	C	C	C	C	C	C	B	B	B	B	B	B
Approach Delay (s)		32.7			29.6			15.0			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	324	0	152	0	0	0	0	381	328	246	700	0
Future Volume (vph)	324	0	152	0	0	0	0	381	328	246	700	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1568					3406	1538	1805	3438	
Flt Permitted	0.95		1.00					1.00	1.00	0.51	1.00	
Satd. Flow (perm)	3433		1568					3406	1538	968	3438	
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)	352	0	165	0	0	0	0	414	357	267	761	0
RTOR Reduction (vph)	0	0	128	0	0	0	0	0	235	0	0	0
Lane Group Flow (vph)	352	0	37	0	0	0	0	414	122	267	761	0
Heavy Vehicles (%)	2%	0%	3%	2%	2%	2%	0%	6%	5%	0%	5%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	15.5		15.5					23.6	23.6	35.4	41.0	
Effective Green, g (s)	15.5		15.5					23.6	23.6	35.4	41.0	
Actuated g/C Ratio	0.22		0.22					0.34	0.34	0.51	0.59	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	767		350					1159	523	636	2034	
v/s Ratio Prot								0.12		0.07	c0.22	
v/s Ratio Perm	c0.10		0.02						0.08	c0.14		
v/c Ratio	0.46		0.11					0.36	0.23	0.42	0.37	
Uniform Delay, d1	23.3		21.4					17.2	16.4	9.7	7.4	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1		0.3					0.6	0.7	0.6	0.4	
Delay (s)	24.3		21.7					17.8	17.1	10.3	7.8	
Level of Service	C		C					B	B	B	A	
Approach Delay (s)		23.5			0.0			17.4			8.5	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	18.4
Intersection Capacity Utilization	87.1%	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 (vph)	0	0	0	327	0	255	150	555	0	0	619	717
Future Volume (vph)	0	0	0	327	0	255	150	555	0	0	619	717
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1752		1553	1752	3471			3539	1568
Flt Permitted				0.95		1.00	0.35	1.00			1.00	1.00
Satd. Flow (perm)				1752		1553	639	3471			3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.25	0.25	0.96	0.96
Adj. Flow (vph)	0	0	0	341	0	266	156	578	0	0	645	747
RTOR Reduction (vph)	0	0	0	0	0	195	0	0	0	0	0	424
Lane Group Flow (vph)	0	0	0	341	0	71	156	578	0	0	645	323
Heavy Vehicles (%)	2%	2%	2%	3%	0%	4%	3%	4%	0%	0%	2%	3%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				26.0		26.0	52.0	58.0			42.1	42.1
Effective Green, g (s)				26.0		26.0	52.0	58.0			42.1	42.1
Actuated g/C Ratio				0.27		0.27	0.53	0.59			0.43	0.43
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				467		414	453	2064			1528	677
v/s Ratio Prot							0.03	c0.17			0.18	
v/s Ratio Perm				c0.19		0.05	0.15					c0.21
v/c Ratio				0.73		0.17	0.34	0.28			0.42	0.48
Uniform Delay, d1				32.6		27.5	11.9	9.6			19.2	19.8
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				6.2		0.3	0.5	0.2			0.5	1.3
Delay (s)				38.7		27.7	12.4	9.8			19.7	21.1
Level of Service				D		C	B	A			B	C
Approach Delay (s)		0.0			33.9			10.3			20.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	19.5
Intersection Capacity Utilization	87.1%	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 (vph)	107	33	465	70	16	17	225	559	26	14	801	116
Future Volume (vph)	107	33	465	70	16	17	225	559	26	14	801	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	1787	3438	1583	1805	3505	1615
Flt Permitted	0.44	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	835	1881	1599	1396	1881	1615	1787	3438	1583	1805	3505	1615
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)	111	34	484	73	17	18	234	582	27	15	834	121
RTOR Reduction (vph)	0	0	202	0	0	16	0	0	12	0	0	64
Lane Group Flow (vph)	111	34	282	73	17	2	234	582	15	15	834	57
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	23.8	23.8	23.8	8.8	8.8	8.8	9.1	51.7	51.7	2.0	44.6	44.6
Effective Green, g (s)	23.8	23.8	23.8	8.8	8.8	8.8	9.1	51.7	51.7	2.0	44.6	44.6
Actuated g/C Ratio	0.25	0.25	0.25	0.09	0.09	0.09	0.10	0.54	0.54	0.02	0.47	0.47
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	297	468	398	128	173	148	170	1861	856	37	1636	754
v/s Ratio Prot	0.04	0.02			0.01		c0.13	0.17		0.01	c0.24	
v/s Ratio Perm	0.06		c0.18	0.05		0.00			0.01			0.03
v/c Ratio	0.37	0.07	0.71	0.57	0.10	0.01	1.38	0.31	0.02	0.41	0.51	0.07
Uniform Delay, d1	28.9	27.4	32.7	41.5	39.7	39.4	43.2	12.1	10.1	46.2	17.8	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	5.3	5.0	0.2	0.0	201.9	0.4	0.0	19.2	1.1	0.2
Delay (s)	29.7	27.5	38.0	46.5	39.9	39.4	245.1	12.5	10.2	65.4	18.9	14.2
Level of Service	C	C	D	D	D	D	F	B	B	E	B	B
Approach Delay (s)		35.9			44.3			77.0			19.1	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	24.0
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 (vph)	134	7	185	41	12	26	108	534	41	16	705	84
Future Volume (vph)	134	7	185	41	12	26	108	534	41	16	705	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1712			1770		1787	1792	1615	1805	1845	1615
Flt Permitted		0.85			0.63		0.14	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)		1481			1143		258	1792	1615	763	1845	1615
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)	143	7	197	44	13	28	115	568	44	17	750	89
RTOR Reduction (vph)	0	47	0	0	18	0	0	0	19	0	0	47
Lane Group Flow (vph)	0	300	0	0	67	0	115	568	25	17	750	42
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		19.0			19.0		63.7	55.0	55.0	48.7	45.5	45.5
Effective Green, g (s)		19.0			19.0		63.7	55.0	55.0	48.7	45.5	45.5
Actuated g/C Ratio		0.20			0.20		0.66	0.57	0.57	0.51	0.47	0.47
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		292			225		309	1024	923	420	872	763
v/s Ratio Prot							c0.03	c0.32		0.00	c0.41	
v/s Ratio Perm		c0.20			0.06		0.21		0.02	0.02		0.03
v/c Ratio		1.03			0.30		0.37	0.55	0.03	0.04	0.86	0.06
Uniform Delay, d1		38.6			32.9		13.5	12.9	9.0	12.0	22.5	13.7
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		60.3			0.8		0.8	2.2	0.1	0.0	10.8	0.1
Delay (s)		98.9			33.7		14.3	15.1	9.0	12.0	33.3	13.9
Level of Service		F			C		B	B	A	B	C	B
Approach Delay (s)		98.9			33.7			14.6			30.9	
Approach LOS		F			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	219	402	139	163	181	222	317	155	208	264	13
Future Volume (vph)	23	219	402	139	163	181	222	317	155	208	264	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1787	1881	1568	1770	1881	1568	1752	1887	
Flt Permitted	0.64	1.00	1.00	0.43	1.00	1.00	0.37	1.00	1.00	0.29	1.00	
Satd. Flow (perm)	1224	1900	1615	816	1881	1568	687	1881	1568	529	1887	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	25	241	442	153	179	199	244	348	170	229	290	14
RTOR Reduction (vph)	0	0	202	0	0	125	0	0	112	0	2	0
Lane Group Flow (vph)	25	241	240	153	179	74	244	348	58	229	302	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	3%	2%	1%	3%	3%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	32.5	29.6	29.6	46.9	37.1	37.1	31.2	22.8	22.8	31.1	22.8	
Effective Green, g (s)	32.5	29.6	29.6	46.9	37.1	37.1	31.2	22.8	22.8	31.1	22.8	
Actuated g/C Ratio	0.33	0.30	0.30	0.47	0.37	0.37	0.31	0.23	0.23	0.31	0.23	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	417	565	480	486	702	585	307	431	359	267	432	
v/s Ratio Prot	0.00	0.13		c0.03	0.10		0.07	0.18		c0.07	0.16	
v/s Ratio Perm	0.02		c0.15	0.12		0.05	0.18		0.04	c0.20		
v/c Ratio	0.06	0.43	0.50	0.31	0.25	0.13	0.79	0.81	0.16	0.86	0.70	
Uniform Delay, d1	22.8	28.1	28.8	15.8	21.6	20.5	29.4	36.2	30.7	29.8	35.2	
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	0.1	1.5	2.3	0.4	0.5	0.3	13.2	10.6	0.2	23.2	5.1	
Delay (s)	22.9	29.5	31.1	16.2	22.1	20.8	42.6	46.8	30.9	53.0	40.2	
Level of Service	C	C	C	B	C	C	D	D	C	D	D	
Approach Delay (s)		30.3			19.9			41.9			45.7	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	28.3
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	118	20	16	103	64	7	300	0	58	319	146
Future Volume (vph)	385	118	20	16	103	64	7	300	0	58	319	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810			1803		1805	1776		1805	1810	1553
Flt Permitted		0.66			0.94		0.46	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1248			1699		873	1776		927	1810	1553
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)	405	124	21	17	108	67	7	316	0	61	336	154
RTOR Reduction (vph)	0	2	0	0	18	0	0	0	0	0	0	105
Lane Group Flow (vph)	0	548	0	0	174	0	7	316	0	61	336	49
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	7%	0%	0%	5%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.7			28.7		19.5	19.5		19.5	19.5	19.5
Effective Green, g (s)		28.7			28.7		19.5	19.5		19.5	19.5	19.5
Actuated g/C Ratio		0.47			0.47		0.32	0.32		0.32	0.32	0.32
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		590			803		280	570		297	581	498
v/s Ratio Prot								0.18			c0.19	
v/s Ratio Perm		c0.44			0.10		0.01			0.07		0.03
v/c Ratio		0.93			0.22		0.03	0.55		0.21	0.58	0.10
Uniform Delay, d1		15.0			9.4		14.1	17.0		15.0	17.2	14.4
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		21.4			0.2		0.1	2.0		0.7	2.2	0.2
Delay (s)		36.4			9.6		14.2	19.0		15.7	19.4	14.6
Level of Service		D			A		B	B		B	B	B
Approach Delay (s)		36.4			9.6			18.9			17.7	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	86.6%	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 (vph)	986	2	2	12	0	12	0	742	7	8	509	719
Future Volume (vph)	986	2	2	12	0	12	0	742	7	8	509	719
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1441	1446		1805	0			3435		1805	1810	1417
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1441	1446		1805	0			3435		285	1810	1417
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)	1049	2	2	13	0	13	0	789	7	9	541	765
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	234
Lane Group Flow (vph)	524	529	0	13	0	0	0	796	0	9	541	531
Heavy Vehicles (%)	19%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	14%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	58.1	58.1		2.5	0.0			26.7		27.7	33.7	33.7
Effective Green, g (s)	58.1	58.1		2.5	0.0			26.7		27.7	33.7	33.7
Actuated g/C Ratio	0.52	0.52		0.02	0.00			0.24		0.25	0.30	0.30
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	747	750		40	0			818		84	544	426
v/s Ratio Prot	0.36	c0.37		c0.01				0.23		0.00	0.30	
v/s Ratio Perm										0.03		c0.38
v/c Ratio	0.70	0.71		0.33	0.00			0.97		0.11	0.99	1.25
Uniform Delay, d1	20.4	20.5		53.9	56.0			42.3		33.7	39.1	39.1
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	5.1		4.7	0.0			25.6		0.6	37.3	129.7
Delay (s)	25.4	25.5		58.6	56.0			67.9		34.3	76.3	168.9
Level of Service	C	C		E	E			E		C	E	F
Approach Delay (s)		25.5			57.3			67.9			129.9	
Approach LOS		C			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	79.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	56	1	449	13	582	3	1058	679	393	698	48
Future Volume (vph)	57	56	1	449	13	582	3	1058	679	393	698	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1815			1542	1583	1805	3574	1357	1736	3406	1615
Flt Permitted		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1815			1542	1583	1805	3574	1357	1736	3406	1615
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)	61	60	1	478	14	619	3	1126	722	418	743	51
RTOR Reduction (vph)	0	0	0	0	0	236	0	0	222	0	0	25
Lane Group Flow (vph)	0	122	0	0	492	383	3	1126	500	418	743	26
Heavy Vehicles (%)	3%	1%	0%	18%	0%	2%	0%	1%	19%	4%	6%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		18.3			53.5	53.5	1.3	58.4	58.4	51.3	108.2	108.2
Effective Green, g (s)		18.3			53.5	53.5	1.3	58.4	58.4	51.3	108.2	108.2
Actuated g/C Ratio		0.09			0.26	0.26	0.01	0.28	0.28	0.25	0.52	0.52
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		159			396	406	11	1002	380	427	1769	838
v/s Ratio Prot		c0.07			c0.32		0.00	0.32		c0.24	0.22	
v/s Ratio Perm						0.24			c0.37			0.02
v/c Ratio		0.77			1.24	0.94	0.27	1.12	1.32	0.98	0.42	0.03
Uniform Delay, d1		92.9			77.4	75.9	103.0	75.0	75.0	78.0	30.8	24.5
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		19.6			128.8	30.5	13.0	68.9	160.1	37.6	0.4	0.0
Delay (s)		112.5			206.2	106.4	116.0	143.8	235.0	115.5	31.2	24.5
Level of Service		F			F	F	F	F	F	F	C	C
Approach Delay (s)		112.5			150.6			179.3			60.0	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	136.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	208.3	Sum of lost time (s)	27.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	54	18	3	3	362	1307	28	8	1067	194
Future Volume (vph)	61	0	54	18	3	3	362	1307	28	8	1067	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.94			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1734			1801		1805	3505	1615	1805	3374	1615
Flt Permitted		0.82			0.68		0.13	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)		1459			1275		255	3505	1615	281	3374	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	67	0	59	20	3	3	398	1436	31	9	1173	213
RTOR Reduction (vph)	0	93	0	0	3	0	0	0	9	0	0	58
Lane Group Flow (vph)	0	33	0	0	23	0	398	1436	22	9	1173	155
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		10.0			10.0		73.3	72.6	72.6	73.7	48.5	48.5
Effective Green, g (s)		10.0			10.0		73.3	72.6	72.6	73.7	48.5	48.5
Actuated g/C Ratio		0.10			0.10		0.73	0.72	0.72	0.73	0.48	0.48
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)		144			126		565	2519	1160	221	1620	775
v/s Ratio Prot							c0.17	0.41		0.00	c0.35	
v/s Ratio Perm		c0.02			0.02		0.34		0.01	0.03		0.10
v/c Ratio		0.23			0.18		0.70	0.57	0.02	0.04	0.72	0.20
Uniform Delay, d1		42.0			41.8		18.9	6.8	4.0	4.8	20.9	15.1
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.7			0.7		4.0	0.5	0.0	0.1	2.0	0.3
Delay (s)		43.7			42.5		22.9	7.3	4.1	4.9	22.9	15.4
Level of Service		D			D		C	A	A	A	C	B
Approach Delay (s)		43.7			42.5			10.5			21.7	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	17.7
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 (vph)	97	223	596	115	183	181	493	774	104	252	558	62
Future Volume (vph)	97	223	596	115	183	181	493	774	104	252	558	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
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)	1805	1900	1495	1805	1900	1583	1752	3541		1787	3556	
Flt Permitted	0.55	1.00	1.00	0.42	1.00	1.00	0.15	1.00		0.20	1.00	
Satd. Flow (perm)	1047	1900	1495	790	1900	1583	277	3541		377	3556	
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)	103	237	634	122	195	193	524	823	111	268	594	66
RTOR Reduction (vph)	0	0	239	0	0	144	0	7	0	0	6	0
Lane Group Flow (vph)	103	237	395	122	195	49	524	927	0	268	654	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%	3%	0%	1%	1%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	44.3	33.5	33.5	48.0	35.2	35.2	75.1	50.7		52.0	35.0	
Effective Green, g (s)	44.3	33.5	33.5	48.0	35.2	35.2	75.1	50.7		52.0	35.0	
Actuated g/C Ratio	0.32	0.24	0.24	0.34	0.25	0.25	0.54	0.36		0.37	0.25	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	389	454	357	363	477	398	498	1282		311	889	
v/s Ratio Prot	0.02	0.12		c0.03	0.10		c0.25	0.26		0.10	0.18	
v/s Ratio Perm	0.06		c0.26	0.08		0.03	c0.31			0.22		
v/c Ratio	0.26	0.52	1.11	0.34	0.41	0.12	1.05	0.72		0.86	0.74	
Uniform Delay, d1	34.8	46.3	53.2	32.9	43.7	40.5	38.5	38.6		33.5	48.2	
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	0.4	1.4	79.6	0.6	0.8	0.2	54.8	2.9		20.9	4.4	
Delay (s)	35.1	47.7	132.9	33.5	44.5	40.7	93.3	41.5		54.4	52.6	
Level of Service	D	D	F	C	D	D	F	D		D	D	
Approach Delay (s)		101.8			40.4			60.1			53.2	
Approach LOS		F			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.3
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	0	58	16	0	16	50	989	13	13	798	27
Future Volume (vph)	44	0	58	16	0	16	50	989	13	13	798	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615			1729		1805	3603		1805	3558	
Flt Permitted	0.73	1.00			0.81		0.26	1.00		0.22	1.00	
Satd. Flow (perm)	1394	1615			1433		502	3603		421	3558	
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)	49	0	64	18	0	18	56	1099	14	14	887	30
RTOR Reduction (vph)	0	57	0	0	32	0	0	0	0	0	2	0
Lane Group Flow (vph)	49	7	0	0	4	0	56	1113	0	14	915	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	7.0	7.0			7.0		42.8	39.4		38.6	37.7	
Effective Green, g (s)	7.0	7.0			7.0		42.8	39.4		38.6	37.7	
Actuated g/C Ratio	0.10	0.10			0.10		0.64	0.59		0.58	0.57	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	146	169			150		388	2128		262	2011	
v/s Ratio Prot		0.00					c0.01	c0.31		0.00	0.26	
v/s Ratio Perm	c0.04				0.00		0.09			0.03		
v/c Ratio	0.34	0.04			0.03		0.14	0.52		0.05	0.45	
Uniform Delay, d1	27.7	26.8			26.8		4.7	8.1		6.2	8.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.1			0.1		0.2	0.4		0.1	0.3	
Delay (s)	29.1	26.9			26.9		4.9	8.5		6.2	8.8	
Level of Service	C	C			C		A	A		A	A	
Approach Delay (s)		27.9			26.9			8.4			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	19.4
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	0	1	12	0	14	13	992	44	10	21	825
Future Volume (vph)	7	0	1	12	0	14	13	992	44	10	21	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1615		1805	1615		1805	5154			1793	3610
Flt Permitted	1.00	1.00		1.00	1.00		0.32	1.00			0.24	1.00
Satd. Flow (perm)	1900	1615		1900	1615		609	5154			453	3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93
Adj. Flow (vph)	8	0	1	13	0	15	14	1067	47	11	23	887
RTOR Reduction (vph)	0	1	0	0	15	0	0	2	0	0	0	0
Lane Group Flow (vph)	8	0	0	13	0	0	14	1112	0	0	34	887
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	3.2	3.2		3.2	3.2		72.9	72.9			76.0	83.1
Effective Green, g (s)	3.2	3.2		3.2	3.2		72.9	72.9			76.0	83.1
Actuated g/C Ratio	0.03	0.03		0.03	0.03		0.73	0.73			0.76	0.83
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	60	51		60	51		443	3757			385	2999
v/s Ratio Prot		0.00			0.00			0.22			0.00	
v/s Ratio Perm	0.00			c0.01			0.02				0.06	c0.25
v/c Ratio	0.13	0.00		0.22	0.01		0.03	0.30			0.09	0.30
Uniform Delay, d1	47.1	46.9		47.2	46.9		3.8	4.7			2.9	1.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			0.20	0.23
Incremental Delay, d2	0.4	0.0		0.7	0.0		0.1	0.2			0.0	0.2
Delay (s)	47.4	46.9		47.8	46.9		3.9	4.9			0.6	0.7
Level of Service	D	D		D	D		A	A			A	A
Approach Delay (s)		47.4			47.3			4.9				0.7
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	11
RTOR Reduction (vph)	2
Lane Group Flow (vph)	9
Heavy Vehicles (%)	0%
Turn Type	custom
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	83.1
Effective Green, g (s)	83.1
Actuated g/C Ratio	0.83
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1342
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	1.4
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	1.4
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	530	121	266	757	745	339
Future Volume (vph)	530	121	266	757	745	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1615	1805	5187	5187	1509
Flt Permitted	0.95	1.00	0.24	1.00	1.00	1.00
Satd. Flow (perm)	3303	1615	452	5187	5187	1509
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	602	138	302	860	847	385
RTOR Reduction (vph)	0	108	0	0	0	221
Lane Group Flow (vph)	602	30	302	860	847	164
Heavy Vehicles (%)	6%	0%	0%	0%	0%	7%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	22.0	22.0	63.6	63.6	42.6	42.6
Effective Green, g (s)	22.0	22.0	63.6	63.6	42.6	42.6
Actuated g/C Ratio	0.22	0.22	0.64	0.64	0.43	0.43
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	726	355	462	3298	2209	642
v/s Ratio Prot	c0.18		c0.08	0.17	0.16	
v/s Ratio Perm		0.02	c0.33			0.11
v/c Ratio	0.83	0.09	0.65	0.26	0.38	0.26
Uniform Delay, d1	37.2	31.0	9.7	7.9	19.7	18.5
Progression Factor	1.00	1.00	2.00	1.65	0.30	0.68
Incremental Delay, d2	7.4	0.0	3.6	0.2	0.5	0.9
Delay (s)	44.6	31.0	23.0	13.3	6.3	13.6
Level of Service	D	C	C	B	A	B
Approach Delay (s)	42.1			15.8	8.6	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	12	27	1	47	1239	1056	42
Future Volume (vph)	12	27	1	47	1239	1056	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.90			1.00	1.00	0.99	
Flt Protected	0.99			0.95	1.00	1.00	
Satd. Flow (prot)	3251			1804	4893	6088	
Flt Permitted	0.99			0.18	1.00	1.00	
Satd. Flow (perm)	3251			341	4893	6088	
Peak-hour factor, PHF	0.90	0.90	0.92	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	30	1	52	1377	1173	47
RTOR Reduction (vph)	29	0	0	0	0	3	0
Lane Group Flow (vph)	14	0	0	53	1377	1217	0
Heavy Vehicles (%)	0%	0%	2%	0%	6%	7%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	4.8			80.9	80.9	69.0	
Effective Green, g (s)	4.8			80.9	80.9	69.0	
Actuated g/C Ratio	0.05			0.81	0.81	0.69	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	156			338	3958	4200	
v/s Ratio Prot	c0.00			0.01	c0.28	0.20	
v/s Ratio Perm				0.12			
v/c Ratio	0.09			0.16	0.35	0.29	
Uniform Delay, d1	45.5			2.3	2.5	6.0	
Progression Factor	1.00			0.16	0.18	0.47	
Incremental Delay, d2	0.1			0.1	0.2	0.2	
Delay (s)	45.6			0.4	0.7	3.0	
Level of Service	D			A	A	A	
Approach Delay (s)	45.6				0.7	3.0	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	388	123	217	1034	975	648
Future Volume (vph)	388	123	217	1034	975	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	3467	1615	374	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	441	140	247	1175	1108	736
RTOR Reduction (vph)	0	116	0	0	0	344
Lane Group Flow (vph)	441	24	247	1175	1108	392
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	17.1	17.1	68.6	68.6	53.2	53.2
Effective Green, g (s)	17.1	17.1	68.6	68.6	53.2	53.2
Actuated g/C Ratio	0.17	0.17	0.69	0.69	0.53	0.53
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	592	276	412	3356	2579	834
v/s Ratio Prot	c0.13		c0.07	0.24	0.23	
v/s Ratio Perm		0.01	c0.35			0.25
v/c Ratio	0.74	0.09	0.60	0.35	0.43	0.47
Uniform Delay, d1	39.4	34.9	7.1	6.5	14.2	14.6
Progression Factor	1.00	1.00	1.58	0.21	1.16	8.46
Incremental Delay, d2	4.4	0.0	2.3	0.3	0.4	1.6
Delay (s)	43.8	34.9	13.5	1.6	17.0	125.1
Level of Service	D	C	B	A	B	F
Approach Delay (s)	41.7			3.7	60.1	
Approach LOS	D			A	E	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
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	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	104	3	64	52	1	59	2	71	1181	168	36	121
Future Volume (vph)	104	3	64	52	1	59	2	71	1181	168	36	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.95		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1751		1805	1900	1568		1787	4954			1783
Flt Permitted		0.81		0.63	1.00	1.00		0.11	1.00			0.12
Satd. Flow (perm)		1467		1206	1900	1568		203	4954			219
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91
Adj. Flow (vph)	114	3	70	57	1	65	2	78	1298	185	39	133
RTOR Reduction (vph)	0	24	0	0	0	54	0	0	14	0	0	0
Lane Group Flow (vph)	0	163	0	57	1	11	0	80	1469	0	0	172
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	2%	1%	3%	1%	2%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		17.1		17.1	17.1	17.1		59.6	54.3			66.6
Effective Green, g (s)		17.1		17.1	17.1	17.1		59.6	54.3			66.6
Actuated g/C Ratio		0.17		0.17	0.17	0.17		0.60	0.54			0.67
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		250		206	324	268		204	2690			283
v/s Ratio Prot					0.00			0.02	0.30			c0.05
v/s Ratio Perm		c0.11		0.05		0.01		0.21				0.35
v/c Ratio		0.65		0.28	0.00	0.04		0.39	0.55			0.61
Uniform Delay, d1		38.7		36.1	34.4	34.6		9.5	14.8			9.4
Progression Factor		1.00		1.00	1.00	1.00		1.13	0.93			0.80
Incremental Delay, d2		6.6		0.3	0.0	0.0		0.4	0.8			1.6
Delay (s)		45.3		36.3	34.4	34.6		11.2	14.5			9.1
Level of Service		D		D	C	C		B	B			A
Approach Delay (s)		45.3			35.4				14.3			
Approach LOS		D			D				B			

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1505	22
Future Volume (vph)	1505	22
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	4715	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	4715	1615
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	1654	24
RTOR Reduction (vph)	0	10
Lane Group Flow (vph)	1654	14
Heavy Vehicles (%)	10%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	57.8	57.8
Effective Green, g (s)	57.8	57.8
Actuated g/C Ratio	0.58	0.58
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2725	933
v/s Ratio Prot	c0.35	
v/s Ratio Perm		0.01
v/c Ratio	0.61	0.01
Uniform Delay, d1	13.7	9.0
Progression Factor	1.25	1.00
Incremental Delay, d2	0.6	0.0
Delay (s)	17.8	9.0
Level of Service	B	A
Approach Delay (s)	16.8	
Approach LOS	B	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	0	431	0	0	0	0	453	927	454	1253	0
Future Volume (vph)	72	0	431	0	0	0	0	453	927	454	1253	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	1656	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.34	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	597	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	82	0	490	0	0	0	0	515	1053	516	1424	0
RTOR Reduction (vph)	0	0	93	0	0	0	0	0	428	0	0	0
Lane Group Flow (vph)	82	0	397	0	0	0	0	515	625	516	1424	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Effective Green, g (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Actuated g/C Ratio	0.24		0.24					0.38	0.38	0.63	0.63	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	433		379					1316	600	562	2096	
v/s Ratio Prot								0.15		c0.16	0.43	
v/s Ratio Perm	0.05		c0.25						c0.40	0.42		
v/c Ratio	0.19		1.05					0.39	1.04	0.92	0.68	
Uniform Delay, d1	30.3		38.0					22.4	30.9	11.7	11.8	
Progression Factor	1.00		1.00					1.54	3.11	1.77	1.32	
Incremental Delay, d2	0.2		58.8					0.8	45.9	11.3	0.9	
Delay (s)	30.4		96.8					35.4	141.9	32.1	16.5	
Level of Service	C		F					D	F	C	B	
Approach Delay (s)		87.3			0.0			106.9			20.6	
Approach LOS		F			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	867	0	435	206	319	0	0	840	26
Future Volume (vph)	0	0	0	867	0	435	206	319	0	0	840	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.16	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	293	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	963	0	483	229	354	0	0	933	29
RTOR Reduction (vph)	0	0	0	0	0	347	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	963	0	136	229	354	0	0	933	12
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				28.1		28.1	59.5	59.5			40.6	40.6
Effective Green, g (s)				28.1		28.1	59.5	59.5			40.6	40.6
Actuated g/C Ratio				0.28		0.28	0.60	0.60			0.41	0.41
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		432	338	2105			1344	655
v/s Ratio Prot							c0.08	0.10			0.28	
v/s Ratio Perm				c0.29		0.09	c0.33					0.01
v/c Ratio				1.05		0.31	0.68	0.17			0.69	0.02
Uniform Delay, d1				36.0		28.4	14.1	9.1			24.6	17.8
Progression Factor				1.00		1.00	3.14	0.73			1.00	1.00
Incremental Delay, d2				43.0		0.4	4.0	0.2			3.0	0.1
Delay (s)				79.0		28.8	48.1	6.8			27.5	17.8
Level of Service				E		C	D	A			C	B
Approach Delay (s)		0.0			62.2			23.0			27.2	
Approach LOS		A			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	3	45	96	6	20	123	461	170	22	725	28
Future Volume (vph)	10	3	45	96	6	20	123	461	170	22	725	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1755	1615	1665	1683	1615	1787	3406	1615	1787	3438	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.30	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1715	1755	1615	1665	1683	1615	557	3406	1615	885	3438	1615
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)	11	3	48	103	6	22	132	496	183	24	780	30
RTOR Reduction (vph)	0	0	47	0	0	21	0	0	63	0	0	12
Lane Group Flow (vph)	7	7	1	55	54	1	132	496	120	24	780	18
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	1%	6%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	3.1	3.1	3.1	6.9	6.9	6.9	73.5	66.6	66.6	63.9	61.8	61.8
Effective Green, g (s)	3.1	3.1	3.1	6.9	6.9	6.9	73.5	66.6	66.6	63.9	61.8	61.8
Actuated g/C Ratio	0.03	0.03	0.03	0.07	0.07	0.07	0.72	0.65	0.65	0.63	0.61	0.61
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	52	53	49	112	114	109	485	2228	1056	574	2087	980
v/s Ratio Prot	c0.00	0.00		c0.03	0.03		c0.02	0.15		0.00	c0.23	
v/s Ratio Perm			0.00			0.00	0.18		0.07	0.03		0.01
v/c Ratio	0.13	0.13	0.03	0.49	0.47	0.01	0.27	0.22	0.11	0.04	0.37	0.02
Uniform Delay, d1	48.0	48.0	47.9	45.8	45.7	44.3	5.0	7.1	6.6	7.2	10.2	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.8	0.2	1.2	1.1	0.0	0.1	0.2	0.2	0.0	0.5	0.0
Delay (s)	48.9	48.9	48.1	47.0	46.8	44.3	5.1	7.4	6.8	7.2	10.7	8.0
Level of Service	D	D	D	D	D	D	A	A	A	A	B	A
Approach Delay (s)		48.3			46.5			6.9			10.5	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	101.8	Sum of lost time (s)	23.1
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2	45	32	1	36	51	416	24	28	698	20
Future Volume (vph)	20	2	45	32	1	36	51	416	24	28	698	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1817	1615	1805	1900	1599		1764	1615		1745	1599
Flt Permitted		0.78	1.00	0.82	1.00	1.00		0.87	1.00		0.97	1.00
Satd. Flow (perm)		1486	1615	1551	1900	1599		1537	1615		1699	1599
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)	22	2	50	36	1	40	57	462	27	31	776	22
RTOR Reduction (vph)	0	0	46	0	0	37	0	0	7	0	0	6
Lane Group Flow (vph)	0	24	4	36	1	3	0	519	20	0	807	16
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	8%	0%	0%	9%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		4.9	4.9	4.9	4.9	4.9		50.5	50.5		50.5	50.5
Effective Green, g (s)		4.9	4.9	4.9	4.9	4.9		50.5	50.5		50.5	50.5
Actuated g/C Ratio		0.07	0.07	0.07	0.07	0.07		0.75	0.75		0.75	0.75
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		108	117	112	138	116		1151	1210		1272	1198
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.02	0.00	c0.02		0.00		0.34	0.01		c0.47	0.01
v/c Ratio		0.22	0.03	0.32	0.01	0.03		0.45	0.02		0.63	0.01
Uniform Delay, d1		29.5	29.0	29.7	29.0	29.0		3.2	2.1		4.0	2.1
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.1	1.7	0.0	0.1		1.3	0.0		2.4	0.0
Delay (s)		30.5	29.2	31.3	29.0	29.1		4.5	2.2		6.5	2.2
Level of Service		C	C	C	C	C		A	A		A	A
Approach Delay (s)		29.6			30.2			4.4			6.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	71	0	31	12	0	17	8	58	1502	8	7	7
Future Volume (vph)	71	0	31	12	0	17	8	58	1502	8	7	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.92			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1770	1553		1715			1805	5132			1805
Flt Permitted		0.74	1.00		0.83			0.19	1.00			0.14
Satd. Flow (perm)		1373	1553		1453			359	5132			264
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	74	0	32	12	0	18	9	60	1565	8	8	7
RTOR Reduction (vph)	0	0	29	0	28	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	74	3	0	3	0	0	69	1573	0	0	15
Heavy Vehicles (%)	2%	0%	4%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		7.6	7.6		7.6			57.4	52.7			50.0
Effective Green, g (s)		7.6	7.6		7.6			57.4	52.7			50.0
Actuated g/C Ratio		0.09	0.09		0.09			0.72	0.66			0.62
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		130	147		138			342	3380			184
v/s Ratio Prot								c0.01	c0.31			0.00
v/s Ratio Perm		c0.05	0.00		0.00			0.13				0.05
v/c Ratio		0.57	0.02		0.02			0.20	0.47			0.08
Uniform Delay, d1		34.6	32.8		32.8			4.6	6.7			5.8
Progression Factor		1.00	1.00		1.00			1.00	1.00			0.74
Incremental Delay, d2		4.6	0.0		0.0			0.1	0.5			0.1
Delay (s)		39.2	32.9		32.9			4.8	7.2			4.3
Level of Service		D	C		C			A	A			A
Approach Delay (s)		37.3			32.9				7.1			
Approach LOS		D			C				A			

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1080	28
Future Volume (vph)	1080	28
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1615
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1125	29
RTOR Reduction (vph)	0	11
Lane Group Flow (vph)	1125	18
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	49.0	49.0
Effective Green, g (s)	49.0	49.0
Actuated g/C Ratio	0.61	0.61
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2167	989
v/s Ratio Prot	c0.32	
v/s Ratio Perm		0.01
v/c Ratio	0.52	0.02
Uniform Delay, d1	8.8	6.1
Progression Factor	0.58	1.00
Incremental Delay, d2	0.6	0.0
Delay (s)	5.7	6.1
Level of Service	A	A
Approach Delay (s)	5.7	
Approach LOS	A	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	17	134	1586	557	208	1720	360	1	565	549	482	4
Future Volume (vph)	17	134	1586	557	208	1720	360	1	565	549	482	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.95	1.00	
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
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)	18	138	1635	574	214	1773	371	1	582	566	497	4
RTOR Reduction (vph)	0	0	0	206	0	0	105	0	0	0	152	0
Lane Group Flow (vph)	0	156	1635	368	214	1773	266	0	583	566	345	0
Heavy Vehicles (%)	0%	2%	2%	2%	3%	2%	1%	0%	1%	1%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	1	1	6		5	2		3	3	8		7
Permitted Phases				6			2				8	
Actuated Green, G (s)		12.1	67.8	67.8	14.5	71.2	71.2		24.0	32.4	32.4	
Effective Green, g (s)		12.1	67.8	67.8	14.5	71.2	71.2		24.0	32.4	32.4	
Actuated g/C Ratio		0.08	0.42	0.42	0.09	0.45	0.45		0.15	0.20	0.20	
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0		2.5	3.0	3.0	
Lane Grp Cap (vph)		260	2154	670	308	2262	711		520	723	323	
v/s Ratio Prot		0.05	c0.32		0.06	c0.35			c0.17	0.16		
v/s Ratio Perm				0.23			0.17				c0.22	
v/c Ratio		0.60	0.76	0.55	0.69	0.78	0.37		1.12	0.78	1.07	
Uniform Delay, d1		71.6	39.2	34.6	70.6	37.8	29.6		68.0	60.5	63.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.04	1.00	0.98	
Incremental Delay, d2		3.1	2.6	3.2	6.1	2.8	1.5		75.9	5.2	68.0	
Delay (s)		74.7	41.7	37.9	76.7	40.6	31.1		146.8	65.5	130.8	
Level of Service		E	D	D	E	D	C		F	E	F	
Approach Delay (s)			43.0			42.4				114.0		
Approach LOS			D			D				F		

Intersection Summary			
HCM 2000 Control Delay	72.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	302	356	182
Future Volume (vph)	302	356	182
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.7	7.6	7.6
Lane Util. Factor	0.97	0.95	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3502	3539	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3502	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	311	367	188
RTOR Reduction (vph)	0	0	162
Lane Group Flow (vph)	315	367	26
Heavy Vehicles (%)	0%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Actuated Green, G (s)	14.3	22.4	22.4
Effective Green, g (s)	14.3	22.4	22.4
Actuated g/C Ratio	0.09	0.14	0.14
Clearance Time (s)	7.7	7.6	7.6
Vehicle Extension (s)	2.5	3.0	3.0
Lane Grp Cap (vph)	312	495	221
v/s Ratio Prot	0.09	0.10	
v/s Ratio Perm			0.02
v/c Ratio	1.01	0.74	0.12
Uniform Delay, d1	72.8	66.0	60.2
Progression Factor	0.94	0.99	5.97
Incremental Delay, d2	51.7	5.5	0.2
Delay (s)	120.5	71.2	359.7
Level of Service	F	E	F
Approach Delay (s)		151.4	
Approach LOS		F	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	69	62	53	63	931	729	56
Future Volume (vph)	69	62	53	63	931	729	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1733			1805	3574	3538	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1733			1805	3574	3538	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	71	64	55	65	960	752	58
RTOR Reduction (vph)	43	0	0	0	0	6	0
Lane Group Flow (vph)	92	0	0	120	960	804	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	8.6			7.3	59.5	46.5	
Effective Green, g (s)	8.6			7.3	59.5	46.5	
Actuated g/C Ratio	0.11			0.09	0.74	0.58	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	186			164	2658	2056	
v/s Ratio Prot	c0.05			c0.07	0.27	c0.23	
v/s Ratio Perm							
v/c Ratio	0.50			0.73	0.36	0.39	
Uniform Delay, d1	33.7			35.4	3.6	9.1	
Progression Factor	1.00			0.81	2.03	0.61	
Incremental Delay, d2	0.9			10.9	0.3	0.5	
Delay (s)	34.6			39.5	7.6	6.1	
Level of Service	C			D	A	A	
Approach Delay (s)	34.6				11.1	6.1	
Approach LOS	C				B	A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1	9	39	3	71	16	900	82	37	737	2
Future Volume (vph)	13	1	9	39	3	71	16	900	82	37	737	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750			1816	1583	1805	1859		1805	1881	1615
Flt Permitted		0.80			0.72	1.00	0.30	1.00		0.14	1.00	1.00
Satd. Flow (perm)		1442			1377	1583	573	1859		273	1881	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	13	1	9	39	3	72	16	909	83	37	744	2
RTOR Reduction (vph)	0	8	0	0	0	66	0	3	0	0	0	1
Lane Group Flow (vph)	0	15	0	0	42	6	16	989	0	37	744	1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		5.8			6.2	6.2	55.6	52.4		55.6	54.6	54.6
Effective Green, g (s)		5.8			6.2	6.2	55.6	52.4		55.6	54.6	54.6
Actuated g/C Ratio		0.07			0.08	0.08	0.70	0.65		0.70	0.68	0.68
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		104			106	122	413	1217		251	1283	1102
v/s Ratio Prot							0.00	c0.53		c0.01	0.40	
v/s Ratio Perm		0.01			c0.03	0.00	0.03			0.10		0.00
v/c Ratio		0.14			0.40	0.05	0.04	0.81		0.15	0.58	0.00
Uniform Delay, d1		34.8			35.1	34.2	4.6	10.2		8.9	6.7	4.0
Progression Factor		1.00			1.00	1.00	1.36	2.71		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.1	0.1	0.0	5.7		0.1	1.9	0.0
Delay (s)		35.0			36.2	34.2	6.3	33.3		9.0	8.6	4.0
Level of Service		D			D	C	A	C		A	A	A
Approach Delay (s)		35.0			34.9			32.9			8.6	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	278	393	591	498	80
Future Volume (vph)	53	278	393	591	498	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.98	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1644		1787	1863	1849	
Flt Permitted	0.99		0.30	1.00	1.00	
Satd. Flow (perm)	1644		564	1863	1849	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	55	287	405	609	513	82
RTOR Reduction (vph)	121	0	0	0	2	0
Lane Group Flow (vph)	221	0	405	609	593	0
Heavy Vehicles (%)	0%	2%	1%	2%	1%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	29.3		139.6	139.6	106.9	
Effective Green, g (s)	29.3		139.6	139.6	106.9	
Actuated g/C Ratio	0.16		0.78	0.78	0.59	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	267		624	1444	1098	
v/s Ratio Prot	c0.13		c0.10	0.33	0.32	
v/s Ratio Perm			c0.40			
v/c Ratio	0.83		0.65	0.42	0.54	
Uniform Delay, d1	72.9		12.8	6.7	21.9	
Progression Factor	1.00		1.00	1.00	0.88	
Incremental Delay, d2	18.8		1.8	0.9	1.8	
Delay (s)	91.8		14.6	7.6	21.1	
Level of Service	F		B	A	C	
Approach Delay (s)	91.8			10.4	21.1	
Approach LOS	F			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	86.5%	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 (vph)	11	27	34	60	14	33	10	526	108	45	484	20
Future Volume (vph)	11	27	34	60	14	33	10	526	108	45	484	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1766			1826	1615	1805	1836		1805	1867	
Flt Permitted		0.94			0.57	1.00	0.45	1.00		0.38	1.00	
Satd. Flow (perm)		1680			1091	1615	849	1836		721	1867	
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)	12	29	36	64	15	35	11	560	115	48	515	21
RTOR Reduction (vph)	0	19	0	0	0	20	0	3	0	0	0	0
Lane Group Flow (vph)	0	58	0	0	79	15	11	672	0	48	536	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		16.5			16.5	16.5	152.2	152.2		152.2	152.2	
Effective Green, g (s)		16.5			16.5	16.5	152.2	152.2		152.2	152.2	
Actuated g/C Ratio		0.09			0.09	0.09	0.85	0.85		0.85	0.85	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		154			100	148	717	1552		609	1578	
v/s Ratio Prot								c0.37			0.29	
v/s Ratio Perm		0.03			c0.07	0.01	0.01			0.07		
v/c Ratio		0.38			0.79	0.10	0.02	0.43		0.08	0.34	
Uniform Delay, d1		76.9			80.1	75.0	2.2	3.4		2.3	3.0	
Progression Factor		1.00			1.00	1.00	0.81	0.64		0.49	0.40	
Incremental Delay, d2		1.5			33.3	0.3	0.0	0.8		0.2	0.6	
Delay (s)		78.4			113.4	75.3	1.8	3.0		1.4	1.8	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		78.4			101.7			3.0			1.7	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	57.6%	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 (vph)	0	357	21	73	412	71	104	441	105	115	400	202
Future Volume (vph)	0	357	21	73	412	71	104	441	105	115	400	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1868		1770	1834		1787	1831		1770	1881	1615
Flt Permitted		1.00		0.12	1.00		0.41	1.00		0.30	1.00	1.00
Satd. Flow (perm)		1868		231	1834		767	1831		553	1881	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	368	22	75	425	73	107	455	108	119	412	208
RTOR Reduction (vph)	0	2	0	0	3	0	0	4	0	0	0	80
Lane Group Flow (vph)	0	388	0	75	495	0	107	559	0	119	412	128
Heavy Vehicles (%)	0%	1%	0%	2%	1%	3%	1%	1%	0%	2%	1%	0%
Turn Type		NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		41.5		56.5	56.5		102.9	93.6		101.1	92.7	92.7
Effective Green, g (s)		41.5		56.5	56.5		102.9	93.6		101.1	92.7	92.7
Actuated g/C Ratio		0.23		0.31	0.31		0.57	0.52		0.56	0.52	0.52
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		430		128	575		491	952		367	968	831
v/s Ratio Prot		0.21		0.02	c0.27		0.01	c0.31		c0.02	0.22	
v/s Ratio Perm				0.16			0.11			0.17		0.08
v/c Ratio		0.90		0.59	0.86		0.22	0.59		0.32	0.43	0.15
Uniform Delay, d1		67.3		48.7	58.0		18.9	29.8		21.8	27.1	23.0
Progression Factor		1.00		1.00	1.00		1.09	1.08		1.00	1.00	1.00
Incremental Delay, d2		22.0		6.8	12.5		0.1	2.5		0.2	1.4	0.4
Delay (s)		89.3		55.4	70.6		20.7	34.8		22.1	28.5	23.4
Level of Service		F		E	E		C	C		C	C	C
Approach Delay (s)		89.3			68.6			32.6			26.0	
Approach LOS		F			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	769	225	229	347	326	692
Future Volume (vph)	769	225	229	347	326	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	827	242	246	373	351	744
RTOR Reduction (vph)	0	163	0	0	0	437
Lane Group Flow (vph)	827	79	246	373	351	307
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	39.0	39.0	13.7	68.7	49.5	49.5
Effective Green, g (s)	39.0	39.0	13.7	68.7	49.5	49.5
Actuated g/C Ratio	0.32	0.32	0.11	0.57	0.41	0.41
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1126	519	395	1066	775	646
v/s Ratio Prot	c0.24	0.05	c0.07	0.20	0.19	c0.20
v/s Ratio Perm						
v/c Ratio	0.73	0.15	0.62	0.35	0.45	0.48
Uniform Delay, d1	35.9	28.8	50.7	13.7	25.5	25.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	2.3	0.9	0.9	1.2
Delay (s)	39.0	29.0	53.0	14.6	26.4	27.0
Level of Service	D	C	D	B	C	C
Approach Delay (s)	36.8			29.9	26.8	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
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 (vph)	97	128	40	475	140	644	88	361	629	536	307	16
Future Volume (vph)	97	128	40	475	140	644	88	361	629	536	307	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
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)	100	132	41	490	144	664	91	372	648	553	316	16
RTOR Reduction (vph)	0	7	0	0	0	357	0	0	392	0	1	0
Lane Group Flow (vph)	100	166	0	314	320	307	91	372	256	553	331	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	16.5	16.5		32.0	32.0	32.0	11.3	51.0	51.0	25.5	64.6	
Effective Green, g (s)	16.5	16.5		32.0	32.0	32.0	11.3	51.0	51.0	25.5	64.6	
Actuated g/C Ratio	0.11	0.11		0.21	0.21	0.21	0.08	0.34	0.34	0.17	0.43	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	198	200		358	370	341	135	639	543	589	797	
v/s Ratio Prot	0.06	c0.09		0.19	0.18		0.05	c0.20		c0.16	0.18	
v/s Ratio Perm						c0.19			0.16			
v/c Ratio	0.51	0.83		0.88	0.86	0.90	0.67	0.58	0.47	0.94	0.42	
Uniform Delay, d1	62.9	65.4		57.1	56.9	57.4	67.6	40.7	38.9	61.5	29.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.87	
Incremental Delay, d2	0.7	22.8		20.7	18.5	25.1	10.0	3.8	2.9	19.0	1.2	
Delay (s)	63.6	88.2		77.8	75.4	82.5	77.5	44.6	41.8	77.3	27.1	
Level of Service	E	F		E	E	F	E	D	D	E	C	
Approach Delay (s)		79.2			79.6			45.7			58.4	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	4	15	26	2	35	9	770	40	39	1001	62
Future Volume (vph)	54	4	15	26	2	35	9	770	40	39	1001	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	1432		1805	1585		1444	1881	1615	1752	1881	1583
Flt Permitted	0.73	1.00		0.74	1.00		0.21	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)	1288	1432		1414	1585		312	1881	1615	551	1881	1583
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)	56	4	16	27	2	36	9	802	42	41	1043	65
RTOR Reduction (vph)	0	15	0	0	33	0	0	0	9	0	0	13
Lane Group Flow (vph)	56	5	0	27	5	0	9	802	33	41	1043	52
Heavy Vehicles (%)	8%	0%	21%	0%	0%	3%	25%	1%	0%	3%	1%	2%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	10.6	10.6		10.6	10.6		121.1	116.6	116.6	120.8	120.1	120.1
Effective Green, g (s)	10.6	10.6		10.6	10.6		121.1	116.6	116.6	120.8	120.1	120.1
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.81	0.78	0.78	0.81	0.80	0.80
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	91	101		99	112		259	1462	1255	477	1506	1267
v/s Ratio Prot		0.00			0.00		0.00	0.43		c0.00	c0.55	
v/s Ratio Perm	c0.04			0.02			0.03		0.02	0.07		0.03
v/c Ratio	0.62	0.05		0.27	0.04		0.03	0.55	0.03	0.09	0.69	0.04
Uniform Delay, d1	67.7	65.0		66.0	65.0		6.9	6.5	3.8	4.4	6.7	3.1
Progression Factor	1.00	1.00		1.00	1.00		0.41	0.57	0.18	1.17	0.83	1.37
Incremental Delay, d2	11.7	0.2		1.5	0.1		0.0	0.9	0.0	0.0	2.0	0.0
Delay (s)	79.5	65.2		67.5	65.1		2.9	4.6	0.7	5.2	7.6	4.3
Level of Service	E	E		E	E		A	A	A	A	A	A
Approach Delay (s)		75.7			66.1			4.4			7.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	73.0%	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 (vph)	18	6	8	122	8	237	9	955	112	269	942	23
Future Volume (vph)	18	6	8	122	8	237	9	955	112	269	942	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1725			1783	1615	1805	1881	1583	1752	1857	
Flt Permitted		0.72			0.72	1.00	0.30	1.00	1.00	0.10	1.00	
Satd. Flow (perm)		1270			1336	1615	577	1881	1583	182	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	18	6	8	124	8	242	9	974	114	274	961	23
RTOR Reduction (vph)	0	7	0	0	0	213	0	0	22	0	1	0
Lane Group Flow (vph)	0	25	0	0	132	29	9	974	92	274	983	0
Heavy Vehicles (%)	0%	0%	14%	1%	14%	0%	0%	1%	2%	3%	2%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		17.7			17.7	17.7	92.0	92.0	92.0	115.7	120.8	
Effective Green, g (s)		17.7			17.7	17.7	92.0	92.0	92.0	115.7	120.8	
Actuated g/C Ratio		0.12			0.12	0.12	0.61	0.61	0.61	0.77	0.81	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		149			157	190	353	1153	970	388	1495	
v/s Ratio Prot								c0.52		0.11	c0.53	
v/s Ratio Perm		0.02			c0.10	0.02	0.02		0.06	0.43		
v/c Ratio		0.17			0.84	0.15	0.03	0.84	0.09	0.71	0.66	
Uniform Delay, d1		59.5			64.8	59.4	11.4	23.3	11.9	35.8	6.0	
Progression Factor		1.00			1.00	1.00	1.01	0.80	0.90	1.31	0.14	
Incremental Delay, d2		0.5			31.3	0.4	0.1	7.2	0.2	2.2	0.8	
Delay (s)		60.1			96.1	59.8	11.6	25.8	10.9	49.1	1.7	
Level of Service		E			F	E	B	C	B	D	A	
Approach Delay (s)		60.1			72.6			24.2			12.0	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	110	90	114	1096	1144	123
Future Volume (vph)	110	90	114	1096	1144	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1568	1787	1881	1842	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1770	1568	68	1881	1842	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	94	119	1142	1192	128
RTOR Reduction (vph)	0	86	0	0	2	0
Lane Group Flow (vph)	115	8	119	1142	1318	0
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	12.9	12.9	119.7	125.6	110.6	
Effective Green, g (s)	12.9	12.9	119.7	125.6	110.6	
Actuated g/C Ratio	0.09	0.09	0.80	0.84	0.74	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	152	134	158	1575	1358	
v/s Ratio Prot	c0.06		0.05	c0.61	c0.72	
v/s Ratio Perm		0.01	0.55			
v/c Ratio	0.76	0.06	0.75	0.73	0.97	
Uniform Delay, d1	67.0	63.0	63.7	5.1	18.2	
Progression Factor	1.00	1.00	0.75	1.31	0.72	
Incremental Delay, d2	17.4	0.1	10.8	1.8	11.7	
Delay (s)	84.4	63.1	58.2	8.5	24.7	
Level of Service	F	E	E	A	C	
Approach Delay (s)	74.8			13.2	24.7	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	95.2%	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 (vph)	349	110	783	91	74	33	780	414	12	44	393	239
Future Volume (vph)	349	110	783	91	74	33	780	414	12	44	393	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1599	1805	1787		3467	1874		1805	1881	1583
Flt Permitted	0.59	1.00	1.00	0.66	1.00		0.95	1.00		0.39	1.00	1.00
Satd. Flow (perm)	1091	1863	1599	1248	1787		3467	1874		733	1881	1583
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)	367	116	824	96	78	35	821	436	13	46	414	252
RTOR Reduction (vph)	0	0	474	0	11	0	0	0	0	0	0	163
Lane Group Flow (vph)	367	116	350	96	102	0	821	449	0	46	414	89
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	42.4	32.4	32.4	42.6	14.9		35.3	77.2		82.4	47.5	47.5
Effective Green, g (s)	42.4	32.4	32.4	42.6	14.9		35.3	77.2		82.4	47.5	47.5
Actuated g/C Ratio	0.28	0.22	0.22	0.28	0.10		0.24	0.51		0.55	0.32	0.32
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	432	402	345	392	177		815	964		439	595	501
v/s Ratio Prot	c0.16	0.06		0.02	0.06		c0.24	0.24		0.00	c0.22	
v/s Ratio Perm	0.08		c0.22	0.05						0.05		0.06
v/c Ratio	0.85	0.29	1.01	0.24	0.58		1.01	0.47		0.10	0.70	0.18
Uniform Delay, d1	48.8	49.2	58.8	40.6	64.5		57.4	23.2		16.8	44.9	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.91	0.82		1.65	1.00	2.95
Incremental Delay, d2	13.9	0.1	51.9	0.1	2.8		27.9	1.1		0.0	6.5	0.8
Delay (s)	62.7	49.3	110.7	40.7	67.4		80.0	20.1		27.7	51.6	110.4
Level of Service	E	D	F	D	E		F	C		C	D	F
Approach Delay (s)		91.8			55.1			58.8			70.9	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	89.7%	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 (vph)	103	0	91	0	0	0	46	750	0	1	585	77
Future Volume (vph)	103	0	91	0	0	0	46	750	0	1	585	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1615				1805	3574		1805	3539	1615
Flt Permitted	0.95		1.00				0.40	1.00		0.35	1.00	1.00
Satd. Flow (perm)	1805		1615				768	3574		660	3539	1615
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)	111	0	98	0	0	0	49	806	0	1	629	83
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	111	0	9	0	0	0	49	806	0	1	629	62
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	14.5		14.5				117.5	123.9		112.3	112.3	112.3
Effective Green, g (s)	14.5		14.5				117.5	123.9		112.3	112.3	112.3
Actuated g/C Ratio	0.10		0.10				0.78	0.83		0.75	0.75	0.75
Clearance Time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	174		156				637	2952		494	2649	1209
v/s Ratio Prot	c0.06		0.01				0.00	c0.23			0.18	
v/s Ratio Perm							0.06			0.00		0.04
v/c Ratio	0.64		0.06				0.08	0.27		0.00	0.24	0.05
Uniform Delay, d1	65.2		61.6				3.6	2.9		4.7	5.8	4.9
Progression Factor	1.00		1.00				1.13	1.40		1.00	1.00	1.00
Incremental Delay, d2	7.5		0.2				0.0	0.2		0.0	0.2	0.1
Delay (s)	72.7		61.7				4.2	4.3		4.8	6.0	5.0
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		67.5			0.0			4.3			5.9	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.6
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	16	0	71	24	0	9	104	700	49	2	16	568
Future Volume (vph)	16	0	71	24	0	9	104	700	49	2	16	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1805	1442	1805	3539	1568		1805	1863
Flt Permitted		0.74	1.00		0.75	1.00	0.39	1.00	1.00		0.37	1.00
Satd. Flow (perm)		1408	1615		1418	1442	748	3539	1568		706	1863
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)	17	0	75	25	0	9	109	737	52	2	17	598
RTOR Reduction (vph)	0	0	66	0	0	8	0	0	20	0	0	0
Lane Group Flow (vph)	0	17	9	0	25	1	109	737	32	0	19	598
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	2%	3%	0%	0%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		6.1	6.1		6.1	6.1	29.5	29.5	29.5		29.5	29.5
Effective Green, g (s)		6.1	6.1		6.1	6.1	29.5	29.5	29.5		29.5	29.5
Actuated g/C Ratio		0.13	0.13		0.13	0.13	0.61	0.61	0.61		0.61	0.61
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		176	202		177	180	454	2148	951		428	1130
v/s Ratio Prot								0.21				c0.32
v/s Ratio Perm		0.01	0.01		c0.02	0.00	0.15		0.02		0.03	
v/c Ratio		0.10	0.05		0.14	0.01	0.24	0.34	0.03		0.04	0.53
Uniform Delay, d1		18.8	18.7		18.9	18.6	4.4	4.7	3.8		3.9	5.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.1		0.4	0.0	0.6	0.2	0.0		0.1	0.9
Delay (s)		19.1	18.8		19.3	18.6	5.0	4.9	3.9		3.9	6.4
Level of Service		B	B		B	B	A	A	A		A	A
Approach Delay (s)		18.8			19.1			4.9				6.2
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	23
Future Volume (vph)	23
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	24
RTOR Reduction (vph)	9
Lane Group Flow (vph)	15
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	29.5
Effective Green, g (s)	29.5
Actuated g/C Ratio	0.61
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	980
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	3.8
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Future Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.22	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	305	1881	1583	413	1793	
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)	146	186	74	287	254	469	87	336	327	296	267	160
RTOR Reduction (vph)	0	0	64	0	0	247	0	0	234	0	18	0
Lane Group Flow (vph)	146	186	10	287	254	222	87	336	93	296	409	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	15.3	15.3	15.3	39.5	39.5	39.5	31.1	24.4	24.4	36.5	27.2	
Effective Green, g (s)	15.3	15.3	15.3	39.5	39.5	39.5	31.1	24.4	24.4	36.5	27.2	
Actuated g/C Ratio	0.14	0.14	0.14	0.35	0.35	0.35	0.28	0.22	0.22	0.33	0.24	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	241	252	212	630	657	558	172	409	344	247	435	
v/s Ratio Prot	0.08	c0.10		c0.16	0.14		0.03	0.18		c0.10	0.23	
v/s Ratio Perm			0.01			0.14	0.11		0.06	c0.29		
v/c Ratio	0.61	0.74	0.05	0.46	0.39	0.40	0.51	0.82	0.27	1.20	0.94	
Uniform Delay, d1	45.5	46.4	42.0	28.0	27.2	27.3	32.2	41.7	36.4	34.9	41.6	
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	3.6	10.2	0.1	2.4	1.7	2.1	0.9	14.5	1.2	121.6	29.6	
Delay (s)	49.1	56.6	42.1	30.3	28.9	29.4	33.0	56.2	37.6	156.5	71.2	
Level of Service	D	E	D	C	C	C	C	E	D	F	E	
Approach Delay (s)		51.3			29.5			45.4			106.1	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	55.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	77.5%	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 (vph)	76	26	59	69	12	102	32	813	78	154	573	43
Future Volume (vph)	76	26	59	69	12	102	32	813	78	154	573	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1719			1822	1583	1752	3499		1787	1863	1568
Flt Permitted		0.81			0.69	1.00	0.38	1.00		0.22	1.00	1.00
Satd. Flow (perm)		1422			1320	1583	704	3499		421	1863	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	78	27	60	70	12	104	33	830	80	157	585	44
RTOR Reduction (vph)	0	24	0	0	0	84	0	8	0	0	0	17
Lane Group Flow (vph)	0	141	0	0	82	20	33	902	0	157	585	27
Heavy Vehicles (%)	2%	4%	3%	0%	0%	2%	3%	2%	0%	1%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		12.1			13.0	13.0	40.8	26.9		34.1	40.8	40.8
Effective Green, g (s)		12.1			13.0	13.0	40.8	26.9		34.1	40.8	40.8
Actuated g/C Ratio		0.18			0.20	0.20	0.61	0.40		0.51	0.61	0.61
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		258			257	308	431	1413		363	1141	960
v/s Ratio Prot								c0.26		0.05	c0.31	
v/s Ratio Perm		c0.10			0.06	0.01	0.05			0.17		0.02
v/c Ratio		0.55			0.32	0.07	0.08	0.64		0.43	0.51	0.03
Uniform Delay, d1		24.8			23.0	21.8	5.2	15.9		9.3	7.3	5.1
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.3			0.3	0.0	0.1	1.1		0.3	0.5	0.0
Delay (s)		26.0			23.3	21.9	5.3	17.0		9.6	7.8	5.1
Level of Service		C			C	C	A	B		A	A	A
Approach Delay (s)		26.0			22.5			16.6			8.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	20.4
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 (vph)	236	11	160	23	10	31	156	791	44	83	587	58
Future Volume (vph)	236	11	160	23	10	31	156	791	44	83	587	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1698	1710	1615	1719	1900	1509	1787	3539	1538	1805	3505	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.33	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	1698	1710	1615	1719	1900	1509	627	3539	1538	531	3505	1615
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)	246	11	167	24	10	32	162	824	46	86	611	60
RTOR Reduction (vph)	0	0	100	0	0	30	0	0	26	0	0	36
Lane Group Flow (vph)	128	129	67	24	10	2	163	824	20	86	611	24
Heavy Vehicles (%)	1%	0%	0%	5%	0%	7%	1%	2%	5%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	12.8	12.8	12.8	5.1	5.1	5.1	46.0	36.6	36.6	40.2	33.7	33.7
Effective Green, g (s)	12.8	12.8	12.8	5.1	5.1	5.1	46.0	36.6	36.6	40.2	33.7	33.7
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.06	0.53	0.43	0.43	0.47	0.39	0.39
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	252	254	240	101	112	89	462	1506	654	344	1373	632
v/s Ratio Prot	0.08	c0.08		c0.01	0.01		c0.04	c0.23		0.02	0.17	
v/s Ratio Perm			0.04			0.00	0.15		0.01	0.10		0.01
v/c Ratio	0.51	0.51	0.28	0.24	0.09	0.02	0.35	0.55	0.03	0.25	0.45	0.04
Uniform Delay, d1	33.7	33.7	32.5	38.6	38.3	38.1	10.7	18.5	14.4	13.1	19.3	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.2	0.5	0.9	0.3	0.1	0.3	0.7	0.0	0.3	0.1	0.0
Delay (s)	34.9	34.9	33.0	39.5	38.5	38.2	11.0	19.2	14.4	13.3	19.3	16.1
Level of Service	C	C	C	D	D	D	B	B	B	B	B	B
Approach Delay (s)		34.1			38.7			17.7			18.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	56.0%	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 (vph)	745	0	318	0	0	0	0	738	428	236	684	0
Future Volume (vph)	745	0	318	0	0	0	0	738	428	236	684	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467		1583					3574	1568	1805	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.29	1.00	
Satd. Flow (perm)	3467		1583					3574	1568	556	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.25	0.25	0.25	0.25	0.96	0.96	0.96	0.96	0.25
Adj. Flow (vph)	776	0	331	0	0	0	0	769	446	246	712	0
RTOR Reduction (vph)	0	0	241	0	0	0	0	0	242	0	0	0
Lane Group Flow (vph)	776	0	90	0	0	0	0	769	204	246	713	0
Heavy Vehicles (%)	1%	0%	2%	0%	0%	0%	0%	1%	3%	0%	2%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.8		18.8					40.9	40.9	52.2	57.8	
Effective Green, g (s)	18.8		18.8					40.9	40.9	52.2	57.8	
Actuated g/C Ratio	0.21		0.21					0.46	0.46	0.58	0.65	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	729		332					1635	717	482	2288	
v/s Ratio Prot								0.22		c0.06	0.20	
v/s Ratio Perm	c0.22		0.06						0.13	c0.23		
v/c Ratio	1.06		0.27					0.47	0.28	0.51	0.31	
Uniform Delay, d1	35.3		29.6					16.8	15.1	9.5	7.0	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	51.8		1.1					0.7	0.7	1.2	0.2	
Delay (s)	87.1		30.7					17.4	15.8	10.7	7.2	
Level of Service	F		C					B	B	B	A	
Approach Delay (s)		70.2			0.0			16.8			8.1	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	89.4	Sum of lost time (s)	18.4
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 (vph)	0	0	0	262	0	344	193	1290	0	0	658	512
Future Volume (vph)	0	0	0	262	0	344	193	1290	0	0	658	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1615	1787	3574			3574	1583
Flt Permitted				0.95		1.00	0.31	1.00			1.00	1.00
Satd. Flow (perm)				1770		1615	584	3574			3574	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.94	0.94	0.94	0.94	0.94	0.25	0.25	0.94	0.94
Adj. Flow (vph)	0	0	0	279	0	366	205	1372	0	0	700	545
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	0	0	0	319
Lane Group Flow (vph)	0	0	0	279	0	306	205	1372	0	0	700	226
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				24.7		24.7	50.5	56.5			39.3	39.3
Effective Green, g (s)				24.7		24.7	50.5	56.5			39.3	39.3
Actuated g/C Ratio				0.26		0.26	0.53	0.60			0.41	0.41
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				461		421	453	2132			1483	656
v/s Ratio Prot							0.05	c0.38			0.20	
v/s Ratio Perm				0.16		c0.19	0.19					0.14
v/c Ratio				0.61		0.73	0.45	0.64			0.47	0.34
Uniform Delay, d1				30.7		31.9	12.1	12.5			20.2	18.9
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				2.6		6.6	0.7	1.0			0.6	0.8
Delay (s)				33.3		38.5	12.8	13.5			20.7	19.7
Level of Service				C		D	B	B			C	B
Approach Delay (s)		0.0			36.3			13.4			20.3	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	19.5
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 (vph)	242	85	422	149	112	49	494	1061	79	40	599	238
Future Volume (vph)	242	85	422	149	112	49	494	1061	79	40	599	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	1805	3574	1615	1805	3539	1599
Flt Permitted	0.39	1.00	1.00	0.70	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	743	1900	1615	1329	1900	1615	1805	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	255	89	444	157	118	52	520	1117	83	42	631	251
RTOR Reduction (vph)	0	0	243	0	0	47	0	0	45	0	0	142
Lane Group Flow (vph)	255	89	201	157	118	5	520	1117	38	42	631	109
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	28.9	28.9	28.9	9.0	9.0	9.0	9.0	45.1	45.1	6.9	43.0	43.0
Effective Green, g (s)	28.9	28.9	28.9	9.0	9.0	9.0	9.0	45.1	45.1	6.9	43.0	43.0
Actuated g/C Ratio	0.29	0.29	0.29	0.09	0.09	0.09	0.09	0.46	0.46	0.07	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	363	555	471	120	172	146	164	1629	736	125	1538	695
v/s Ratio Prot	c0.10	0.05			0.06		c0.29	c0.31		0.02	0.18	
v/s Ratio Perm	0.11		0.12	c0.12		0.00			0.02			0.07
v/c Ratio	0.70	0.16	0.43	1.31	0.69	0.03	3.17	0.69	0.05	0.34	0.41	0.16
Uniform Delay, d1	29.1	26.0	28.3	45.0	43.6	41.0	45.0	21.3	15.0	43.8	19.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.1	0.5	186.2	9.9	0.1	992.6	2.4	0.1	4.5	0.8	0.5
Delay (s)	35.2	26.1	28.8	231.1	53.5	41.0	1037.6	23.7	15.1	48.3	20.0	17.4
Level of Service	D	C	C	F	D	D	F	C	B	D	C	B
Approach Delay (s)		30.5			136.8			329.8			20.6	
Approach LOS		C			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	174.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	24.0
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 (vph)	99	8	118	39	6	21	221	1080	51	18	720	104
Future Volume (vph)	99	8	118	39	6	21	221	1080	51	18	720	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1696			1738		1805	1863	1568	1805	1863	1583
Flt Permitted		0.84			0.64		0.13	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1463			1139		255	1863	1568	166	1863	1583
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)	103	8	123	41	6	22	230	1125	53	19	750	108
RTOR Reduction (vph)	0	41	0	0	18	0	0	0	21	0	0	57
Lane Group Flow (vph)	0	193	0	0	51	0	230	1125	32	19	750	51
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		16.0			16.0		68.3	58.8	58.8	48.8	45.8	45.8
Effective Green, g (s)		16.0			16.0		68.3	58.8	58.8	48.8	45.8	45.8
Actuated g/C Ratio		0.17			0.17		0.71	0.61	0.61	0.50	0.47	0.47
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		241			188		372	1131	952	134	881	748
v/s Ratio Prot							c0.08	c0.60		0.00	0.40	
v/s Ratio Perm		c0.13			0.05		0.36		0.02	0.07		0.03
v/c Ratio		0.80			0.27		0.62	0.99	0.03	0.14	0.85	0.07
Uniform Delay, d1		38.9			35.3		14.9	18.8	7.6	21.1	22.5	13.9
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		17.2			0.8		3.0	25.5	0.1	0.5	10.2	0.2
Delay (s)		56.0			36.1		17.9	44.4	7.7	21.6	32.7	14.1
Level of Service		E			D		B	D	A	C	C	B
Approach Delay (s)		56.0			36.1			38.7			30.1	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	23.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	235	291	138	270	190	591	470	139	208	413	22
Future Volume (vph)	20	235	291	138	270	190	591	470	139	208	413	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1626	1881	1568	1736	1881	1583	1787	1863	1524	1752	1863	
Flt Permitted	0.59	1.00	1.00	0.41	1.00	1.00	0.18	1.00	1.00	0.18	1.00	
Satd. Flow (perm)	1002	1881	1568	754	1881	1583	330	1863	1524	324	1863	
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)	21	247	306	145	284	200	622	495	146	219	435	23
RTOR Reduction (vph)	0	0	140	0	0	101	0	0	111	0	2	0
Lane Group Flow (vph)	21	247	166	145	284	99	622	495	35	219	456	0
Heavy Vehicles (%)	11%	1%	3%	4%	1%	2%	1%	2%	6%	3%	1%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	29.9	27.0	27.0	44.2	34.4	34.4	31.2	22.8	22.8	31.1	22.8	
Effective Green, g (s)	29.9	27.0	27.0	44.2	34.4	34.4	31.2	22.8	22.8	31.1	22.8	
Actuated g/C Ratio	0.31	0.28	0.28	0.46	0.36	0.36	0.32	0.24	0.24	0.32	0.24	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	328	525	437	449	669	563	233	439	359	226	439	
v/s Ratio Prot	0.00	c0.13		c0.03	c0.15		c0.23	0.27		0.08	0.24	
v/s Ratio Perm	0.02		0.11	0.11		0.06	c0.63		0.02	0.23		
v/c Ratio	0.06	0.47	0.38	0.32	0.42	0.18	2.67	1.13	0.10	0.97	1.04	
Uniform Delay, d1	23.4	28.9	28.1	16.2	23.6	21.4	29.5	37.0	28.9	29.2	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	0.1	1.9	1.6	0.4	1.2	0.4	763.4	82.6	0.1	50.7	53.7	
Delay (s)	23.5	30.8	29.7	16.7	24.9	21.8	793.0	119.5	29.0	79.9	90.6	
Level of Service	C	C	C	B	C	C	F	F	C	E	F	
Approach Delay (s)		29.9			22.0			440.7			87.1	
Approach LOS		C			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	205.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	28.3
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	107	20	18	171	118	29	449	1	59	362	139
Future Volume (vph)	225	107	20	18	171	118	29	449	1	59	362	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799			1786		1671	1862		1736	1881	1615
Flt Permitted		0.60			0.97		0.40	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1120			1729		698	1862		522	1881	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	256	122	23	20	194	134	33	510	1	67	411	158
RTOR Reduction (vph)	0	2	0	0	23	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	399	0	0	325	0	33	511	0	67	411	61
Heavy Vehicles (%)	1%	3%	0%	0%	1%	0%	8%	2%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.8			28.8		26.0	26.0		26.0	26.0	26.0
Effective Green, g (s)		28.8			28.8		26.0	26.0		26.0	26.0	26.0
Actuated g/C Ratio		0.43			0.43		0.39	0.39		0.39	0.39	0.39
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		479			739		269	719		201	726	623
v/s Ratio Prot								c0.27			0.22	
v/s Ratio Perm		c0.36			0.19		0.05			0.13		0.04
v/c Ratio		0.83			0.44		0.12	0.71		0.33	0.57	0.10
Uniform Delay, d1		17.1			13.6		13.3	17.5		14.5	16.2	13.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		12.2			0.6		0.4	4.1		2.0	1.7	0.1
Delay (s)		29.3			14.1		13.7	21.6		16.6	17.9	13.3
Level of Service		C			B		B	C		B	B	B
Approach Delay (s)		29.3			14.1			21.1			16.6	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	693	1	3	10	0	18	0	773	19	26	547	969
Future Volume (vph)	693	1	3	10	0	18	0	773	19	26	547	969
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	1592		1805	0			3562		1805	1881	1553
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.17	1.00	1.00
Satd. Flow (perm)	1588	1592		1805	0			3562		319	1881	1553
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)	714	1	3	10	0	19	0	797	20	27	564	999
RTOR Reduction (vph)	0	0	0	0	19	0	0	1	0	0	0	252
Lane Group Flow (vph)	357	361	0	10	0	0	0	816	0	27	564	747
Heavy Vehicles (%)	8%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	4%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	33.2	33.2		1.1	0.0			25.9		28.2	34.2	34.2
Effective Green, g (s)	33.2	33.2		1.1	0.0			25.9		28.2	34.2	34.2
Actuated g/C Ratio	0.39	0.39		0.01	0.00			0.30		0.33	0.40	0.40
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	611	613		23	0			1070		144	746	616
v/s Ratio Prot	0.22	c0.23		c0.01				0.23		0.01	0.30	
v/s Ratio Perm										0.06		c0.48
v/c Ratio	0.58	0.59		0.43	0.00			0.76		0.19	0.76	1.21
Uniform Delay, d1	21.0	21.1		42.2	43.1			27.4		20.9	22.4	26.0
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.2	3.3		12.6	0.0			5.2		0.6	7.0	110.1
Delay (s)	24.3	24.4		54.9	43.1			32.5		21.5	29.4	136.1
Level of Service	C	C		D	D			C		C	C	F
Approach Delay (s)		24.3			47.2			32.5			96.3	
Approach LOS		C			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	62.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	68	17	495	36	626	16	773	695	442	867	50
Future Volume (vph)	74	68	17	495	36	626	16	773	695	442	867	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830			1731	1599	1805	3574	1538	1770	3574	1615
Flt Permitted		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830			1731	1599	1805	3574	1538	1770	3574	1615
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)	82	76	19	550	40	696	18	859	772	491	963	56
RTOR Reduction (vph)	0	2	0	0	0	223	0	0	318	0	0	28
Lane Group Flow (vph)	0	175	0	0	590	473	18	859	454	491	963	28
Heavy Vehicles (%)	0%	0%	0%	5%	3%	1%	0%	1%	5%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		21.9			53.4	53.4	5.2	55.8	55.8	54.0	104.4	104.4
Effective Green, g (s)		21.9			53.4	53.4	5.2	55.8	55.8	54.0	104.4	104.4
Actuated g/C Ratio		0.10			0.25	0.25	0.02	0.26	0.26	0.25	0.49	0.49
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		189			436	402	44	941	405	451	1760	795
v/s Ratio Prot		c0.10			c0.34		0.01	0.24		c0.28	0.27	
v/s Ratio Perm						0.30			c0.30			0.02
v/c Ratio		0.93			1.35	1.18	0.41	0.91	1.12	1.09	0.55	0.03
Uniform Delay, d1		94.2			79.2	79.2	101.8	75.7	78.1	79.0	37.3	27.7
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		44.7			173.4	102.7	6.1	13.8	81.6	68.5	0.7	0.0
Delay (s)		138.9			252.7	181.9	107.9	89.5	159.7	147.4	38.0	27.8
Level of Service		F			F	F	F	F	F	F	D	C
Approach Delay (s)		138.9			214.4			122.5			73.2	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	132.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	211.9	Sum of lost time (s)	27.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	39	4	0	0	70	1399	4	0	1316	24
Future Volume (vph)	23	0	39	4	0	0	70	1399	4	0	1316	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frt		0.92			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.98			0.95		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1675			1805		1805	3574	1615		3574	1615
Flt Permitted		0.88			0.72		0.15	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1495			1362		291	3574	1615		3574	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	23	0	39	4	0	0	71	1413	4	0	1329	24
RTOR Reduction (vph)	0	57	0	0	0	0	0	0	1	0	0	9
Lane Group Flow (vph)	0	5	0	0	4	0	71	1413	3	0	1329	15
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		6.2			6.2		53.3	58.9	58.9		48.3	48.3
Effective Green, g (s)		6.2			6.2		53.3	58.9	58.9		48.3	48.3
Actuated g/C Ratio		0.08			0.08		0.69	0.76	0.76		0.63	0.63
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		120			109		298	2726	1232		2236	1010
v/s Ratio Prot							0.02	c0.40			c0.37	
v/s Ratio Perm		c0.00			0.00		0.15		0.00			0.01
v/c Ratio		0.04			0.04		0.24	0.52	0.00		0.59	0.01
Uniform Delay, d1		32.8			32.7		5.1	3.6	2.2		8.6	5.5
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3			0.1		0.4	0.3	0.0		0.6	0.0
Delay (s)		33.1			32.9		5.5	3.9	2.2		9.3	5.5
Level of Service		C			C		A	A	A		A	A
Approach Delay (s)		33.1			32.9			4.0			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	17.7
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 (vph)	133	222	456	166	337	385	503	791	128	322	718	175
Future Volume (vph)	133	222	456	166	337	385	503	791	128	322	718	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
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)	1770	1863	1583	1770	1863	1615	1770	3530		1805	3504	
Flt Permitted	0.21	1.00	1.00	0.39	1.00	1.00	0.09	1.00		0.18	1.00	
Satd. Flow (perm)	387	1863	1583	721	1863	1615	161	3530		339	3504	
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)	141	236	485	177	359	410	535	841	136	343	764	186
RTOR Reduction (vph)	0	0	189	0	0	275	0	9	0	0	14	0
Lane Group Flow (vph)	141	236	296	177	359	135	535	968	0	343	936	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	0%	2%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	45.2	31.6	31.6	48.9	33.3	33.3	79.4	54.4		56.9	39.3	
Effective Green, g (s)	45.2	31.6	31.6	48.9	33.3	33.3	79.4	54.4		56.9	39.3	
Actuated g/C Ratio	0.31	0.22	0.22	0.34	0.23	0.23	0.55	0.37		0.39	0.27	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	250	405	344	355	427	370	455	1322		310	948	
v/s Ratio Prot	0.05	0.13		c0.05	c0.19		c0.27	0.27		0.13	0.27	
v/s Ratio Perm	0.12		0.19	0.11		0.08	c0.37			0.30		
v/c Ratio	0.56	0.58	0.86	0.50	0.84	0.36	1.18	0.73		1.11	0.99	
Uniform Delay, d1	38.9	50.9	54.7	36.1	53.4	47.1	46.4	39.1		35.1	52.7	
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	2.9	2.5	19.9	1.1	14.4	0.8	100.0	2.9		82.8	26.2	
Delay (s)	41.8	53.4	74.6	37.2	67.8	47.9	146.5	42.1		117.9	78.9	
Level of Service	D	D	E	D	E	D	F	D		F	E	
Approach Delay (s)		63.4			53.4			79.0			89.3	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	73.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	145.2	Sum of lost time (s)	26.3
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	162	56	2	20	119	1140	50	46	997	54
Future Volume (vph)	87	0	162	56	2	20	119	1140	50	46	997	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1615			1732		1787	3587		1805	3582	
Flt Permitted	0.78	1.00			0.60		0.17	1.00		0.16	1.00	
Satd. Flow (perm)	1462	1615			1069		321	3587		308	3582	
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	0	174	60	2	22	128	1226	54	49	1072	58
RTOR Reduction (vph)	0	149	0	0	12	0	0	2	0	0	4	0
Lane Group Flow (vph)	94	25	0	0	72	0	128	1278	0	49	1126	0
Heavy Vehicles (%)	1%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	11.8	11.8			11.8		55.4	47.9		48.4	44.8	
Effective Green, g (s)	11.8	11.8			11.8		55.4	47.9		48.4	44.8	
Actuated g/C Ratio	0.14	0.14			0.14		0.67	0.58		0.59	0.54	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	208	230			152		347	2077		245	1940	
v/s Ratio Prot		0.02					c0.03	c0.36		0.01	0.31	
v/s Ratio Perm	0.06				c0.07		0.21			0.11		
v/c Ratio	0.45	0.11			0.47		0.37	0.62		0.20	0.58	
Uniform Delay, d1	32.5	30.9			32.6		6.8	11.4		8.2	12.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.2			2.3		0.7	0.8		0.4	0.7	
Delay (s)	34.0	31.1			34.9		7.5	12.2		8.6	13.4	
Level of Service	C	C			C		A	B		A	B	
Approach Delay (s)		32.1			34.9			11.7			13.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	19.4
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	22	1	23	41	0	30	21	1196	30	59	29	1033
Future Volume (vph)	22	1	23	41	0	30	21	1196	30	59	29	1033
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.86		1.00	0.85		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1626		1805	1509		1805	5163			1758	3610
Flt Permitted	0.74	1.00		0.74	1.00		0.26	1.00			0.18	1.00
Satd. Flow (perm)	1399	1626		1407	1509		488	5163			338	3610
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)	24	1	25	44	0	32	23	1286	32	63	31	1111
RTOR Reduction (vph)	0	23	0	0	30	0	0	1	0	0	0	0
Lane Group Flow (vph)	24	3	0	44	2	0	23	1317	0	0	94	1111
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	0%	4%	2%	4%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	7.5	7.5		7.5	7.5		80.8	80.8			86.7	93.8
Effective Green, g (s)	7.5	7.5		7.5	7.5		80.8	80.8			86.7	93.8
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.70	0.70			0.75	0.82
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	91	106		91	98		342	3627			327	2944
v/s Ratio Prot		0.00			0.00			0.26			0.01	c0.31
v/s Ratio Perm	0.02			c0.03			0.05				0.20	
v/c Ratio	0.26	0.02		0.48	0.02		0.07	0.36			0.29	0.38
Uniform Delay, d1	51.1	50.3		51.9	50.3		5.3	6.8			3.9	2.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			2.95	2.28
Incremental Delay, d2	0.6	0.0		1.5	0.0		0.2	0.1			0.2	0.3
Delay (s)	51.7	50.4		53.4	50.3		5.5	7.0			11.5	6.8
Level of Service	D	D		D	D		A	A			B	A
Approach Delay (s)		51.0			52.1			6.9				7.0
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	24
Future Volume (vph)	24
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	26
RTOR Reduction (vph)	5
Lane Group Flow (vph)	21
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	93.8
Effective Green, g (s)	93.8
Actuated g/C Ratio	0.82
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1317
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.02
Uniform Delay, d1	2.0
Progression Factor	1.34
Incremental Delay, d2	0.0
Delay (s)	2.7
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	540	205	361	946	940	443
Future Volume (vph)	540	205	361	946	940	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	1787	5187	5136	1615
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	330	5187	5136	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	593	225	397	1040	1033	487
RTOR Reduction (vph)	0	178	0	0	0	283
Lane Group Flow (vph)	593	47	397	1040	1033	204
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	24.0	24.0	76.6	76.6	48.1	48.1
Effective Green, g (s)	24.0	24.0	76.6	76.6	48.1	48.1
Actuated g/C Ratio	0.21	0.21	0.67	0.67	0.42	0.42
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	723	333	478	3454	2148	675
v/s Ratio Prot	c0.17		c0.15	0.20	0.20	
v/s Ratio Perm		0.03	c0.41			0.13
v/c Ratio	0.82	0.14	0.83	0.30	0.48	0.30
Uniform Delay, d1	43.4	37.1	18.6	8.0	24.4	22.3
Progression Factor	1.00	1.00	2.19	0.97	0.56	1.81
Incremental Delay, d2	7.1	0.1	11.7	0.2	0.3	0.5
Delay (s)	50.5	37.2	52.4	8.0	14.0	40.7
Level of Service	D	D	D	A	B	D
Approach Delay (s)	46.8			20.3	22.6	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	121	160	6	139	1341	1217	118
Future Volume (vph)	121	160	6	139	1341	1217	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.91			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3300			1805	5136	6391	
Flt Permitted	0.98			0.13	1.00	1.00	
Satd. Flow (perm)	3300			243	5136	6391	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	133	176	7	153	1474	1337	130
RTOR Reduction (vph)	161	0	0	0	0	8	0
Lane Group Flow (vph)	148	0	0	160	1474	1459	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	10.1			90.6	90.6	74.3	
Effective Green, g (s)	10.1			90.6	90.6	74.3	
Actuated g/C Ratio	0.09			0.79	0.79	0.65	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	289			309	4046	4129	
v/s Ratio Prot	c0.04			0.04	c0.29	0.23	
v/s Ratio Perm				c0.37			
v/c Ratio	0.51			0.52	0.36	0.35	
Uniform Delay, d1	50.1			4.7	3.6	9.3	
Progression Factor	1.00			2.31	1.08	0.29	
Incremental Delay, d2	0.6			0.6	0.2	0.1	
Delay (s)	50.7			11.3	4.2	2.8	
Level of Service	D			B	A	A	
Approach Delay (s)	50.7				4.9	2.8	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	616	153	157	1305	1182	629
Future Volume (vph)	616	153	157	1305	1182	629
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.14	1.00	1.00	1.00
Satd. Flow (perm)	3467	1583	265	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	684	170	174	1450	1313	699
RTOR Reduction (vph)	0	95	0	0	0	341
Lane Group Flow (vph)	684	75	174	1450	1313	358
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	26.7	26.7	74.0	74.0	58.9	58.9
Effective Green, g (s)	26.7	26.7	74.0	74.0	58.9	58.9
Actuated g/C Ratio	0.23	0.23	0.64	0.64	0.51	0.51
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	804	367	310	3304	2630	818
v/s Ratio Prot	c0.20		c0.05	0.28	0.26	
v/s Ratio Perm		0.05	c0.31			0.22
v/c Ratio	0.85	0.20	0.56	0.44	0.50	0.44
Uniform Delay, d1	42.2	35.6	10.8	10.2	18.4	17.6
Progression Factor	1.00	1.00	0.90	0.55	0.55	1.56
Incremental Delay, d2	8.3	0.1	2.2	0.4	0.6	1.4
Delay (s)	50.5	35.7	11.9	6.0	10.6	28.9
Level of Service	D	D	B	A	B	C
Approach Delay (s)	47.6			6.6	17.0	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
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	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	90	4	69	61	7	71	3	65	1728	125	51	76
Future Volume (vph)	90	4	69	61	7	71	3	65	1728	125	51	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.94		1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1729		1805	1624	1583		1805	5087			1759
Flt Permitted		0.82		0.60	1.00	1.00		0.08	1.00			0.06
Satd. Flow (perm)		1464		1148	1624	1583		146	5087			104
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	102	5	78	69	8	81	3	74	1964	142	58	86
RTOR Reduction (vph)	0	26	0	0	0	68	0	0	5	0	0	0
Lane Group Flow (vph)	0	159	0	69	8	13	0	77	2101	0	0	144
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		18.5		18.5	18.5	18.5		73.3	67.9			80.1
Effective Green, g (s)		18.5		18.5	18.5	18.5		73.3	67.9			80.1
Actuated g/C Ratio		0.16		0.16	0.16	0.16		0.64	0.59			0.70
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		235		184	261	254		170	3003			199
v/s Ratio Prot					0.00			0.02	0.41			c0.06
v/s Ratio Perm		c0.11		0.06		0.01		0.27				c0.45
v/c Ratio		0.68		0.38	0.03	0.05		0.45	0.70			0.72
Uniform Delay, d1		45.4		43.1	40.7	40.8		10.2	16.4			25.9
Progression Factor		1.00		1.00	1.00	1.00		1.43	1.07			1.30
Incremental Delay, d2		8.2		0.5	0.0	0.0		0.6	0.8			8.0
Delay (s)		53.6		43.6	40.7	40.9		15.1	18.4			41.8
Level of Service		D		D	D	D		B	B			D
Approach Delay (s)		53.6			42.0				18.3			
Approach LOS		D			D				B			

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1678	21
Future Volume (vph)	1678	21
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1615
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	1907	24
RTOR Reduction (vph)	0	9
Lane Group Flow (vph)	1907	15
Heavy Vehicles (%)	1%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	71.3	71.3
Effective Green, g (s)	71.3	71.3
Actuated g/C Ratio	0.62	0.62
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	3184	1001
v/s Ratio Prot	0.37	
v/s Ratio Perm		0.01
v/c Ratio	0.60	0.01
Uniform Delay, d1	13.2	8.4
Progression Factor	0.93	1.00
Incremental Delay, d2	0.6	0.0
Delay (s)	12.9	8.4
Level of Service	B	A
Approach Delay (s)	14.8	
Approach LOS	B	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	0	311	0	0	0	0	903	1037	476	1515	0
Future Volume (vph)	64	0	311	0	0	0	0	903	1037	476	1515	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	1752	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.15	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	271	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	70	0	338	0	0	0	0	982	1127	517	1647	0
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	351	0	0	0
Lane Group Flow (vph)	70	0	251	0	0	0	0	982	776	517	1647	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	21.2		21.2					48.3	48.3	81.1	81.1	
Effective Green, g (s)	21.2		21.2					48.3	48.3	81.1	81.1	
Actuated g/C Ratio	0.18		0.18					0.42	0.42	0.71	0.71	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	320		291					1501	664	515	2520	
v/s Ratio Prot								0.27		c0.22	0.46	
v/s Ratio Perm	0.04		c0.16						c0.49	0.49		
v/c Ratio	0.22		0.86					0.65	1.17	1.00	0.65	
Uniform Delay, d1	39.9		45.5					26.7	33.4	29.4	9.3	
Progression Factor	1.00		1.00					0.46	1.28	1.43	1.38	
Incremental Delay, d2	0.3		21.9					1.0	88.0	25.1	0.5	
Delay (s)	40.1		67.4					13.2	130.6	67.2	13.3	
Level of Service	D		E					B	F	E	B	
Approach Delay (s)		62.7			0.0			76.0			26.2	
Approach LOS		E			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	971	0	720	360	607	0	0	1020	87
Future Volume (vph)	0	0	0	971	0	720	360	607	0	0	1020	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	168	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1022	0	758	379	639	0	0	1074	92
RTOR Reduction (vph)	0	0	0	0	0	183	0	0	0	0	0	63
Lane Group Flow (vph)	0	0	0	1022	0	575	379	639	0	0	1074	29
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				35.1		35.1	67.5	67.5			36.6	36.6
Effective Green, g (s)				35.1		35.1	67.5	67.5			36.6	36.6
Actuated g/C Ratio				0.31		0.31	0.59	0.59			0.32	0.32
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		478	420	2097			1137	508
v/s Ratio Prot							c0.18	0.18			0.30	
v/s Ratio Perm				0.29		c0.37	c0.35					0.02
v/c Ratio				0.97		1.20	0.90	0.30			0.94	0.06
Uniform Delay, d1				39.4		40.0	34.2	11.9			38.2	27.2
Progression Factor				1.00		1.00	1.62	1.97			1.00	1.00
Incremental Delay, d2				19.7		109.5	18.0	0.3			15.6	0.1
Delay (s)				59.1		149.5	73.2	23.9			53.8	27.3
Level of Service				E		F	E	C			D	C
Approach Delay (s)		0.0			97.6			42.2			51.7	
Approach LOS		A			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	69.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	8	161	380	4	99	61	812	454	64	566	9
Future Volume (vph)	18	8	161	380	4	99	61	812	454	64	566	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1773	1583	1698	1704	1599	1805	3539	1599	1752	3574	1615
Flt Permitted	0.95	0.98	1.00	0.95	0.95	1.00	0.38	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	1715	1773	1583	1698	1704	1599	727	3539	1599	475	3574	1615
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)	19	9	173	409	4	106	66	873	488	69	609	10
RTOR Reduction (vph)	0	0	166	0	0	89	0	0	224	0	0	5
Lane Group Flow (vph)	14	14	7	204	209	17	66	873	264	69	609	5
Heavy Vehicles (%)	0%	0%	2%	1%	0%	1%	0%	2%	1%	3%	1%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	4.0	4.0	4.0	16.7	16.7	16.7	59.9	55.0	55.0	60.1	55.1	55.1
Effective Green, g (s)	4.0	4.0	4.0	16.7	16.7	16.7	59.9	55.0	55.0	60.1	55.1	55.1
Actuated g/C Ratio	0.04	0.04	0.04	0.16	0.16	0.16	0.58	0.53	0.53	0.58	0.53	0.53
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	66	68	61	273	274	257	470	1875	847	336	1897	857
v/s Ratio Prot	c0.01	0.01		0.12	c0.12		0.01	c0.25		c0.01	0.17	
v/s Ratio Perm			0.00			0.01	0.07		0.16	0.11		0.00
v/c Ratio	0.21	0.21	0.11	0.75	0.76	0.07	0.14	0.47	0.31	0.21	0.32	0.01
Uniform Delay, d1	48.4	48.4	48.2	41.5	41.7	36.9	9.8	15.2	13.7	10.3	13.8	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.1	0.6	9.4	10.7	0.0	0.1	0.8	1.0	0.1	0.4	0.0
Delay (s)	49.5	49.5	48.8	50.9	52.4	37.0	9.8	16.1	14.7	10.4	14.2	11.5
Level of Service	D	D	D	D	D	D	A	B	B	B	B	B
Approach Delay (s)		48.9			48.7			15.3			13.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	23.1
Intersection Capacity Utilization	58.2%	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 (vph)	4	3	11	51	2	86	12	863	54	34	577	6
Future Volume (vph)	4	3	11	51	2	86	12	863	54	34	577	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		1847	1615	1770	1900	1553		1862	1583		1870	1615
Flt Permitted		0.82	1.00	0.75	1.00	1.00		0.99	1.00		0.92	1.00
Satd. Flow (perm)		1563	1615	1403	1900	1553		1845	1583		1729	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	4	3	12	56	2	95	13	948	59	37	634	7
RTOR Reduction (vph)	0	0	11	0	0	85	0	0	16	0	0	2
Lane Group Flow (vph)	0	7	1	56	2	10	0	961	43	0	671	5
Heavy Vehicles (%)	0%	0%	0%	2%	0%	4%	0%	2%	2%	7%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		7.1	7.1	7.1	7.1	7.1		50.2	50.2		50.2	50.2
Effective Green, g (s)		7.1	7.1	7.1	7.1	7.1		50.2	50.2		50.2	50.2
Actuated g/C Ratio		0.10	0.10	0.10	0.10	0.10		0.72	0.72		0.72	0.72
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		160	165	143	194	159		1336	1146		1252	1169
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.00	0.00	c0.04		0.01		c0.52	0.03		0.39	0.00
v/c Ratio		0.04	0.01	0.39	0.01	0.06		0.72	0.04		0.54	0.00
Uniform Delay, d1		28.0	27.9	29.1	27.9	28.1		5.5	2.7		4.3	2.6
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0	1.8	0.0	0.2		3.4	0.1		1.6	0.0
Delay (s)		28.2	28.0	30.9	28.0	28.3		8.9	2.8		5.9	2.6
Level of Service		C	C	C	C	C		A	A		A	A
Approach Delay (s)		28.0			29.2			8.5			5.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	21	0	16	5	0	4	7	26	969	1	32	21
Future Volume (vph)	21	0	16	5	0	4	7	26	969	1	32	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.94			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00			0.95
Satd. Flow (prot)		1805	1615		1738			1797	4847			1783
Flt Permitted		0.93	1.00		0.82			0.08	1.00			0.27
Satd. Flow (perm)		1767	1615		1456			149	4847			507
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	22	0	16	5	0	4	8	27	999	1	35	22
RTOR Reduction (vph)	0	0	15	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	22	1	0	0	0	0	35	1000	0	0	57
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	7%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		4.3	4.3		4.3			57.2	54.0			56.8
Effective Green, g (s)		4.3	4.3		4.3			57.2	54.0			56.8
Actuated g/C Ratio		0.05	0.05		0.05			0.72	0.68			0.71
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		94	86		78			172	3271			407
v/s Ratio Prot								c0.01	0.21			0.01
v/s Ratio Perm		c0.01	0.00		0.00			0.14				0.09
v/c Ratio		0.23	0.01		0.01			0.20	0.31			0.14
Uniform Delay, d1		36.3	35.8		35.8			6.9	5.3			3.5
Progression Factor		1.00	1.00		1.00			1.00	1.00			1.46
Incremental Delay, d2		0.9	0.0		0.0			0.3	0.2			0.0
Delay (s)		37.2	35.9		35.9			7.2	5.6			5.1
Level of Service		D	D		D			A	A			A
Approach Delay (s)		36.6			35.9				5.6			
Approach LOS		D			D				A			

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1700	7
Future Volume (vph)	1700	7
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3374	1599
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3374	1599
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1753	7
RTOR Reduction (vph)	0	2
Lane Group Flow (vph)	1753	5
Heavy Vehicles (%)	7%	1%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	53.8	53.8
Effective Green, g (s)	53.8	53.8
Actuated g/C Ratio	0.67	0.67
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2269	1075
v/s Ratio Prot	c0.52	
v/s Ratio Perm		0.00
v/c Ratio	0.77	0.00
Uniform Delay, d1	8.9	4.3
Progression Factor	2.44	1.00
Incremental Delay, d2	0.2	0.0
Delay (s)	22.0	4.3
Level of Service	C	A
Approach Delay (s)	21.4	
Approach LOS	C	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	120	2240	707	416	1854	244	493	295	238	393	637
Future Volume (vph)	2	120	2240	707	416	1854	244	493	295	238	393	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Peak-hour factor, PHF	0.92	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)	2	129	2409	760	447	1994	262	530	317	256	423	685
RTOR Reduction (vph)	0	0	0	172	0	0	67	0	0	155	0	0
Lane Group Flow (vph)	0	131	2409	588	447	1994	195	530	317	101	423	685
Heavy Vehicles (%)	2%	2%	22%	9%	0%	13%	0%	5%	1%	1%	0%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		3	8		7	4
Permitted Phases				6			2			8		
Actuated Green, G (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Effective Green, g (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Actuated g/C Ratio		0.05	0.44	0.44	0.10	0.50	0.50	0.12	0.18	0.18	0.08	0.14
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0	2.5	3.0	3.0	2.5	3.0
Lane Grp Cap (vph)		160	1881	655	361	2317	815	396	656	293	269	500
v/s Ratio Prot		0.04	c0.57		c0.13	c0.43		c0.16	c0.09		0.12	c0.19
v/s Ratio Perm				0.40			0.12			0.06		
v/c Ratio		0.82	1.28	0.90	1.24	0.86	0.24	1.34	0.48	0.34	1.57	1.37
Uniform Delay, d1		75.6	44.6	41.3	71.8	34.7	22.3	70.5	58.5	56.9	73.8	68.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.04	0.94	1.04	1.06	1.00
Incremental Delay, d2		26.1	130.5	17.5	128.8	4.5	0.7	168.2	0.6	0.7	273.2	177.7
Delay (s)		101.7	175.1	58.8	200.5	39.1	23.0	241.5	55.3	60.1	351.1	246.5
Level of Service		F	F	E	F	D	C	F	E	E	F	F
Approach Delay (s)			145.4			64.3			145.9			252.1
Approach LOS			F			E			F			F

Intersection Summary			
HCM 2000 Control Delay	136.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	225
Future Volume (vph)	225
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	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	0.93
Adj. Flow (vph)	242
RTOR Reduction (vph)	163
Lane Group Flow (vph)	79
Heavy Vehicles (%)	2%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	22.4
Effective Green, g (s)	22.4
Actuated g/C Ratio	0.14
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	221
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.36
Uniform Delay, d1	62.3
Progression Factor	1.51
Incremental Delay, d2	0.9
Delay (s)	94.8
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	25	21	17	18	624	1217	57
Future Volume (vph)	25	21	17	18	624	1217	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1735			1788	3505	3486	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1735			1788	3505	3486	
Peak-hour factor, PHF	0.97	0.97	0.92	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	22	18	19	643	1255	59
RTOR Reduction (vph)	21	0	0	0	0	3	0
Lane Group Flow (vph)	27	0	0	37	643	1311	0
Heavy Vehicles (%)	0%	0%	2%	0%	3%	3%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	4.2			4.3	63.9	53.9	
Effective Green, g (s)	4.2			4.3	63.9	53.9	
Actuated g/C Ratio	0.05			0.05	0.80	0.67	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	91			96	2799	2348	
v/s Ratio Prot	c0.02			0.02	c0.18	c0.38	
v/s Ratio Perm							
v/c Ratio	0.30			0.39	0.23	0.56	
Uniform Delay, d1	36.5			36.6	2.0	6.8	
Progression Factor	1.00			0.83	1.91	0.53	
Incremental Delay, d2	0.8			1.0	0.2	0.4	
Delay (s)	37.3			31.3	4.0	4.1	
Level of Service	D			C	A	A	
Approach Delay (s)	37.3				5.4	4.1	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	6	77	1	49	5	605	35	41	1191	10
Future Volume (vph)	10	0	6	77	1	49	5	605	35	41	1191	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1753			1811	1615	1805	1867		1805	1845	1615
Flt Permitted		0.76			0.72	1.00	0.08	1.00		0.31	1.00	1.00
Satd. Flow (perm)		1366			1361	1615	145	1867		597	1845	1615
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)	11	0	6	81	1	52	5	637	37	43	1254	11
RTOR Reduction (vph)	0	15	0	0	0	47	0	2	0	0	0	4
Lane Group Flow (vph)	0	2	0	0	82	5	5	672	0	43	1254	7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		8.0			8.4	8.4	53.4	50.1		53.4	52.4	52.4
Effective Green, g (s)		8.0			8.4	8.4	53.4	50.1		53.4	52.4	52.4
Actuated g/C Ratio		0.10			0.11	0.11	0.67	0.63		0.67	0.65	0.65
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		136			142	169	117	1169		448	1208	1057
v/s Ratio Prot							0.00	0.36		c0.00	c0.68	
v/s Ratio Perm		0.00			c0.06	0.00	0.03			0.06		0.00
v/c Ratio		0.01			0.58	0.03	0.04	0.57		0.10	1.04	0.01
Uniform Delay, d1		32.4			34.1	32.2	19.1	8.7		5.4	13.8	4.8
Progression Factor		1.00			1.00	1.00	1.62	2.49		1.23	2.25	1.00
Incremental Delay, d2		0.0			3.7	0.0	0.1	2.0		0.0	26.5	0.0
Delay (s)		32.5			37.8	32.2	31.0	23.8		6.7	57.5	4.8
Level of Service		C			D	C	C	C		A	E	A
Approach Delay (s)		32.5			35.6			23.8			55.4	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	71	387	264	400	855	54
Future Volume (vph)	71	387	264	400	855	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1670		1805	1900	1850	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1670		90	1900	1850	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	407	278	421	900	57
RTOR Reduction (vph)	141	0	0	0	2	0
Lane Group Flow (vph)	341	0	278	421	955	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	37.8		111.1	111.1	79.4	
Effective Green, g (s)	37.8		111.1	111.1	79.4	
Actuated g/C Ratio	0.24		0.69	0.69	0.50	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	394		346	1319	918	
v/s Ratio Prot	c0.20		c0.13	0.22	c0.52	
v/s Ratio Perm			0.42			
v/c Ratio	0.86		0.80	0.32	1.04	
Uniform Delay, d1	58.6		53.4	9.6	40.3	
Progression Factor	1.00		1.18	1.50	0.61	
Incremental Delay, d2	17.7		10.8	0.6	38.7	
Delay (s)	76.3		73.7	14.9	63.4	
Level of Service	E		E	B	E	
Approach Delay (s)	76.3			38.3	63.4	
Approach LOS	E			D	E	

Intersection Summary			
HCM 2000 Control Delay	58.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	16	31	55	7	17	10	398	63	27	823	9
Future Volume (vph)	10	16	31	55	7	17	10	398	63	27	823	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1820	1615	1805	1845		1805	1878	
Flt Permitted		0.93			0.65	1.00	0.29	1.00		0.47	1.00	
Satd. Flow (perm)		1645			1241	1615	548	1845		894	1878	
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)	11	17	33	59	8	18	11	428	68	29	885	10
RTOR Reduction (vph)	0	30	0	0	0	17	0	2	0	0	0	0
Lane Group Flow (vph)	0	31	0	0	67	1	11	494	0	29	895	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		13.0			13.0	13.0	135.7	135.7		135.7	135.7	
Effective Green, g (s)		13.0			13.0	13.0	135.7	135.7		135.7	135.7	
Actuated g/C Ratio		0.08			0.08	0.08	0.85	0.85		0.85	0.85	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		133			100	131	464	1564		758	1592	
v/s Ratio Prot								0.27			c0.48	
v/s Ratio Perm		0.02			c0.05	0.00	0.02			0.03		
v/c Ratio		0.23			0.67	0.01	0.02	0.32		0.04	0.56	
Uniform Delay, d1		68.8			71.4	67.6	1.9	2.5		1.9	3.5	
Progression Factor		1.00			1.00	1.00	0.89	0.96		0.53	0.30	
Incremental Delay, d2		0.9			16.2	0.0	0.1	0.5		0.1	1.3	
Delay (s)		69.7			87.6	67.6	1.8	2.9		1.1	2.3	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		69.7			83.4			2.9			2.3	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	420	29	110	503	54	63	282	85	115	642	204
Future Volume (vph)	1	420	29	110	503	54	63	282	85	115	642	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1865		1805	1856		1805	1806		1805	1900	1615
Flt Permitted		1.00		0.18	1.00		0.14	1.00		0.35	1.00	1.00
Satd. Flow (perm)		1863		350	1856		271	1806		668	1900	1615
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)	1	447	31	117	535	57	67	300	90	122	683	217
RTOR Reduction (vph)	0	1	0	0	2	0	0	6	0	0	0	78
Lane Group Flow (vph)	0	478	0	117	590	0	67	384	0	122	683	139
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		43.2		61.8	61.8		72.0	66.5		81.4	71.2	71.2
Effective Green, g (s)		43.2		61.8	61.8		72.0	66.5		81.4	71.2	71.2
Actuated g/C Ratio		0.27		0.39	0.39		0.45	0.42		0.51	0.45	0.45
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		503		227	716		174	750		412	845	718
v/s Ratio Prot				0.03	c0.32		0.01	0.21		c0.02	c0.36	
v/s Ratio Perm		c0.26		0.17			0.16			0.13		0.09
v/c Ratio		0.95		0.52	0.82		0.39	0.51		0.30	0.81	0.19
Uniform Delay, d1		57.3		36.8	44.2		31.5	34.7		22.8	38.5	27.0
Progression Factor		1.00		1.00	1.00		1.30	1.01		1.00	1.00	1.00
Incremental Delay, d2		27.5		2.0	7.7		0.6	2.4		0.2	8.2	0.6
Delay (s)		84.9		38.9	51.8		41.5	37.6		22.9	46.7	27.6
Level of Service		F		D	D		D	D		C	D	C
Approach Delay (s)		84.9			49.7			38.2			39.8	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	116.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	579	386	87	271	603	618
Future Volume (vph)	579	386	87	271	603	618
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	1538
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	1538
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	715	477	107	335	744	763
RTOR Reduction (vph)	0	229	0	0	0	404
Lane Group Flow (vph)	715	248	107	335	744	359
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	27.6	27.6	7.5	60.1	47.1	47.1
Effective Green, g (s)	27.6	27.6	7.5	60.1	47.1	47.1
Actuated g/C Ratio	0.28	0.28	0.08	0.60	0.47	0.47
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	903	436	262	1141	894	724
v/s Ratio Prot	c0.22	0.16	0.03	c0.18	c0.39	0.23
v/s Ratio Perm						
v/c Ratio	0.79	0.57	0.41	0.29	0.83	0.50
Uniform Delay, d1	33.5	31.1	44.1	9.7	23.0	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	2.9	0.5	0.7	7.5	1.2
Delay (s)	39.1	34.0	44.6	10.3	30.5	19.4
Level of Service	D	C	D	B	C	B
Approach Delay (s)	37.0			18.6	24.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
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 (vph)	11	27	15	748	28	521	12	210	409	900	648	4
Future Volume (vph)	11	27	15	748	28	521	12	210	409	900	648	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
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)	12	29	16	804	30	560	13	226	440	968	697	4
RTOR Reduction (vph)	0	15	0	0	0	429	0	0	337	0	0	0
Lane Group Flow (vph)	12	30	0	418	416	131	13	226	103	968	701	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		30.4	30.4	30.4	2.6	30.4	30.4	37.7	64.9	
Effective Green, g (s)	6.5	6.5		30.4	30.4	30.4	2.6	30.4	30.4	37.7	64.9	
Actuated g/C Ratio	0.05	0.05		0.23	0.23	0.23	0.02	0.23	0.23	0.29	0.50	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	90	89		401	403	373	36	423	370	1005	911	
v/s Ratio Prot	0.01	c0.02		c0.24	0.24		0.01	0.12		c0.28	c0.38	
v/s Ratio Perm						0.08			0.06			
v/c Ratio	0.13	0.33		1.04	1.03	0.35	0.36	0.53	0.28	0.96	0.77	
Uniform Delay, d1	59.1	59.7		49.8	49.8	41.6	62.9	43.6	40.8	45.5	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.54	
Incremental Delay, d2	0.2	0.8		56.4	53.4	0.6	2.2	2.4	0.9	3.3	0.6	
Delay (s)	59.3	60.5		106.2	103.2	42.1	65.1	46.0	41.7	45.9	14.9	
Level of Service	E	E		F	F	D	E	D	D	D	B	
Approach Delay (s)		60.2			79.6			43.5			32.9	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1	83	61	4	39	41	666	35	10	1408	5
Future Volume (vph)	29	1	83	61	4	39	41	666	35	10	1408	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1618		1805	1639		1805	1792	1615	1805	1792	1615
Flt Permitted	0.73	1.00		0.70	1.00		0.04	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	1380	1618		1325	1639		80	1792	1615	613	1792	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	32	1	91	67	4	43	45	732	38	11	1547	5
RTOR Reduction (vph)	0	82	0	0	39	0	0	0	10	0	0	1
Lane Group Flow (vph)	32	10	0	67	8	0	45	732	28	11	1547	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	12.2	12.2		12.2	12.2		99.5	97.2	97.2	99.2	95.1	95.1
Effective Green, g (s)	12.2	12.2		12.2	12.2		99.5	97.2	97.2	99.2	95.1	95.1
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.77	0.75	0.75	0.76	0.73	0.73
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	129	151		124	153		119	1339	1207	486	1310	1181
v/s Ratio Prot		0.01			0.00		c0.01	0.41		0.00	c0.86	
v/s Ratio Perm	0.02			c0.05			0.28		0.02	0.02		0.00
v/c Ratio	0.25	0.06		0.54	0.05		0.38	0.55	0.02	0.02	1.18	0.00
Uniform Delay, d1	54.6	53.7		56.2	53.6		36.4	7.0	4.2	4.7	17.5	4.7
Progression Factor	1.00	1.00		1.00	1.00		1.95	0.66	0.00	0.71	0.87	1.00
Incremental Delay, d2	1.0	0.2		4.7	0.1		0.6	1.3	0.0	0.0	82.2	0.0
Delay (s)	55.7	53.9		61.0	53.8		71.5	5.9	0.0	3.3	97.3	4.7
Level of Service	E	D		E	D		E	A	A	A	F	A
Approach Delay (s)		54.3			58.0			9.2			96.4	
Approach LOS		D			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	4	22	237	2	466	12	713	109	228	1199	23
Future Volume (vph)	41	4	22	237	2	466	12	713	109	228	1199	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1761			1810	1568	1805	1845	1615	1787	1789	
Flt Permitted		0.50			0.69	1.00	0.05	1.00	1.00	0.18	1.00	
Satd. Flow (perm)		909			1320	1568	103	1845	1615	339	1789	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	45	4	24	260	2	512	13	784	120	251	1318	25
RTOR Reduction (vph)	0	14	0	0	0	241	0	0	29	0	1	0
Lane Group Flow (vph)	0	59	0	0	262	271	13	784	91	251	1342	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	6%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		28.2			28.2	28.2	73.7	73.7	73.7	85.2	90.3	
Effective Green, g (s)		28.2			28.2	28.2	73.7	73.7	73.7	85.2	90.3	
Actuated g/C Ratio		0.22			0.22	0.22	0.57	0.57	0.57	0.66	0.69	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		197			286	340	58	1045	915	350	1242	
v/s Ratio Prot								0.43		0.06	c0.75	
v/s Ratio Perm		0.06			c0.20	0.17	0.13		0.06	0.41		
v/c Ratio		0.30			0.92	0.80	0.22	0.75	0.10	0.72	1.08	
Uniform Delay, d1		42.6			49.7	48.2	14.0	21.2	12.9	17.5	19.9	
Progression Factor		1.00			1.00	1.00	1.33	1.46	1.62	1.61	0.51	
Incremental Delay, d2		0.9			31.9	12.2	8.0	4.6	0.2	0.6	38.0	
Delay (s)		43.5			81.6	60.4	26.7	35.5	21.1	28.9	48.1	
Level of Service		D			F	E	C	D	C	C	D	
Approach Delay (s)		43.5			67.6			33.5			45.1	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	155	46	1174	1295	77
Future Volume (vph)	174	155	46	1174	1295	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	1792	1769	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1805	1615	83	1792	1769	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	181	161	48	1223	1349	80
RTOR Reduction (vph)	0	141	0	0	1	0
Lane Group Flow (vph)	181	20	48	1223	1428	0
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	16.5	16.5	96.1	102.0	91.5	
Effective Green, g (s)	16.5	16.5	96.1	102.0	91.5	
Actuated g/C Ratio	0.13	0.13	0.74	0.78	0.70	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	229	204	122	1406	1245	
v/s Ratio Prot	c0.10		0.01	c0.68	c0.81	
v/s Ratio Perm		0.01	0.28			
v/c Ratio	0.79	0.10	0.39	0.87	1.15	
Uniform Delay, d1	55.1	50.2	34.8	9.5	19.2	
Progression Factor	1.00	1.00	1.17	0.65	0.70	
Incremental Delay, d2	15.9	0.1	0.6	4.8	69.3	
Delay (s)	70.9	50.3	41.1	11.0	82.9	
Level of Service	E	D	D	B	F	
Approach Delay (s)	61.2			12.1	82.9	
Approach LOS	E			B	F	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	70	835	76	98	33	1061	285	2	44	461	692
Future Volume (vph)	198	70	835	76	98	33	1061	285	2	44	461	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1881	1524	1805	1829		3367	1879		1805	1900	1599
Flt Permitted	0.59	1.00	1.00	0.71	1.00		0.95	1.00		0.53	1.00	1.00
Satd. Flow (perm)	1087	1881	1524	1348	1829		3367	1879		1014	1900	1599
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)	206	73	870	79	102	34	1105	297	2	46	480	721
RTOR Reduction (vph)	0	0	542	0	9	0	0	0	0	0	0	192
Lane Group Flow (vph)	206	73	328	79	127	0	1105	299	0	46	480	529
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	28.5	21.7	21.7	28.7	19.2		37.9	71.5		76.3	38.8	38.8
Effective Green, g (s)	28.5	21.7	21.7	28.7	19.2		37.9	71.5		76.3	38.8	38.8
Actuated g/C Ratio	0.22	0.17	0.17	0.22	0.15		0.29	0.55		0.59	0.30	0.30
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	284	313	254	322	270		981	1033		624	567	477
v/s Ratio Prot	c0.05	0.04		0.01	0.07		c0.33	0.16		0.00	0.25	
v/s Ratio Perm	0.11		c0.22	0.04						0.04		c0.33
v/c Ratio	0.73	0.23	1.29	0.25	0.47		1.13	0.29		0.07	0.85	1.11
Uniform Delay, d1	45.9	46.9	54.1	41.3	50.7		46.0	15.7		11.5	42.8	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.87	0.73		0.29	0.83	0.73
Incremental Delay, d2	7.6	0.1	156.8	0.1	0.5		64.2	0.4		0.0	11.3	72.9
Delay (s)	53.5	47.1	210.9	41.4	51.2		104.4	11.9		3.4	46.8	106.0
Level of Service	D	D	F	D	D		F	B		A	D	F
Approach Delay (s)		172.3			47.6			84.7			79.4	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	106.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	96.2%	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 (vph)	52	0	49	0	0	0	78	438	0	2	1148	97
Future Volume (vph)	52	0	49	0	0	0	78	438	0	2	1148	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1599				1787	3471		1805	3610	1615
Flt Permitted	0.95		1.00				0.19	1.00		0.47	1.00	1.00
Satd. Flow (perm)	1805		1599				348	3471		902	3610	1615
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)	58	0	54	0	0	0	87	487	0	2	1276	108
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	58	0	3	0	0	0	87	487	0	2	1276	80
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	8.4		8.4				104.0	110.0		96.0	96.0	96.0
Effective Green, g (s)	8.4		8.4				104.0	110.0		96.0	96.0	96.0
Actuated g/C Ratio	0.06		0.06				0.80	0.85		0.74	0.74	0.74
Clearance Time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	116		103				366	2937		666	2665	1192
v/s Ratio Prot	c0.03		0.00				0.01	c0.14			c0.35	
v/s Ratio Perm							0.17			0.00		0.05
v/c Ratio	0.50		0.03				0.24	0.17		0.00	0.48	0.07
Uniform Delay, d1	58.8		57.0				3.7	1.8		4.5	6.9	4.7
Progression Factor	1.00		1.00				0.75	0.66		1.00	1.00	1.00
Incremental Delay, d2	3.4		0.1				0.3	0.1		0.0	0.6	0.1
Delay (s)	62.1		57.1				3.1	1.3		4.5	7.5	4.8
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		59.7			0.0			1.6			7.3	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	0	115	59	1	18	26	454	10	2	9	1073
Future Volume (vph)	36	0	115	59	1	18	26	454	10	2	9	1073
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1811	1615	1805	3438	1615		1799	1900
Flt Permitted		0.71	1.00		0.70	1.00	0.09	1.00	1.00		0.46	1.00
Satd. Flow (perm)		1354	1615		1328	1615	168	3438	1615		874	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88
Adj. Flow (vph)	41	0	131	67	1	20	30	516	11	2	10	1219
RTOR Reduction (vph)	0	0	75	0	0	18	0	0	3	0	0	0
Lane Group Flow (vph)	0	41	56	0	68	2	30	516	8	0	12	1219
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	2%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		10.3	10.3		10.3	10.3	66.4	66.4	66.4		66.4	66.4
Effective Green, g (s)		10.3	10.3		10.3	10.3	66.4	66.4	66.4		66.4	66.4
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.74	0.74	0.74		0.74	0.74
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		155	185		152	185	124	2544	1195		646	1406
v/s Ratio Prot								0.15				c0.64
v/s Ratio Perm		0.03	0.03		c0.05	0.00	0.18		0.01		0.01	
v/c Ratio		0.26	0.30		0.45	0.01	0.24	0.20	0.01		0.02	0.87
Uniform Delay, d1		36.2	36.4		37.0	35.2	3.7	3.6	3.0		3.1	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.9		2.1	0.0	2.1	0.1	0.0		0.0	6.4
Delay (s)		37.2	37.3		39.1	35.2	5.8	3.6	3.0		3.1	14.9
Level of Service		D	D		D	D	A	A	A		A	B
Approach Delay (s)		37.3			38.2			3.7				14.6
Approach LOS		D			D			A				B

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	12
RTOR Reduction (vph)	3
Lane Group Flow (vph)	10
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	66.4
Effective Green, g (s)	66.4
Actuated g/C Ratio	0.74
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1195
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	3.0
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.0
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Future Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.33	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	322	1881	1583	612	1851	
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)	199	307	126	470	175	415	30	241	283	420	595	114
RTOR Reduction (vph)	0	0	105	0	0	254	0	0	225	0	6	0
Lane Group Flow (vph)	199	307	21	470	175	161	30	241	58	420	703	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	19.3	19.3	19.3	39.4	39.4	39.4	27.4	23.6	23.6	38.6	29.3	
Effective Green, g (s)	19.3	19.3	19.3	39.4	39.4	39.4	27.4	23.6	23.6	38.6	29.3	
Actuated g/C Ratio	0.17	0.17	0.17	0.34	0.34	0.34	0.24	0.21	0.21	0.34	0.25	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	302	318	270	617	650	516	125	385	324	297	471	
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.11	c0.38	
v/s Ratio Perm			0.01			0.11	0.05		0.04	0.36		
v/c Ratio	0.66	0.97	0.08	0.76	0.27	0.31	0.24	0.63	0.18	1.41	1.49	
Uniform Delay, d1	44.8	47.6	40.4	33.7	27.4	27.9	35.7	41.7	37.8	37.2	42.9	
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	4.6	40.8	0.1	8.6	1.0	1.6	0.4	5.3	0.7	205.2	232.7	
Delay (s)	49.4	88.4	40.5	42.3	28.4	29.4	36.0	47.1	38.5	242.3	275.6	
Level of Service	D	F	D	D	C	C	D	D	D	F	F	
Approach Delay (s)		66.6			35.0			42.1			263.2	
Approach LOS		E			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	118.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	4	37	94	15	62	27	695	65	62	907	28
Future Volume (vph)	25	4	37	94	15	62	27	695	65	62	907	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1724			1821	1615	1805	3321		1787	1810	1615
Flt Permitted		0.82			0.70	1.00	0.16	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1449			1335	1615	298	3321		541	1810	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	28	5	42	107	17	70	31	790	74	70	1031	32
RTOR Reduction (vph)	0	36	0	0	0	60	0	5	0	0	0	10
Lane Group Flow (vph)	0	39	0	0	124	10	31	859	0	70	1031	22
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	8%	0%	1%	5%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		11.6			12.5	12.5	58.8	47.1		52.1	58.8	58.8
Effective Green, g (s)		11.6			12.5	12.5	58.8	47.1		52.1	58.8	58.8
Actuated g/C Ratio		0.14			0.15	0.15	0.70	0.56		0.62	0.70	0.70
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		199			198	240	208	1859		409	1265	1129
v/s Ratio Prot								0.26		0.01	c0.57	
v/s Ratio Perm		0.03			c0.09	0.01	0.10			0.10		0.01
v/c Ratio		0.19			0.63	0.04	0.15	0.46		0.17	0.82	0.02
Uniform Delay, d1		32.1			33.6	30.7	4.2	11.0		6.6	8.8	3.9
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			4.4	0.0	0.5	0.2		0.1	4.4	0.0
Delay (s)		32.3			38.0	30.7	4.7	11.2		6.6	13.2	3.9
Level of Service		C			D	C	A	B		A	B	A
Approach Delay (s)		32.3			35.4			11.0			12.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	20.4
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	2	54	80	4	86	76	667	39	34	863	12
Future Volume (vph)	59	2	54	80	4	86	76	667	39	34	863	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1724	1615	1805	1900	1599	1805	3312	1615	1787	3438	1615
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.20	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	1715	1724	1615	1805	1900	1599	377	3312	1615	646	3438	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	67	2	61	91	5	98	86	758	44	39	981	14
RTOR Reduction (vph)	0	0	57	0	0	88	0	0	21	0	0	7
Lane Group Flow (vph)	34	35	4	91	5	10	86	758	23	39	981	7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	9%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	5.7	5.7	5.7	9.9	9.9	9.9	56.2	49.2	49.2	49.6	45.9	45.9
Effective Green, g (s)	5.7	5.7	5.7	9.9	9.9	9.9	56.2	49.2	49.2	49.6	45.9	45.9
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11	0.11	0.60	0.53	0.53	0.53	0.49	0.49
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	104	105	98	191	201	169	333	1742	849	387	1687	792
v/s Ratio Prot	0.02	c0.02		c0.05	0.00		c0.02	c0.23		0.00	c0.29	
v/s Ratio Perm			0.00			0.01	0.14		0.01	0.05		0.00
v/c Ratio	0.33	0.33	0.04	0.48	0.02	0.06	0.26	0.44	0.03	0.10	0.58	0.01
Uniform Delay, d1	42.1	42.1	41.3	39.4	37.5	37.6	9.4	13.6	10.6	10.6	17.0	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.4	0.1	1.4	0.0	0.1	0.3	0.4	0.0	0.1	0.3	0.0
Delay (s)	43.4	43.4	41.4	40.7	37.5	37.7	9.7	14.0	10.7	10.7	17.3	12.2
Level of Service	D	D	D	D	D	D	A	B	B	B	B	B
Approach Delay (s)		42.5			39.1			13.4			17.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	25.0
Intersection Capacity Utilization	55.2%	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 (vph)	395	0	186	0	0	0	0	465	400	300	854	0
Future Volume (vph)	395	0	186	0	0	0	0	465	400	300	854	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1568					3406	1538	1805	3438	
Flt Permitted	0.95		1.00					1.00	1.00	0.43	1.00	
Satd. Flow (perm)	3433		1568					3406	1538	826	3438	
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)	429	0	202	0	0	0	0	505	435	326	928	0
RTOR Reduction (vph)	0	0	158	0	0	0	0	0	269	0	0	0
Lane Group Flow (vph)	429	0	44	0	0	0	0	505	166	326	928	0
Heavy Vehicles (%)	2%	0%	3%	2%	2%	2%	0%	6%	5%	0%	5%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	17.1		17.1					30.1	30.1	43.4	49.0	
Effective Green, g (s)	17.1		17.1					30.1	30.1	43.4	49.0	
Actuated g/C Ratio	0.22		0.22					0.38	0.38	0.55	0.62	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	744		339					1299	586	619	2135	
v/s Ratio Prot								0.15		0.09	c0.27	
v/s Ratio Perm	c0.12		0.03						0.11	c0.20		
v/c Ratio	0.58		0.13					0.39	0.28	0.53	0.43	
Uniform Delay, d1	27.7		24.9					17.7	16.9	9.8	7.8	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9		0.4					0.6	0.8	1.1	0.5	
Delay (s)	29.6		25.3					18.3	17.8	10.8	8.2	
Level of Service	C		C					B	B	B	A	
Approach Delay (s)		28.2			0.0			18.1			8.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	18.4
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	399	0	311	183	677	0	0	755	875
Future Volume (vph)	0	0	0	399	0	311	183	677	0	0	755	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1752		1553	1752	3471			3539	1568
Flt Permitted				0.95		1.00	0.27	1.00			1.00	1.00
Satd. Flow (perm)				1752		1553	494	3471			3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.25	0.25	0.96	0.96
Adj. Flow (vph)	0	0	0	416	0	324	191	705	0	0	786	911
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	0	0	0	485
Lane Group Flow (vph)	0	0	0	416	0	155	191	705	0	0	786	426
Heavy Vehicles (%)	2%	2%	2%	3%	0%	4%	3%	4%	0%	0%	2%	3%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				32.4		32.4	61.7	67.7			50.3	50.3
Effective Green, g (s)				32.4		32.4	61.7	67.7			50.3	50.3
Actuated g/C Ratio				0.29		0.29	0.54	0.60			0.44	0.44
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				499		442	394	2068			1567	694
v/s Ratio Prot							c0.05	0.20			0.22	
v/s Ratio Perm				c0.24		0.10	0.21					c0.27
v/c Ratio				0.83		0.35	0.48	0.34			0.50	0.61
Uniform Delay, d1				38.1		32.2	14.2	11.6			22.7	24.2
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				11.9		0.7	0.9	0.2			0.6	2.6
Delay (s)				50.0		32.9	15.2	11.9			23.3	26.8
Level of Service				D		C	B	B			C	C
Approach Delay (s)		0.0			42.5			12.6			25.2	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	113.6	Sum of lost time (s)	19.5
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	40	567	86	20	20	274	682	32	17	977	142
Future Volume (vph)	131	40	567	86	20	20	274	682	32	17	977	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	1787	3438	1583	1805	3505	1615
Flt Permitted	0.44	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	828	1881	1599	1386	1881	1615	1787	3438	1583	1805	3505	1615
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)	136	42	591	90	21	21	285	710	33	18	1018	148
RTOR Reduction (vph)	0	0	167	0	0	19	0	0	17	0	0	82
Lane Group Flow (vph)	136	42	424	90	21	2	285	710	17	18	1018	66
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	26.3	26.3	26.3	8.7	8.7	8.7	9.0	48.3	48.3	4.0	43.3	43.3
Effective Green, g (s)	26.3	26.3	26.3	8.7	8.7	8.7	9.0	48.3	48.3	4.0	43.3	43.3
Actuated g/C Ratio	0.27	0.27	0.27	0.09	0.09	0.09	0.09	0.50	0.50	0.04	0.45	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	340	512	435	124	169	145	166	1719	791	74	1571	723
v/s Ratio Prot	0.05	0.02			0.01		c0.16	c0.21		0.01	c0.29	
v/s Ratio Perm	0.06		c0.26	0.06		0.00			0.01			0.04
v/c Ratio	0.40	0.08	0.97	0.73	0.12	0.01	1.72	0.41	0.02	0.24	0.65	0.09
Uniform Delay, d1	27.9	26.2	34.8	42.8	40.4	40.0	43.8	15.2	12.2	44.8	20.7	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	36.1	17.9	0.2	0.0	346.8	0.7	0.0	4.8	2.1	0.3
Delay (s)	28.7	26.2	70.9	60.6	40.7	40.1	390.6	16.0	12.3	49.6	22.8	15.6
Level of Service	C	C	E	E	D	D	F	B	B	D	C	B
Approach Delay (s)		61.0			54.2			119.7			22.3	
Approach LOS		E			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	65.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	82.9%	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 (vph)	164	9	226	50	15	32	132	651	50	20	860	102
Future Volume (vph)	164	9	226	50	15	32	132	651	50	20	860	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1713			1770		1787	1792	1615	1805	1845	1615
Flt Permitted		0.84			0.59		0.07	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)		1460			1069		135	1792	1615	579	1845	1615
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)	174	10	240	53	16	34	140	693	53	21	915	109
RTOR Reduction (vph)	0	47	0	0	18	0	0	0	23	0	0	58
Lane Group Flow (vph)	0	377	0	0	85	0	140	693	30	21	915	51
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		19.0			19.0		65.1	55.7	55.7	48.5	45.4	45.4
Effective Green, g (s)		19.0			19.0		65.1	55.7	55.7	48.5	45.4	45.4
Actuated g/C Ratio		0.20			0.20		0.67	0.58	0.58	0.50	0.47	0.47
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		286			209		251	1031	929	329	865	757
v/s Ratio Prot							c0.05	c0.39		0.00	c0.50	
v/s Ratio Perm		c0.26			0.08		0.32		0.02	0.03		0.03
v/c Ratio		1.32			0.41		0.56	0.67	0.03	0.06	1.06	0.07
Uniform Delay, d1		38.9			34.0		21.2	14.2	8.9	12.8	25.7	14.1
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		166.3			1.3		2.7	3.5	0.1	0.1	47.1	0.2
Delay (s)		205.2			35.3		23.9	17.7	9.0	12.9	72.8	14.3
Level of Service		F			D		C	B	A	B	E	B
Approach Delay (s)		205.2			35.3			18.2			65.5	
Approach LOS		F			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	23.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	267	491	169	199	221	271	387	189	254	322	16
Future Volume (vph)	28	267	491	169	199	221	271	387	189	254	322	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1787	1881	1568	1770	1881	1568	1752	1886	
Flt Permitted	0.62	1.00	1.00	0.40	1.00	1.00	0.20	1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1181	1900	1615	749	1881	1568	368	1881	1568	322	1886	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	293	540	186	219	243	298	425	208	279	354	18
RTOR Reduction (vph)	0	0	192	0	0	145	0	0	114	0	2	0
Lane Group Flow (vph)	31	293	348	186	219	98	298	425	94	279	370	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	3%	2%	1%	3%	3%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	40.5	36.1	36.1	54.5	43.2	43.2	31.3	22.9	22.9	31.2	22.9	
Effective Green, g (s)	40.5	36.1	36.1	54.5	43.2	43.2	31.3	22.9	22.9	31.2	22.9	
Actuated g/C Ratio	0.38	0.34	0.34	0.51	0.40	0.40	0.29	0.21	0.21	0.29	0.21	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	472	640	544	492	758	632	217	402	335	204	403	
v/s Ratio Prot	0.00	0.15		c0.04	0.12		c0.11	0.23		0.11	0.20	
v/s Ratio Perm	0.02		c0.22	0.15		0.06	c0.29		0.06	0.29		
v/c Ratio	0.07	0.46	0.64	0.38	0.29	0.16	1.37	1.06	0.28	1.37	0.92	
Uniform Delay, d1	21.1	27.8	30.0	15.4	21.6	20.3	34.7	42.1	35.2	34.8	41.2	
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	0.1	1.5	4.2	0.5	0.6	0.3	194.3	60.8	0.5	193.5	25.5	
Delay (s)	21.1	29.3	34.2	15.9	22.2	20.7	229.0	102.9	35.7	228.3	66.7	
Level of Service	C	C	C	B	C	C	F	F	D	F	E	
Approach Delay (s)		32.1			19.8			128.3			136.0	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	80.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	28.3
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 (vph)	470	144	24	19	126	78	9	366	0	71	389	178
Future Volume (vph)	470	144	24	19	126	78	9	366	0	71	389	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810			1803		1805	1776		1805	1810	1553
Flt Permitted		0.67			0.92		0.39	1.00		0.41	1.00	1.00
Satd. Flow (perm)		1259			1674		733	1776		788	1810	1553
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)	495	152	25	20	133	82	9	385	0	75	409	187
RTOR Reduction (vph)	0	1	0	0	19	0	0	0	0	0	0	119
Lane Group Flow (vph)	0	671	0	0	216	0	9	385	0	75	409	68
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	7%	0%	0%	5%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.9			28.9		23.6	23.6		23.6	23.6	23.6
Effective Green, g (s)		28.9			28.9		23.6	23.6		23.6	23.6	23.6
Actuated g/C Ratio		0.44			0.44		0.36	0.36		0.36	0.36	0.36
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		559			744		266	644		286	657	563
v/s Ratio Prot								0.22			c0.23	
v/s Ratio Perm		c0.53			0.13		0.01			0.10		0.04
v/c Ratio		1.20			0.29		0.03	0.60		0.26	0.62	0.12
Uniform Delay, d1		18.1			11.5		13.3	16.8		14.6	17.0	13.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		106.4			0.3		0.1	2.3		1.0	2.6	0.2
Delay (s)		124.5			11.8		13.5	19.1		15.6	19.6	14.0
Level of Service		F			B		B	B		B	B	B
Approach Delay (s)		124.5			11.8			19.0			17.6	
Approach LOS		F			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	53.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1203	2	2	15	0	15	0	905	9	10	621	877
Future Volume (vph)	1203	2	2	15	0	15	0	905	9	10	621	877
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1441	1446		1805	0			3434		1805	1810	1417
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1441	1446		1805	0			3434		278	1810	1417
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)	1280	2	2	16	0	16	0	963	10	11	661	933
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	0	249
Lane Group Flow (vph)	640	644	0	16	0	0	0	973	0	11	661	684
Heavy Vehicles (%)	19%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	14%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	84.0	84.0		2.5	0.0			27.3		29.4	35.4	35.4
Effective Green, g (s)	84.0	84.0		2.5	0.0			27.3		29.4	35.4	35.4
Actuated g/C Ratio	0.60	0.60		0.02	0.00			0.20		0.21	0.25	0.25
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	867	870		32	0			671		81	458	359
v/s Ratio Prot	0.44	c0.45		c0.01				0.28		0.00	0.37	
v/s Ratio Perm										0.03		c0.48
v/c Ratio	0.74	0.74		0.50	0.00			1.45		0.14	1.44	1.91
Uniform Delay, d1	19.9	20.0		67.9	69.8			56.1		45.7	52.1	52.1
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1	5.1		11.8	0.0			210.8		0.8	211.5	418.2
Delay (s)	25.0	25.0		79.7	69.8			267.0		46.5	263.6	470.3
Level of Service	C	C		E	E			F		D	F	F
Approach Delay (s)		25.0			74.7			267.0			382.3	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	233.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	68	1	548	16	710	4	1291	828	480	851	59
Future Volume (vph)	70	68	1	548	16	710	4	1291	828	480	851	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1815			1542	1583	1805	3574	1357	1736	3406	1615
Flt Permitted		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1815			1542	1583	1805	3574	1357	1736	3406	1615
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)	74	72	1	583	17	755	4	1373	881	511	905	63
RTOR Reduction (vph)	0	0	0	0	0	238	0	0	224	0	0	30
Lane Group Flow (vph)	0	147	0	0	600	517	4	1373	657	511	905	33
Heavy Vehicles (%)	3%	1%	0%	18%	0%	2%	0%	1%	19%	4%	6%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		20.4			53.4	53.4	1.4	58.3	58.3	54.0	110.7	110.7
Effective Green, g (s)		20.4			53.4	53.4	1.4	58.3	58.3	54.0	110.7	110.7
Actuated g/C Ratio		0.10			0.25	0.25	0.01	0.27	0.27	0.25	0.52	0.52
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		173			386	397	11	978	371	440	1770	839
v/s Ratio Prot		c0.08			c0.39		0.00	0.38		c0.29	0.27	
v/s Ratio Perm						0.33			c0.48			0.02
v/c Ratio		0.85			1.55	1.30	0.36	1.40	1.77	1.16	0.51	0.04
Uniform Delay, d1		94.7			79.8	79.8	105.3	77.3	77.3	79.5	33.4	25.0
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		30.2			261.9	153.1	19.3	187.9	358.1	95.1	0.6	0.0
Delay (s)		125.0			341.7	232.8	124.6	265.2	435.4	174.5	34.0	25.1
Level of Service		F			F	F	F	F	F	F	C	C
Approach Delay (s)		125.0			281.0			331.4			82.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	242.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	212.9	Sum of lost time (s)	27.0
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	0	66	22	4	4	442	1595	34	10	1302	237
Future Volume (vph)	74	0	66	22	4	4	442	1595	34	10	1302	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.94			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1733			1800		1805	3505	1615	1805	3374	1615
Flt Permitted		0.82			0.64		0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1455			1205		157	3505	1615	170	3374	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	81	0	73	24	4	4	486	1753	37	11	1431	260
RTOR Reduction (vph)	0	92	0	0	4	0	0	0	10	0	0	61
Lane Group Flow (vph)	0	62	0	0	28	0	486	1753	27	11	1431	199
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		11.6			11.6		77.8	77.1	77.1	78.2	48.4	48.4
Effective Green, g (s)		11.6			11.6		77.8	77.1	77.1	78.2	48.4	48.4
Actuated g/C Ratio		0.11			0.11		0.73	0.72	0.72	0.73	0.45	0.45
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)		157			130		566	2523	1162	140	1524	729
v/s Ratio Prot							c0.24	0.50		0.00	c0.42	
v/s Ratio Perm		c0.04			0.02		0.39		0.02	0.06		0.12
v/c Ratio		0.40			0.22		0.86	0.69	0.02	0.08	0.94	0.27
Uniform Delay, d1		44.5			43.6		29.7	8.4	4.3	7.1	27.9	18.4
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.4			0.9		12.3	1.1	0.0	0.2	11.8	0.4
Delay (s)		47.9			44.5		42.0	9.5	4.3	7.4	39.8	18.8
Level of Service		D			D		D	A	A	A	D	B
Approach Delay (s)		47.9			44.5			16.3			36.3	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	17.7
Intersection Capacity Utilization	83.7%	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 (vph)	119	272	727	140	223	221	602	944	127	307	682	76
Future Volume (vph)	119	272	727	140	223	221	602	944	127	307	682	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
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)	1805	1900	1495	1805	1900	1583	1752	3542		1787	3556	
Flt Permitted	0.46	1.00	1.00	0.31	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	876	1900	1495	588	1900	1583	163	3542		196	3556	
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)	127	289	773	149	237	235	640	1004	135	327	726	81
RTOR Reduction (vph)	0	0	242	0	0	178	0	7	0	0	6	0
Lane Group Flow (vph)	127	289	531	149	237	57	640	1132	0	327	801	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%	3%	0%	1%	1%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	45.7	33.4	33.4	49.6	35.2	35.2	78.4	53.4		56.0	38.4	
Effective Green, g (s)	45.7	33.4	33.4	49.6	35.2	35.2	78.4	53.4		56.0	38.4	
Actuated g/C Ratio	0.32	0.23	0.23	0.34	0.24	0.24	0.54	0.37		0.39	0.27	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	355	438	344	322	461	384	451	1306		269	943	
v/s Ratio Prot	0.03	0.15		c0.05	0.12		c0.32	0.32		0.15	0.23	
v/s Ratio Perm	0.08		c0.36	0.11		0.04	c0.44			0.32		
v/c Ratio	0.36	0.66	1.54	0.46	0.51	0.15	1.42	0.87		1.22	0.85	
Uniform Delay, d1	36.7	50.5	55.7	35.2	47.4	43.0	45.8	42.4		43.4	50.5	
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	0.6	4.0	259.2	1.1	1.3	0.2	201.2	7.1		126.1	8.3	
Delay (s)	37.4	54.5	314.9	36.3	48.7	43.3	247.1	49.5		169.5	58.8	
Level of Service	D	D	F	D	D	D	F	D		F	E	
Approach Delay (s)		222.0			43.7			120.6			90.7	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	128.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	144.8	Sum of lost time (s)	26.3
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	0	71	20	0	20	61	1207	16	16	974	33
Future Volume (vph)	53	0	71	20	0	20	61	1207	16	16	974	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615			1729		1805	3603		1805	3558	
Flt Permitted	0.73	1.00			0.80		0.20	1.00		0.16	1.00	
Satd. Flow (perm)	1384	1615			1420		375	3603		295	3558	
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)	59	0	79	22	0	22	68	1341	18	18	1082	37
RTOR Reduction (vph)	0	71	0	0	40	0	0	1	0	0	2	0
Lane Group Flow (vph)	59	8	0	0	4	0	68	1358	0	18	1117	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	7.4	7.4			7.4		53.3	48.4		48.1	46.2	
Effective Green, g (s)	7.4	7.4			7.4		53.3	48.4		48.1	46.2	
Actuated g/C Ratio	0.10	0.10			0.10		0.69	0.63		0.62	0.60	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	132	155			136		350	2261		221	2132	
v/s Ratio Prot		0.00					c0.01	c0.38		0.00	0.31	
v/s Ratio Perm	c0.04				0.00		0.12			0.05		
v/c Ratio	0.45	0.05			0.03		0.19	0.60		0.08	0.52	
Uniform Delay, d1	32.9	31.7			31.6		4.7	8.6		6.2	9.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.1			0.1		0.3	0.7		0.2	0.4	
Delay (s)	35.3	31.8			31.7		5.0	9.2		6.4	9.5	
Level of Service	D	C			C		A	A		A	A	
Approach Delay (s)		33.3			31.7			9.0			9.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	19.4
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	0	1	15	0	17	16	1210	54	12	26	1007
Future Volume (vph)	9	0	1	15	0	17	16	1210	54	12	26	1007
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1615		1805	1615		1805	5154			1794	3610
Flt Permitted	0.83	1.00		0.83	1.00		0.26	1.00			0.18	1.00
Satd. Flow (perm)	1583	1615		1583	1615		501	5154			335	3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93
Adj. Flow (vph)	10	0	1	16	0	18	17	1301	58	13	28	1083
RTOR Reduction (vph)	0	1	0	0	17	0	0	2	0	0	0	0
Lane Group Flow (vph)	10	0	0	16	1	0	17	1357	0	0	41	1083
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	4.8	4.8		4.8	4.8		71.2	71.2			74.4	81.5
Effective Green, g (s)	4.8	4.8		4.8	4.8		71.2	71.2			74.4	81.5
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.71	0.71			0.74	0.82
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	75	77		75	77		356	3669			295	2942
v/s Ratio Prot		0.00			0.00			0.26			0.00	c0.30
v/s Ratio Perm	0.01			c0.01			0.03				0.10	
v/c Ratio	0.13	0.00		0.21	0.01		0.05	0.37			0.14	0.37
Uniform Delay, d1	45.6	45.3		45.8	45.3		4.3	5.6			3.4	2.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			0.20	0.35
Incremental Delay, d2	0.3	0.0		0.5	0.0		0.3	0.3			0.1	0.3
Delay (s)	45.9	45.3		46.3	45.4		4.5	5.9			0.7	1.2
Level of Service	D	D		D	D		A	A			A	A
Approach Delay (s)		45.8			45.8			5.9				1.2
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	13
RTOR Reduction (vph)	2
Lane Group Flow (vph)	11
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	81.5
Effective Green, g (s)	81.5
Actuated g/C Ratio	0.82
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1316
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	1.7
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	1.7
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	646	148	325	923	909	414
Future Volume (vph)	646	148	325	923	909	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1615	1805	5187	5187	1509
Flt Permitted	0.95	1.00	0.17	1.00	1.00	1.00
Satd. Flow (perm)	3303	1615	314	5187	5187	1509
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	734	168	369	1049	1033	470
RTOR Reduction (vph)	0	127	0	0	0	289
Lane Group Flow (vph)	734	41	369	1049	1033	181
Heavy Vehicles (%)	6%	0%	0%	0%	0%	7%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	24.4	24.4	61.2	61.2	38.6	38.6
Effective Green, g (s)	24.4	24.4	61.2	61.2	38.6	38.6
Actuated g/C Ratio	0.24	0.24	0.61	0.61	0.39	0.39
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	805	394	408	3174	2002	582
v/s Ratio Prot	c0.22		c0.13	0.20	0.20	
v/s Ratio Perm		0.03	c0.42			0.12
v/c Ratio	0.91	0.10	0.90	0.33	0.52	0.31
Uniform Delay, d1	36.8	29.3	18.0	9.4	23.5	21.4
Progression Factor	1.00	1.00	1.47	1.82	0.45	1.64
Incremental Delay, d2	14.3	0.0	22.7	0.3	0.9	1.3
Delay (s)	51.0	29.4	49.1	17.4	11.6	36.5
Level of Service	D	C	D	B	B	D
Approach Delay (s)	47.0			25.7	19.4	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	15	33	1	57	1511	1289	51
Future Volume (vph)	15	33	1	57	1511	1289	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.90			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3256			1804	4893	6089	
Flt Permitted	0.98			0.13	1.00	1.00	
Satd. Flow (perm)	3256			241	4893	6089	
Peak-hour factor, PHF	0.90	0.90	0.92	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	37	1	63	1679	1432	57
RTOR Reduction (vph)	35	0	0	0	0	3	0
Lane Group Flow (vph)	19	0	0	64	1679	1486	0
Heavy Vehicles (%)	0%	0%	2%	0%	6%	7%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	6.4			79.3	79.3	67.3	
Effective Green, g (s)	6.4			79.3	79.3	67.3	
Actuated g/C Ratio	0.06			0.79	0.79	0.67	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	208			259	3880	4097	
v/s Ratio Prot	c0.01			0.01	c0.34	0.24	
v/s Ratio Perm				0.18			
v/c Ratio	0.09			0.25	0.43	0.36	
Uniform Delay, d1	44.1			3.1	3.3	7.1	
Progression Factor	1.00			0.32	0.13	1.00	
Incremental Delay, d2	0.1			0.2	0.3	0.2	
Delay (s)	44.1			1.1	0.7	7.2	
Level of Service	D			A	A	A	
Approach Delay (s)	44.1				0.7	7.2	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	474	151	265	1261	1189	791
Future Volume (vph)	474	151	265	1261	1189	791
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.12	1.00	1.00	1.00
Satd. Flow (perm)	3467	1615	230	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	539	172	301	1433	1351	899
RTOR Reduction (vph)	0	138	0	0	0	393
Lane Group Flow (vph)	539	34	301	1433	1351	506
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	19.8	19.8	65.9	65.9	46.0	46.0
Effective Green, g (s)	19.8	19.8	65.9	65.9	46.0	46.0
Actuated g/C Ratio	0.20	0.20	0.66	0.66	0.46	0.46
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	686	319	394	3224	2230	721
v/s Ratio Prot	c0.16		c0.12	0.29	0.28	
v/s Ratio Perm		0.02	c0.39			0.32
v/c Ratio	0.79	0.11	0.76	0.44	0.61	0.70
Uniform Delay, d1	38.1	32.9	18.5	8.2	20.2	21.5
Progression Factor	1.00	1.00	1.31	0.17	1.06	3.82
Incremental Delay, d2	5.5	0.1	8.0	0.4	0.8	3.9
Delay (s)	43.5	32.9	32.3	1.8	22.2	86.3
Level of Service	D	C	C	A	C	F
Approach Delay (s)	41.0			7.1	47.8	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	127	4	78	64	1	72	2	87	1441	205	44	148
Future Volume (vph)	127	4	78	64	1	72	2	87	1441	205	44	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.95		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1751		1805	1900	1568		1787	4954			1783
Flt Permitted		0.81		0.62	1.00	1.00		0.08	1.00			0.07
Satd. Flow (perm)		1468		1170	1900	1568		150	4954			138
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91
Adj. Flow (vph)	140	4	86	70	1	79	2	96	1584	225	48	163
RTOR Reduction (vph)	0	23	0	0	0	63	0	0	15	0	0	0
Lane Group Flow (vph)	0	207	0	70	1	16	0	98	1794	0	0	211
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	2%	1%	3%	1%	2%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		19.7		19.7	19.7	19.7		56.0	50.1			65.0
Effective Green, g (s)		19.7		19.7	19.7	19.7		56.0	50.1			65.0
Actuated g/C Ratio		0.20		0.20	0.20	0.20		0.56	0.50			0.65
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		289		230	374	308		180	2481			260
v/s Ratio Prot					0.00			0.03	0.36			c0.08
v/s Ratio Perm		c0.14		0.06		0.01		0.27				c0.44
v/c Ratio		0.72		0.30	0.00	0.05		0.54	0.72			0.81
Uniform Delay, d1		37.5		34.3	32.3	32.6		13.7	19.5			24.8
Progression Factor		1.00		1.00	1.00	1.00		1.12	0.91			0.87
Incremental Delay, d2		8.7		0.3	0.0	0.0		1.6	1.7			6.2
Delay (s)		46.2		34.6	32.3	32.6		17.0	19.5			27.8
Level of Service		D		C	C	C		B	B			C
Approach Delay (s)		46.2			33.5				19.3			
Approach LOS		D			C				B			

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1836	27
Future Volume (vph)	1836	27
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	4715	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	4715	1615
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	2018	30
RTOR Reduction (vph)	0	14
Lane Group Flow (vph)	2018	16
Heavy Vehicles (%)	10%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	54.6	54.6
Effective Green, g (s)	54.6	54.6
Actuated g/C Ratio	0.55	0.55
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2574	881
v/s Ratio Prot	c0.43	
v/s Ratio Perm		0.01
v/c Ratio	0.78	0.02
Uniform Delay, d1	18.0	10.4
Progression Factor	1.14	1.00
Incremental Delay, d2	0.9	0.0
Delay (s)	21.4	10.4
Level of Service	C	B
Approach Delay (s)	21.9	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	0	526	0	0	0	0	553	1131	554	1529	0
Future Volume (vph)	88	0	526	0	0	0	0	553	1131	554	1529	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	1656	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.28	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	489	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	100	0	598	0	0	0	0	628	1285	630	1738	0
RTOR Reduction (vph)	0	0	93	0	0	0	0	0	408	0	0	0
Lane Group Flow (vph)	100	0	505	0	0	0	0	628	877	630	1738	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Effective Green, g (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Actuated g/C Ratio	0.24		0.24					0.38	0.38	0.63	0.63	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	433		379					1316	600	512	2096	
v/s Ratio Prot								0.18		c0.21	0.52	
v/s Ratio Perm	0.06		c0.32						c0.56	0.56		
v/c Ratio	0.23		1.33					0.48	1.46	1.23	0.83	
Uniform Delay, d1	30.6		38.0					23.3	30.9	14.6	14.2	
Progression Factor	1.00		1.00					1.59	2.76	1.87	1.55	
Incremental Delay, d2	0.2		166.2					0.9	214.2	105.4	0.4	
Delay (s)	30.8		204.2					38.0	299.4	132.6	22.3	
Level of Service	C		F					D	F	F	C	
Approach Delay (s)		179.3			0.0			213.6			51.6	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	131.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	130.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1058	0	531	252	389	0	0	1025	32
Future Volume (vph)	0	0	0	1058	0	531	252	389	0	0	1025	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	163	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1176	0	590	280	432	0	0	1139	36
RTOR Reduction (vph)	0	0	0	0	0	308	0	0	0	0	0	22
Lane Group Flow (vph)	0	0	0	1176	0	282	280	432	0	0	1139	14
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				28.1		28.1	59.5	59.5			37.9	37.9
Effective Green, g (s)				28.1		28.1	59.5	59.5			37.9	37.9
Actuated g/C Ratio				0.28		0.28	0.60	0.60			0.38	0.38
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		432	318	2105			1255	612
v/s Ratio Prot							c0.12	0.12			0.34	
v/s Ratio Perm				c0.36		0.18	c0.40					0.01
v/c Ratio				1.28		0.65	0.88	0.21			0.91	0.02
Uniform Delay, d1				36.0		31.7	27.9	9.3			29.4	19.4
Progression Factor				1.00		1.00	2.15	0.58			1.00	1.00
Incremental Delay, d2				134.2		3.5	21.4	0.2			11.1	0.1
Delay (s)				170.2		35.2	81.3	5.6			40.5	19.5
Level of Service				F		D	F	A			D	B
Approach Delay (s)		0.0			125.1			35.4			39.9	
Approach LOS		A			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	80.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	130.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	55	117	7	24	150	563	207	27	885	34
Future Volume (vph)	12	4	55	117	7	24	150	563	207	27	885	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1756	1615	1665	1684	1615	1787	3406	1615	1787	3438	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.23	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	1715	1756	1615	1665	1684	1615	436	3406	1615	796	3438	1615
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)	13	4	59	126	8	26	161	605	223	29	952	37
RTOR Reduction (vph)	0	0	57	0	0	24	0	0	81	0	0	15
Lane Group Flow (vph)	8	9	2	67	67	2	161	605	142	29	952	22
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	1%	6%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	3.1	3.1	3.1	7.3	7.3	7.3	72.1	64.6	64.6	63.3	60.2	60.2
Effective Green, g (s)	3.1	3.1	3.1	7.3	7.3	7.3	72.1	64.6	64.6	63.3	60.2	60.2
Actuated g/C Ratio	0.03	0.03	0.03	0.07	0.07	0.07	0.71	0.64	0.64	0.63	0.59	0.59
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	52	53	49	120	121	116	410	2174	1030	528	2045	960
v/s Ratio Prot	0.00	c0.01		c0.04	0.04		c0.03	0.18		0.00	c0.28	
v/s Ratio Perm			0.00			0.00	0.25		0.09	0.03		0.01
v/c Ratio	0.15	0.17	0.04	0.56	0.55	0.02	0.39	0.28	0.14	0.05	0.47	0.02
Uniform Delay, d1	47.8	47.8	47.6	45.4	45.4	43.6	6.1	8.0	7.3	7.2	11.5	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.1	0.2	3.2	3.1	0.0	0.2	0.3	0.3	0.0	0.8	0.0
Delay (s)	48.8	48.9	47.8	48.6	48.5	43.6	6.3	8.4	7.5	7.2	12.3	8.5
Level of Service	D	D	D	D	D	D	A	A	A	A	B	A
Approach Delay (s)		48.1			47.7			7.9			12.0	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	23.1
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	2	55	39	1	44	62	508	29	34	852	24
Future Volume (vph)	24	2	55	39	1	44	62	508	29	34	852	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1815	1615	1805	1900	1599		1764	1615		1745	1599
Flt Permitted		0.74	1.00	0.74	1.00	1.00		0.76	1.00		0.96	1.00
Satd. Flow (perm)		1407	1615	1403	1900	1599		1353	1615		1685	1599
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)	27	2	61	43	1	49	69	564	32	38	947	27
RTOR Reduction (vph)	0	0	55	0	0	44	0	0	9	0	0	7
Lane Group Flow (vph)	0	29	6	43	1	5	0	633	23	0	985	20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	8%	0%	0%	9%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		6.4	6.4	6.4	6.4	6.4		49.9	49.9		49.9	49.9
Effective Green, g (s)		6.4	6.4	6.4	6.4	6.4		49.9	49.9		49.9	49.9
Actuated g/C Ratio		0.09	0.09	0.09	0.09	0.09		0.73	0.73		0.73	0.73
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		131	151	131	178	149		988	1179		1231	1168
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.02	0.00	c0.03		0.00		0.47	0.01		c0.58	0.01
v/c Ratio		0.22	0.04	0.33	0.01	0.03		0.64	0.02		0.80	0.02
Uniform Delay, d1		28.6	28.1	28.9	28.1	28.1		4.7	2.5		6.0	2.5
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.1	1.5	0.0	0.1		3.2	0.0		5.5	0.0
Delay (s)		29.5	28.3	30.4	28.1	28.2		7.8	2.5		11.5	2.5
Level of Service		C	C	C	C	C		A	A		B	A
Approach Delay (s)		28.7			29.2			7.6			11.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	86	0	38	14	0	21	10	71	1833	10	9	9
Future Volume (vph)	86	0	38	14	0	21	10	71	1833	10	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.92			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1770	1553		1713			1805	5132			1805
Flt Permitted		0.73	1.00		0.83			0.13	1.00			0.08
Satd. Flow (perm)		1365	1553		1446			240	5132			157
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	90	0	40	15	0	22	11	74	1909	10	10	9
RTOR Reduction (vph)	0	0	36	0	33	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	4	0	4	0	0	85	1919	0	0	19
Heavy Vehicles (%)	2%	0%	4%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		8.0	8.0		8.0			56.2	51.3			50.4
Effective Green, g (s)		8.0	8.0		8.0			56.2	51.3			50.4
Actuated g/C Ratio		0.10	0.10		0.10			0.70	0.64			0.63
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		136	155		144			264	3290			140
v/s Ratio Prot								c0.02	c0.37			0.00
v/s Ratio Perm		c0.07	0.00		0.00			0.21				0.08
v/c Ratio		0.66	0.03		0.03			0.32	0.58			0.14
Uniform Delay, d1		34.7	32.5		32.5			6.5	8.2			6.2
Progression Factor		1.00	1.00		1.00			1.00	1.00			0.68
Incremental Delay, d2		10.4	0.0		0.1			0.4	0.8			0.1
Delay (s)		45.1	32.5		32.5			6.8	9.0			4.3
Level of Service		D	C		C			A	A			A
Approach Delay (s)		41.2			32.5				8.9			
Approach LOS		D			C				A			

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1317	34
Future Volume (vph)	1317	34
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1615
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1372	35
RTOR Reduction (vph)	0	14
Lane Group Flow (vph)	1372	21
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	48.4	48.4
Effective Green, g (s)	48.4	48.4
Actuated g/C Ratio	0.60	0.60
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2141	977
v/s Ratio Prot	c0.39	
v/s Ratio Perm		0.01
v/c Ratio	0.64	0.02
Uniform Delay, d1	10.2	6.3
Progression Factor	0.60	1.00
Incremental Delay, d2	0.8	0.0
Delay (s)	6.8	6.3
Level of Service	A	A
Approach Delay (s)	6.8	
Approach LOS	A	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	21	163	1935	680	254	2099	439	1	690	670	588	6
Future Volume (vph)	21	163	1935	680	254	2099	439	1	690	670	588	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.95	1.00	
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
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)	22	168	1995	701	262	2164	453	1	711	691	606	6
RTOR Reduction (vph)	0	0	0	198	0	0	107	0	0	0	152	0
Lane Group Flow (vph)	0	190	1995	503	262	2164	346	0	712	691	454	0
Heavy Vehicles (%)	0%	2%	2%	2%	3%	2%	1%	0%	1%	1%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	1	1	6		5	2		3	3	8		7
Permitted Phases				6			2				8	
Actuated Green, G (s)		13.3	67.8	67.8	14.5	70.0	70.0		24.0	32.4	32.4	
Effective Green, g (s)		13.3	67.8	67.8	14.5	70.0	70.0		24.0	32.4	32.4	
Actuated g/C Ratio		0.08	0.42	0.42	0.09	0.44	0.44		0.15	0.20	0.20	
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0		2.5	3.0	3.0	
Lane Grp Cap (vph)		286	2154	670	308	2224	699		520	723	323	
v/s Ratio Prot		0.06	c0.39		0.08	c0.43			c0.21	0.19		
v/s Ratio Perm				0.32			0.22				c0.28	
v/c Ratio		0.66	0.93	0.75	0.85	0.97	0.50		1.37	0.96	1.41	
Uniform Delay, d1		71.2	43.7	39.0	71.7	44.1	32.3		68.0	63.1	63.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.01	1.05	1.07	
Incremental Delay, d2		5.2	8.4	7.6	19.4	13.7	2.5		176.7	21.0	198.6	
Delay (s)		76.3	52.1	46.6	91.1	57.8	34.8		245.3	87.0	266.7	
Level of Service		E	D	D	F	E	C		F	F	F	
Approach Delay (s)			52.4			57.2				197.3		
Approach LOS			D			E				F		

Intersection Summary			
HCM 2000 Control Delay	97.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	369	434	222
Future Volume (vph)	369	434	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.7	7.6	7.6
Lane Util. Factor	0.97	0.95	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3502	3539	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3502	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	380	447	229
RTOR Reduction (vph)	0	0	197
Lane Group Flow (vph)	386	447	32
Heavy Vehicles (%)	0%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Actuated Green, G (s)	14.3	22.4	22.4
Effective Green, g (s)	14.3	22.4	22.4
Actuated g/C Ratio	0.09	0.14	0.14
Clearance Time (s)	7.7	7.6	7.6
Vehicle Extension (s)	2.5	3.0	3.0
Lane Grp Cap (vph)	312	495	221
v/s Ratio Prot	0.11	0.13	
v/s Ratio Perm			0.02
v/c Ratio	1.24	0.90	0.15
Uniform Delay, d1	72.8	67.7	60.4
Progression Factor	0.97	0.97	2.56
Incremental Delay, d2	128.4	17.5	0.3
Delay (s)	198.7	83.0	154.7
Level of Service	F	F	F
Approach Delay (s)		140.5	
Approach LOS		F	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	84	76	65	77	1136	890	68
Future Volume (vph)	84	76	65	77	1136	890	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1733			1805	3574	3539	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1733			1805	3574	3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	87	78	67	79	1171	918	70
RTOR Reduction (vph)	42	0	0	0	0	7	0
Lane Group Flow (vph)	123	0	0	146	1171	981	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	9.4			8.9	58.7	44.1	
Effective Green, g (s)	9.4			8.9	58.7	44.1	
Actuated g/C Ratio	0.12			0.11	0.73	0.55	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	203			200	2622	1950	
v/s Ratio Prot	c0.07			c0.08	0.33	c0.28	
v/s Ratio Perm							
v/c Ratio	0.60			0.73	0.45	0.50	
Uniform Delay, d1	33.5			34.4	4.2	11.1	
Progression Factor	1.00			0.87	2.11	0.59	
Incremental Delay, d2	3.6			7.0	0.3	0.7	
Delay (s)	37.1			36.9	9.2	7.4	
Level of Service	D			D	A	A	
Approach Delay (s)	37.1				12.3	7.4	
Approach LOS	D				B	A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	58.6%	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 (vph)	16	1	11	48	4	87	20	1098	100	45	899	2
Future Volume (vph)	16	1	11	48	4	87	20	1098	100	45	899	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749			1816	1583	1805	1859		1805	1881	1615
Flt Permitted		0.79			0.72	1.00	0.20	1.00		0.08	1.00	1.00
Satd. Flow (perm)		1429			1372	1583	373	1859		147	1881	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	16	1	11	48	4	88	20	1109	101	45	908	2
RTOR Reduction (vph)	0	10	0	0	0	81	0	3	0	0	0	1
Lane Group Flow (vph)	0	18	0	0	52	7	20	1207	0	45	908	1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		6.4			6.8	6.8	55.0	51.7		55.0	52.9	52.9
Effective Green, g (s)		6.4			6.8	6.8	55.0	51.7		55.0	52.9	52.9
Actuated g/C Ratio		0.08			0.08	0.08	0.69	0.65		0.69	0.66	0.66
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		114			116	134	294	1201		169	1243	1067
v/s Ratio Prot							0.00	c0.65		c0.01	0.48	
v/s Ratio Perm		0.01			c0.04	0.00	0.04			0.17		0.00
v/c Ratio		0.16			0.45	0.06	0.07	1.01		0.27	0.73	0.00
Uniform Delay, d1		34.3			34.8	33.6	6.9	14.1		18.6	8.9	4.6
Progression Factor		1.00			1.00	1.00	1.36	2.75		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.2	0.1	0.0	26.0		0.4	3.8	0.0
Delay (s)		34.6			36.0	33.7	9.4	64.9		18.9	12.7	4.6
Level of Service		C			D	C	A	E		B	B	A
Approach Delay (s)		34.6			34.6			64.0			13.0	
Approach LOS		C			C			E			B	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	339	480	721	607	99
Future Volume (vph)	65	339	480	721	607	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.98	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1644		1787	1863	1848	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1644		95	1863	1848	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	67	349	495	743	626	102
RTOR Reduction (vph)	114	0	0	0	4	0
Lane Group Flow (vph)	302	0	495	743	724	0
Heavy Vehicles (%)	0%	2%	1%	2%	1%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	37.6		131.3	131.3	74.4	
Effective Green, g (s)	37.6		131.3	131.3	74.4	
Actuated g/C Ratio	0.21		0.73	0.73	0.41	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	343		555	1358	763	
v/s Ratio Prot	c0.18		c0.26	0.40	c0.39	
v/s Ratio Perm			0.40			
v/c Ratio	0.88		0.89	0.55	0.95	
Uniform Delay, d1	69.0		54.9	11.0	51.0	
Progression Factor	1.00		1.00	1.00	0.83	
Incremental Delay, d2	22.2		16.2	1.6	21.2	
Delay (s)	91.3		71.1	12.6	63.3	
Level of Service	F		E	B	E	
Approach Delay (s)	91.3			35.9	63.3	
Approach LOS	F			D	E	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	33	42	73	17	40	12	642	132	55	591	24
Future Volume (vph)	13	33	42	73	17	40	12	642	132	55	591	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764			1826	1615	1805	1836		1805	1866	
Flt Permitted		0.94			0.54	1.00	0.38	1.00		0.31	1.00	
Satd. Flow (perm)		1679			1021	1615	728	1836		584	1866	
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)	14	35	45	78	18	43	13	683	140	59	629	26
RTOR Reduction (vph)	0	20	0	0	0	20	0	3	0	0	1	0
Lane Group Flow (vph)	0	74	0	0	96	23	13	820	0	59	654	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		19.8			19.8	19.8	148.9	148.9		148.9	148.9	
Effective Green, g (s)		19.8			19.8	19.8	148.9	148.9		148.9	148.9	
Actuated g/C Ratio		0.11			0.11	0.11	0.83	0.83		0.83	0.83	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		184			112	177	602	1518		483	1543	
v/s Ratio Prot								c0.45			0.35	
v/s Ratio Perm		0.04			c0.09	0.01	0.02			0.10		
v/c Ratio		0.40			0.86	0.13	0.02	0.54		0.12	0.42	
Uniform Delay, d1		74.6			78.7	72.3	2.7	4.9		3.0	4.1	
Progression Factor		1.00			1.00	1.00	0.75	0.54		0.43	0.37	
Incremental Delay, d2		1.5			43.6	0.3	0.1	1.2		0.5	0.8	
Delay (s)		76.1			122.4	72.7	2.1	3.8		1.8	2.3	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		76.1			107.0			3.8			2.3	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	435	26	89	502	87	127	538	128	140	488	247
Future Volume (vph)	0	435	26	89	502	87	127	538	128	140	488	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1868		1770	1834		1787	1830		1770	1881	1615
Flt Permitted		1.00		0.07	1.00		0.31	1.00		0.18	1.00	1.00
Satd. Flow (perm)		1868		135	1834		574	1830		337	1881	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	448	27	92	518	90	131	555	132	144	503	255
RTOR Reduction (vph)	0	1	0	0	3	0	0	5	0	0	0	85
Lane Group Flow (vph)	0	474	0	92	605	0	131	682	0	144	503	170
Heavy Vehicles (%)	0%	1%	0%	2%	1%	3%	1%	1%	0%	2%	1%	0%
Turn Type		NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		46.5		61.5	61.5		99.3	88.6		94.7	86.3	86.3
Effective Green, g (s)		46.5		61.5	61.5		99.3	88.6		94.7	86.3	86.3
Actuated g/C Ratio		0.26		0.34	0.34		0.55	0.49		0.53	0.48	0.48
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		482		105	626		388	900		244	901	774
v/s Ratio Prot		0.25		0.03	c0.33		0.02	c0.37		c0.03	0.27	
v/s Ratio Perm				0.27			0.17			0.28		0.11
v/c Ratio		0.98		0.88	0.97		0.34	0.76		0.59	0.56	0.22
Uniform Delay, d1		66.3		48.1	58.2		22.9	37.0		29.8	33.3	27.3
Progression Factor		1.00		1.00	1.00		1.02	0.98		1.00	1.00	1.00
Incremental Delay, d2		36.2		50.6	27.4		0.2	5.4		2.7	2.5	0.7
Delay (s)		102.6		98.7	85.6		23.6	41.7		32.5	35.8	27.9
Level of Service		F		F	F		C	D		C	D	C
Approach Delay (s)		102.6			87.4			38.8			33.0	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	59.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	125.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	938	275	279	424	398	844
Future Volume (vph)	938	275	279	424	398	844
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1009	296	300	456	428	908
RTOR Reduction (vph)	0	183	0	0	0	599
Lane Group Flow (vph)	1009	113	300	456	428	309
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	45.9	45.9	15.4	61.8	40.9	40.9
Effective Green, g (s)	45.9	45.9	15.4	61.8	40.9	40.9
Actuated g/C Ratio	0.38	0.38	0.13	0.51	0.34	0.34
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1326	611	444	959	641	534
v/s Ratio Prot	c0.29	0.07	c0.09	0.24	c0.23	0.20
v/s Ratio Perm						
v/c Ratio	0.76	0.19	0.68	0.48	0.67	0.58
Uniform Delay, d1	32.3	24.6	49.9	18.7	33.8	32.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	3.3	1.7	3.5	2.5
Delay (s)	35.4	24.9	53.2	20.4	37.3	35.0
Level of Service	D	C	D	C	D	C
Approach Delay (s)	33.0			33.4	35.7	
Approach LOS	C			C	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)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	70.5%	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 (vph)	118	156	49	580	171	786	107	442	767	653	375	20
Future Volume (vph)	118	156	49	580	171	786	107	442	767	653	375	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1818		1681	1738	1599	1805	1881	1599	3467	1850	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1818		1681	1738	1599	1805	1881	1599	3467	1850	
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)	122	161	51	598	176	810	110	456	791	673	387	21
RTOR Reduction (vph)	0	8	0	0	0	308	0	0	387	0	1	0
Lane Group Flow (vph)	122	204	0	383	391	502	110	456	404	673	407	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	18.1	18.1		33.4	33.4	33.4	12.2	48.8	48.8	24.7	60.7	
Effective Green, g (s)	18.1	18.1		33.4	33.4	33.4	12.2	48.8	48.8	24.7	60.7	
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.22	0.08	0.33	0.33	0.16	0.40	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	217	219		374	386	356	146	611	520	570	748	
v/s Ratio Prot	0.07	c0.11		0.23	0.23		0.06	0.24		c0.19	0.22	
v/s Ratio Perm						c0.31			c0.25			
v/c Ratio	0.56	0.93		1.02	1.01	1.41	0.75	0.75	0.78	1.18	0.54	
Uniform Delay, d1	62.2	65.3		58.3	58.3	58.3	67.4	45.1	45.7	62.6	34.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.77	
Incremental Delay, d2	2.0	41.7		52.8	49.1	200.8	17.6	8.1	10.9	91.9	1.7	
Delay (s)	64.2	107.0		111.1	107.4	259.1	85.0	53.2	56.6	153.9	27.8	
Level of Service	E	F		F	F	F	F	D	E	F	C	
Approach Delay (s)		91.4			185.9			57.8			106.3	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	119.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	5	18	32	2	43	11	939	49	48	1222	76
Future Volume (vph)	66	5	18	32	2	43	11	939	49	48	1222	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	1436		1805	1582		1444	1881	1615	1752	1881	1583
Flt Permitted	0.73	1.00		0.74	1.00		0.09	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1278	1436		1409	1582		139	1881	1615	394	1881	1583
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)	69	5	19	33	2	45	11	978	51	50	1273	79
RTOR Reduction (vph)	0	17	0	0	41	0	0	0	12	0	0	15
Lane Group Flow (vph)	69	7	0	33	6	0	11	978	39	50	1273	64
Heavy Vehicles (%)	8%	0%	21%	0%	0%	3%	25%	1%	0%	3%	1%	2%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	11.9	11.9		11.9	11.9		119.8	115.1	115.1	119.5	117.8	117.8
Effective Green, g (s)	11.9	11.9		11.9	11.9		119.8	115.1	115.1	119.5	117.8	117.8
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.80	0.77	0.77	0.80	0.79	0.79
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	101	113		111	125		128	1443	1239	353	1477	1243
v/s Ratio Prot		0.00			0.00		0.00	0.52		c0.00	c0.68	
v/s Ratio Perm	c0.05			0.02			0.07		0.02	0.11		0.04
v/c Ratio	0.68	0.06		0.30	0.04		0.09	0.68	0.03	0.14	0.86	0.05
Uniform Delay, d1	67.2	63.9		65.1	63.8		20.6	8.5	4.2	7.7	10.7	3.6
Progression Factor	1.00	1.00		1.00	1.00		0.40	0.53	0.16	1.14	0.79	1.36
Incremental Delay, d2	17.4	0.2		1.5	0.1		0.0	0.2	0.0	0.0	4.3	0.0
Delay (s)	84.6	64.1		66.6	63.9		8.2	4.7	0.7	8.8	12.8	4.9
Level of Service	F	E		E	E		A	A	A	A	B	A
Approach Delay (s)		79.3			65.0			4.6			12.2	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	7	10	149	10	289	11	1165	137	328	1150	28
Future Volume (vph)	22	7	10	149	10	289	11	1165	137	328	1150	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1722			1783	1615	1805	1881	1583	1752	1857	
Flt Permitted		0.59			0.76	1.00	0.18	1.00	1.00	0.05	1.00	
Satd. Flow (perm)		1047			1424	1615	350	1881	1583	85	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	22	7	10	152	10	295	11	1189	140	335	1173	29
RTOR Reduction (vph)	0	8	0	0	0	258	0	0	24	0	1	0
Lane Group Flow (vph)	0	31	0	0	162	37	11	1189	116	335	1201	0
Heavy Vehicles (%)	0%	0%	14%	1%	14%	0%	0%	1%	2%	3%	2%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		18.8			18.8	18.8	87.2	87.2	87.2	114.6	119.7	
Effective Green, g (s)		18.8			18.8	18.8	87.2	87.2	87.2	114.6	119.7	
Actuated g/C Ratio		0.13			0.13	0.13	0.58	0.58	0.58	0.76	0.80	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		131			178	202	203	1093	920	369	1481	
v/s Ratio Prot								c0.63		c0.17	0.65	
v/s Ratio Perm		0.03			c0.11	0.02	0.03		0.07	0.53		
v/c Ratio		0.24			0.91	0.18	0.05	1.09	0.13	0.91	0.81	
Uniform Delay, d1		59.1			64.8	58.7	13.6	31.4	14.2	52.6	8.7	
Progression Factor		1.00			1.00	1.00	1.06	0.87	1.04	1.17	0.29	
Incremental Delay, d2		0.9			42.7	0.4	0.4	52.9	0.2	3.4	0.5	
Delay (s)		60.1			107.4	59.2	14.8	80.3	15.0	65.0	3.0	
Level of Service		E			F	E	B	F	B	E	A	
Approach Delay (s)		60.1			76.3			73.0			16.5	
Approach LOS		E			E			E			B	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	135	110	139	1337	1396	150
Future Volume (vph)	135	110	139	1337	1396	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1568	1787	1881	1842	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1770	1568	69	1881	1842	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	141	115	145	1393	1454	156
RTOR Reduction (vph)	0	104	0	0	2	0
Lane Group Flow (vph)	141	11	145	1393	1608	0
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	14.0	14.0	118.6	124.5	109.5	
Effective Green, g (s)	14.0	14.0	118.6	124.5	109.5	
Actuated g/C Ratio	0.09	0.09	0.79	0.83	0.73	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	165	146	158	1561	1344	
v/s Ratio Prot	c0.08		0.06	c0.74	c0.87	
v/s Ratio Perm		0.01	0.67			
v/c Ratio	0.85	0.07	0.92	0.89	1.20	
Uniform Delay, d1	67.0	62.1	66.6	8.4	20.2	
Progression Factor	1.00	1.00	0.79	1.81	0.64	
Incremental Delay, d2	31.7	0.1	20.1	2.6	89.0	
Delay (s)	98.7	62.2	72.8	17.7	101.9	
Level of Service	F	E	E	B	F	
Approach Delay (s)	82.3			22.9	101.9	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	64.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	112.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	426	134	955	111	90	40	952	505	15	54	480	291
Future Volume (vph)	426	134	955	111	90	40	952	505	15	54	480	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1599	1805	1788		3467	1873		1805	1881	1583
Flt Permitted	0.45	1.00	1.00	0.60	1.00		0.95	1.00		0.31	1.00	1.00
Satd. Flow (perm)	830	1863	1599	1139	1788		3467	1873		580	1881	1583
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)	448	141	1005	117	95	42	1002	532	16	57	505	306
RTOR Reduction (vph)	0	0	444	0	11	0	0	0	0	0	0	162
Lane Group Flow (vph)	448	141	561	117	126	0	1002	548	0	57	505	144
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	42.4	31.4	31.4	42.6	13.1		35.3	76.9		82.4	47.5	47.5
Effective Green, g (s)	42.4	31.4	31.4	42.6	13.1		35.3	76.9		82.4	47.5	47.5
Actuated g/C Ratio	0.28	0.21	0.21	0.28	0.09		0.24	0.51		0.55	0.32	0.32
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	418	389	334	373	156		815	960		363	595	501
v/s Ratio Prot	c0.21	0.08		0.02	0.07		c0.29	0.29		0.01	c0.27	
v/s Ratio Perm	0.09		c0.35	0.07						0.08		0.09
v/c Ratio	1.07	0.36	1.68	0.31	0.81		1.23	0.57		0.16	0.85	0.29
Uniform Delay, d1	51.3	50.7	59.3	41.2	67.2		57.4	25.2		18.1	47.9	38.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.92		1.80	0.99	1.96
Incremental Delay, d2	64.5	0.2	319.2	0.2	24.3		108.4	1.1		0.1	13.7	1.4
Delay (s)	115.8	50.9	378.5	41.3	91.5		162.7	24.3		32.6	61.3	76.9
Level of Service	F	D	F	D	F		F	C		C	E	E
Approach Delay (s)		275.7			68.4			113.8			64.9	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	161.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	0	111	0	0	0	56	915	0	1	714	94
Future Volume (vph)	126	0	111	0	0	0	56	915	0	1	714	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1615				1805	3574		1805	3539	1615
Flt Permitted	0.95		1.00				0.34	1.00		0.29	1.00	1.00
Satd. Flow (perm)	1805		1615				650	3574		553	3539	1615
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)	135	0	119	0	0	0	60	984	0	1	768	101
RTOR Reduction (vph)	0	0	106	0	0	0	0	0	0	0	0	27
Lane Group Flow (vph)	135	0	13	0	0	0	60	984	0	1	768	74
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	16.5		16.5				115.5	121.9		110.1	110.1	110.1
Effective Green, g (s)	16.5		16.5				115.5	121.9		110.1	110.1	110.1
Actuated g/C Ratio	0.11		0.11				0.77	0.81		0.73	0.73	0.73
Clearance Time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	198		177				542	2904		405	2597	1185
v/s Ratio Prot	c0.07		0.01				0.00	c0.28			0.22	
v/s Ratio Perm							0.08			0.00		0.05
v/c Ratio	0.68		0.07				0.11	0.34		0.00	0.30	0.06
Uniform Delay, d1	64.2		59.9				4.2	3.6		5.3	6.8	5.6
Progression Factor	1.00		1.00				0.97	1.22		1.00	1.00	1.00
Incremental Delay, d2	9.3		0.2				0.1	0.2		0.0	0.3	0.1
Delay (s)	73.5		60.1				4.2	4.6		5.3	7.1	5.7
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		67.2			0.0			4.6			6.9	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.6
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	0	87	29	0	11	127	854	60	2	20	693
Future Volume (vph)	20	0	87	29	0	11	127	854	60	2	20	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1805	1442	1805	3539	1568		1805	1863
Flt Permitted		0.74	1.00		0.74	1.00	0.31	1.00	1.00		0.31	1.00
Satd. Flow (perm)		1400	1615		1413	1442	595	3539	1568		595	1863
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)	21	0	92	31	0	12	134	899	63	2	21	729
RTOR Reduction (vph)	0	0	81	0	0	11	0	0	23	0	0	0
Lane Group Flow (vph)	0	21	11	0	31	1	134	899	40	0	23	729
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	2%	3%	0%	0%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		6.3	6.3		6.3	6.3	34.4	34.4	34.4		34.4	34.4
Effective Green, g (s)		6.3	6.3		6.3	6.3	34.4	34.4	34.4		34.4	34.4
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.64	0.64	0.64		0.64	0.64
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		164	189		165	169	381	2267	1004		381	1193
v/s Ratio Prot								0.25				c0.39
v/s Ratio Perm		0.01	0.01		c0.02	0.00	0.23		0.03		0.04	
v/c Ratio		0.13	0.06		0.19	0.01	0.35	0.40	0.04		0.06	0.61
Uniform Delay, d1		21.2	21.1		21.4	20.9	4.5	4.6	3.6		3.6	5.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.1		0.6	0.0	1.2	0.2	0.0		0.1	1.3
Delay (s)		21.6	21.2		21.9	21.0	5.7	4.9	3.6		3.7	7.0
Level of Service		C	C		C	C	A	A	A		A	A
Approach Delay (s)		21.3			21.7			4.9				6.8
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	28
Future Volume (vph)	28
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	29
RTOR Reduction (vph)	10
Lane Group Flow (vph)	19
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	34.4
Effective Green, g (s)	34.4
Actuated g/C Ratio	0.64
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1034
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.02
Uniform Delay, d1	3.5
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.5
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Future Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.16	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	317	1881	1583	302	1793	
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)	178	227	91	349	309	572	105	410	399	361	326	195
RTOR Reduction (vph)	0	0	77	0	0	215	0	0	237	0	19	0
Lane Group Flow (vph)	178	227	14	349	309	357	105	410	162	361	502	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	17.2	17.2	17.2	39.4	39.4	39.4	31.8	23.5	23.5	34.0	24.7	
Effective Green, g (s)	17.2	17.2	17.2	39.4	39.4	39.4	31.8	23.5	23.5	34.0	24.7	
Actuated g/C Ratio	0.15	0.15	0.15	0.35	0.35	0.35	0.28	0.21	0.21	0.30	0.22	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	269	281	236	623	650	552	196	391	329	211	392	
v/s Ratio Prot	0.10	c0.12		0.20	0.17		0.04	0.22		c0.14	0.28	
v/s Ratio Perm			0.01			c0.23	0.11		0.10	c0.37		
v/c Ratio	0.66	0.81	0.06	0.56	0.48	0.65	0.54	1.05	0.49	1.71	1.28	
Uniform Delay, d1	45.1	46.3	40.9	29.7	28.7	30.9	32.8	44.7	39.4	35.5	44.1	
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	5.4	15.1	0.1	3.6	2.5	5.8	1.4	58.8	3.3	339.3	144.8	
Delay (s)	50.5	61.4	41.0	33.4	31.2	36.7	34.2	103.5	42.7	374.8	188.9	
Level of Service	D	E	D	C	C	D	C	F	D	F	F	
Approach Delay (s)		53.7			34.3			69.0			265.0	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	103.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	32	72	84	15	124	39	992	95	188	699	52
Future Volume (vph)	93	32	72	84	15	124	39	992	95	188	699	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1719			1822	1583	1752	3499		1787	1863	1568
Flt Permitted		0.80			0.63	1.00	0.30	1.00		0.15	1.00	1.00
Satd. Flow (perm)		1406			1192	1583	549	3499		288	1863	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	95	33	73	86	15	127	40	1012	97	192	713	53
RTOR Reduction (vph)	0	23	0	0	0	101	0	7	0	0	0	20
Lane Group Flow (vph)	0	178	0	0	101	26	40	1102	0	192	713	33
Heavy Vehicles (%)	2%	4%	3%	0%	0%	2%	3%	2%	0%	1%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		14.8			15.7	15.7	48.9	34.4		42.2	48.9	48.9
Effective Green, g (s)		14.8			15.7	15.7	48.9	34.4		42.2	48.9	48.9
Actuated g/C Ratio		0.19			0.20	0.20	0.63	0.44		0.55	0.63	0.63
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		268			241	321	346	1555		308	1177	990
v/s Ratio Prot								c0.31		0.06	c0.38	
v/s Ratio Perm		c0.13			0.08	0.02	0.07			0.28		0.02
v/c Ratio		0.66			0.42	0.08	0.12	0.71		0.62	0.61	0.03
Uniform Delay, d1		29.0			26.9	25.0	5.7	17.4		11.0	8.5	5.4
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.7			0.4	0.0	0.2	1.6		2.8	1.0	0.0
Delay (s)		33.7			27.3	25.0	5.9	19.0		13.9	9.5	5.4
Level of Service		C			C	C	A	B		B	A	A
Approach Delay (s)		33.7			26.0			18.6			10.2	
Approach LOS		C			C			B			B	

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)	77.4	Sum of lost time (s)	20.4
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	13	195	28	12	38	190	965	54	101	716	71
Future Volume (vph)	288	13	195	28	12	38	190	965	54	101	716	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1698	1711	1615	1719	1900	1509	1787	3539	1538	1805	3505	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.27	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1698	1711	1615	1719	1900	1509	508	3539	1538	362	3505	1615
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)	300	14	203	29	12	40	198	1005	56	105	746	74
RTOR Reduction (vph)	0	0	99	0	0	38	0	0	31	0	0	43
Lane Group Flow (vph)	156	158	104	29	13	2	198	1005	25	105	746	31
Heavy Vehicles (%)	1%	0%	0%	5%	0%	7%	1%	2%	5%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	15.3	15.3	15.3	5.7	5.7	5.7	55.7	44.1	44.1	50.9	41.7	41.7
Effective Green, g (s)	15.3	15.3	15.3	5.7	5.7	5.7	55.7	44.1	44.1	50.9	41.7	41.7
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.06	0.56	0.44	0.44	0.51	0.42	0.42
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	261	263	248	98	109	86	434	1571	683	319	1471	678
v/s Ratio Prot	0.09	c0.09		c0.02	0.01		c0.05	c0.28		0.03	0.21	
v/s Ratio Perm			0.06			0.00	0.20		0.02	0.14		0.02
v/c Ratio	0.60	0.60	0.42	0.30	0.12	0.03	0.46	0.64	0.04	0.33	0.51	0.05
Uniform Delay, d1	39.1	39.2	38.0	44.9	44.4	44.2	11.7	21.4	15.6	13.7	21.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	3.2	0.8	1.2	0.4	0.1	0.6	1.2	0.0	0.4	0.1	0.0
Delay (s)	42.2	42.4	38.8	46.1	44.8	44.3	12.3	22.6	15.6	14.2	21.3	17.0
Level of Service	D	D	D	D	D	D	B	C	B	B	C	B
Approach Delay (s)		40.9			45.0			20.7			20.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	25.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	909	0	388	0	0	0	0	901	522	288	835	0
Future Volume (vph)	909	0	388	0	0	0	0	901	522	288	835	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467		1583					3574	1568	1805	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.22	1.00	
Satd. Flow (perm)	3467		1583					3574	1568	419	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.25	0.25	0.25	0.25	0.96	0.96	0.96	0.96	0.25
Adj. Flow (vph)	947	0	404	0	0	0	0	939	544	300	870	0
RTOR Reduction (vph)	0	0	185	0	0	0	0	0	284	0	0	0
Lane Group Flow (vph)	947	0	219	0	0	0	0	939	260	300	870	0
Heavy Vehicles (%)	1%	0%	2%	0%	0%	0%	0%	1%	3%	0%	2%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.7		18.7					46.6	46.6	60.4	66.0	
Effective Green, g (s)	18.7		18.7					46.6	46.6	60.4	66.0	
Actuated g/C Ratio	0.19		0.19					0.48	0.48	0.62	0.68	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	664		303					1708	749	455	2395	
v/s Ratio Prot								0.26		c0.09	0.25	
v/s Ratio Perm	c0.27		0.14						0.17	c0.31		
v/c Ratio	1.43		0.72					0.55	0.35	0.66	0.36	
Uniform Delay, d1	39.4		37.0					18.0	15.9	10.2	6.7	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	200.5		10.7					0.9	0.9	3.8	0.3	
Delay (s)	239.9		47.7					18.9	16.8	14.0	7.0	
Level of Service	F		D					B	B	B	A	
Approach Delay (s)		182.4			0.0			18.2			8.8	
Approach LOS		F			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	70.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	18.4
Intersection Capacity Utilization	89.5%	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 (vph)	0	0	0	320	0	420	236	1574	0	0	803	625
Future Volume (vph)	0	0	0	320	0	420	236	1574	0	0	803	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1615	1787	3574			3574	1583
Flt Permitted				0.95		1.00	0.23	1.00			1.00	1.00
Satd. Flow (perm)				1770		1615	427	3574			3574	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.94	0.94	0.94	0.94	0.94	0.25	0.25	0.94	0.94
Adj. Flow (vph)	0	0	0	340	0	447	251	1674	0	0	854	665
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	0	0	0	383
Lane Group Flow (vph)	0	0	0	340	0	389	251	1674	0	0	854	282
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				32.6		32.6	61.8	67.8			48.3	48.3
Effective Green, g (s)				32.6		32.6	61.8	67.8			48.3	48.3
Actuated g/C Ratio				0.29		0.29	0.54	0.60			0.42	0.42
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				506		462	392	2127			1515	671
v/s Ratio Prot							0.08	c0.47			0.24	
v/s Ratio Perm				0.19		c0.24	0.27					0.18
v/c Ratio				0.67		0.84	0.64	0.79			0.56	0.42
Uniform Delay, d1				35.9		38.2	15.6	17.6			24.8	23.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				3.8		13.6	3.6	2.4			0.9	1.0
Delay (s)				39.7		51.8	19.1	20.0			25.7	24.0
Level of Service				D		D	B	B			C	C
Approach Delay (s)		0.0			46.6			19.8			25.0	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	19.5
Intersection Capacity Utilization	89.5%	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 (vph)	295	104	515	182	137	60	603	1295	96	49	731	290
Future Volume (vph)	295	104	515	182	137	60	603	1295	96	49	731	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	1805	3574	1615	1805	3539	1599
Flt Permitted	0.32	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	602	1900	1615	1305	1900	1615	1805	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	109	542	192	144	63	635	1363	101	52	769	305
RTOR Reduction (vph)	0	0	204	0	0	57	0	0	58	0	0	173
Lane Group Flow (vph)	311	109	338	192	144	6	635	1363	43	52	769	132
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.4	42.5	42.5
Effective Green, g (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.4	42.5	42.5
Actuated g/C Ratio	0.29	0.29	0.29	0.09	0.09	0.09	0.09	0.43	0.43	0.10	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	345	559	475	119	173	147	164	1527	690	172	1526	689
v/s Ratio Prot	c0.13	0.06			0.08		c0.35	c0.38		0.03	0.22	
v/s Ratio Perm	0.14		0.21	c0.15		0.00			0.03			0.08
v/c Ratio	0.90	0.19	0.71	1.61	0.83	0.04	3.87	0.89	0.06	0.30	0.50	0.19
Uniform Delay, d1	30.4	26.0	31.0	44.8	44.0	40.8	44.8	26.1	16.6	41.5	20.3	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	0.1	4.7	311.3	27.1	0.1	1307.0	8.4	0.2	2.8	1.2	0.6
Delay (s)	55.9	26.1	35.7	356.1	71.1	40.9	1351.8	34.5	16.8	44.3	21.5	18.0
Level of Service	E	C	D	F	E	D	F	C	B	D	C	B
Approach Delay (s)		41.1			203.5			432.1			21.6	
Approach LOS		D			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	229.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	97.2%	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 (vph)	121	10	144	48	7	26	270	1318	62	22	878	127
Future Volume (vph)	121	10	144	48	7	26	270	1318	62	22	878	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1696			1737		1805	1863	1568	1805	1863	1583
Flt Permitted		0.84			0.61		0.07	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1455			1088		135	1863	1568	167	1863	1583
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)	126	10	150	50	7	27	281	1373	65	23	915	132
RTOR Reduction (vph)	0	40	0	0	17	0	0	0	26	0	0	69
Lane Group Flow (vph)	0	246	0	0	67	0	281	1373	39	23	915	63
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		18.3			18.3		70.1	60.5	60.5	48.7	45.6	45.6
Effective Green, g (s)		18.3			18.3		70.1	60.5	60.5	48.7	45.6	45.6
Actuated g/C Ratio		0.18			0.18		0.69	0.60	0.60	0.48	0.45	0.45
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		263			197		325	1117	940	130	841	715
v/s Ratio Prot							c0.12	c0.74		0.01	0.49	
v/s Ratio Perm		c0.17			0.06		0.48		0.02	0.08		0.04
v/c Ratio		0.93			0.34		0.86	1.23	0.04	0.18	1.09	0.09
Uniform Delay, d1		40.7			36.0		31.9	20.2	8.3	22.4	27.7	15.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		38.0			1.0		20.5	111.2	0.1	0.7	57.7	0.2
Delay (s)		78.7			37.1		52.4	131.4	8.4	23.0	85.4	16.0
Level of Service		E			D		D	F	A	C	F	B
Approach Delay (s)		78.7			37.1			113.8			75.5	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	95.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	287	355	168	330	232	721	574	170	254	504	27
Future Volume (vph)	24	287	355	168	330	232	721	574	170	254	504	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1626	1881	1568	1736	1881	1583	1787	1863	1524	1752	1863	
Flt Permitted	0.55	1.00	1.00	0.37	1.00	1.00	0.18	1.00	1.00	0.18	1.00	
Satd. Flow (perm)	946	1881	1568	677	1881	1583	330	1863	1524	324	1863	
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)	25	302	374	177	347	244	759	604	179	267	531	28
RTOR Reduction (vph)	0	0	133	0	0	95	0	0	113	0	2	0
Lane Group Flow (vph)	25	302	241	177	347	149	759	604	66	267	557	0
Heavy Vehicles (%)	11%	1%	3%	4%	1%	2%	1%	2%	6%	3%	1%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	35.1	32.2	32.2	50.4	40.6	40.6	31.2	22.8	22.8	31.1	22.8	
Effective Green, g (s)	35.1	32.2	32.2	50.4	40.6	40.6	31.2	22.8	22.8	31.1	22.8	
Actuated g/C Ratio	0.34	0.31	0.31	0.49	0.39	0.39	0.30	0.22	0.22	0.30	0.22	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	341	588	490	447	742	624	218	412	337	213	412	
v/s Ratio Prot	0.00	c0.16		c0.04	c0.18		c0.28	0.32		0.10	0.30	
v/s Ratio Perm	0.02		0.15	0.15		0.09	c0.77		0.04	0.28		
v/c Ratio	0.07	0.51	0.49	0.40	0.47	0.24	3.48	1.47	0.20	1.25	1.35	
Uniform Delay, d1	22.7	28.9	28.7	16.1	23.1	20.8	32.7	40.1	32.6	32.9	40.1	
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	0.1	2.0	2.2	0.6	1.3	0.6	1128.2	222.7	0.3	146.6	174.1	
Delay (s)	22.8	30.9	30.9	16.6	24.4	21.4	1160.9	262.7	32.9	179.5	214.2	
Level of Service	C	C	C	B	C	C	F	F	C	F	F	
Approach Delay (s)		30.6			21.7			678.1			203.0	
Approach LOS		C			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	326.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	28.3
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	131	24	22	209	144	35	547	1	72	442	170
Future Volume (vph)	275	131	24	22	209	144	35	547	1	72	442	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799			1786		1671	1862		1736	1881	1615
Flt Permitted		0.51			0.96		0.33	1.00		0.22	1.00	1.00
Satd. Flow (perm)		947			1712		579	1862		394	1881	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	312	149	27	25	238	164	40	622	1	82	502	193
RTOR Reduction (vph)	0	2	0	0	24	0	0	0	0	0	0	109
Lane Group Flow (vph)	0	487	0	0	403	0	40	623	0	82	502	84
Heavy Vehicles (%)	1%	3%	0%	0%	1%	0%	8%	2%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.9			28.9		32.0	32.0		32.0	32.0	32.0
Effective Green, g (s)		28.9			28.9		32.0	32.0		32.0	32.0	32.0
Actuated g/C Ratio		0.39			0.39		0.44	0.44		0.44	0.44	0.44
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		372			674		252	811		171	820	704
v/s Ratio Prot								c0.33			0.27	
v/s Ratio Perm		c0.51			0.24		0.07			0.21		0.05
v/c Ratio		1.31			0.60		0.16	0.77		0.48	0.61	0.12
Uniform Delay, d1		22.3			17.6		12.5	17.6		14.8	15.9	12.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		156.8			1.7		0.6	5.2		4.4	2.0	0.2
Delay (s)		179.0			19.3		13.2	22.7		19.1	17.9	12.5
Level of Service		F			B		B	C		B	B	B
Approach Delay (s)		179.0			19.3			22.2			16.7	
Approach LOS		F			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	845	1	4	12	0	22	0	943	23	32	668	1183
Future Volume (vph)	845	1	4	12	0	22	0	943	23	32	668	1183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	1592		1805	0			3562		1805	1881	1553
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1588	1592		1805	0			3562		291	1881	1553
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)	871	1	4	12	0	23	0	972	24	33	689	1220
RTOR Reduction (vph)	0	0	0	0	23	0	0	1	0	0	0	263
Lane Group Flow (vph)	435	441	0	12	0	0	0	995	0	33	689	957
Heavy Vehicles (%)	8%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	4%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	42.6	42.6		1.1	0.0			26.1		30.1	36.1	36.1
Effective Green, g (s)	42.6	42.6		1.1	0.0			26.1		30.1	36.1	36.1
Actuated g/C Ratio	0.44	0.44		0.01	0.00			0.27		0.31	0.37	0.37
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	693	695		20	0			953		151	696	575
v/s Ratio Prot	0.27	c0.28		c0.01				0.28		0.01	0.37	
v/s Ratio Perm										0.06		c0.62
v/c Ratio	0.63	0.63		0.60	0.00			1.04		0.22	0.99	1.66
Uniform Delay, d1	21.3	21.4		48.0	48.8			35.7		26.3	30.5	30.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	3.7		40.2	0.0			41.4		0.7	31.8	306.4
Delay (s)	24.8	25.1		88.2	48.8			77.1		27.0	62.3	337.1
Level of Service	C	C		F	D			E		C	E	F
Approach Delay (s)		24.9			62.3			77.1			234.3	
Approach LOS		C			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	144.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	83	21	604	44	764	20	943	847	539	1058	62
Future Volume (vph)	90	83	21	604	44	764	20	943	847	539	1058	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830			1731	1599	1805	3574	1538	1770	3574	1615
Flt Permitted		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830			1731	1599	1805	3574	1538	1770	3574	1615
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)	100	92	23	671	49	849	22	1048	941	599	1176	69
RTOR Reduction (vph)	0	2	0	0	0	223	0	0	318	0	0	35
Lane Group Flow (vph)	0	213	0	0	720	626	22	1048	623	599	1176	34
Heavy Vehicles (%)	0%	0%	0%	5%	3%	1%	0%	1%	5%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		22.5			53.4	53.4	5.6	55.8	55.8	54.0	104.0	104.0
Effective Green, g (s)		22.5			53.4	53.4	5.6	55.8	55.8	54.0	104.0	104.0
Actuated g/C Ratio		0.11			0.25	0.25	0.03	0.26	0.26	0.25	0.49	0.49
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		193			434	401	47	938	403	449	1749	790
v/s Ratio Prot		c0.12			c0.42		0.01	0.29		c0.34	0.33	
v/s Ratio Perm						0.39			c0.41			0.02
v/c Ratio		1.10			1.66	1.56	0.47	1.12	1.55	1.33	0.67	0.04
Uniform Delay, d1		95.0			79.5	79.5	102.0	78.3	78.3	79.2	41.3	28.3
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		95.6			306.6	264.3	7.2	67.1	257.9	164.9	1.5	0.1
Delay (s)		190.6			386.2	343.8	109.2	145.5	336.3	244.2	42.8	28.3
Level of Service		F			F	F	F	F	F	F	D	C
Approach Delay (s)		190.6			363.3			234.4			107.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	227.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	212.5	Sum of lost time (s)	27.0
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	0	48	5	0	0	85	1707	5	0	1606	30
Future Volume (vph)	28	0	48	5	0	0	85	1707	5	0	1606	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frt		0.91			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.98			0.95		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1675			1805		1805	3574	1615		3574	1615
Flt Permitted		0.88			0.93		0.09	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1495			1770		166	3574	1615		3574	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	28	0	48	5	0	0	86	1724	5	0	1622	30
RTOR Reduction (vph)	0	70	0	0	0	0	0	0	1	0	0	11
Lane Group Flow (vph)	0	6	0	0	5	0	86	1724	4	0	1622	19
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		6.4			6.4		52.9	58.5	58.5		47.7	47.7
Effective Green, g (s)		6.4			6.4		52.9	58.5	58.5		47.7	47.7
Actuated g/C Ratio		0.08			0.08		0.69	0.76	0.76		0.62	0.62
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		124			147		224	2715	1226		2214	1000
v/s Ratio Prot							0.03	c0.48			c0.45	
v/s Ratio Perm		c0.00			0.00		0.24		0.00			0.01
v/c Ratio		0.05			0.03		0.38	0.63	0.00		0.73	0.02
Uniform Delay, d1		32.5			32.5		7.8	4.3	2.2		10.2	5.6
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4			0.1		1.1	0.7	0.0		1.6	0.0
Delay (s)		32.9			32.6		8.9	5.0	2.2		11.8	5.7
Level of Service		C			C		A	A	A		B	A
Approach Delay (s)		32.9			32.6			5.2			11.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	17.7
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 (vph)	162	271	557	203	411	470	614	965	156	393	876	214
Future Volume (vph)	162	271	557	203	411	470	614	965	156	393	876	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
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)	1770	1863	1583	1770	1863	1615	1770	3530		1805	3504	
Flt Permitted	0.12	1.00	1.00	0.31	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	223	1863	1583	574	1863	1615	162	3530		194	3504	
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)	172	288	593	216	437	500	653	1027	166	418	932	228
RTOR Reduction (vph)	0	0	187	0	0	243	0	9	0	0	14	0
Lane Group Flow (vph)	172	288	406	216	437	257	653	1184	0	418	1146	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	0%	2%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	49.3	33.4	33.4	51.4	34.3	34.3	79.2	54.2		56.8	39.2	
Effective Green, g (s)	49.3	33.4	33.4	51.4	34.3	34.3	79.2	54.2		56.8	39.2	
Actuated g/C Ratio	0.33	0.23	0.23	0.35	0.23	0.23	0.53	0.37		0.38	0.26	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	239	419	356	336	430	373	445	1290		265	926	
v/s Ratio Prot	c0.08	0.15		0.07	0.23		c0.33	0.34		0.19	0.33	
v/s Ratio Perm	0.16		c0.26	0.15		0.16	0.46			c0.42		
v/c Ratio	0.72	0.69	1.14	0.64	1.02	0.69	1.47	0.92		1.58	1.24	
Uniform Delay, d1	39.8	52.7	57.5	37.2	57.0	52.1	47.7	44.9		45.0	54.6	
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	9.9	5.0	91.0	4.2	47.6	5.7	222.3	11.3		277.2	116.2	
Delay (s)	49.7	57.7	148.5	41.3	104.6	57.8	270.0	56.2		322.2	170.8	
Level of Service	D	E	F	D	F	E	F	E		F	F	
Approach Delay (s)		107.5			72.4			131.9			210.9	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	137.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	148.3	Sum of lost time (s)	26.3
Intersection Capacity Utilization	116.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	0	198	68	2	25	145	1391	61	56	1217	66
Future Volume (vph)	106	0	198	68	2	25	145	1391	61	56	1217	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1615			1732		1787	3587		1805	3582	
Flt Permitted	0.73	1.00			0.45		0.11	1.00		0.09	1.00	
Satd. Flow (perm)	1374	1615			805		212	3587		166	3582	
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)	114	0	213	73	2	27	156	1496	66	60	1309	71
RTOR Reduction (vph)	0	159	0	0	12	0	0	2	0	0	4	0
Lane Group Flow (vph)	114	54	0	0	90	0	156	1560	0	60	1376	0
Heavy Vehicles (%)	1%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	13.5	13.5			13.5		60.9	53.0		56.3	51.1	
Effective Green, g (s)	13.5	13.5			13.5		60.9	53.0		56.3	51.1	
Actuated g/C Ratio	0.15	0.15			0.15		0.67	0.58		0.62	0.56	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	203	239			119		278	2086		196	2009	
v/s Ratio Prot		0.03					c0.05	c0.43		0.02	0.38	
v/s Ratio Perm	0.08				c0.11		0.33			0.17		
v/c Ratio	0.56	0.22			0.76		0.56	0.75		0.31	0.69	
Uniform Delay, d1	36.1	34.2			37.2		10.3	14.1		10.7	14.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	0.5			23.6		2.6	1.8		0.9	1.3	
Delay (s)	39.6	34.7			60.9		12.9	15.9		11.6	15.5	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		36.4			60.9			15.6			15.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	19.4
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	27	1	28	50	0	37	26	1459	37	72	35	1261
Future Volume (vph)	27	1	28	50	0	37	26	1459	37	72	35	1261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1624		1805	1509		1805	5163			1758	3610
Flt Permitted	0.73	1.00		0.74	1.00		0.20	1.00			0.12	1.00
Satd. Flow (perm)	1389	1624		1400	1509		381	5163			231	3610
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)	29	1	30	54	0	40	28	1569	40	77	38	1356
RTOR Reduction (vph)	0	28	0	0	37	0	0	2	0	0	0	0
Lane Group Flow (vph)	29	3	0	54	3	0	28	1607	0	0	115	1356
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	0%	4%	2%	4%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	8.1	8.1		8.1	8.1		78.8	78.8			86.1	93.2
Effective Green, g (s)	8.1	8.1		8.1	8.1		78.8	78.8			86.1	93.2
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.69	0.69			0.75	0.81
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	97	114		98	106		261	3537			269	2925
v/s Ratio Prot		0.00			0.00			0.31			0.03	c0.38
v/s Ratio Perm	0.02			c0.04			0.07				0.29	
v/c Ratio	0.30	0.03		0.55	0.03		0.11	0.45			0.43	0.46
Uniform Delay, d1	50.8	49.8		51.7	49.8		6.1	8.3			4.8	3.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			4.66	3.10
Incremental Delay, d2	0.6	0.0		3.8	0.0		0.4	0.2			0.3	0.4
Delay (s)	51.4	49.8		55.5	49.8		6.5	8.5			22.5	10.7
Level of Service	D	D		E	D		A	A			C	B
Approach Delay (s)		50.6			53.1			8.4				11.5
Approach LOS		D			D			A				B

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	31
RTOR Reduction (vph)	6
Lane Group Flow (vph)	25
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	93.2
Effective Green, g (s)	93.2
Actuated g/C Ratio	0.81
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1308
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.1
Progression Factor	2.53
Incremental Delay, d2	0.0
Delay (s)	5.3
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	659	250	441	1154	1147	541
Future Volume (vph)	659	250	441	1154	1147	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	1787	5187	5136	1615
Flt Permitted	0.95	1.00	0.11	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	200	5187	5136	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	724	275	485	1268	1260	595
RTOR Reduction (vph)	0	210	0	0	0	367
Lane Group Flow (vph)	724	65	485	1268	1260	228
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	27.1	27.1	73.5	73.5	44.1	44.1
Effective Green, g (s)	27.1	27.1	73.5	73.5	44.1	44.1
Actuated g/C Ratio	0.24	0.24	0.64	0.64	0.38	0.38
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	817	376	421	3315	1969	619
v/s Ratio Prot	c0.21		c0.21	0.24	0.25	
v/s Ratio Perm		0.04	c0.52			0.14
v/c Ratio	0.89	0.17	1.15	0.38	0.64	0.37
Uniform Delay, d1	42.5	35.0	32.7	9.9	29.0	25.5
Progression Factor	1.00	1.00	1.52	0.91	0.50	1.78
Incremental Delay, d2	11.1	0.1	90.9	0.3	0.9	0.7
Delay (s)	53.5	35.1	140.6	9.3	15.3	46.1
Level of Service	D	D	F	A	B	D
Approach Delay (s)	48.4			45.6	25.2	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	148	196	7	170	1636	1485	144
Future Volume (vph)	148	196	7	170	1636	1485	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.91			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3300			1805	5136	6391	
Flt Permitted	0.98			0.08	1.00	1.00	
Satd. Flow (perm)	3300			153	5136	6391	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	163	215	8	187	1798	1632	158
RTOR Reduction (vph)	194	0	0	0	0	9	0
Lane Group Flow (vph)	184	0	0	195	1798	1781	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	11.0			89.7	89.7	70.7	
Effective Green, g (s)	11.0			89.7	89.7	70.7	
Actuated g/C Ratio	0.10			0.78	0.78	0.61	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	315			283	4006	3929	
v/s Ratio Prot	c0.06			c0.07	0.35	0.28	
v/s Ratio Perm				c0.47			
v/c Ratio	0.58			0.69	0.45	0.45	
Uniform Delay, d1	49.8			18.4	4.3	11.8	
Progression Factor	1.00			1.39	1.27	0.29	
Incremental Delay, d2	1.8			4.7	0.3	0.1	
Delay (s)	51.6			30.2	5.7	3.6	
Level of Service	D			C	A	A	
Approach Delay (s)	51.6				8.1	3.6	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	751	187	192	1592	1442	768
Future Volume (vph)	751	187	192	1592	1442	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	3467	1583	139	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	834	208	213	1769	1602	853
RTOR Reduction (vph)	0	92	0	0	0	423
Lane Group Flow (vph)	834	116	213	1769	1602	430
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	30.0	30.0	70.7	70.7	52.4	52.4
Effective Green, g (s)	30.0	30.0	70.7	70.7	52.4	52.4
Actuated g/C Ratio	0.26	0.26	0.61	0.61	0.46	0.46
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	904	412	283	3157	2340	728
v/s Ratio Prot	c0.24		c0.09	0.34	0.31	
v/s Ratio Perm		0.07	c0.37			0.27
v/c Ratio	0.92	0.28	0.75	0.56	0.68	0.59
Uniform Delay, d1	41.4	33.9	28.1	13.0	24.8	23.3
Progression Factor	1.00	1.00	1.11	0.43	0.57	1.72
Incremental Delay, d2	14.4	0.1	9.9	0.7	1.0	2.2
Delay (s)	55.7	34.0	41.2	6.2	15.2	42.3
Level of Service	E	C	D	A	B	D
Approach Delay (s)	51.4			10.0	24.6	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	110	5	84	75	9	87	4	79	2108	152	62	93
Future Volume (vph)	110	5	84	75	9	87	4	79	2108	152	62	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.94		1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1729		1805	1624	1583		1805	5087			1759
Flt Permitted		0.82		0.59	1.00	1.00		0.06	1.00			0.06
Satd. Flow (perm)		1462		1117	1624	1583		120	5087			112
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	6	95	85	10	99	5	90	2395	173	70	106
RTOR Reduction (vph)	0	24	0	0	0	80	0	0	5	0	0	0
Lane Group Flow (vph)	0	202	0	85	10	19	0	95	2563	0	0	176
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		21.6		21.6	21.6	21.6		70.3	63.1			76.9
Effective Green, g (s)		21.6		21.6	21.6	21.6		70.3	63.1			76.9
Actuated g/C Ratio		0.19		0.19	0.19	0.19		0.61	0.55			0.67
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		274		209	305	297		178	2791			225
v/s Ratio Prot					0.01			0.03	c0.50			c0.07
v/s Ratio Perm		c0.14		0.08		0.01		0.29				0.45
v/c Ratio		0.74		0.41	0.03	0.06		0.53	0.92			0.78
Uniform Delay, d1		44.0		41.1	38.2	38.4		17.1	23.6			33.1
Progression Factor		1.00		1.00	1.00	1.00		1.28	0.99			1.28
Incremental Delay, d2		10.5		0.5	0.0	0.0		1.2	4.5			8.7
Delay (s)		54.5		41.5	38.2	38.4		23.1	27.9			51.1
Level of Service		D		D	D	D		C	C			D
Approach Delay (s)		54.5			39.8				27.7			
Approach LOS		D			D				C			

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2047	26
Future Volume (vph)	2047	26
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1615
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	2326	30
RTOR Reduction (vph)	0	13
Lane Group Flow (vph)	2326	17
Heavy Vehicles (%)	1%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	66.4	66.4
Effective Green, g (s)	66.4	66.4
Actuated g/C Ratio	0.58	0.58
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2965	932
v/s Ratio Prot	c0.45	
v/s Ratio Perm		0.01
v/c Ratio	0.78	0.02
Uniform Delay, d1	18.8	10.4
Progression Factor	0.89	1.00
Incremental Delay, d2	1.2	0.0
Delay (s)	17.8	10.4
Level of Service	B	B
Approach Delay (s)	20.1	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	0	380	0	0	0	0	1102	1265	582	1848	0
Future Volume (vph)	78	0	380	0	0	0	0	1102	1265	582	1848	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	1752	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.08	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	148	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	85	0	413	0	0	0	0	1198	1375	633	2009	0
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	335	0	0	0
Lane Group Flow (vph)	85	0	328	0	0	0	0	1198	1040	633	2009	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Effective Green, g (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Actuated g/C Ratio	0.21		0.21					0.42	0.42	0.68	0.68	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	362		330					1501	664	413	2433	
v/s Ratio Prot								0.34		c0.30	0.56	
v/s Ratio Perm	0.05		c0.21						0.66	c0.75		
v/c Ratio	0.23		0.99					0.80	1.57	1.53	0.83	
Uniform Delay, d1	37.9		45.4					29.1	33.4	36.3	13.4	
Progression Factor	1.00		1.00					0.46	1.06	1.12	1.54	
Incremental Delay, d2	0.2		47.9					1.7	258.1	240.8	0.3	
Delay (s)	38.1		93.3					15.0	293.4	281.5	20.9	
Level of Service	D		F					B	F	F	C	
Approach Delay (s)		83.9			0.0			163.8			83.4	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	119.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	140.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1185	0	878	439	741	0	0	1245	106
Future Volume (vph)	0	0	0	1185	0	878	439	741	0	0	1245	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	189	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1247	0	924	462	780	0	0	1311	112
RTOR Reduction (vph)	0	0	0	0	0	133	0	0	0	0	0	74
Lane Group Flow (vph)	0	0	0	1247	0	791	462	780	0	0	1311	38
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				35.1		35.1	67.5	67.5			31.7	31.7
Effective Green, g (s)				35.1		35.1	67.5	67.5			31.7	31.7
Actuated g/C Ratio				0.31		0.31	0.59	0.59			0.28	0.28
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		478	495	2097			985	440
v/s Ratio Prot							c0.23	0.22			c0.37	
v/s Ratio Perm				0.36		c0.50	0.32					0.02
v/c Ratio				1.18		1.66	0.93	0.37			1.33	0.09
Uniform Delay, d1				40.0		40.0	33.7	12.5			41.6	30.9
Progression Factor				1.00		1.00	1.60	2.11			1.00	1.00
Incremental Delay, d2				90.4		304.2	17.6	0.3			156.0	0.2
Delay (s)				130.3		344.1	71.4	26.8			197.6	31.1
Level of Service				F		F	E	C			F	C
Approach Delay (s)		0.0			221.3			43.4			184.5	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	164.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	140.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	10	197	463	5	121	74	991	554	78	691	11
Future Volume (vph)	22	10	197	463	5	121	74	991	554	78	691	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1771	1583	1698	1704	1599	1805	3539	1599	1752	3574	1615
Flt Permitted	0.95	0.98	1.00	0.95	0.95	1.00	0.31	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1715	1771	1583	1698	1704	1599	588	3539	1599	331	3574	1615
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)	24	11	212	498	5	130	80	1066	596	84	743	12
RTOR Reduction (vph)	0	0	204	0	0	101	0	0	232	0	0	6
Lane Group Flow (vph)	17	18	8	249	254	29	80	1066	364	84	743	6
Heavy Vehicles (%)	0%	0%	2%	1%	0%	1%	0%	2%	1%	3%	1%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	4.0	4.0	4.0	19.4	19.4	19.4	60.1	54.8	54.8	60.3	54.9	54.9
Effective Green, g (s)	4.0	4.0	4.0	19.4	19.4	19.4	60.1	54.8	54.8	60.3	54.9	54.9
Actuated g/C Ratio	0.04	0.04	0.04	0.18	0.18	0.18	0.56	0.51	0.51	0.57	0.51	0.51
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	64	66	59	308	309	290	391	1817	821	258	1838	830
v/s Ratio Prot	0.01	c0.01		0.15	c0.15		0.01	c0.30		c0.02	0.21	
v/s Ratio Perm			0.01			0.02	0.10		0.23	0.17		0.00
v/c Ratio	0.27	0.27	0.13	0.81	0.82	0.10	0.20	0.59	0.44	0.33	0.40	0.01
Uniform Delay, d1	49.9	49.9	49.7	41.9	42.0	36.4	11.1	18.1	16.3	12.5	15.9	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.6	0.8	13.6	15.3	0.1	0.1	1.4	1.7	0.3	0.7	0.0
Delay (s)	51.5	51.6	50.4	55.5	57.3	36.4	11.2	19.5	18.1	12.7	16.5	12.6
Level of Service	D	D	D	E	E	D	B	B	B	B	B	B
Approach Delay (s)		50.6			52.3			18.6			16.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	23.1
Intersection Capacity Utilization	65.6%	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 (vph)	5	4	13	62	2	105	15	1053	66	41	705	7
Future Volume (vph)	5	4	13	62	2	105	15	1053	66	41	705	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		1849	1615	1770	1900	1553		1862	1583		1870	1615
Flt Permitted		0.83	1.00	0.75	1.00	1.00		0.99	1.00		0.65	1.00
Satd. Flow (perm)		1578	1615	1400	1900	1553		1839	1583		1223	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	4	14	68	2	115	16	1157	73	45	775	8
RTOR Reduction (vph)	0	0	12	0	0	85	0	0	21	0	0	2
Lane Group Flow (vph)	0	9	2	68	2	30	0	1173	52	0	820	6
Heavy Vehicles (%)	0%	0%	0%	2%	0%	4%	0%	2%	2%	7%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		7.5	7.5	7.5	7.5	7.5		48.8	48.8		48.8	48.8
Effective Green, g (s)		7.5	7.5	7.5	7.5	7.5		48.8	48.8		48.8	48.8
Actuated g/C Ratio		0.11	0.11	0.11	0.11	0.11		0.71	0.71		0.71	0.71
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		173	177	153	208	170		1313	1131		873	1153
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.01	0.00	c0.05		0.02		0.64	0.03		c0.67	0.00
v/c Ratio		0.05	0.01	0.44	0.01	0.18		0.89	0.05		0.94	0.00
Uniform Delay, d1		27.2	27.1	28.5	27.1	27.6		7.7	2.9		8.5	2.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0	2.1	0.0	0.5		9.6	0.1		18.9	0.0
Delay (s)		27.3	27.1	30.5	27.1	28.1		17.3	3.0		27.3	2.8
Level of Service		C	C	C	C	C		B	A		C	A
Approach Delay (s)		27.2			29.0			16.4			27.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	20	0	16	5	0	2	7	25	952	1	31	20
Future Volume (vph)	20	0	16	5	0	2	7	25	952	1	31	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.96			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00			0.95
Satd. Flow (prot)		1805	1615		1764			1797	4847			1783
Flt Permitted		0.93	1.00		0.80			0.08	1.00			0.28
Satd. Flow (perm)		1767	1615		1457			159	4847			518
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	21	0	16	5	0	2	8	26	981	1	34	21
RTOR Reduction (vph)	0	0	15	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	1	0	0	0	0	34	982	0	0	55
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	7%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		4.3	4.3		4.3			57.2	54.0			56.8
Effective Green, g (s)		4.3	4.3		4.3			57.2	54.0			56.8
Actuated g/C Ratio		0.05	0.05		0.05			0.72	0.68			0.71
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		94	86		78			179	3271			415
v/s Ratio Prot								c0.01	0.20			0.00
v/s Ratio Perm		c0.01	0.00		0.00			0.13				0.09
v/c Ratio		0.22	0.01		0.00			0.19	0.30			0.13
Uniform Delay, d1		36.3	35.8		35.8			6.5	5.3			3.5
Progression Factor		1.00	1.00		1.00			1.00	1.00			1.45
Incremental Delay, d2		0.9	0.0		0.0			0.3	0.2			0.0
Delay (s)		37.1	35.9		35.8			6.8	5.5			5.1
Level of Service		D	D		D			A	A			A
Approach Delay (s)		36.6			35.8				5.6			
Approach LOS		D			D				A			

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1670	7
Future Volume (vph)	1670	7
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3374	1599
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3374	1599
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1722	7
RTOR Reduction (vph)	0	2
Lane Group Flow (vph)	1722	5
Heavy Vehicles (%)	7%	1%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	53.8	53.8
Effective Green, g (s)	53.8	53.8
Actuated g/C Ratio	0.67	0.67
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2269	1075
v/s Ratio Prot	c0.51	
v/s Ratio Perm		0.00
v/c Ratio	0.76	0.00
Uniform Delay, d1	8.8	4.3
Progression Factor	2.41	1.00
Incremental Delay, d2	0.2	0.0
Delay (s)	21.4	4.3
Level of Service	C	A
Approach Delay (s)	20.8	
Approach LOS	C	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	118	2203	695	409	1823	240	485	290	233	387	627
Future Volume (vph)	2	118	2203	695	409	1823	240	485	290	233	387	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Peak-hour factor, PHF	0.92	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)	2	127	2369	747	440	1960	258	522	312	251	416	674
RTOR Reduction (vph)	0	0	0	172	0	0	67	0	0	155	0	0
Lane Group Flow (vph)	0	129	2369	575	440	1960	191	522	312	96	416	674
Heavy Vehicles (%)	2%	2%	22%	9%	0%	13%	0%	5%	1%	1%	0%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		3	8		7	4
Permitted Phases				6			2			8		
Actuated Green, G (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Effective Green, g (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Actuated g/C Ratio		0.05	0.44	0.44	0.10	0.50	0.50	0.12	0.18	0.18	0.08	0.14
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0	2.5	3.0	3.0	2.5	3.0
Lane Grp Cap (vph)		160	1881	655	361	2317	815	396	656	293	269	500
v/s Ratio Prot		0.04	c0.56		c0.13	c0.43		c0.16	c0.09		0.12	c0.19
v/s Ratio Perm				0.39			0.12			0.06		
v/c Ratio		0.81	1.26	0.88	1.22	0.85	0.23	1.32	0.48	0.33	1.55	1.35
Uniform Delay, d1		75.5	44.6	40.7	71.8	34.2	22.2	70.5	58.4	56.7	73.8	68.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.04	0.94	1.06	1.05	1.00
Incremental Delay, d2		24.2	121.2	15.5	121.1	4.0	0.7	159.8	0.5	0.6	262.0	168.3
Delay (s)		99.7	165.8	56.1	192.8	38.3	22.9	232.8	55.3	61.0	339.8	237.3
Level of Service		F	F	E	F	D	C	F	E	E	F	F
Approach Delay (s)			137.9			62.3			142.0			244.3
Approach LOS			F			E			F			F

Intersection Summary			
HCM 2000 Control Delay	131.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	221
Future Volume (vph)	221
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	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	0.93
Adj. Flow (vph)	238
RTOR Reduction (vph)	163
Lane Group Flow (vph)	75
Heavy Vehicles (%)	2%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	22.4
Effective Green, g (s)	22.4
Actuated g/C Ratio	0.14
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	221
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.34
Uniform Delay, d1	62.1
Progression Factor	1.56
Incremental Delay, d2	0.8
Delay (s)	97.4
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	25	21	18	19	614	1197	56
Future Volume (vph)	25	21	18	19	614	1197	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1735			1787	3505	3486	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1735			1787	3505	3486	
Peak-hour factor, PHF	0.97	0.97	0.92	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	22	20	20	633	1234	58
RTOR Reduction (vph)	21	0	0	0	0	3	0
Lane Group Flow (vph)	27	0	0	40	633	1289	0
Heavy Vehicles (%)	0%	0%	2%	0%	3%	3%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	4.2			4.4	63.9	53.8	
Effective Green, g (s)	4.2			4.4	63.9	53.8	
Actuated g/C Ratio	0.05			0.06	0.80	0.67	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	91			98	2799	2344	
v/s Ratio Prot	c0.02			c0.02	0.18	c0.37	
v/s Ratio Perm							
v/c Ratio	0.30			0.41	0.23	0.55	
Uniform Delay, d1	36.5			36.5	2.0	6.8	
Progression Factor	1.00			0.84	1.91	0.54	
Incremental Delay, d2	0.8			1.1	0.2	0.4	
Delay (s)	37.3			31.6	4.0	4.1	
Level of Service	D			C	A	A	
Approach Delay (s)	37.3				5.6	4.1	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	6	76	1	48	5	595	35	41	1172	10
Future Volume (vph)	10	0	6	76	1	48	5	595	35	41	1172	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1753			1811	1615	1805	1866		1805	1845	1615
Flt Permitted		0.76			0.72	1.00	0.08	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1368			1362	1615	145	1866		611	1845	1615
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)	11	0	6	80	1	51	5	626	37	43	1234	11
RTOR Reduction (vph)	0	15	0	0	0	46	0	2	0	0	0	4
Lane Group Flow (vph)	0	2	0	0	81	5	5	661	0	43	1234	7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		7.9			8.3	8.3	53.5	50.2		53.5	52.5	52.5
Effective Green, g (s)		7.9			8.3	8.3	53.5	50.2		53.5	52.5	52.5
Actuated g/C Ratio		0.10			0.10	0.10	0.67	0.63		0.67	0.66	0.66
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		135			141	167	117	1170		457	1210	1059
v/s Ratio Prot							0.00	0.35		c0.00	c0.67	
v/s Ratio Perm		0.00			c0.06	0.00	0.03			0.06		0.00
v/c Ratio		0.01			0.57	0.03	0.04	0.57		0.09	1.02	0.01
Uniform Delay, d1		32.5			34.2	32.2	19.1	8.6		5.3	13.8	4.7
Progression Factor		1.00			1.00	1.00	1.62	2.46		1.24	2.24	1.00
Incremental Delay, d2		0.0			3.7	0.0	0.1	2.0		0.0	21.3	0.0
Delay (s)		32.5			37.9	32.3	31.0	23.1		6.6	52.1	4.8
Level of Service		C			D	C	C	C		A	D	A
Approach Delay (s)		32.5			35.7			23.2			50.2	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	380	259	394	841	53
Future Volume (vph)	70	380	259	394	841	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1671		1805	1900	1850	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1671		90	1900	1850	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	400	273	415	885	56
RTOR Reduction (vph)	141	0	0	0	2	0
Lane Group Flow (vph)	333	0	273	415	939	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	37.0		111.9	111.9	79.4	
Effective Green, g (s)	37.0		111.9	111.9	79.4	
Actuated g/C Ratio	0.23		0.70	0.70	0.50	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	386		355	1328	918	
v/s Ratio Prot	c0.20		c0.13	0.22	c0.51	
v/s Ratio Perm			0.41			
v/c Ratio	0.86		0.77	0.31	1.02	
Uniform Delay, d1	59.0		52.4	9.3	40.3	
Progression Factor	1.00		1.18	1.53	0.61	
Incremental Delay, d2	17.6		7.9	0.5	33.7	
Delay (s)	76.7		69.7	14.7	58.5	
Level of Service	E		E	B	E	
Approach Delay (s)	76.7			36.5	58.5	
Approach LOS	E			D	E	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	15	31	54	7	17	10	391	63	26	809	8
Future Volume (vph)	10	15	31	54	7	17	10	391	63	26	809	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1743			1820	1615	1805	1844		1805	1878	
Flt Permitted		0.93			0.66	1.00	0.29	1.00		0.47	1.00	
Satd. Flow (perm)		1641			1252	1615	560	1844		902	1878	
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)	11	16	33	58	8	18	11	420	68	28	870	9
RTOR Reduction (vph)	0	30	0	0	0	17	0	2	0	0	0	0
Lane Group Flow (vph)	0	30	0	0	66	1	11	486	0	28	879	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		12.9			12.9	12.9	135.8	135.8		135.8	135.8	
Effective Green, g (s)		12.9			12.9	12.9	135.8	135.8		135.8	135.8	
Actuated g/C Ratio		0.08			0.08	0.08	0.85	0.85		0.85	0.85	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		132			100	130	475	1565		765	1593	
v/s Ratio Prot								0.26			c0.47	
v/s Ratio Perm		0.02			c0.05	0.00	0.02			0.03		
v/c Ratio		0.22			0.66	0.01	0.02	0.31		0.04	0.55	
Uniform Delay, d1		68.9			71.4	67.7	1.9	2.5		1.9	3.4	
Progression Factor		1.00			1.00	1.00	0.90	0.98		0.53	0.30	
Incremental Delay, d2		0.9			15.1	0.0	0.1	0.5		0.1	1.2	
Delay (s)		69.7			86.6	67.7	1.8	2.9		1.1	2.3	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		69.7			82.5			2.9			2.2	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	413	29	108	494	53	62	277	84	113	631	200
Future Volume (vph)	1	413	29	108	494	53	62	277	84	113	631	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1864		1805	1856		1805	1806		1805	1900	1615
Flt Permitted		1.00		0.19	1.00		0.15	1.00		0.36	1.00	1.00
Satd. Flow (perm)		1863		354	1856		293	1806		686	1900	1615
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)	1	439	31	115	526	56	66	295	89	120	671	213
RTOR Reduction (vph)	0	1	0	0	2	0	0	6	0	0	0	78
Lane Group Flow (vph)	0	470	0	115	580	0	66	378	0	120	671	135
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		42.8		61.4	61.4		72.7	67.0		81.5	71.4	71.4
Effective Green, g (s)		42.8		61.4	61.4		72.7	67.0		81.5	71.4	71.4
Actuated g/C Ratio		0.27		0.38	0.38		0.45	0.42		0.51	0.45	0.45
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		498		227	712		186	756		420	847	720
v/s Ratio Prot				0.03	c0.31		0.01	0.21		c0.02	c0.35	
v/s Ratio Perm		c0.25		0.16			0.15			0.13		0.08
v/c Ratio		0.94		0.51	0.81		0.35	0.50		0.29	0.79	0.19
Uniform Delay, d1		57.4		36.9	44.2		30.7	34.2		22.5	37.9	26.8
Progression Factor		1.00		1.00	1.00		1.24	1.00		1.00	1.00	1.00
Incremental Delay, d2		26.6		1.8	7.1		0.5	2.3		0.2	7.5	0.6
Delay (s)		84.0		38.8	51.3		38.4	36.5		22.7	45.4	27.4
Level of Service		F		D	D		D	D		C	D	C
Approach Delay (s)		84.0			49.2			36.8			38.9	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	570	379	85	267	593	608
Future Volume (vph)	570	379	85	267	593	608
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	1538
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	1538
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	704	468	105	330	732	751
RTOR Reduction (vph)	0	231	0	0	0	388
Lane Group Flow (vph)	704	237	105	330	732	363
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	27.5	27.5	6.4	60.2	48.3	48.3
Effective Green, g (s)	27.5	27.5	6.4	60.2	48.3	48.3
Actuated g/C Ratio	0.28	0.28	0.06	0.60	0.48	0.48
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	900	435	224	1143	917	742
v/s Ratio Prot	c0.22	0.15	c0.03	0.17	c0.39	0.24
v/s Ratio Perm						
v/c Ratio	0.78	0.54	0.47	0.29	0.80	0.49
Uniform Delay, d1	33.5	30.9	45.2	9.6	21.8	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	2.5	0.7	0.6	5.7	1.1
Delay (s)	38.7	33.4	45.8	10.2	27.4	18.6
Level of Service	D	C	D	B	C	B
Approach Delay (s)	36.6			18.8	22.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	64.9%	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 (vph)	11	27	15	736	28	513	12	206	402	885	637	4
Future Volume (vph)	11	27	15	736	28	513	12	206	402	885	637	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1799		1715	1725	1599	1805	1810	1583	3467	1826	
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)	12	29	16	791	30	552	13	222	432	952	685	4
RTOR Reduction (vph)	0	15	0	0	0	423	0	0	330	0	0	0
Lane Group Flow (vph)	12	30	0	411	410	129	13	222	102	952	689	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		30.4	30.4	30.4	2.6	30.8	30.8	37.3	64.9	
Effective Green, g (s)	6.5	6.5		30.4	30.4	30.4	2.6	30.8	30.8	37.3	64.9	
Actuated g/C Ratio	0.05	0.05		0.23	0.23	0.23	0.02	0.24	0.24	0.29	0.50	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	90	89		401	403	373	36	428	375	994	911	
v/s Ratio Prot	0.01	c0.02		c0.24	0.24		0.01	0.12		c0.27	c0.38	
v/s Ratio Perm						0.08			0.06			
v/c Ratio	0.13	0.33		1.02	1.02	0.35	0.36	0.52	0.27	0.96	0.76	
Uniform Delay, d1	59.1	59.7		49.8	49.8	41.5	62.9	43.2	40.5	45.6	26.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.54	
Incremental Delay, d2	0.2	0.8		51.5	49.3	0.6	2.2	2.1	0.8	2.9	0.5	
Delay (s)	59.3	60.5		101.3	99.1	42.1	65.1	45.3	41.3	45.9	14.7	
Level of Service	E	E		F	F	D	E	D	D	D	B	
Approach Delay (s)		60.2			76.8			43.1			32.8	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1	82	60	4	38	41	654	35	10	1385	5
Future Volume (vph)	29	1	82	60	4	38	41	654	35	10	1385	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1618		1805	1640		1805	1792	1615	1805	1792	1615
Flt Permitted	0.73	1.00		0.70	1.00		0.04	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	1381	1618		1326	1640		80	1792	1615	626	1792	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	32	1	90	66	4	42	45	719	38	11	1522	5
RTOR Reduction (vph)	0	82	0	0	38	0	0	0	10	0	0	1
Lane Group Flow (vph)	32	9	0	66	8	0	45	719	28	11	1522	4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	12.1	12.1		12.1	12.1		99.6	97.3	97.3	99.3	95.2	95.2
Effective Green, g (s)	12.1	12.1		12.1	12.1		99.6	97.3	97.3	99.3	95.2	95.2
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.77	0.75	0.75	0.76	0.73	0.73
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	128	150		123	152		119	1341	1208	496	1312	1182
v/s Ratio Prot		0.01			0.00		c0.01	0.40		0.00	c0.85	
v/s Ratio Perm	0.02			c0.05			0.28		0.02	0.02		0.00
v/c Ratio	0.25	0.06		0.54	0.05		0.38	0.54	0.02	0.02	1.16	0.00
Uniform Delay, d1	54.7	53.8		56.3	53.7		36.4	6.9	4.2	4.6	17.4	4.7
Progression Factor	1.00	1.00		1.00	1.00		1.94	0.65	0.00	0.72	0.87	1.00
Incremental Delay, d2	1.0	0.2		4.4	0.1		0.6	1.2	0.0	0.0	72.9	0.0
Delay (s)	55.8	54.0		60.7	53.9		71.3	5.7	0.0	3.3	88.0	4.7
Level of Service	E	D		E	D		E	A	A	A	F	A
Approach Delay (s)		54.4			57.9			9.1			87.1	
Approach LOS		D			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	60.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	4	22	233	2	459	12	701	107	224	1178	23
Future Volume (vph)	41	4	22	233	2	459	12	701	107	224	1178	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1761			1810	1568	1805	1845	1615	1787	1789	
Flt Permitted		0.51			0.69	1.00	0.05	1.00	1.00	0.19	1.00	
Satd. Flow (perm)		921			1320	1568	103	1845	1615	360	1789	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	45	4	24	256	2	504	13	770	118	246	1295	25
RTOR Reduction (vph)	0	14	0	0	0	245	0	0	28	0	1	0
Lane Group Flow (vph)	0	59	0	0	258	259	13	770	90	246	1319	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	6%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		28.1			28.1	28.1	74.0	74.0	74.0	85.3	90.4	
Effective Green, g (s)		28.1			28.1	28.1	74.0	74.0	74.0	85.3	90.4	
Actuated g/C Ratio		0.22			0.22	0.22	0.57	0.57	0.57	0.66	0.70	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		199			285	338	58	1050	919	360	1244	
v/s Ratio Prot								0.42		0.06	c0.74	
v/s Ratio Perm		0.06			c0.20	0.16	0.13		0.06	0.39		
v/c Ratio		0.30			0.91	0.77	0.22	0.73	0.10	0.68	1.06	
Uniform Delay, d1		42.7			49.7	47.9	13.8	20.7	12.8	16.6	19.8	
Progression Factor		1.00			1.00	1.00	1.34	1.47	1.65	1.51	0.50	
Incremental Delay, d2		0.8			29.8	9.9	8.1	4.2	0.2	1.4	32.7	
Delay (s)		43.5			79.5	57.8	26.6	34.5	21.2	26.5	42.6	
Level of Service		D			E	E	C	C	C	C	D	
Approach Delay (s)		43.5			65.1			32.7			40.1	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	172	152	46	1154	1273	76
Future Volume (vph)	172	152	46	1154	1273	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	1792	1769	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1805	1615	83	1792	1769	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	179	158	48	1202	1326	79
RTOR Reduction (vph)	0	138	0	0	1	0
Lane Group Flow (vph)	179	20	48	1202	1404	0
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	16.5	16.5	96.1	102.0	91.5	
Effective Green, g (s)	16.5	16.5	96.1	102.0	91.5	
Actuated g/C Ratio	0.13	0.13	0.74	0.78	0.70	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	229	204	122	1406	1245	
v/s Ratio Prot	c0.10		0.01	c0.67	c0.79	
v/s Ratio Perm		0.01	0.28			
v/c Ratio	0.78	0.10	0.39	0.85	1.13	
Uniform Delay, d1	55.0	50.2	34.8	9.2	19.2	
Progression Factor	1.00	1.00	1.19	0.65	0.71	
Incremental Delay, d2	14.8	0.1	0.6	4.4	61.4	
Delay (s)	69.8	50.3	42.0	10.4	75.0	
Level of Service	E	D	D	B	E	
Approach Delay (s)	60.6			11.6	75.0	
Approach LOS	E			B	E	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	90.7%	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 (vph)	194	68	822	74	96	32	1043	281	2	43	454	680
Future Volume (vph)	194	68	822	74	96	32	1043	281	2	43	454	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1881	1524	1805	1829		3367	1879		1805	1900	1599
Flt Permitted	0.60	1.00	1.00	0.71	1.00		0.95	1.00		0.54	1.00	1.00
Satd. Flow (perm)	1103	1881	1524	1350	1829		3367	1879		1020	1900	1599
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)	202	71	856	77	100	33	1086	293	2	45	473	708
RTOR Reduction (vph)	0	0	545	0	9	0	0	0	0	0	0	193
Lane Group Flow (vph)	202	71	311	77	124	0	1086	295	0	45	473	515
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	28.5	21.7	21.7	28.7	19.2		37.9	71.5		76.3	38.8	38.8
Effective Green, g (s)	28.5	21.7	21.7	28.7	19.2		37.9	71.5		76.3	38.8	38.8
Actuated g/C Ratio	0.22	0.17	0.17	0.22	0.15		0.29	0.55		0.59	0.30	0.30
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	287	313	254	322	270		981	1033		627	567	477
v/s Ratio Prot	c0.05	0.04		0.01	0.07		c0.32	0.16		0.00	0.25	
v/s Ratio Perm	0.10		c0.20	0.04						0.04		c0.32
v/c Ratio	0.70	0.23	1.23	0.24	0.46		1.11	0.29		0.07	0.83	1.08
Uniform Delay, d1	45.7	46.9	54.1	41.2	50.6		46.0	15.6		11.5	42.6	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.88	0.74		0.30	0.83	0.73
Incremental Delay, d2	6.3	0.1	131.1	0.1	0.4		56.7	0.4		0.0	10.4	62.6
Delay (s)	51.9	47.0	185.2	41.4	51.1		97.0	11.9		3.4	45.8	95.7
Level of Service	D	D	F	D	D		F	B		A	D	F
Approach Delay (s)		152.7			47.5			78.9			73.1	
Approach LOS		F			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	0	48	0	0	0	77	431	0	2	1129	95
Future Volume (vph)	50	0	48	0	0	0	77	431	0	2	1129	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1599				1787	3471		1805	3610	1615
Flt Permitted	0.95		1.00				0.19	1.00		0.48	1.00	1.00
Satd. Flow (perm)	1805		1599				359	3471		909	3610	1615
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)	56	0	53	0	0	0	86	479	0	2	1254	106
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	56	0	3	0	0	0	86	479	0	2	1254	78
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	8.3		8.3				104.1	110.1		96.1	96.1	96.1
Effective Green, g (s)	8.3		8.3				104.1	110.1		96.1	96.1	96.1
Actuated g/C Ratio	0.06		0.06				0.80	0.85		0.74	0.74	0.74
Clearance Time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	115		102				375	2939		671	2668	1193
v/s Ratio Prot	c0.03		0.00				0.01	c0.14			c0.35	
v/s Ratio Perm							0.17			0.00		0.05
v/c Ratio	0.49		0.03				0.23	0.16		0.00	0.47	0.07
Uniform Delay, d1	58.8		57.1				3.6	1.8		4.4	6.8	4.6
Progression Factor	1.00		1.00				0.74	0.67		1.00	1.00	1.00
Incremental Delay, d2	3.2		0.1				0.3	0.1		0.0	0.6	0.1
Delay (s)	62.0		57.2				2.9	1.3		4.4	7.4	4.8
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		59.7			0.0			1.6			7.2	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	0	114	59	1	18	25	446	10	2	8	1054
Future Volume (vph)	35	0	114	59	1	18	25	446	10	2	8	1054
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1811	1615	1805	3438	1615		1798	1900
Flt Permitted		0.71	1.00		0.70	1.00	0.10	1.00	1.00		0.47	1.00
Satd. Flow (perm)		1354	1615		1330	1615	187	3438	1615		881	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88
Adj. Flow (vph)	40	0	130	67	1	20	28	507	11	2	9	1198
RTOR Reduction (vph)	0	0	79	0	0	18	0	0	3	0	0	0
Lane Group Flow (vph)	0	40	51	0	68	2	28	507	8	0	11	1198
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	2%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		10.3	10.3		10.3	10.3	65.8	65.8	65.8		65.8	65.8
Effective Green, g (s)		10.3	10.3		10.3	10.3	65.8	65.8	65.8		65.8	65.8
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.74	0.74	0.74		0.74	0.74
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		156	186		153	186	138	2538	1192		650	1403
v/s Ratio Prot								0.15				c0.63
v/s Ratio Perm		0.03	0.03		c0.05	0.00	0.15		0.01		0.01	
v/c Ratio		0.26	0.28		0.44	0.01	0.20	0.20	0.01		0.02	0.85
Uniform Delay, d1		35.9	36.0		36.7	34.9	3.6	3.6	3.1		3.1	8.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.8		2.1	0.0	1.5	0.1	0.0		0.0	5.8
Delay (s)		36.8	36.8		38.8	34.9	5.1	3.7	3.1		3.1	14.0
Level of Service		D	D		D	C	A	A	A		A	B
Approach Delay (s)		36.8			37.9			3.7				13.8
Approach LOS		D			D			A				B

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	12
RTOR Reduction (vph)	3
Lane Group Flow (vph)	10
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	65.8
Effective Green, g (s)	65.8
Actuated g/C Ratio	0.74
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1192
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	3.1
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Future Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.34	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	323	1881	1583	621	1851	
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)	196	301	124	462	172	409	30	238	278	412	586	113
RTOR Reduction (vph)	0	0	103	0	0	256	0	0	221	0	6	0
Lane Group Flow (vph)	196	301	21	462	172	153	30	238	57	412	693	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	19.1	19.1	19.1	39.4	39.4	39.4	27.3	23.5	23.5	38.5	29.2	
Effective Green, g (s)	19.1	19.1	19.1	39.4	39.4	39.4	27.3	23.5	23.5	38.5	29.2	
Actuated g/C Ratio	0.17	0.17	0.17	0.34	0.34	0.34	0.24	0.20	0.20	0.34	0.25	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	300	316	268	619	652	517	125	385	324	299	470	
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.11	c0.37	
v/s Ratio Perm			0.01			0.10	0.05		0.04	0.35		
v/c Ratio	0.65	0.95	0.08	0.75	0.26	0.30	0.24	0.62	0.18	1.38	1.47	
Uniform Delay, d1	44.8	47.4	40.4	33.3	27.2	27.6	35.6	41.6	37.7	37.1	42.8	
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	4.5	37.9	0.1	8.0	1.0	1.5	0.4	5.1	0.7	189.7	224.8	
Delay (s)	49.3	85.3	40.5	41.3	28.2	29.0	36.0	46.7	38.4	226.8	267.6	
Level of Service	D	F	D	D	C	C	D	D	D	F	F	
Approach Delay (s)		65.0			34.3			41.9			252.5	
Approach LOS		E			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	114.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	23.5
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	4	36	92	14	61	26	684	64	61	891	28
Future Volume (vph)	24	4	36	92	14	61	26	684	64	61	891	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1724			1821	1615	1805	3321		1787	1810	1615
Flt Permitted		0.83			0.70	1.00	0.16	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1453			1336	1615	310	3321		550	1810	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	27	5	41	105	16	69	30	777	73	69	1012	32
RTOR Reduction (vph)	0	35	0	0	0	59	0	5	0	0	0	10
Lane Group Flow (vph)	0	38	0	0	121	10	30	845	0	69	1013	22
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	8%	0%	1%	5%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		11.4			12.3	12.3	56.8	45.2		50.1	56.8	56.8
Effective Green, g (s)		11.4			12.3	12.3	56.8	45.2		50.1	56.8	56.8
Actuated g/C Ratio		0.14			0.15	0.15	0.69	0.55		0.61	0.69	0.69
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		202			200	242	214	1832		410	1255	1120
v/s Ratio Prot								0.25		0.01	c0.56	
v/s Ratio Perm		0.03			c0.09	0.01	0.10			0.09		0.01
v/c Ratio		0.19			0.60	0.04	0.14	0.46		0.17	0.81	0.02
Uniform Delay, d1		31.2			32.5	29.8	4.3	11.0		6.6	8.7	3.9
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			3.5	0.0	0.4	0.3		0.1	4.1	0.0
Delay (s)		31.3			36.0	29.8	4.7	11.3		6.7	12.9	3.9
Level of Service		C			D	C	A	B		A	B	A
Approach Delay (s)		31.3			33.8			11.1			12.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	20.4
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 (vph)	58	2	53	79	4	84	74	657	38	34	848	12
Future Volume (vph)	58	2	53	79	4	84	74	657	38	34	848	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1724	1615	1805	1900	1599	1805	3312	1615	1787	3438	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.20	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	1715	1724	1615	1805	1900	1599	388	3312	1615	653	3438	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	66	2	60	90	5	95	84	747	43	39	964	14
RTOR Reduction (vph)	0	0	56	0	0	85	0	0	21	0	0	7
Lane Group Flow (vph)	34	34	4	90	5	10	84	747	22	39	964	7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	9%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	5.7	5.7	5.7	9.8	9.8	9.8	54.9	48.0	48.0	48.7	44.9	44.9
Effective Green, g (s)	5.7	5.7	5.7	9.8	9.8	9.8	54.9	48.0	48.0	48.7	44.9	44.9
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11	0.11	0.59	0.52	0.52	0.53	0.49	0.49
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	105	106	99	191	201	169	336	1722	839	391	1672	785
v/s Ratio Prot	c0.02	0.02		c0.05	0.00		c0.02	c0.23		0.00	c0.28	
v/s Ratio Perm			0.00			0.01	0.13		0.01	0.05		0.00
v/c Ratio	0.32	0.32	0.04	0.47	0.02	0.06	0.25	0.43	0.03	0.10	0.58	0.01
Uniform Delay, d1	41.5	41.4	40.7	38.8	37.0	37.1	9.4	13.7	10.8	10.6	16.9	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.3	0.1	1.3	0.0	0.1	0.3	0.4	0.0	0.1	0.3	0.0
Delay (s)	42.8	42.7	40.8	40.1	37.0	37.2	9.7	14.1	10.8	10.6	17.2	12.2
Level of Service	D	D	D	D	D	D	A	B	B	B	B	B
Approach Delay (s)		41.8			38.6			13.5			16.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	25.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	0	182	0	0	0	0	457	394	295	840	0
Future Volume (vph)	389	0	182	0	0	0	0	457	394	295	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1568					3406	1538	1805	3438	
Flt Permitted	0.95		1.00					1.00	1.00	0.44	1.00	
Satd. Flow (perm)	3433		1568					3406	1538	837	3438	
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)	423	0	198	0	0	0	0	497	428	321	913	0
RTOR Reduction (vph)	0	0	155	0	0	0	0	0	266	0	0	0
Lane Group Flow (vph)	423	0	43	0	0	0	0	497	162	321	913	0
Heavy Vehicles (%)	2%	0%	3%	2%	2%	2%	0%	6%	5%	0%	5%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	17.0		17.0					29.5	29.5	42.7	48.3	
Effective Green, g (s)	17.0		17.0					29.5	29.5	42.7	48.3	
Actuated g/C Ratio	0.22		0.22					0.38	0.38	0.55	0.62	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	747		341					1286	580	621	2126	
v/s Ratio Prot								0.15		0.09	c0.27	
v/s Ratio Perm	c0.12		0.03						0.11	c0.20		
v/c Ratio	0.57		0.13					0.39	0.28	0.52	0.43	
Uniform Delay, d1	27.3		24.6					17.7	16.9	9.8	7.7	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8		0.4					0.6	0.8	1.0	0.4	
Delay (s)	29.1		25.0					18.3	17.7	10.8	8.2	
Level of Service	C		C					B	B	B	A	
Approach Delay (s)		27.8			0.0			18.1			8.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	18.4
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	392	0	306	180	666	0	0	743	860
Future Volume (vph)	0	0	0	392	0	306	180	666	0	0	743	860
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1752		1553	1752	3471			3539	1568
Flt Permitted				0.95		1.00	0.27	1.00			1.00	1.00
Satd. Flow (perm)				1752		1553	506	3471			3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.25	0.25	0.96	0.96
Adj. Flow (vph)	0	0	0	408	0	319	188	694	0	0	774	896
RTOR Reduction (vph)	0	0	0	0	0	174	0	0	0	0	0	486
Lane Group Flow (vph)	0	0	0	408	0	145	188	694	0	0	774	410
Heavy Vehicles (%)	2%	2%	2%	3%	0%	4%	3%	4%	0%	0%	2%	3%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				31.8		31.8	61.1	67.1			49.9	49.9
Effective Green, g (s)				31.8		31.8	61.1	67.1			49.9	49.9
Actuated g/C Ratio				0.28		0.28	0.54	0.60			0.44	0.44
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				495		439	399	2072			1571	696
v/s Ratio Prot							c0.05	0.20			0.22	
v/s Ratio Perm				c0.23		0.09	0.21					c0.26
v/c Ratio				0.82		0.33	0.47	0.33			0.49	0.59
Uniform Delay, d1				37.7		31.9	14.0	11.4			22.2	23.5
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				11.2		0.6	0.9	0.2			0.6	2.2
Delay (s)				48.9		32.5	14.8	11.6			22.8	25.7
Level of Service				D		C	B	B			C	C
Approach Delay (s)		0.0			41.7			12.3			24.4	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	40	558	84	19	20	270	671	31	17	961	140
Future Volume (vph)	128	40	558	84	19	20	270	671	31	17	961	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	1787	3438	1583	1805	3505	1615
Flt Permitted	0.44	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	829	1881	1599	1386	1881	1615	1787	3438	1583	1805	3505	1615
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)	133	42	581	88	20	21	281	699	32	18	1001	146
RTOR Reduction (vph)	0	0	170	0	0	19	0	0	16	0	0	80
Lane Group Flow (vph)	133	42	411	88	20	2	281	699	16	18	1001	66
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	26.2	26.2	26.2	8.7	8.7	8.7	9.0	48.3	48.3	4.0	43.3	43.3
Effective Green, g (s)	26.2	26.2	26.2	8.7	8.7	8.7	9.0	48.3	48.3	4.0	43.3	43.3
Actuated g/C Ratio	0.27	0.27	0.27	0.09	0.09	0.09	0.09	0.50	0.50	0.04	0.45	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	339	510	434	124	169	145	166	1720	792	74	1572	724
v/s Ratio Prot	0.05	0.02			0.01		c0.16	c0.20		0.01	c0.29	
v/s Ratio Perm	0.06		c0.26	0.06		0.00			0.01			0.04
v/c Ratio	0.39	0.08	0.95	0.71	0.12	0.01	1.69	0.41	0.02	0.24	0.64	0.09
Uniform Delay, d1	27.9	26.2	34.5	42.7	40.4	40.0	43.8	15.1	12.2	44.8	20.5	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	29.9	15.8	0.2	0.0	336.3	0.7	0.0	4.8	2.0	0.2
Delay (s)	28.6	26.2	64.4	58.5	40.6	40.0	380.1	15.8	12.2	49.6	22.5	15.5
Level of Service	C	C	E	E	D	D	F	B	B	D	C	B
Approach Delay (s)		56.0			52.7			116.8			22.1	
Approach LOS		E			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	63.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	81.9%	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 (vph)	161	8	222	49	14	31	130	641	49	19	846	101
Future Volume (vph)	161	8	222	49	14	31	130	641	49	19	846	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1712			1769		1787	1792	1615	1805	1845	1615
Flt Permitted		0.84			0.59		0.07	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)		1464			1071		135	1792	1615	595	1845	1615
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)	171	9	236	52	15	33	138	682	52	20	900	107
RTOR Reduction (vph)	0	47	0	0	18	0	0	0	22	0	0	57
Lane Group Flow (vph)	0	369	0	0	82	0	138	682	30	20	900	50
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		19.0			19.0		65.0	55.7	55.7	48.6	45.5	45.5
Effective Green, g (s)		19.0			19.0		65.0	55.7	55.7	48.6	45.5	45.5
Actuated g/C Ratio		0.20			0.20		0.67	0.58	0.58	0.50	0.47	0.47
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		287			210		249	1031	929	337	867	759
v/s Ratio Prot							c0.05	c0.38		0.00	c0.49	
v/s Ratio Perm		c0.25			0.08		0.32		0.02	0.03		0.03
v/c Ratio		1.29			0.39		0.55	0.66	0.03	0.06	1.04	0.07
Uniform Delay, d1		38.9			33.9		20.8	14.1	8.9	12.7	25.6	14.0
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		152.9			1.2		2.7	3.3	0.1	0.1	40.9	0.2
Delay (s)		191.8			35.1		23.4	17.4	9.0	12.8	66.5	14.2
Level of Service		F			D		C	B	A	B	E	B
Approach Delay (s)		191.8			35.1			17.9			60.0	
Approach LOS		F			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	66.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	23.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	263	483	167	196	217	266	381	186	250	317	16
Future Volume (vph)	28	263	483	167	196	217	266	381	186	250	317	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1787	1881	1568	1770	1881	1568	1752	1886	
Flt Permitted	0.62	1.00	1.00	0.40	1.00	1.00	0.21	1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1185	1900	1615	752	1881	1568	399	1881	1568	322	1886	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	289	531	184	215	238	292	419	204	275	348	18
RTOR Reduction (vph)	0	0	192	0	0	143	0	0	114	0	2	0
Lane Group Flow (vph)	31	289	339	184	215	95	292	419	90	275	364	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	3%	2%	1%	3%	3%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	39.7	35.3	35.3	53.6	42.3	42.3	31.3	22.9	22.9	31.2	22.9	
Effective Green, g (s)	39.7	35.3	35.3	53.6	42.3	42.3	31.3	22.9	22.9	31.2	22.9	
Actuated g/C Ratio	0.37	0.33	0.33	0.50	0.40	0.40	0.29	0.22	0.22	0.29	0.22	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	468	631	536	490	749	624	226	405	338	206	406	
v/s Ratio Prot	0.00	0.15		c0.04	0.11		0.10	0.22		c0.10	0.19	
v/s Ratio Perm	0.02		c0.21	0.15		0.06	0.28		0.06	c0.29		
v/c Ratio	0.07	0.46	0.63	0.38	0.29	0.15	1.29	1.03	0.27	1.33	0.90	
Uniform Delay, d1	21.2	27.9	30.0	15.5	21.7	20.5	34.6	41.7	34.7	34.3	40.5	
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	0.1	1.5	4.0	0.5	0.6	0.3	160.3	53.9	0.4	179.9	21.8	
Delay (s)	21.2	29.4	34.0	16.0	22.3	20.8	194.9	95.6	35.1	214.2	62.3	
Level of Service	C	C	C	B	C	C	F	F	D	F	E	
Approach Delay (s)		32.0			19.9			113.8			127.4	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	74.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	28.3
Intersection Capacity Utilization	80.6%	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 (vph)	462	142	24	19	124	78	8	360	0	70	383	174
Future Volume (vph)	462	142	24	19	124	78	8	360	0	70	383	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810			1802		1805	1776		1805	1810	1553
Flt Permitted		0.67			0.93		0.39	1.00		0.42	1.00	1.00
Satd. Flow (perm)		1262			1675		744	1776		800	1810	1553
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)	486	149	25	20	131	82	8	379	0	74	403	183
RTOR Reduction (vph)	0	2	0	0	19	0	0	0	0	0	0	117
Lane Group Flow (vph)	0	658	0	0	214	0	8	379	0	74	403	66
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	7%	0%	0%	5%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.9			28.9		23.4	23.4		23.4	23.4	23.4
Effective Green, g (s)		28.9			28.9		23.4	23.4		23.4	23.4	23.4
Actuated g/C Ratio		0.45			0.45		0.36	0.36		0.36	0.36	0.36
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		562			747		268	641		288	653	560
v/s Ratio Prot								0.21			c0.22	
v/s Ratio Perm		c0.52			0.13		0.01			0.09		0.04
v/c Ratio		1.17			0.29		0.03	0.59		0.26	0.62	0.12
Uniform Delay, d1		17.9			11.4		13.4	16.8		14.6	17.0	13.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		94.9			0.3		0.1	2.2		1.0	2.5	0.2
Delay (s)		112.9			11.7		13.5	19.0		15.6	19.5	14.0
Level of Service		F			B		B	B		B	B	B
Approach Delay (s)		112.9			11.7			18.9			17.6	
Approach LOS		F			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	12.5
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1183	2	2	15	0	15	0	891	8	10	612	863
Future Volume (vph)	1183	2	2	15	0	15	0	891	8	10	612	863
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1441	1446		1805	0			3435		1805	1810	1417
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1441	1446		1805	0			3435		277	1810	1417
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)	1259	2	2	16	0	16	0	948	9	11	651	918
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	0	247
Lane Group Flow (vph)	629	634	0	16	0	0	0	957	0	11	651	671
Heavy Vehicles (%)	19%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	14%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	82.0	82.0		2.5	0.0			27.4		29.5	35.5	35.5
Effective Green, g (s)	82.0	82.0		2.5	0.0			27.4		29.5	35.5	35.5
Actuated g/C Ratio	0.60	0.60		0.02	0.00			0.20		0.21	0.26	0.26
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	858	861		32	0			683		82	466	365
v/s Ratio Prot	0.44	c0.44		c0.01				0.28		0.00	0.36	
v/s Ratio Perm										0.03		c0.47
v/c Ratio	0.73	0.74		0.50	0.00			1.40		0.13	1.40	1.84
Uniform Delay, d1	20.0	20.1		67.0	68.8			55.1		44.8	51.1	51.1
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	5.1		11.8	0.0			189.3		0.7	191.3	387.6
Delay (s)	25.0	25.1		78.7	68.8			244.5		45.5	242.4	438.7
Level of Service	C	C		E	E			F		D	F	F
Approach Delay (s)		25.0			73.8			244.5			355.1	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	216.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	137.7	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	67	1	539	16	699	4	1270	815	472	838	58
Future Volume (vph)	70	67	1	539	16	699	4	1270	815	472	838	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1815			1542	1583	1805	3574	1357	1736	3406	1615
Flt Permitted		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1815			1542	1583	1805	3574	1357	1736	3406	1615
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)	74	71	1	573	17	744	4	1351	867	502	891	62
RTOR Reduction (vph)	0	0	0	0	0	239	0	0	224	0	0	30
Lane Group Flow (vph)	0	146	0	0	590	505	4	1351	643	502	891	32
Heavy Vehicles (%)	3%	1%	0%	18%	0%	2%	0%	1%	19%	4%	6%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		20.3			53.4	53.4	1.4	58.3	58.3	54.0	110.7	110.7
Effective Green, g (s)		20.3			53.4	53.4	1.4	58.3	58.3	54.0	110.7	110.7
Actuated g/C Ratio		0.10			0.25	0.25	0.01	0.27	0.27	0.25	0.52	0.52
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		173			386	397	11	979	371	440	1771	840
v/s Ratio Prot		c0.08			c0.38		0.00	0.38		c0.29	0.26	
v/s Ratio Perm						0.32			c0.47			0.02
v/c Ratio		0.84			1.53	1.27	0.36	1.38	1.73	1.14	0.50	0.04
Uniform Delay, d1		94.7			79.7	79.7	105.3	77.2	77.2	79.4	33.2	25.0
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		29.5			250.6	140.9	19.3	177.4	341.5	87.4	0.6	0.0
Delay (s)		124.2			330.3	220.6	124.5	254.7	418.7	166.8	33.7	25.0
Level of Service		F			F	F	F	F	F	F	C	C
Approach Delay (s)		124.2			269.1			318.4			79.3	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	232.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	212.8	Sum of lost time (s)	27.0
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	0	65	23	4	4	434	1568	34	10	1281	233
Future Volume (vph)	73	0	65	23	4	4	434	1568	34	10	1281	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.94			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1733			1801		1805	3505	1615	1805	3374	1615
Flt Permitted		0.82			0.65		0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1453			1210		157	3505	1615	179	3374	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	80	0	71	25	4	4	477	1723	37	11	1408	256
RTOR Reduction (vph)	0	92	0	0	4	0	0	0	10	0	0	61
Lane Group Flow (vph)	0	59	0	0	29	0	477	1723	27	11	1408	195
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		11.5			11.5		77.8	77.1	77.1	78.2	48.4	48.4
Effective Green, g (s)		11.5			11.5		77.8	77.1	77.1	78.2	48.4	48.4
Actuated g/C Ratio		0.11			0.11		0.73	0.72	0.72	0.73	0.45	0.45
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)		156			130		566	2525	1163	147	1526	730
v/s Ratio Prot							c0.23	0.49		0.00	c0.42	
v/s Ratio Perm		c0.04			0.02		0.38		0.02	0.05		0.12
v/c Ratio		0.38			0.23		0.84	0.68	0.02	0.07	0.92	0.27
Uniform Delay, d1		44.4			43.7		29.2	8.2	4.2	6.8	27.5	18.3
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.2			0.9		11.0	1.0	0.0	0.2	10.0	0.4
Delay (s)		47.6			44.6		40.2	9.2	4.3	7.0	37.6	18.7
Level of Service		D			D		D	A	A	A	D	B
Approach Delay (s)		47.6			44.6			15.7			34.5	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	82.5%	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 (vph)	116	268	715	139	220	217	592	928	125	303	669	74
Future Volume (vph)	116	268	715	139	220	217	592	928	125	303	669	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
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)	1805	1900	1495	1805	1900	1583	1752	3541		1787	3556	
Flt Permitted	0.47	1.00	1.00	0.32	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	895	1900	1495	599	1900	1583	173	3541		197	3556	
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)	123	285	761	148	234	231	630	987	133	322	712	79
RTOR Reduction (vph)	0	0	241	0	0	174	0	7	0	0	6	0
Lane Group Flow (vph)	123	285	520	148	234	57	630	1113	0	322	785	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%	3%	0%	1%	1%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	45.5	33.4	33.4	49.8	35.4	35.4	78.2	53.2		55.8	38.2	
Effective Green, g (s)	45.5	33.4	33.4	49.8	35.4	35.4	78.2	53.2		55.8	38.2	
Actuated g/C Ratio	0.31	0.23	0.23	0.34	0.24	0.24	0.54	0.37		0.39	0.26	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	357	438	345	326	465	387	455	1302		269	939	
v/s Ratio Prot	0.03	0.15		c0.05	0.12		c0.32	0.31		0.15	0.22	
v/s Ratio Perm	0.08		c0.35	0.11		0.04	c0.43			0.32		
v/c Ratio	0.34	0.65	1.51	0.45	0.50	0.15	1.38	0.85		1.20	0.84	
Uniform Delay, d1	36.7	50.3	55.6	34.9	47.0	42.8	45.2	42.1		43.2	50.2	
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	0.6	3.8	243.2	1.0	1.2	0.2	186.3	6.5		119.0	7.6	
Delay (s)	37.3	54.1	298.8	35.9	48.2	43.0	231.5	48.7		162.2	57.8	
Level of Service	D	D	F	D	D	D	F	D		F	E	
Approach Delay (s)		211.6			43.3			114.5			88.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	123.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	26.3
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	0	69	19	0	19	60	1186	16	16	958	32
Future Volume (vph)	53	0	69	19	0	19	60	1186	16	16	958	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615			1729		1805	3603		1805	3558	
Flt Permitted	0.73	1.00			0.80		0.20	1.00		0.16	1.00	
Satd. Flow (perm)	1386	1615			1421		386	3603		306	3558	
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)	59	0	77	21	0	21	67	1318	18	18	1064	36
RTOR Reduction (vph)	0	70	0	0	38	0	0	1	0	0	2	0
Lane Group Flow (vph)	59	7	0	0	4	0	67	1335	0	18	1098	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	7.3	7.3			7.3		52.7	47.8		47.5	45.6	
Effective Green, g (s)	7.3	7.3			7.3		52.7	47.8		47.5	45.6	
Actuated g/C Ratio	0.10	0.10			0.10		0.69	0.63		0.62	0.60	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	132	154			135		357	2254		227	2123	
v/s Ratio Prot		0.00					c0.01	c0.37		0.00	0.31	
v/s Ratio Perm	c0.04				0.00		0.12			0.05		
v/c Ratio	0.45	0.05			0.03		0.19	0.59		0.08	0.52	
Uniform Delay, d1	32.6	31.4			31.3		4.6	8.5		6.2	9.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.1			0.1		0.3	0.6		0.2	0.4	
Delay (s)	35.0	31.5			31.4		4.9	9.1		6.3	9.4	
Level of Service	D	C			C		A	A		A	A	
Approach Delay (s)		33.0			31.4			8.9			9.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	19.4
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	0	1	14	0	17	17	1191	53	12	25	990
Future Volume (vph)	9	0	1	14	0	17	17	1191	53	12	25	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1615		1805	1615		1805	5154			1793	3610
Flt Permitted	0.83	1.00		0.83	1.00		0.27	1.00			0.18	1.00
Satd. Flow (perm)	1583	1615		1583	1615		510	5154			344	3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93
Adj. Flow (vph)	10	0	1	15	0	18	18	1281	57	13	27	1065
RTOR Reduction (vph)	0	1	0	0	17	0	0	2	0	0	0	0
Lane Group Flow (vph)	10	0	0	15	1	0	18	1336	0	0	40	1065
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	4.8	4.8		4.8	4.8		71.2	71.2			74.4	81.5
Effective Green, g (s)	4.8	4.8		4.8	4.8		71.2	71.2			74.4	81.5
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.71	0.71			0.74	0.82
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	75	77		75	77		363	3669			302	2942
v/s Ratio Prot		0.00			0.00			0.26			0.00	
v/s Ratio Perm	0.01			c0.01			0.04				0.09	c0.30
v/c Ratio	0.13	0.00		0.20	0.01		0.05	0.36			0.13	0.36
Uniform Delay, d1	45.6	45.3		45.8	45.3		4.3	5.6			3.4	2.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			0.19	0.32
Incremental Delay, d2	0.3	0.0		0.5	0.0		0.3	0.3			0.1	0.3
Delay (s)	45.9	45.3		46.2	45.4		4.6	5.9			0.7	1.1
Level of Service	D	D		D	D		A	A			A	A
Approach Delay (s)		45.8			45.8			5.9				1.1
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	13
RTOR Reduction (vph)	2
Lane Group Flow (vph)	11
Heavy Vehicles (%)	0%
Turn Type	custom
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	81.5
Effective Green, g (s)	81.5
Actuated g/C Ratio	0.82
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1316
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	1.7
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	1.7
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	636	145	321	909	894	408
Future Volume (vph)	636	145	321	909	894	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1615	1805	5187	5187	1509
Flt Permitted	0.95	1.00	0.17	1.00	1.00	1.00
Satd. Flow (perm)	3303	1615	326	5187	5187	1509
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	723	165	365	1033	1016	464
RTOR Reduction (vph)	0	125	0	0	0	284
Lane Group Flow (vph)	723	40	365	1033	1016	180
Heavy Vehicles (%)	6%	0%	0%	0%	0%	7%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	24.2	24.2	61.4	61.4	38.9	38.9
Effective Green, g (s)	24.2	24.2	61.4	61.4	38.9	38.9
Actuated g/C Ratio	0.24	0.24	0.61	0.61	0.39	0.39
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	799	390	413	3184	2017	587
v/s Ratio Prot	c0.22		c0.13	0.20	0.20	
v/s Ratio Perm		0.02	c0.42			0.12
v/c Ratio	0.90	0.10	0.88	0.32	0.50	0.31
Uniform Delay, d1	36.8	29.5	16.6	9.3	23.2	21.2
Progression Factor	1.00	1.00	1.53	1.82	0.42	1.52
Incremental Delay, d2	13.4	0.0	19.5	0.3	0.9	1.3
Delay (s)	50.2	29.5	44.9	17.2	10.7	33.6
Level of Service	D	C	D	B	B	C
Approach Delay (s)	46.3			24.4	17.9	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	14	33	1	56	1486	1268	50
Future Volume (vph)	14	33	1	56	1486	1268	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.90			1.00	1.00	0.99	
Flt Protected	0.99			0.95	1.00	1.00	
Satd. Flow (prot)	3251			1804	4893	6089	
Flt Permitted	0.99			0.13	1.00	1.00	
Satd. Flow (perm)	3251			248	4893	6089	
Peak-hour factor, PHF	0.90	0.90	0.92	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	37	1	62	1651	1409	56
RTOR Reduction (vph)	35	0	0	0	0	3	0
Lane Group Flow (vph)	18	0	0	63	1651	1462	0
Heavy Vehicles (%)	0%	0%	2%	0%	6%	7%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	6.4			79.3	79.3	67.3	
Effective Green, g (s)	6.4			79.3	79.3	67.3	
Actuated g/C Ratio	0.06			0.79	0.79	0.67	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	208			265	3880	4097	
v/s Ratio Prot	c0.01			0.01	c0.34	0.24	
v/s Ratio Perm				0.18			
v/c Ratio	0.09			0.24	0.43	0.36	
Uniform Delay, d1	44.1			3.0	3.2	7.0	
Progression Factor	1.00			0.28	0.13	0.93	
Incremental Delay, d2	0.1			0.1	0.3	0.2	
Delay (s)	44.1			1.0	0.7	6.7	
Level of Service	D			A	A	A	
Approach Delay (s)	44.1				0.7	6.7	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	465	148	259	1241	1170	778
Future Volume (vph)	465	148	259	1241	1170	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.13	1.00	1.00	1.00
Satd. Flow (perm)	3467	1615	243	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	528	168	294	1410	1330	884
RTOR Reduction (vph)	0	135	0	0	0	390
Lane Group Flow (vph)	528	33	294	1410	1330	494
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	19.5	19.5	66.2	66.2	46.8	46.8
Effective Green, g (s)	19.5	19.5	66.2	66.2	46.8	46.8
Actuated g/C Ratio	0.20	0.20	0.66	0.66	0.47	0.47
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	676	314	393	3239	2268	733
v/s Ratio Prot	c0.15		c0.11	0.29	0.27	
v/s Ratio Perm		0.02	c0.38			0.32
v/c Ratio	0.78	0.10	0.75	0.44	0.59	0.67
Uniform Delay, d1	38.2	33.1	16.5	8.0	19.5	20.7
Progression Factor	1.00	1.00	1.37	0.16	1.06	4.05
Incremental Delay, d2	5.4	0.1	7.1	0.4	0.8	3.5
Delay (s)	43.6	33.1	29.7	1.7	21.5	87.2
Level of Service	D	C	C	A	C	F
Approach Delay (s)	41.1			6.5	47.7	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
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	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	125	4	78	62	1	71	2	85	1417	202	43	145
Future Volume (vph)	125	4	78	62	1	71	2	85	1417	202	43	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.95		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1750		1805	1900	1568		1787	4954			1783
Flt Permitted		0.81		0.61	1.00	1.00		0.08	1.00			0.07
Satd. Flow (perm)		1469		1168	1900	1568		149	4954			137
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91
Adj. Flow (vph)	137	4	86	68	1	78	2	93	1557	222	47	159
RTOR Reduction (vph)	0	24	0	0	0	63	0	0	15	0	0	0
Lane Group Flow (vph)	0	203	0	68	1	15	0	95	1764	0	0	206
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	2%	1%	3%	1%	2%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		19.5		19.5	19.5	19.5		56.3	50.5			65.1
Effective Green, g (s)		19.5		19.5	19.5	19.5		56.3	50.5			65.1
Actuated g/C Ratio		0.20		0.20	0.20	0.20		0.56	0.50			0.65
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		286		227	370	305		178	2501			257
v/s Ratio Prot					0.00			0.03	0.36			c0.08
v/s Ratio Perm		c0.14		0.06		0.01		0.27				c0.44
v/c Ratio		0.71		0.30	0.00	0.05		0.53	0.71			0.80
Uniform Delay, d1		37.6		34.4	32.4	32.7		13.3	19.0			24.2
Progression Factor		1.00		1.00	1.00	1.00		1.12	0.92			0.85
Incremental Delay, d2		8.4		0.3	0.0	0.0		1.4	1.5			6.3
Delay (s)		46.0		34.7	32.4	32.7		16.3	19.0			27.0
Level of Service		D		C	C	C		B	B			C
Approach Delay (s)		46.0			33.6				18.9			
Approach LOS		D			C				B			

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1806	26
Future Volume (vph)	1806	26
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	4715	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	4715	1615
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	1985	29
RTOR Reduction (vph)	0	13
Lane Group Flow (vph)	1985	16
Heavy Vehicles (%)	10%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	54.9	54.9
Effective Green, g (s)	54.9	54.9
Actuated g/C Ratio	0.55	0.55
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2588	886
v/s Ratio Prot	c0.42	
v/s Ratio Perm		0.01
v/c Ratio	0.77	0.02
Uniform Delay, d1	17.6	10.3
Progression Factor	1.15	1.00
Incremental Delay, d2	0.8	0.0
Delay (s)	21.1	10.3
Level of Service	C	B
Approach Delay (s)	21.5	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	0	518	0	0	0	0	544	1112	545	1503	0
Future Volume (vph)	86	0	518	0	0	0	0	544	1112	545	1503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	1656	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.29	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	498	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	98	0	589	0	0	0	0	618	1264	619	1708	0
RTOR Reduction (vph)	0	0	93	0	0	0	0	0	410	0	0	0
Lane Group Flow (vph)	98	0	496	0	0	0	0	618	854	619	1708	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Effective Green, g (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Actuated g/C Ratio	0.24		0.24					0.38	0.38	0.63	0.63	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	433		379					1316	600	516	2096	
v/s Ratio Prot								0.18		c0.21	0.52	
v/s Ratio Perm	0.05		c0.31						c0.54	0.55		
v/c Ratio	0.23		1.31					0.47	1.42	1.20	0.81	
Uniform Delay, d1	30.5		38.0					23.2	30.9	14.2	13.9	
Progression Factor	1.00		1.00					1.59	2.78	1.92	1.54	
Incremental Delay, d2	0.2		156.2					0.9	198.1	91.7	0.3	
Delay (s)	30.7		194.2					37.8	283.7	119.0	21.7	
Level of Service	C		F					D	F	F	C	
Approach Delay (s)		170.9			0.0			203.0			47.6	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	124.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1040	0	522	247	383	0	0	1008	31
Future Volume (vph)	0	0	0	1040	0	522	247	383	0	0	1008	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	162	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1156	0	580	274	426	0	0	1120	34
RTOR Reduction (vph)	0	0	0	0	0	312	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	1156	0	268	274	426	0	0	1120	13
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				28.1		28.1	59.5	59.5			38.1	38.1
Effective Green, g (s)				28.1		28.1	59.5	59.5			38.1	38.1
Actuated g/C Ratio				0.28		0.28	0.60	0.60			0.38	0.38
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		432	315	2105			1261	615
v/s Ratio Prot							c0.12	0.12			0.34	
v/s Ratio Perm				c0.35		0.17	c0.40					0.01
v/c Ratio				1.26		0.62	0.87	0.20			0.89	0.02
Uniform Delay, d1				36.0		31.3	27.6	9.3			29.0	19.3
Progression Factor				1.00		1.00	2.15	0.59			1.00	1.00
Incremental Delay, d2				124.9		2.8	19.6	0.2			9.5	0.1
Delay (s)				160.9		34.1	78.8	5.7			38.5	19.4
Level of Service				F		C	E	A			D	B
Approach Delay (s)		0.0			118.5			34.3			37.9	
Approach LOS		A			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	76.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	54	115	7	24	148	553	204	26	870	34
Future Volume (vph)	12	4	54	115	7	24	148	553	204	26	870	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1756	1615	1665	1685	1615	1787	3406	1615	1787	3438	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.24	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	1715	1756	1615	1665	1685	1615	448	3406	1615	804	3438	1615
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)	13	4	58	124	8	26	159	595	219	28	935	37
RTOR Reduction (vph)	0	0	56	0	0	24	0	0	79	0	0	15
Lane Group Flow (vph)	8	9	2	66	66	2	159	595	140	28	935	22
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	1%	6%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	3.1	3.1	3.1	7.3	7.3	7.3	72.1	64.7	64.7	63.5	60.4	60.4
Effective Green, g (s)	3.1	3.1	3.1	7.3	7.3	7.3	72.1	64.7	64.7	63.5	60.4	60.4
Actuated g/C Ratio	0.03	0.03	0.03	0.07	0.07	0.07	0.71	0.64	0.64	0.63	0.60	0.60
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	52	53	49	119	121	116	416	2175	1031	534	2049	962
v/s Ratio Prot	0.00	c0.01		c0.04	0.04		c0.03	c0.17		0.00	c0.27	
v/s Ratio Perm			0.00			0.00	0.24		0.09	0.03		0.01
v/c Ratio	0.15	0.17	0.04	0.55	0.55	0.02	0.38	0.27	0.14	0.05	0.46	0.02
Uniform Delay, d1	47.8	47.8	47.7	45.4	45.4	43.7	6.0	8.0	7.2	7.2	11.3	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.1	0.2	3.2	2.7	0.0	0.2	0.3	0.3	0.0	0.7	0.0
Delay (s)	48.8	49.0	47.9	48.6	48.1	43.7	6.2	8.3	7.5	7.2	12.1	8.4
Level of Service	D	D	D	D	D	D	A	A	A	A	B	A
Approach Delay (s)		48.1			47.6			7.8			11.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	23.1
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	2	54	38	1	43	61	500	29	34	837	24
Future Volume (vph)	24	2	54	38	1	43	61	500	29	34	837	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1815	1615	1805	1900	1599		1764	1615		1745	1599
Flt Permitted		0.76	1.00	0.78	1.00	1.00		0.81	1.00		0.96	1.00
Satd. Flow (perm)		1439	1615	1490	1900	1599		1437	1615		1685	1599
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)	27	2	60	42	1	48	68	556	32	38	930	27
RTOR Reduction (vph)	0	0	55	0	0	44	0	0	8	0	0	7
Lane Group Flow (vph)	0	29	5	42	1	4	0	624	24	0	968	20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	8%	0%	0%	9%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		5.1	5.1	5.1	5.1	5.1		50.0	50.0		50.0	50.0
Effective Green, g (s)		5.1	5.1	5.1	5.1	5.1		50.0	50.0		50.0	50.0
Actuated g/C Ratio		0.08	0.08	0.08	0.08	0.08		0.75	0.75		0.75	0.75
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		109	122	113	144	121		1070	1203		1255	1191
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.02	0.00	c0.03		0.00		0.43	0.01		c0.57	0.01
v/c Ratio		0.27	0.04	0.37	0.01	0.03		0.58	0.02		0.77	0.02
Uniform Delay, d1		29.2	28.7	29.5	28.7	28.7		3.9	2.2		5.1	2.2
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.3	0.1	2.1	0.0	0.1		2.3	0.0		4.6	0.0
Delay (s)		30.5	28.9	31.5	28.7	28.8		6.2	2.2		9.8	2.2
Level of Service		C	C	C	C	C		A	A		A	A
Approach Delay (s)		29.4			30.1			6.0			9.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	85	0	37	14	0	20	10	70	1802	10	8	8
Future Volume (vph)	85	0	37	14	0	20	10	70	1802	10	8	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.92			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1770	1553		1715			1805	5132			1805
Flt Permitted		0.73	1.00		0.82			0.13	1.00			0.09
Satd. Flow (perm)		1367	1553		1443			246	5132			171
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	89	0	39	15	0	21	11	73	1877	10	9	8
RTOR Reduction (vph)	0	0	35	0	32	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	4	0	4	0	0	84	1887	0	0	17
Heavy Vehicles (%)	2%	0%	4%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		7.9	7.9		7.9			57.3	52.4			49.5
Effective Green, g (s)		7.9	7.9		7.9			57.3	52.4			49.5
Actuated g/C Ratio		0.10	0.10		0.10			0.72	0.65			0.62
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		134	153		142			271	3361			126
v/s Ratio Prot								c0.02	c0.37			0.00
v/s Ratio Perm		c0.07	0.00		0.00			0.20				0.08
v/c Ratio		0.66	0.03		0.03			0.31	0.56			0.13
Uniform Delay, d1		34.8	32.6		32.6			6.2	7.5			6.3
Progression Factor		1.00	1.00		1.00			1.00	1.00			0.68
Incremental Delay, d2		10.6	0.0		0.1			0.3	0.7			0.1
Delay (s)		45.4	32.6		32.6			6.5	8.2			4.4
Level of Service		D	C		C			A	A			A
Approach Delay (s)		41.5			32.6				8.1			
Approach LOS		D			C				A			

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1295	34
Future Volume (vph)	1295	34
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1615
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1349	35
RTOR Reduction (vph)	0	14
Lane Group Flow (vph)	1349	21
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	48.5	48.5
Effective Green, g (s)	48.5	48.5
Actuated g/C Ratio	0.61	0.61
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2145	979
v/s Ratio Prot	c0.38	
v/s Ratio Perm		0.01
v/c Ratio	0.63	0.02
Uniform Delay, d1	10.0	6.3
Progression Factor	0.59	1.00
Incremental Delay, d2	0.8	0.0
Delay (s)	6.7	6.3
Level of Service	A	A
Approach Delay (s)	6.7	
Approach LOS	A	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	20	161	1903	668	250	2064	432	1	678	659	578	5
Future Volume (vph)	20	161	1903	668	250	2064	432	1	678	659	578	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.95	1.00	
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3441	5085	1583	3400	5085	1599		3467	3574	1599	
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)	21	166	1962	689	258	2128	445	1	699	679	596	5
RTOR Reduction (vph)	0	0	0	198	0	0	107	0	0	0	152	0
Lane Group Flow (vph)	0	187	1962	491	258	2128	338	0	700	679	444	0
Heavy Vehicles (%)	0%	2%	2%	2%	3%	2%	1%	0%	1%	1%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	1	1	6		5	2		3	3	8		7
Permitted Phases				6			2				8	
Actuated Green, G (s)		13.2	67.8	67.8	14.5	70.1	70.1		24.0	32.4	32.4	
Effective Green, g (s)		13.2	67.8	67.8	14.5	70.1	70.1		24.0	32.4	32.4	
Actuated g/C Ratio		0.08	0.42	0.42	0.09	0.44	0.44		0.15	0.20	0.20	
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0		2.5	3.0	3.0	
Lane Grp Cap (vph)		283	2154	670	308	2227	700		520	723	323	
v/s Ratio Prot		0.05	c0.39		0.08	c0.42			c0.20	0.19		
v/s Ratio Perm				0.31			0.21				c0.28	
v/c Ratio		0.66	0.91	0.73	0.84	0.96	0.48		1.35	0.94	1.38	
Uniform Delay, d1		71.2	43.3	38.5	71.6	43.4	32.0		68.0	62.8	63.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.03	0.99	0.98	
Incremental Delay, d2		5.1	7.2	7.0	17.4	11.2	2.4		166.9	18.2	185.7	
Delay (s)		76.4	50.5	45.5	89.0	54.6	34.4		236.9	80.4	248.3	
Level of Service		E	D	D	F	D	C		F	F	F	
Approach Delay (s)			51.0			54.6				186.5		
Approach LOS			D			D				F		

Intersection Summary			
HCM 2000 Control Delay	93.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	362	427	218
Future Volume (vph)	362	427	218
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.7	7.6	7.6
Lane Util. Factor	0.97	0.95	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3502	3539	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3502	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	373	440	225
RTOR Reduction (vph)	0	0	194
Lane Group Flow (vph)	378	440	32
Heavy Vehicles (%)	0%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Actuated Green, G (s)	14.3	22.4	22.4
Effective Green, g (s)	14.3	22.4	22.4
Actuated g/C Ratio	0.09	0.14	0.14
Clearance Time (s)	7.7	7.6	7.6
Vehicle Extension (s)	2.5	3.0	3.0
Lane Grp Cap (vph)	312	495	221
v/s Ratio Prot	0.11	0.12	
v/s Ratio Perm			0.02
v/c Ratio	1.21	0.89	0.14
Uniform Delay, d1	72.8	67.6	60.4
Progression Factor	0.97	0.97	2.72
Incremental Delay, d2	118.3	15.6	0.3
Delay (s)	188.6	81.0	164.4
Level of Service	F	F	F
Approach Delay (s)		138.0	
Approach LOS		F	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	83	74	65	77	1116	875	67
Future Volume (vph)	83	74	65	77	1116	875	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1734			1805	3574	3539	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1734			1805	3574	3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	86	76	67	79	1151	902	69
RTOR Reduction (vph)	41	0	0	0	0	7	0
Lane Group Flow (vph)	121	0	0	146	1151	964	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	9.4			8.9	58.7	44.1	
Effective Green, g (s)	9.4			8.9	58.7	44.1	
Actuated g/C Ratio	0.12			0.11	0.73	0.55	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	203			200	2622	1950	
v/s Ratio Prot	c0.07			c0.08	0.32	c0.27	
v/s Ratio Perm							
v/c Ratio	0.59			0.73	0.44	0.49	
Uniform Delay, d1	33.5			34.4	4.2	11.1	
Progression Factor	1.00			0.86	2.10	0.60	
Incremental Delay, d2	3.2			7.2	0.3	0.7	
Delay (s)	36.7			36.9	9.1	7.3	
Level of Service	D			D	A	A	
Approach Delay (s)	36.7				12.2	7.3	
Approach LOS	D				B	A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1	11	47	4	85	19	1080	98	44	884	2
Future Volume (vph)	16	1	11	47	4	85	19	1080	98	44	884	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749			1816	1583	1805	1859		1805	1881	1615
Flt Permitted		0.79			0.72	1.00	0.21	1.00		0.08	1.00	1.00
Satd. Flow (perm)		1430			1372	1583	391	1859		147	1881	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	16	1	11	47	4	86	19	1091	99	44	893	2
RTOR Reduction (vph)	0	10	0	0	0	79	0	3	0	0	0	1
Lane Group Flow (vph)	0	18	0	0	51	7	19	1187	0	44	893	1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		6.3			6.7	6.7	55.1	51.8		55.1	53.0	53.0
Effective Green, g (s)		6.3			6.7	6.7	55.1	51.8		55.1	53.0	53.0
Actuated g/C Ratio		0.08			0.08	0.08	0.69	0.65		0.69	0.66	0.66
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		112			114	132	306	1203		169	1246	1069
v/s Ratio Prot							0.00	c0.64		c0.01	0.47	
v/s Ratio Perm		0.01			c0.04	0.00	0.04			0.17		0.00
v/c Ratio		0.16			0.45	0.05	0.06	0.99		0.26	0.72	0.00
Uniform Delay, d1		34.4			34.9	33.7	6.6	13.8		18.6	8.7	4.6
Progression Factor		1.00			1.00	1.00	1.38	2.74		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.2	0.1	0.0	21.8		0.4	3.6	0.0
Delay (s)		34.7			36.1	33.8	9.1	59.6		19.0	12.2	4.6
Level of Service		C			D	C	A	E		B	B	A
Approach Delay (s)		34.7			34.7			58.8			12.5	
Approach LOS		C			C			E			B	

Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	333	472	709	598	96
Future Volume (vph)	64	333	472	709	598	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.98	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1644		1787	1863	1849	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1644		97	1863	1849	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	66	343	487	731	616	99
RTOR Reduction (vph)	114	0	0	0	3	0
Lane Group Flow (vph)	295	0	487	731	712	0
Heavy Vehicles (%)	0%	2%	1%	2%	1%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	37.1		131.8	131.8	74.4	
Effective Green, g (s)	37.1		131.8	131.8	74.4	
Actuated g/C Ratio	0.21		0.73	0.73	0.41	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	338		561	1364	764	
v/s Ratio Prot	c0.18		c0.25	0.39	c0.39	
v/s Ratio Perm			0.38			
v/c Ratio	0.87		0.87	0.54	0.93	
Uniform Delay, d1	69.2		53.7	10.6	50.4	
Progression Factor	1.00		1.00	1.00	0.83	
Incremental Delay, d2	21.4		13.0	1.5	18.6	
Delay (s)	90.6		66.7	12.1	60.4	
Level of Service	F		E	B	E	
Approach Delay (s)	90.6			34.0	60.4	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	32	41	72	17	39	12	631	131	54	581	24
Future Volume (vph)	13	32	41	72	17	39	12	631	131	54	581	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764			1826	1615	1805	1836		1805	1866	
Flt Permitted		0.94			0.54	1.00	0.39	1.00		0.31	1.00	
Satd. Flow (perm)		1677			1034	1615	738	1836		596	1866	
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)	14	34	44	77	18	41	13	671	139	57	618	26
RTOR Reduction (vph)	0	20	0	0	0	19	0	3	0	0	1	0
Lane Group Flow (vph)	0	72	0	0	95	22	13	807	0	57	643	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		19.6			19.6	19.6	149.1	149.1		149.1	149.1	
Effective Green, g (s)		19.6			19.6	19.6	149.1	149.1		149.1	149.1	
Actuated g/C Ratio		0.11			0.11	0.11	0.83	0.83		0.83	0.83	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		182			112	175	611	1520		493	1545	
v/s Ratio Prot								c0.44			0.34	
v/s Ratio Perm		0.04			c0.09	0.01	0.02			0.10		
v/c Ratio		0.40			0.85	0.13	0.02	0.53		0.12	0.42	
Uniform Delay, d1		74.7			78.7	72.5	2.7	4.7		2.9	4.0	
Progression Factor		1.00			1.00	1.00	0.75	0.55		0.44	0.37	
Incremental Delay, d2		1.4			41.5	0.3	0.1	1.1		0.4	0.8	
Delay (s)		76.1			120.3	72.8	2.1	3.8		1.7	2.3	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		76.1			106.0			3.7			2.2	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.3
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 (vph)	0	429	25	88	494	85	125	529	126	138	480	242
Future Volume (vph)	0	429	25	88	494	85	125	529	126	138	480	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1868		1770	1834		1787	1830		1770	1881	1615
Flt Permitted		1.00		0.07	1.00		0.31	1.00		0.19	1.00	1.00
Satd. Flow (perm)		1868		136	1834		591	1830		358	1881	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	442	26	91	509	88	129	545	130	142	495	249
RTOR Reduction (vph)	0	1	0	0	3	0	0	5	0	0	0	85
Lane Group Flow (vph)	0	467	0	91	594	0	129	670	0	142	495	164
Heavy Vehicles (%)	0%	1%	0%	2%	1%	3%	1%	1%	0%	2%	1%	0%
Turn Type		NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		46.1		61.1	61.1		99.6	89.0		95.2	86.8	86.8
Effective Green, g (s)		46.1		61.1	61.1		99.6	89.0		95.2	86.8	86.8
Actuated g/C Ratio		0.26		0.34	0.34		0.55	0.49		0.53	0.48	0.48
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		478		105	622		397	904		255	907	778
v/s Ratio Prot		0.25		0.03	c0.32		0.02	c0.37		c0.03	0.26	
v/s Ratio Perm				0.26			0.16			0.27		0.10
v/c Ratio		0.98		0.87	0.95		0.32	0.74		0.56	0.55	0.21
Uniform Delay, d1		66.4		48.2	58.1		22.5	36.3		28.9	32.7	26.9
Progression Factor		1.00		1.00	1.00		1.03	0.99		1.00	1.00	1.00
Incremental Delay, d2		34.7		48.2	25.1		0.2	5.0		1.6	2.4	0.6
Delay (s)		101.1		96.4	83.2		23.4	40.9		30.5	35.1	27.5
Level of Service		F		F	F		C	D		C	D	C
Approach Delay (s)		101.1			85.0			38.1			32.2	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	123.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	923	270	275	416	391	831
Future Volume (vph)	923	270	275	416	391	831
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	992	290	296	447	420	894
RTOR Reduction (vph)	0	180	0	0	0	585
Lane Group Flow (vph)	992	110	296	447	420	309
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	45.4	45.4	15.3	62.3	41.5	41.5
Effective Green, g (s)	45.4	45.4	15.3	62.3	41.5	41.5
Actuated g/C Ratio	0.38	0.38	0.13	0.52	0.35	0.35
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1311	604	442	967	650	542
v/s Ratio Prot	c0.29	0.07	c0.09	0.24	c0.22	0.20
v/s Ratio Perm						
v/c Ratio	0.76	0.18	0.67	0.46	0.65	0.57
Uniform Delay, d1	32.5	24.9	49.9	18.3	33.1	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	3.1	1.6	3.1	2.4
Delay (s)	35.6	25.2	53.0	19.8	36.1	34.4
Level of Service	D	C	D	B	D	C
Approach Delay (s)	33.2			33.1	34.9	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	69.6%	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 (vph)	116	154	48	570	168	773	106	433	755	643	368	19
Future Volume (vph)	116	154	48	570	168	773	106	433	755	643	368	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1819		1681	1738	1599	1805	1881	1599	3467	1851	
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)	120	159	49	588	173	797	109	446	778	663	379	20
RTOR Reduction (vph)	0	7	0	0	0	312	0	0	387	0	1	0
Lane Group Flow (vph)	120	201	0	376	385	485	109	446	391	663	398	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	17.9	17.9		33.4	33.4	33.4	12.2	48.8	48.8	24.9	60.9	
Effective Green, g (s)	17.9	17.9		33.4	33.4	33.4	12.2	48.8	48.8	24.9	60.9	
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.22	0.08	0.33	0.33	0.17	0.41	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	215	217		374	386	356	146	611	520	575	751	
v/s Ratio Prot	0.07	c0.11		0.22	0.22		0.06	0.24		c0.19	0.21	
v/s Ratio Perm						c0.30			c0.24			
v/c Ratio	0.56	0.93		1.01	1.00	1.36	0.75	0.73	0.75	1.15	0.53	
Uniform Delay, d1	62.3	65.4		58.3	58.3	58.3	67.4	44.8	45.2	62.5	33.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.89	
Incremental Delay, d2	1.8	40.2		47.9	44.8	180.6	16.5	7.5	9.6	84.0	2.1	
Delay (s)	64.1	105.6		106.2	103.1	238.9	83.9	52.3	54.8	144.1	32.0	
Level of Service	E	F		F	F	F	F	D	D	F	C	
Approach Delay (s)		90.4			173.3			56.3			102.0	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	112.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	5	65	42	2	31	74	1201	47	48	924	11
Future Volume (vph)	18	5	65	42	2	31	74	1201	47	48	924	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	1367		1805	1587		1444	1881	1615	1752	1881	1583
Flt Permitted	0.73	1.00		0.71	1.00		0.22	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	1293	1367		1348	1587		335	1881	1615	167	1881	1583
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)	19	5	68	44	2	32	77	1251	49	50	962	11
RTOR Reduction (vph)	0	63	0	0	30	0	0	0	11	0	0	3
Lane Group Flow (vph)	19	10	0	44	4	0	77	1251	38	50	963	8
Heavy Vehicles (%)	8%	0%	21%	0%	0%	3%	25%	1%	0%	3%	1%	2%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	10.7	10.7		10.7	10.7		121.0	115.8	115.8	120.7	115.1	115.1
Effective Green, g (s)	10.7	10.7		10.7	10.7		121.0	115.8	115.8	120.7	115.1	115.1
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.81	0.77	0.77	0.80	0.77	0.77
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	92	97		96	113		313	1452	1246	186	1443	1214
v/s Ratio Prot		0.01			0.00		c0.01	c0.67		0.01	0.51	
v/s Ratio Perm	0.01			c0.03			0.19		0.02	0.21		0.01
v/c Ratio	0.21	0.10		0.46	0.04		0.25	0.86	0.03	0.27	0.67	0.01
Uniform Delay, d1	65.6	65.2		66.9	64.9		7.5	11.6	4.0	22.3	8.3	4.1
Progression Factor	1.00	1.00		1.00	1.00		0.39	0.62	0.10	1.14	0.89	1.00
Incremental Delay, d2	1.1	0.5		3.4	0.1		0.0	2.1	0.0	0.2	1.4	0.0
Delay (s)	66.8	65.6		70.3	65.0		3.0	9.3	0.4	25.5	8.8	4.1
Level of Service	E	E		E	E		A	A	A	C	A	A
Approach Delay (s)		65.9			68.0			8.6			9.6	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	82.9%	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 (vph)	21	7	10	146	10	284	11	1146	134	323	1130	28
Future Volume (vph)	21	7	10	146	10	284	11	1146	134	323	1130	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1720			1783	1615	1805	1881	1583	1752	1857	
Flt Permitted		0.61			0.76	1.00	0.20	1.00	1.00	0.05	1.00	
Satd. Flow (perm)		1076			1427	1615	375	1881	1583	84	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	7	10	149	10	290	11	1169	137	330	1153	29
RTOR Reduction (vph)	0	9	0	0	0	254	0	0	24	0	1	0
Lane Group Flow (vph)	0	29	0	0	159	36	11	1169	113	330	1181	0
Heavy Vehicles (%)	0%	0%	14%	1%	14%	0%	0%	1%	2%	3%	2%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		18.6			18.6	18.6	87.6	87.6	87.6	114.8	119.9	
Effective Green, g (s)		18.6			18.6	18.6	87.6	87.6	87.6	114.8	119.9	
Actuated g/C Ratio		0.12			0.12	0.12	0.58	0.58	0.58	0.77	0.80	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		133			176	200	219	1098	924	366	1484	
v/s Ratio Prot								c0.62		c0.16	0.64	
v/s Ratio Perm		0.03			c0.11	0.02	0.03		0.07	0.52		
v/c Ratio		0.22			0.90	0.18	0.05	1.06	0.12	0.90	0.80	
Uniform Delay, d1		59.2			64.8	58.9	13.4	31.2	14.0	52.5	8.3	
Progression Factor		1.00			1.00	1.00	1.19	0.83	1.19	1.17	0.27	
Incremental Delay, d2		0.8			41.2	0.4	0.2	40.0	0.2	3.2	0.4	
Delay (s)		60.0			106.0	59.3	16.2	65.8	16.8	64.9	2.7	
Level of Service		E			F	E	B	E	B	E	A	
Approach Delay (s)		60.0			75.9			60.3			16.2	
Approach LOS		E			E			E			B	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	132	108	137	1315	1372	148
Future Volume (vph)	132	108	137	1315	1372	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1568	1787	1881	1842	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1770	1568	69	1881	1842	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	138	112	143	1370	1429	154
RTOR Reduction (vph)	0	103	0	0	2	0
Lane Group Flow (vph)	138	10	143	1370	1581	0
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	13.9	13.9	118.7	124.6	109.6	
Effective Green, g (s)	13.9	13.9	118.7	124.6	109.6	
Actuated g/C Ratio	0.09	0.09	0.79	0.83	0.73	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	164	145	158	1562	1345	
v/s Ratio Prot	c0.08		0.05	c0.73	c0.86	
v/s Ratio Perm		0.01	0.66			
v/c Ratio	0.84	0.07	0.91	0.88	1.18	
Uniform Delay, d1	67.0	62.2	66.6	7.9	20.2	
Progression Factor	1.00	1.00	0.79	1.80	0.64	
Incremental Delay, d2	29.5	0.1	20.0	2.6	79.6	
Delay (s)	96.5	62.3	72.5	16.9	92.6	
Level of Service	F	E	E	B	F	
Approach Delay (s)	81.1			22.1	92.6	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	419	132	940	109	89	40	936	497	14	53	471	287
Future Volume (vph)	419	132	940	109	89	40	936	497	14	53	471	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1599	1805	1787		3467	1874		1805	1881	1583
Flt Permitted	0.45	1.00	1.00	0.60	1.00		0.95	1.00		0.31	1.00	1.00
Satd. Flow (perm)	840	1863	1599	1148	1787		3467	1874		595	1881	1583
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)	441	139	989	115	94	42	985	523	15	56	496	302
RTOR Reduction (vph)	0	0	446	0	11	0	0	0	0	0	0	163
Lane Group Flow (vph)	441	139	543	115	125	0	985	538	0	56	496	139
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	42.4	31.5	31.5	42.6	13.1		35.3	76.9		82.4	47.5	47.5
Effective Green, g (s)	42.4	31.5	31.5	42.6	13.1		35.3	76.9		82.4	47.5	47.5
Actuated g/C Ratio	0.28	0.21	0.21	0.28	0.09		0.24	0.51		0.55	0.32	0.32
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	419	391	335	374	156		815	960		371	595	501
v/s Ratio Prot	c0.21	0.07		0.02	0.07		c0.28	0.29		0.01	c0.26	
v/s Ratio Perm	0.09		c0.34	0.06						0.08		0.09
v/c Ratio	1.05	0.36	1.62	0.31	0.80		1.21	0.56		0.15	0.83	0.28
Uniform Delay, d1	51.3	50.6	59.2	41.1	67.2		57.4	25.0		17.9	47.6	38.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.92		1.79	1.00	2.02
Incremental Delay, d2	58.4	0.2	292.3	0.2	23.6		99.6	1.1		0.1	12.6	1.3
Delay (s)	109.8	50.8	351.6	41.3	90.8		154.1	24.1		32.3	60.0	78.9
Level of Service	F	D	F	D	F		F	C		C	E	E
Approach Delay (s)		257.0			68.1			108.2			64.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	152.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	0	109	0	0	0	55	900	0	1	702	92
Future Volume (vph)	124	0	109	0	0	0	55	900	0	1	702	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1615				1805	3574		1805	3539	1615
Flt Permitted	0.95		1.00				0.35	1.00		0.30	1.00	1.00
Satd. Flow (perm)	1805		1615				661	3574		562	3539	1615
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)	133	0	117	0	0	0	59	968	0	1	755	99
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	133	0	13	0	0	0	59	968	0	1	755	73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	16.3		16.3				115.7	122.1		110.3	110.3	110.3
Effective Green, g (s)	16.3		16.3				115.7	122.1		110.3	110.3	110.3
Actuated g/C Ratio	0.11		0.11				0.77	0.81		0.74	0.74	0.74
Clearance Time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	196		175				551	2909		413	2602	1187
v/s Ratio Prot	c0.07		0.01				0.00	c0.27			0.21	
v/s Ratio Perm							0.08			0.00		0.05
v/c Ratio	0.68		0.07				0.11	0.33		0.00	0.29	0.06
Uniform Delay, d1	64.3		60.1				4.2	3.6		5.3	6.7	5.5
Progression Factor	1.00		1.00				0.98	1.24		1.00	1.00	1.00
Incremental Delay, d2	9.0		0.2				0.1	0.2		0.0	0.3	0.1
Delay (s)	73.3		60.2				4.1	4.6		5.3	7.0	5.6
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		67.2			0.0			4.6			6.8	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.6
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	19	0	85	30	0	11	125	840	59	2	19	682
Future Volume (vph)	19	0	85	30	0	11	125	840	59	2	19	682
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1805	1442	1805	3539	1568		1805	1863
Flt Permitted		0.74	1.00		0.74	1.00	0.32	1.00	1.00		0.32	1.00
Satd. Flow (perm)		1399	1615		1414	1442	607	3539	1568		607	1863
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)	20	0	89	32	0	12	132	884	62	2	20	718
RTOR Reduction (vph)	0	0	79	0	0	11	0	0	22	0	0	0
Lane Group Flow (vph)	0	20	11	0	32	1	132	884	40	0	22	718
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	2%	3%	0%	0%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		6.3	6.3		6.3	6.3	34.1	34.1	34.1		34.1	34.1
Effective Green, g (s)		6.3	6.3		6.3	6.3	34.1	34.1	34.1		34.1	34.1
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.64	0.64	0.64		0.64	0.64
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		165	190		166	170	387	2259	1001		387	1189
v/s Ratio Prot								0.25				c0.39
v/s Ratio Perm		0.01	0.01		c0.02	0.00	0.22		0.03		0.04	
v/c Ratio		0.12	0.06		0.19	0.01	0.34	0.39	0.04		0.06	0.60
Uniform Delay, d1		21.1	20.9		21.3	20.8	4.5	4.6	3.6		3.6	5.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.1		0.6	0.0	1.1	0.2	0.0		0.1	1.3
Delay (s)		21.4	21.0		21.8	20.8	5.6	4.9	3.6		3.7	7.0
Level of Service		C	C		C	C	A	A	A		A	A
Approach Delay (s)		21.1			21.5			4.9				6.7
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	28
Future Volume (vph)	28
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	29
RTOR Reduction (vph)	10
Lane Group Flow (vph)	19
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	34.1
Effective Green, g (s)	34.1
Actuated g/C Ratio	0.64
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1031
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.02
Uniform Delay, d1	3.5
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.5
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Future Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.16	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	317	1881	1583	300	1793	
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)	175	223	89	344	304	563	104	403	392	355	322	193
RTOR Reduction (vph)	0	0	76	0	0	217	0	0	237	0	19	0
Lane Group Flow (vph)	175	223	13	344	304	346	104	403	155	355	496	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	17.0	17.0	17.0	39.4	39.4	39.4	31.7	23.5	23.5	34.1	24.8	
Effective Green, g (s)	17.0	17.0	17.0	39.4	39.4	39.4	31.7	23.5	23.5	34.1	24.8	
Actuated g/C Ratio	0.15	0.15	0.15	0.35	0.35	0.35	0.28	0.21	0.21	0.30	0.22	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	266	278	234	624	651	553	194	392	330	212	394	
v/s Ratio Prot	0.10	c0.12		0.19	0.16		0.04	0.21		c0.14	0.28	
v/s Ratio Perm			0.01			c0.22	0.11		0.10	c0.37		
v/c Ratio	0.66	0.80	0.06	0.55	0.47	0.63	0.54	1.03	0.47	1.67	1.26	
Uniform Delay, d1	45.1	46.2	41.0	29.5	28.5	30.5	32.7	44.6	39.1	35.4	44.0	
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	5.2	14.8	0.1	3.5	2.4	5.3	1.4	52.8	3.0	323.3	135.9	
Delay (s)	50.3	61.1	41.1	33.0	30.9	35.8	34.1	97.4	42.1	358.7	179.8	
Level of Service	D	E	D	C	C	D	C	F	D	F	F	
Approach Delay (s)		53.5			33.8			66.0			252.8	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	99.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	23.5
Intersection Capacity Utilization	89.1%	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 (vph)	91	31	71	83	14	123	38	976	94	185	688	52
Future Volume (vph)	91	31	71	83	14	123	38	976	94	185	688	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1718			1822	1583	1752	3499		1787	1863	1568
Flt Permitted		0.80			0.63	1.00	0.31	1.00		0.16	1.00	1.00
Satd. Flow (perm)		1408			1199	1583	563	3499		299	1863	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	93	32	72	85	14	126	39	996	96	189	702	53
RTOR Reduction (vph)	0	24	0	0	0	101	0	7	0	0	0	20
Lane Group Flow (vph)	0	173	0	0	99	25	39	1085	0	189	702	33
Heavy Vehicles (%)	2%	4%	3%	0%	0%	2%	3%	2%	0%	1%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		14.4			15.3	15.3	48.2	33.8		41.5	48.2	48.2
Effective Green, g (s)		14.4			15.3	15.3	48.2	33.8		41.5	48.2	48.2
Actuated g/C Ratio		0.19			0.20	0.20	0.63	0.44		0.54	0.63	0.63
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		265			240	317	355	1550		312	1176	990
v/s Ratio Prot								c0.31		0.06	c0.38	
v/s Ratio Perm		c0.12			0.08	0.02	0.07			0.27		0.02
v/c Ratio		0.65			0.41	0.08	0.11	0.70		0.61	0.60	0.03
Uniform Delay, d1		28.6			26.6	24.8	5.6	17.2		10.7	8.3	5.3
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.4			0.4	0.0	0.2	1.5		2.3	1.0	0.0
Delay (s)		33.0			27.0	24.8	5.7	18.7		13.0	9.3	5.3
Level of Service		C			C	C	A	B		B	A	A
Approach Delay (s)		33.0			25.8			18.2			9.8	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	20.4
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 (vph)	283	13	192	28	12	37	187	950	53	100	705	70
Future Volume (vph)	283	13	192	28	12	37	187	950	53	100	705	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1698	1711	1615	1719	1900	1509	1787	3539	1538	1805	3505	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.28	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1698	1711	1615	1719	1900	1509	530	3539	1538	369	3505	1615
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)	295	14	200	29	12	39	195	990	55	104	734	73
RTOR Reduction (vph)	0	0	99	0	0	37	0	0	31	0	0	42
Lane Group Flow (vph)	153	156	101	29	13	2	195	990	24	104	734	31
Heavy Vehicles (%)	1%	0%	0%	5%	0%	7%	1%	2%	5%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	15.2	15.2	15.2	5.7	5.7	5.7	55.1	44.0	44.0	51.3	42.1	42.1
Effective Green, g (s)	15.2	15.2	15.2	5.7	5.7	5.7	55.1	44.0	44.0	51.3	42.1	42.1
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.06	0.56	0.44	0.44	0.52	0.42	0.42
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	260	262	247	98	109	86	435	1571	682	324	1489	686
v/s Ratio Prot	0.09	c0.09		c0.02	0.01		c0.05	c0.28		0.03	0.21	
v/s Ratio Perm			0.06			0.00	0.20		0.02	0.14		0.02
v/c Ratio	0.59	0.60	0.41	0.30	0.12	0.03	0.45	0.63	0.04	0.32	0.49	0.05
Uniform Delay, d1	39.0	39.1	37.9	44.8	44.3	44.1	11.8	21.3	15.6	13.4	20.7	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	3.0	0.8	1.2	0.4	0.1	0.5	1.2	0.0	0.4	0.1	0.0
Delay (s)	41.8	42.1	38.7	46.0	44.7	44.2	12.3	22.4	15.6	13.8	20.8	16.7
Level of Service	D	D	D	D	D	D	B	C	B	B	C	B
Approach Delay (s)		40.7			44.9			20.5			19.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	25.0
Intersection Capacity Utilization	62.6%	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 (vph)	894	0	382	0	0	0	0	885	514	283	821	0
Future Volume (vph)	894	0	382	0	0	0	0	885	514	283	821	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467		1583					3574	1568	1805	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.23	1.00	
Satd. Flow (perm)	3467		1583					3574	1568	432	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.25	0.25	0.25	0.25	0.96	0.96	0.96	0.96	0.25
Adj. Flow (vph)	931	0	398	0	0	0	0	922	535	295	855	0
RTOR Reduction (vph)	0	0	190	0	0	0	0	0	280	0	0	0
Lane Group Flow (vph)	931	0	208	0	0	0	0	922	255	295	855	0
Heavy Vehicles (%)	1%	0%	2%	0%	0%	0%	0%	1%	3%	0%	2%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.7		18.7					46.2	46.2	59.7	65.3	
Effective Green, g (s)	18.7		18.7					46.2	46.2	59.7	65.3	
Actuated g/C Ratio	0.19		0.19					0.48	0.48	0.62	0.67	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	669		305					1705	748	457	2387	
v/s Ratio Prot								0.26		c0.09	0.24	
v/s Ratio Perm	c0.27		0.13						0.16	c0.31		
v/c Ratio	1.39		0.68					0.54	0.34	0.65	0.36	
Uniform Delay, d1	39.0		36.3					17.8	15.8	10.1	6.8	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	185.3		8.6					0.9	0.9	3.5	0.3	
Delay (s)	224.4		44.9					18.7	16.7	13.5	7.1	
Level of Service	F		D					B	B	B	A	
Approach Delay (s)		170.6			0.0			18.0			8.7	
Approach LOS		F			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	314	0	413	232	1548	0	0	790	614
Future Volume (vph)	0	0	0	314	0	413	232	1548	0	0	790	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1615	1787	3574			3574	1583
Flt Permitted				0.95		1.00	0.23	1.00			1.00	1.00
Satd. Flow (perm)				1770		1615	441	3574			3574	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.94	0.94	0.94	0.94	0.94	0.25	0.25	0.94	0.94
Adj. Flow (vph)	0	0	0	334	0	439	247	1647	0	0	840	653
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	0	0	0	375
Lane Group Flow (vph)	0	0	0	334	0	381	247	1647	0	0	840	278
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				31.8		31.8	60.9	66.9			47.7	47.7
Effective Green, g (s)				31.8		31.8	60.9	66.9			47.7	47.7
Actuated g/C Ratio				0.28		0.28	0.54	0.60			0.43	0.43
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				501		457	397	2131			1519	672
v/s Ratio Prot							0.07	c0.46			0.24	
v/s Ratio Perm				0.19		c0.24	0.26					0.18
v/c Ratio				0.67		0.83	0.62	0.77			0.55	0.41
Uniform Delay, d1				35.5		37.7	15.1	17.0			24.2	22.5
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				3.7		12.8	3.0	2.2			0.8	1.0
Delay (s)				39.2		50.6	18.1	19.2			25.1	23.5
Level of Service				D		D	B	B			C	C
Approach Delay (s)		0.0			45.6			19.0			24.4	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	102	507	179	134	59	593	1273	95	48	719	286
Future Volume (vph)	290	102	507	179	134	59	593	1273	95	48	719	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	1805	3574	1615	1805	3539	1599
Flt Permitted	0.33	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	619	1900	1615	1307	1900	1615	1805	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	107	534	188	141	62	624	1340	100	51	757	301
RTOR Reduction (vph)	0	0	207	0	0	56	0	0	57	0	0	171
Lane Group Flow (vph)	305	107	327	188	141	6	624	1340	43	51	757	130
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.3	42.4	42.4
Effective Green, g (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.3	42.4	42.4
Actuated g/C Ratio	0.29	0.29	0.29	0.09	0.09	0.09	0.09	0.43	0.43	0.09	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	348	559	475	119	173	147	165	1529	690	170	1524	689
v/s Ratio Prot	c0.12	0.06			0.07		c0.35	c0.37		0.03	0.21	
v/s Ratio Perm	0.13		0.20	c0.14		0.00			0.03			0.08
v/c Ratio	0.88	0.19	0.69	1.58	0.82	0.04	3.78	0.88	0.06	0.30	0.50	0.19
Uniform Delay, d1	30.0	25.9	30.7	44.7	43.9	40.8	44.7	25.8	16.5	41.5	20.3	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.1	0.1	3.8	297.1	24.1	0.1	1266.5	7.4	0.2	2.8	1.2	0.6
Delay (s)	51.1	26.1	34.5	341.8	68.0	40.8	1311.2	33.1	16.7	44.3	21.4	17.9
Level of Service	D	C	C	F	E	D	F	C	B	D	C	B
Approach Delay (s)		38.9			195.3			418.7			21.5	
Approach LOS		D			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	222.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	10	142	47	7	25	265	1296	61	22	864	125
Future Volume (vph)	119	10	142	47	7	25	265	1296	61	22	864	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1696			1738		1805	1863	1568	1805	1863	1583
Flt Permitted		0.84			0.61		0.07	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1458			1091		135	1863	1568	167	1863	1583
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)	124	10	148	49	7	26	276	1350	64	23	900	130
RTOR Reduction (vph)	0	40	0	0	17	0	0	0	26	0	0	68
Lane Group Flow (vph)	0	242	0	0	65	0	276	1350	38	23	900	62
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		18.1			18.1		69.9	60.3	60.3	48.7	45.6	45.6
Effective Green, g (s)		18.1			18.1		69.9	60.3	60.3	48.7	45.6	45.6
Actuated g/C Ratio		0.18			0.18		0.70	0.60	0.60	0.48	0.45	0.45
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		262			196		323	1117	940	131	845	718
v/s Ratio Prot							c0.12	c0.72		0.01	0.48	
v/s Ratio Perm		c0.17			0.06		0.48		0.02	0.08		0.04
v/c Ratio		0.92			0.33		0.85	1.21	0.04	0.18	1.07	0.09
Uniform Delay, d1		40.5			35.9		31.6	20.1	8.2	22.2	27.4	15.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		35.5			1.0		19.2	102.4	0.1	0.6	49.8	0.2
Delay (s)		76.0			36.9		50.8	122.5	8.3	22.9	77.2	15.8
Level of Service		E			D		D	F	A	C	E	B
Approach Delay (s)		76.0			36.9			106.5			68.5	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	282	349	166	324	228	709	565	167	250	496	26
Future Volume (vph)	24	282	349	166	324	228	709	565	167	250	496	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1626	1881	1568	1736	1881	1583	1787	1863	1524	1752	1864	
Flt Permitted	0.56	1.00	1.00	0.37	1.00	1.00	0.18	1.00	1.00	0.18	1.00	
Satd. Flow (perm)	951	1881	1568	682	1881	1583	330	1863	1524	324	1864	
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)	25	297	367	175	341	240	746	595	176	263	522	27
RTOR Reduction (vph)	0	0	134	0	0	96	0	0	113	0	2	0
Lane Group Flow (vph)	25	297	233	175	341	144	746	595	63	263	547	0
Heavy Vehicles (%)	11%	1%	3%	4%	1%	2%	1%	2%	6%	3%	1%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	34.5	31.6	31.6	49.8	40.0	40.0	31.2	22.8	22.8	31.1	22.8	
Effective Green, g (s)	34.5	31.6	31.6	49.8	40.0	40.0	31.2	22.8	22.8	31.1	22.8	
Actuated g/C Ratio	0.34	0.31	0.31	0.49	0.39	0.39	0.30	0.22	0.22	0.30	0.22	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	339	581	484	448	735	618	220	415	339	214	415	
v/s Ratio Prot	0.00	c0.16		c0.04	c0.18		c0.28	0.32		0.10	0.29	
v/s Ratio Perm	0.02		0.15	0.15		0.09	c0.75		0.04	0.27		
v/c Ratio	0.07	0.51	0.48	0.39	0.46	0.23	3.39	1.43	0.19	1.23	1.32	
Uniform Delay, d1	22.8	29.0	28.7	16.1	23.2	20.9	32.5	39.8	32.2	32.6	39.8	
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	0.1	2.0	2.1	0.6	1.3	0.5	1087.4	208.6	0.3	137.0	159.7	
Delay (s)	22.9	31.0	30.8	16.6	24.5	21.4	1119.9	248.3	32.5	169.6	199.5	
Level of Service	C	C	C	B	C	C	F	F	C	F	F	
Approach Delay (s)		30.6			21.7			651.9			189.8	
Approach LOS		C			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	312.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.72		
Actuated Cycle Length (s)	102.3	Sum of lost time (s)	28.3
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	128	24	22	205	142	35	539	1	71	434	166
Future Volume (vph)	270	128	24	22	205	142	35	539	1	71	434	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799			1786		1671	1862		1736	1881	1615
Flt Permitted		0.52			0.95		0.34	1.00		0.22	1.00	1.00
Satd. Flow (perm)		962			1710		591	1862		404	1881	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	307	145	27	25	233	161	40	612	1	81	493	189
RTOR Reduction (vph)	0	2	0	0	24	0	0	0	0	0	0	107
Lane Group Flow (vph)	0	477	0	0	395	0	40	614	0	81	493	82
Heavy Vehicles (%)	1%	3%	0%	0%	1%	0%	8%	2%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.9			28.9		31.6	31.6		31.6	31.6	31.6
Effective Green, g (s)		28.9			28.9		31.6	31.6		31.6	31.6	31.6
Actuated g/C Ratio		0.40			0.40		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		380			676		255	806		174	814	699
v/s Ratio Prot								c0.33			0.26	
v/s Ratio Perm		c0.50			0.23		0.07			0.20		0.05
v/c Ratio		1.25			0.58		0.16	0.76		0.47	0.61	0.12
Uniform Delay, d1		22.1			17.3		12.6	17.5		14.7	15.9	12.4
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		134.3			1.5		0.6	5.0		4.1	1.9	0.2
Delay (s)		156.3			18.9		13.2	22.6		18.8	17.8	12.5
Level of Service		F			B		B	C		B	B	B
Approach Delay (s)		156.3			18.9			22.0			16.6	
Approach LOS		F			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	831	1	4	12	0	22	0	927	23	31	657	1163
Future Volume (vph)	831	1	4	12	0	22	0	927	23	31	657	1163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	1592		1805	0			3562		1805	1881	1553
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1588	1592		1805	0			3562		291	1881	1553
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)	857	1	4	12	0	23	0	956	24	32	677	1199
RTOR Reduction (vph)	0	0	0	0	23	0	0	1	0	0	0	262
Lane Group Flow (vph)	428	434	0	12	0	0	0	979	0	32	677	937
Heavy Vehicles (%)	8%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	4%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	41.5	41.5		1.1	0.0			26.1		30.0	36.0	36.0
Effective Green, g (s)	41.5	41.5		1.1	0.0			26.1		30.0	36.0	36.0
Actuated g/C Ratio	0.43	0.43		0.01	0.00			0.27		0.31	0.37	0.37
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	684	686		20	0			965		151	703	580
v/s Ratio Prot	0.27	c0.27		c0.01				0.27		0.01	0.36	
v/s Ratio Perm										0.06		c0.60
v/c Ratio	0.63	0.63		0.60	0.00			1.01		0.21	0.96	1.62
Uniform Delay, d1	21.3	21.4		47.4	48.1			35.1		25.8	29.5	30.1
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.6	3.7		40.2	0.0			32.7		0.7	26.0	285.1
Delay (s)	24.9	25.1		87.6	48.1			67.8		26.5	55.5	315.3
Level of Service	C	C		F	D			E		C	E	F
Approach Delay (s)		25.0			61.7			67.8			218.2	
Approach LOS		C			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	133.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	82	20	594	43	751	19	928	834	530	1041	60
Future Volume (vph)	90	82	20	594	43	751	19	928	834	530	1041	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1831			1731	1599	1805	3574	1538	1770	3574	1615
Flt Permitted		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1831			1731	1599	1805	3574	1538	1770	3574	1615
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)	100	91	22	660	48	834	21	1031	927	589	1157	67
RTOR Reduction (vph)	0	2	0	0	0	223	0	0	318	0	0	34
Lane Group Flow (vph)	0	211	0	0	708	611	21	1031	609	589	1157	33
Heavy Vehicles (%)	0%	0%	0%	5%	3%	1%	0%	1%	5%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		22.5			53.4	53.4	5.5	55.8	55.8	54.0	104.1	104.1
Effective Green, g (s)		22.5			53.4	53.4	5.5	55.8	55.8	54.0	104.1	104.1
Actuated g/C Ratio		0.11			0.25	0.25	0.03	0.26	0.26	0.25	0.49	0.49
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		193			434	401	46	938	403	449	1750	791
v/s Ratio Prot		c0.12			c0.41		0.01	0.29		c0.33	0.32	
v/s Ratio Perm						0.38			c0.40			0.02
v/c Ratio		1.09			1.63	1.52	0.46	1.10	1.51	1.31	0.66	0.04
Uniform Delay, d1		95.0			79.5	79.5	102.0	78.3	78.3	79.2	40.9	28.2
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		92.3			294.4	247.9	7.0	60.3	242.7	155.5	1.4	0.1
Delay (s)		187.3			374.0	327.5	109.1	138.7	321.1	234.8	42.3	28.3
Level of Service		F			F	F	F	F	F	F	D	C
Approach Delay (s)		187.3			348.8			223.8			104.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	218.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	212.5	Sum of lost time (s)	27.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	0	47	6	0	0	84	1679	5	0	1579	29
Future Volume (vph)	27	0	47	6	0	0	84	1679	5	0	1579	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frt		0.91			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.98			0.95		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1674			1805		1805	3574	1615		3574	1615
Flt Permitted		0.88			0.94		0.09	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1495			1794		176	3574	1615		3574	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	27	0	47	6	0	0	85	1696	5	0	1595	29
RTOR Reduction (vph)	0	68	0	0	0	0	0	0	1	0	0	11
Lane Group Flow (vph)	0	6	0	0	6	0	85	1696	4	0	1595	18
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		6.4			6.4		52.8	58.4	58.4		47.7	47.7
Effective Green, g (s)		6.4			6.4		52.8	58.4	58.4		47.7	47.7
Actuated g/C Ratio		0.08			0.08		0.69	0.76	0.76		0.62	0.62
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		124			149		228	2714	1226		2216	1001
v/s Ratio Prot							0.02	c0.47			c0.45	
v/s Ratio Perm		c0.00			0.00		0.23		0.00			0.01
v/c Ratio		0.05			0.04		0.37	0.62	0.00		0.72	0.02
Uniform Delay, d1		32.5			32.4		7.5	4.2	2.2		10.0	5.6
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3			0.1		1.0	0.6	0.0		1.4	0.0
Delay (s)		32.8			32.5		8.5	4.9	2.2		11.4	5.6
Level of Service		C			C		A	A	A		B	A
Approach Delay (s)		32.8			32.5			5.0			11.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	17.7
Intersection Capacity Utilization	72.5%	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 (vph)	160	266	547	200	405	462	603	948	154	387	862	210
Future Volume (vph)	160	266	547	200	405	462	603	948	154	387	862	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
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)	1770	1863	1583	1770	1863	1615	1770	3529		1805	3504	
Flt Permitted	0.12	1.00	1.00	0.32	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	223	1863	1583	590	1863	1615	162	3529		194	3504	
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)	170	283	582	213	431	491	641	1009	164	412	917	223
RTOR Reduction (vph)	0	0	187	0	0	244	0	9	0	0	14	0
Lane Group Flow (vph)	170	283	395	213	431	247	641	1164	0	412	1126	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	0%	2%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	49.1	33.4	33.4	51.4	34.4	34.4	79.2	54.2		56.8	39.2	
Effective Green, g (s)	49.1	33.4	33.4	51.4	34.4	34.4	79.2	54.2		56.8	39.2	
Actuated g/C Ratio	0.33	0.23	0.23	0.35	0.23	0.23	0.53	0.37		0.38	0.26	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	237	419	356	339	432	374	445	1290		265	926	
v/s Ratio Prot	c0.08	0.15		0.07	0.23		c0.32	0.33		0.18	0.32	
v/s Ratio Perm	0.16		c0.25	0.15		0.15	0.45			c0.41		
v/c Ratio	0.72	0.68	1.11	0.63	1.00	0.66	1.44	0.90		1.55	1.22	
Uniform Delay, d1	39.7	52.4	57.4	37.0	56.9	51.6	47.6	44.5		44.8	54.5	
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	9.9	4.7	80.9	3.6	42.4	4.6	210.6	9.9		267.4	107.1	
Delay (s)	49.6	57.1	138.3	40.6	99.3	56.2	258.3	54.4		312.2	161.6	
Level of Service	D	E	F	D	F	E	F	D		F	F	
Approach Delay (s)		101.5			69.6			126.4			201.6	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	131.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	148.2	Sum of lost time (s)	26.3
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	0	195	67	2	24	143	1368	60	55	1196	65
Future Volume (vph)	104	0	195	67	2	24	143	1368	60	55	1196	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1615			1732		1787	3587		1805	3582	
Flt Permitted	0.73	1.00			0.46		0.12	1.00		0.09	1.00	
Satd. Flow (perm)	1381	1615			819		222	3587		176	3582	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	112	0	210	72	2	26	154	1471	65	59	1286	70
RTOR Reduction (vph)	0	162	0	0	12	0	0	2	0	0	4	0
Lane Group Flow (vph)	112	48	0	0	88	0	154	1534	0	59	1352	0
Heavy Vehicles (%)	1%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	13.3	13.3			13.3		60.5	52.6		55.9	50.7	
Effective Green, g (s)	13.3	13.3			13.3		60.5	52.6		55.9	50.7	
Actuated g/C Ratio	0.15	0.15			0.15		0.67	0.58		0.62	0.56	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	202	237			120		285	2084		202	2006	
v/s Ratio Prot		0.03					c0.05	c0.43		0.02	0.38	
v/s Ratio Perm	0.08				c0.11		0.31			0.16		
v/c Ratio	0.55	0.20			0.73		0.54	0.74		0.29	0.67	
Uniform Delay, d1	35.8	33.9			36.9		9.8	13.9		10.3	14.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.4			20.5		2.1	1.7		0.8	1.2	
Delay (s)	39.1	34.4			57.5		11.9	15.6		11.1	15.2	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		36.0			57.5			15.2			15.1	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	19.4
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	26	1	28	49	0	36	26	1435	36	71	35	1240
Future Volume (vph)	26	1	28	49	0	36	26	1435	36	71	35	1240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1624		1805	1509		1805	5163			1758	3610
Flt Permitted	0.73	1.00		0.74	1.00		0.21	1.00			0.13	1.00
Satd. Flow (perm)	1390	1624		1400	1509		390	5163			239	3610
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)	28	1	30	53	0	39	28	1543	39	76	38	1333
RTOR Reduction (vph)	0	28	0	0	36	0	0	1	0	0	0	0
Lane Group Flow (vph)	28	3	0	53	3	0	28	1581	0	0	114	1333
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	0%	4%	2%	4%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	8.1	8.1		8.1	8.1		78.9	78.9			86.1	93.2
Effective Green, g (s)	8.1	8.1		8.1	8.1		78.9	78.9			86.1	93.2
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.69	0.69			0.75	0.81
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	97	114		98	106		267	3542			274	2925
v/s Ratio Prot		0.00			0.00			0.31			0.03	c0.37
v/s Ratio Perm	0.02			c0.04			0.07				0.29	
v/c Ratio	0.29	0.03		0.54	0.03		0.10	0.45			0.42	0.46
Uniform Delay, d1	50.7	49.8		51.7	49.8		6.1	8.2			4.7	3.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			4.65	3.06
Incremental Delay, d2	0.6	0.0		3.2	0.0		0.4	0.2			0.3	0.4
Delay (s)	51.3	49.8		54.9	49.8		6.5	8.4			22.0	10.4
Level of Service	D	D		D	D		A	A			C	B
Approach Delay (s)		50.5			52.7			8.3				11.2
Approach LOS		D			D			A				B

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	31
RTOR Reduction (vph)	6
Lane Group Flow (vph)	25
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	93.2
Effective Green, g (s)	93.2
Actuated g/C Ratio	0.81
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1308
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.1
Progression Factor	2.36
Incremental Delay, d2	0.0
Delay (s)	5.0
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	648	246	435	1135	1128	533
Future Volume (vph)	648	246	435	1135	1128	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	1787	5187	5136	1615
Flt Permitted	0.95	1.00	0.11	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	208	5187	5136	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	712	270	478	1247	1240	586
RTOR Reduction (vph)	0	207	0	0	0	361
Lane Group Flow (vph)	712	63	478	1247	1240	225
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	26.8	26.8	73.8	73.8	44.1	44.1
Effective Green, g (s)	26.8	26.8	73.8	73.8	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.64	0.64	0.38	0.38
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	807	372	430	3328	1969	619
v/s Ratio Prot	c0.21		c0.21	0.24	0.24	
v/s Ratio Perm		0.04	c0.50			0.14
v/c Ratio	0.88	0.17	1.11	0.37	0.63	0.36
Uniform Delay, d1	42.6	35.2	32.3	9.7	28.8	25.4
Progression Factor	1.00	1.00	1.55	0.91	0.50	1.78
Incremental Delay, d2	10.9	0.1	75.9	0.3	0.8	0.7
Delay (s)	53.5	35.3	125.9	9.2	15.3	46.0
Level of Service	D	D	F	A	B	D
Approach Delay (s)	48.5			41.5	25.2	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	145	192	7	167	1609	1460	142
Future Volume (vph)	145	192	7	167	1609	1460	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.91			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3300			1805	5136	6391	
Flt Permitted	0.98			0.08	1.00	1.00	
Satd. Flow (perm)	3300			160	5136	6391	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	159	211	8	184	1768	1604	156
RTOR Reduction (vph)	191	0	0	0	0	9	0
Lane Group Flow (vph)	179	0	0	192	1768	1751	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	10.9			89.8	89.8	71.0	
Effective Green, g (s)	10.9			89.8	89.8	71.0	
Actuated g/C Ratio	0.09			0.78	0.78	0.62	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	312			285	4010	3945	
v/s Ratio Prot	c0.05			c0.07	0.34	0.27	
v/s Ratio Perm				c0.46			
v/c Ratio	0.57			0.67	0.44	0.44	
Uniform Delay, d1	49.8			16.2	4.2	11.6	
Progression Factor	1.00			1.42	1.26	0.29	
Incremental Delay, d2	1.6			4.2	0.3	0.1	
Delay (s)	51.4			27.3	5.6	3.5	
Level of Service	D			C	A	A	
Approach Delay (s)	51.4				7.7	3.5	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	739	184	187	1566	1418	755
Future Volume (vph)	739	184	187	1566	1418	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	3467	1583	148	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	821	204	208	1740	1576	839
RTOR Reduction (vph)	0	93	0	0	0	424
Lane Group Flow (vph)	821	111	208	1740	1576	415
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	29.8	29.8	70.9	70.9	52.8	52.8
Effective Green, g (s)	29.8	29.8	70.9	70.9	52.8	52.8
Actuated g/C Ratio	0.26	0.26	0.62	0.62	0.46	0.46
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	898	410	285	3166	2358	734
v/s Ratio Prot	c0.24		c0.09	0.34	0.31	
v/s Ratio Perm		0.07	c0.36			0.26
v/c Ratio	0.91	0.27	0.73	0.55	0.67	0.57
Uniform Delay, d1	41.4	34.0	25.8	12.8	24.3	22.7
Progression Factor	1.00	1.00	1.11	0.43	0.57	1.81
Incremental Delay, d2	13.3	0.1	8.3	0.6	1.0	2.1
Delay (s)	54.7	34.1	37.1	6.2	14.8	43.2
Level of Service	D	C	D	A	B	D
Approach Delay (s)	50.6			9.5	24.7	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	108	5	84	73	8	85	4	78	2073	150	61	91
Future Volume (vph)	108	5	84	73	8	85	4	78	2073	150	61	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.94		1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1729		1805	1624	1583		1805	5087			1759
Flt Permitted		0.82		0.59	1.00	1.00		0.06	1.00			0.06
Satd. Flow (perm)		1464		1114	1624	1583		120	5087			111
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	123	6	95	83	9	97	5	89	2356	170	69	103
RTOR Reduction (vph)	0	25	0	0	0	79	0	0	5	0	0	0
Lane Group Flow (vph)	0	199	0	83	9	18	0	94	2521	0	0	172
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		21.4		21.4	21.4	21.4		70.6	63.5			77.0
Effective Green, g (s)		21.4		21.4	21.4	21.4		70.6	63.5			77.0
Actuated g/C Ratio		0.19		0.19	0.19	0.19		0.61	0.55			0.67
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		272		207	302	294		177	2808			221
v/s Ratio Prot					0.01			0.03	c0.50			c0.07
v/s Ratio Perm		c0.14		0.07		0.01		0.29				c0.45
v/c Ratio		0.73		0.40	0.03	0.06		0.53	0.90			0.78
Uniform Delay, d1		44.1		41.2	38.3	38.5		16.5	22.9			32.4
Progression Factor		1.00		1.00	1.00	1.00		1.29	1.00			1.28
Incremental Delay, d2		10.3		0.5	0.0	0.0		1.2	3.6			8.7
Delay (s)		54.4		41.6	38.3	38.6		22.4	26.4			50.1
Level of Service		D		D	D	D		C	C			D
Approach Delay (s)		54.4			39.9				26.2			
Approach LOS		D			D				C			

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2013	25
Future Volume (vph)	2013	25
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1615
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	2288	28
RTOR Reduction (vph)	0	12
Lane Group Flow (vph)	2288	16
Heavy Vehicles (%)	1%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	66.7	66.7
Effective Green, g (s)	66.7	66.7
Actuated g/C Ratio	0.58	0.58
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2978	936
v/s Ratio Prot	0.45	
v/s Ratio Perm		0.01
v/c Ratio	0.77	0.02
Uniform Delay, d1	18.3	10.2
Progression Factor	0.89	1.00
Incremental Delay, d2	1.1	0.0
Delay (s)	17.5	10.3
Level of Service	B	B
Approach Delay (s)	19.6	
Approach LOS	B	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	0	373	0	0	0	0	1084	1244	571	1818	0
Future Volume (vph)	77	0	373	0	0	0	0	1084	1244	571	1818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	1752	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	158	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	84	0	405	0	0	0	0	1178	1352	621	1976	0
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	336	0	0	0
Lane Group Flow (vph)	84	0	320	0	0	0	0	1178	1016	621	1976	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Effective Green, g (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Actuated g/C Ratio	0.21		0.21					0.42	0.42	0.68	0.68	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	362		330					1501	664	418	2433	
v/s Ratio Prot								0.33		c0.29	0.55	
v/s Ratio Perm	0.05		c0.20						0.64	c0.72		
v/c Ratio	0.23		0.97					0.78	1.53	1.49	0.81	
Uniform Delay, d1	37.8		45.2					28.9	33.4	35.7	13.1	
Progression Factor	1.00		1.00					0.46	1.08	1.14	1.52	
Incremental Delay, d2	0.2		41.5					1.6	242.1	219.7	0.3	
Delay (s)	38.1		86.6					14.9	278.2	260.5	20.3	
Level of Service	D		F					B	F	F	C	
Approach Delay (s)		78.3			0.0			155.6			77.7	
Approach LOS		E			A			F			E	

Intersection Summary			
HCM 2000 Control Delay	112.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	138.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1165	0	864	432	728	0	0	1224	104
Future Volume (vph)	0	0	0	1165	0	864	432	728	0	0	1224	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	187	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1226	0	909	455	766	0	0	1288	109
RTOR Reduction (vph)	0	0	0	0	0	137	0	0	0	0	0	74
Lane Group Flow (vph)	0	0	0	1226	0	772	455	766	0	0	1288	35
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				35.1		35.1	67.5	67.5			32.1	32.1
Effective Green, g (s)				35.1		35.1	67.5	67.5			32.1	32.1
Actuated g/C Ratio				0.31		0.31	0.59	0.59			0.28	0.28
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		478	489	2097			997	446
v/s Ratio Prot							c0.22	0.21			c0.36	
v/s Ratio Perm				0.35		c0.49	0.32					0.02
v/c Ratio				1.16		1.62	0.93	0.37			1.29	0.08
Uniform Delay, d1				40.0		40.0	33.8	12.5			41.5	30.6
Progression Factor				1.00		1.00	1.60	2.10			1.00	1.00
Incremental Delay, d2				82.2		286.5	17.7	0.3			138.9	0.2
Delay (s)				122.2		326.4	71.6	26.6			180.4	30.7
Level of Service				F		F	E	C			F	C
Approach Delay (s)		0.0			209.1			43.4			168.7	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	154.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	138.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	10	193	456	5	119	73	974	545	77	679	11
Future Volume (vph)	22	10	193	456	5	119	73	974	545	77	679	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1771	1583	1698	1704	1599	1805	3539	1599	1752	3574	1615
Flt Permitted	0.95	0.98	1.00	0.95	0.95	1.00	0.32	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1715	1771	1583	1698	1704	1599	602	3539	1599	342	3574	1615
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)	24	11	208	490	5	128	78	1047	586	83	730	12
RTOR Reduction (vph)	0	0	200	0	0	101	0	0	232	0	0	6
Lane Group Flow (vph)	17	18	8	245	250	27	78	1047	354	83	730	6
Heavy Vehicles (%)	0%	0%	2%	1%	0%	1%	0%	2%	1%	3%	1%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	4.0	4.0	4.0	19.4	19.4	19.4	59.9	54.7	54.7	60.3	54.9	54.9
Effective Green, g (s)	4.0	4.0	4.0	19.4	19.4	19.4	59.9	54.7	54.7	60.3	54.9	54.9
Actuated g/C Ratio	0.04	0.04	0.04	0.18	0.18	0.18	0.56	0.51	0.51	0.57	0.52	0.52
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	64	66	59	309	310	291	396	1815	820	264	1840	831
v/s Ratio Prot	0.01	c0.01		0.14	c0.15		0.01	c0.30		c0.02	0.20	
v/s Ratio Perm			0.00			0.02	0.10		0.22	0.16		0.00
v/c Ratio	0.27	0.27	0.13	0.79	0.81	0.09	0.20	0.58	0.43	0.31	0.40	0.01
Uniform Delay, d1	49.9	49.9	49.6	41.7	41.8	36.3	11.1	17.9	16.2	12.3	15.8	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.6	0.7	12.2	13.4	0.1	0.1	1.3	1.7	0.2	0.6	0.0
Delay (s)	51.5	51.5	50.4	53.9	55.2	36.3	11.2	19.3	17.9	12.6	16.4	12.6
Level of Service	D	D	D	D	E	D	B	B	B	B	B	B
Approach Delay (s)		50.5			50.8			18.4			16.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	106.6	Sum of lost time (s)	23.1
Intersection Capacity Utilization	64.9%	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 (vph)	5	4	13	61	2	103	14	1037	65	41	692	7
Future Volume (vph)	5	4	13	61	2	103	14	1037	65	41	692	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		1849	1615	1770	1900	1553		1862	1583		1870	1615
Flt Permitted		0.83	1.00	0.75	1.00	1.00		0.99	1.00		0.68	1.00
Satd. Flow (perm)		1578	1615	1400	1900	1553		1841	1583		1276	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	4	14	67	2	113	15	1140	71	45	760	8
RTOR Reduction (vph)	0	0	12	0	0	87	0	0	20	0	0	2
Lane Group Flow (vph)	0	9	2	67	2	26	0	1155	51	0	805	6
Heavy Vehicles (%)	0%	0%	0%	2%	0%	4%	0%	2%	2%	7%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		7.5	7.5	7.5	7.5	7.5		48.9	48.9		48.9	48.9
Effective Green, g (s)		7.5	7.5	7.5	7.5	7.5		48.9	48.9		48.9	48.9
Actuated g/C Ratio		0.11	0.11	0.11	0.11	0.11		0.71	0.71		0.71	0.71
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		173	177	153	208	170		1316	1131		912	1154
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.01	0.00	c0.05		0.02		0.63	0.03		c0.63	0.00
v/c Ratio		0.05	0.01	0.44	0.01	0.15		0.88	0.04		0.88	0.00
Uniform Delay, d1		27.3	27.1	28.5	27.1	27.6		7.5	2.9		7.5	2.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0	2.0	0.0	0.4		8.5	0.1		12.1	0.0
Delay (s)		27.4	27.2	30.5	27.2	28.0		16.0	2.9		19.6	2.8
Level of Service		C	C	C	C	C		B	A		B	A
Approach Delay (s)		27.2			28.9			15.2			19.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	24	0	20	6	0	3	9	31	1162	1	38	24
Future Volume (vph)	24	0	20	6	0	3	9	31	1162	1	38	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.95			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00			0.95
Satd. Flow (prot)		1805	1615		1756			1796	4847			1783
Flt Permitted		0.91	1.00		0.78			0.08	1.00			0.21
Satd. Flow (perm)		1727	1615		1423			143	4847			388
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	25	0	21	6	0	3	10	32	1198	1	41	25
RTOR Reduction (vph)	0	0	20	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	25	1	0	0	0	0	42	1199	0	0	66
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	7%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		4.4	4.4		4.4			56.2	52.9			57.6
Effective Green, g (s)		4.4	4.4		4.4			56.2	52.9			57.6
Actuated g/C Ratio		0.06	0.06		0.06			0.70	0.66			0.72
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		94	88		78			168	3205			349
v/s Ratio Prot								c0.01	0.25			0.01
v/s Ratio Perm		c0.01	0.00		0.00			0.16				0.13
v/c Ratio		0.27	0.01		0.01			0.25	0.37			0.19
Uniform Delay, d1		36.3	35.7		35.7			12.4	6.1			3.4
Progression Factor		1.00	1.00		1.00			1.00	1.00			1.45
Incremental Delay, d2		1.1	0.0		0.0			0.4	0.3			0.0
Delay (s)		37.4	35.8		35.8			12.8	6.4			4.9
Level of Service		D	D		D			B	A			A
Approach Delay (s)		36.6			35.8				6.7			
Approach LOS		D			D				A			

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2037	9
Future Volume (vph)	2037	9
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3374	1599
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3374	1599
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	2100	9
RTOR Reduction (vph)	0	3
Lane Group Flow (vph)	2100	6
Heavy Vehicles (%)	7%	1%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	53.6	53.6
Effective Green, g (s)	53.6	53.6
Actuated g/C Ratio	0.67	0.67
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2260	1071
v/s Ratio Prot	c0.62	
v/s Ratio Perm		0.00
v/c Ratio	0.93	0.01
Uniform Delay, d1	11.5	4.4
Progression Factor	2.67	1.00
Incremental Delay, d2	0.9	0.0
Delay (s)	31.7	4.4
Level of Service	C	A
Approach Delay (s)	30.8	
Approach LOS	C	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	144	2688	848	499	2224	293	592	354	285	472	765
Future Volume (vph)	2	144	2688	848	499	2224	293	592	354	285	472	765
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3433	4252	1482	3502	4590	1615	3335	3574	1599	3502	3574
Peak-hour factor, PHF	0.92	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)	2	155	2890	912	537	2391	315	637	381	306	508	823
RTOR Reduction (vph)	0	0	0	171	0	0	67	0	0	155	0	0
Lane Group Flow (vph)	0	157	2890	741	537	2391	248	637	381	151	508	823
Heavy Vehicles (%)	2%	2%	22%	9%	0%	13%	0%	5%	1%	1%	0%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		3	8		7	4
Permitted Phases				6			2			8		
Actuated Green, G (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Effective Green, g (s)		7.5	70.8	70.8	16.5	80.8	80.8	19.0	29.4	29.4	12.3	22.4
Actuated g/C Ratio		0.05	0.44	0.44	0.10	0.50	0.50	0.12	0.18	0.18	0.08	0.14
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2	8.0	7.6	7.6	7.7	7.6
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0	2.5	3.0	3.0	2.5	3.0
Lane Grp Cap (vph)		160	1881	655	361	2317	815	396	656	293	269	500
v/s Ratio Prot		0.05	c0.68		c0.15	c0.52		c0.19	c0.11		0.15	c0.23
v/s Ratio Perm				0.50			0.15			0.09		
v/c Ratio		0.98	1.54	1.13	1.49	1.03	0.30	1.61	0.58	0.52	1.89	1.65
Uniform Delay, d1		76.2	44.6	44.6	71.8	39.6	23.2	70.5	59.7	58.9	73.8	68.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.06	0.93	0.94	1.07	0.95
Incremental Delay, d2		65.3	244.1	77.1	233.7	27.5	1.0	285.0	1.3	1.5	411.3	298.1
Delay (s)		141.4	288.7	121.7	305.4	67.1	24.1	360.1	56.5	56.7	490.7	363.8
Level of Service		F	F	F	F	E	C	F	E	E	F	F
Approach Delay (s)			244.4			102.4			202.6			352.5
Approach LOS			F			F			F			F

Intersection Summary			
HCM 2000 Control Delay	210.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	130.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	271
Future Volume (vph)	271
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	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	0.93
Adj. Flow (vph)	291
RTOR Reduction (vph)	163
Lane Group Flow (vph)	128
Heavy Vehicles (%)	2%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	22.4
Effective Green, g (s)	22.4
Actuated g/C Ratio	0.14
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	221
v/s Ratio Prot	
v/s Ratio Perm	0.08
v/c Ratio	0.58
Uniform Delay, d1	64.4
Progression Factor	1.19
Incremental Delay, d2	3.0
Delay (s)	79.7
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	30	26	22	23	749	1461	68
Future Volume (vph)	30	26	22	23	749	1461	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1734			1787	3505	3486	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1734			1787	3505	3486	
Peak-hour factor, PHF	0.97	0.97	0.92	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	27	24	24	772	1506	70
RTOR Reduction (vph)	26	0	0	0	0	3	0
Lane Group Flow (vph)	32	0	0	48	772	1573	0
Heavy Vehicles (%)	0%	0%	2%	0%	3%	3%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	4.4			4.7	63.7	53.3	
Effective Green, g (s)	4.4			4.7	63.7	53.3	
Actuated g/C Ratio	0.06			0.06	0.80	0.67	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	95			104	2790	2322	
v/s Ratio Prot	c0.02			0.03	c0.22	c0.45	
v/s Ratio Perm							
v/c Ratio	0.34			0.46	0.28	0.68	
Uniform Delay, d1	36.4			36.4	2.1	8.1	
Progression Factor	1.00			0.84	1.82	0.64	
Incremental Delay, d2	0.9			1.2	0.2	0.1	
Delay (s)	37.3			31.8	4.1	5.3	
Level of Service	D			C	A	A	
Approach Delay (s)	37.3				5.7	5.3	
Approach LOS	D				A	A	

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	56.6%	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 (vph)	13	0	8	93	1	59	6	726	43	50	1430	12
Future Volume (vph)	13	0	8	93	1	59	6	726	43	50	1430	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1751			1810	1615	1805	1867		1805	1845	1615
Flt Permitted		0.75			0.71	1.00	0.08	1.00		0.22	1.00	1.00
Satd. Flow (perm)		1352			1353	1615	147	1867		426	1845	1615
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)	14	0	8	98	1	62	6	764	45	53	1505	13
RTOR Reduction (vph)	0	20	0	0	0	55	0	2	0	0	0	5
Lane Group Flow (vph)	0	2	0	0	99	7	6	807	0	53	1505	8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		8.6			9.0	9.0	52.8	49.4		52.8	51.8	51.8
Effective Green, g (s)		8.6			9.0	9.0	52.8	49.4		52.8	51.8	51.8
Actuated g/C Ratio		0.11			0.11	0.11	0.66	0.62		0.66	0.65	0.65
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		145			152	181	117	1152		339	1194	1045
v/s Ratio Prot							0.00	0.43		c0.01	c0.82	
v/s Ratio Perm		0.00			c0.07	0.00	0.03			0.10		0.01
v/c Ratio		0.02			0.65	0.04	0.05	0.70		0.16	1.26	0.01
Uniform Delay, d1		31.9			34.0	31.6	19.0	10.3		7.1	14.1	5.0
Progression Factor		1.00			1.00	1.00	1.73	2.78		1.18	2.19	1.00
Incremental Delay, d2		0.0			7.6	0.0	0.1	3.5		0.0	117.9	0.0
Delay (s)		31.9			41.6	31.7	32.9	32.2		8.4	148.8	5.0
Level of Service		C			D	C	C	C		A	F	A
Approach Delay (s)		31.9			37.8			32.2			142.8	
Approach LOS		C			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	100.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	464	316	481	1026	65
Future Volume (vph)	85	464	316	481	1026	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1670		1805	1900	1850	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1670		90	1900	1850	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	488	333	506	1080	68
RTOR Reduction (vph)	122	0	0	0	2	0
Lane Group Flow (vph)	455	0	333	506	1146	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	47.4		101.5	101.5	79.4	
Effective Green, g (s)	47.4		101.5	101.5	79.4	
Actuated g/C Ratio	0.30		0.63	0.63	0.50	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	494		238	1205	918	
v/s Ratio Prot	c0.27		c0.15	0.27	0.62	
v/s Ratio Perm			c0.74			
v/c Ratio	0.92		1.40	0.42	1.25	
Uniform Delay, d1	54.5		57.8	14.6	40.3	
Progression Factor	1.00		1.25	1.26	0.67	
Incremental Delay, d2	22.8		199.0	0.9	119.0	
Delay (s)	77.3		271.3	19.2	146.0	
Level of Service	E		F	B	F	
Approach Delay (s)	77.3			119.3	146.0	
Approach LOS	E			F	F	

Intersection Summary			
HCM 2000 Control Delay	121.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	122.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	18	37	66	9	21	12	477	77	32	987	10
Future Volume (vph)	12	18	37	66	9	21	12	477	77	32	987	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.93			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1742			1820	1615	1805	1844		1805	1878	
Flt Permitted		0.93			0.62	1.00	0.21	1.00		0.42	1.00	
Satd. Flow (perm)		1641			1172	1615	401	1844		790	1878	
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)	13	19	40	71	10	23	13	513	83	34	1061	11
RTOR Reduction (vph)	0	32	0	0	0	18	0	2	0	0	0	0
Lane Group Flow (vph)	0	40	0	0	81	5	13	594	0	34	1072	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		15.4			15.4	15.4	133.3	133.3		133.3	133.3	
Effective Green, g (s)		15.4			15.4	15.4	133.3	133.3		133.3	133.3	
Actuated g/C Ratio		0.10			0.10	0.10	0.83	0.83		0.83	0.83	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		157			112	155	334	1536		658	1564	
v/s Ratio Prot								0.32			c0.57	
v/s Ratio Perm		0.02			c0.07	0.00	0.03			0.04		
v/c Ratio		0.26			0.72	0.03	0.04	0.39		0.05	0.69	
Uniform Delay, d1		67.0			70.2	65.5	2.3	3.3		2.3	5.2	
Progression Factor		1.00			1.00	1.00	0.72	0.84		0.79	0.39	
Incremental Delay, d2		0.9			20.5	0.1	0.2	0.7		0.1	2.0	
Delay (s)		67.9			90.7	65.6	1.8	3.4		2.0	4.0	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		67.9			85.2			3.4			4.0	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	504	35	132	603	65	76	338	102	138	770	244
Future Volume (vph)	1	504	35	132	603	65	76	338	102	138	770	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1865		1805	1856		1805	1806		1805	1900	1615
Flt Permitted		0.90		0.14	1.00		0.06	1.00		0.26	1.00	1.00
Satd. Flow (perm)		1677		265	1856		119	1806		492	1900	1615
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)	1	536	37	140	641	69	81	360	109	147	819	260
RTOR Reduction (vph)	0	1	0	0	2	0	0	7	0	0	0	79
Lane Group Flow (vph)	0	573	0	140	708	0	81	462	0	147	819	181
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		44.7		63.5	63.5		69.3	63.8		80.7	69.5	69.5
Effective Green, g (s)		44.7		63.5	63.5		69.3	63.8		80.7	69.5	69.5
Actuated g/C Ratio		0.28		0.40	0.40		0.43	0.40		0.50	0.43	0.43
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		468		204	736		109	720		340	825	701
v/s Ratio Prot				0.04	c0.38		0.03	0.26		c0.03	c0.43	
v/s Ratio Perm		c0.34		0.23			0.29			0.19		0.11
v/c Ratio		1.22		0.69	0.96		0.74	0.64		0.43	0.99	0.26
Uniform Delay, d1		57.6		37.6	47.1		38.6	38.9		25.5	45.0	28.8
Progression Factor		1.00		1.00	1.00		1.70	1.20		1.00	1.00	1.00
Incremental Delay, d2		118.4		9.3	24.0		20.6	4.2		0.4	29.6	0.9
Delay (s)		176.1		46.8	71.0		86.1	50.8		25.8	74.6	29.7
Level of Service		F		D	E		F	D		C	E	C
Approach Delay (s)		176.1			67.1			56.0			59.3	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	81.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	134.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	696	462	104	326	723	742
Future Volume (vph)	696	462	104	326	723	742
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	1538
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	1538
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	859	570	128	402	893	916
RTOR Reduction (vph)	0	202	0	0	0	466
Lane Group Flow (vph)	859	368	128	402	893	450
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	29.0	29.0	8.1	58.7	45.1	45.1
Effective Green, g (s)	29.0	29.0	8.1	58.7	45.1	45.1
Actuated g/C Ratio	0.29	0.29	0.08	0.59	0.45	0.45
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	949	459	283	1115	856	693
v/s Ratio Prot	c0.26	0.23	0.04	c0.21	c0.47	0.29
v/s Ratio Perm						
v/c Ratio	0.91	0.80	0.45	0.36	1.04	0.65
Uniform Delay, d1	34.2	32.8	43.8	10.8	27.4	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	11.0	0.5	0.9	42.6	2.9
Delay (s)	46.8	43.8	44.3	11.7	70.1	24.2
Level of Service	D	D	D	B	E	C
Approach Delay (s)	45.6			19.6	46.9	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
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 (vph)	13	33	18	898	34	626	15	252	491	1080	777	5
Future Volume (vph)	13	33	18	898	34	626	15	252	491	1080	777	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1800		1715	1725	1599	1805	1810	1583	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1800		1715	1725	1599	1805	1810	1583	3467	1826	
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)	14	35	19	966	37	673	16	271	528	1161	835	5
RTOR Reduction (vph)	0	15	0	0	0	431	0	0	417	0	0	0
Lane Group Flow (vph)	14	39	0	502	501	242	16	271	111	1161	840	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.6	6.6		30.4	30.4	30.4	2.8	27.4	27.4	40.6	64.6	
Effective Green, g (s)	6.6	6.6		30.4	30.4	30.4	2.8	27.4	27.4	40.6	64.6	
Actuated g/C Ratio	0.05	0.05		0.23	0.23	0.23	0.02	0.21	0.21	0.31	0.50	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	91	91		401	403	373	38	381	333	1082	907	
v/s Ratio Prot	0.01	c0.02		c0.29	0.29		0.01	0.15		c0.33	c0.46	
v/s Ratio Perm						0.15			0.07			
v/c Ratio	0.15	0.43		1.25	1.24	0.65	0.42	0.71	0.33	1.07	0.93	
Uniform Delay, d1	59.0	59.9		49.8	49.8	45.0	62.8	47.6	43.6	44.7	30.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.51	
Incremental Delay, d2	0.3	1.2		132.4	128.8	3.8	2.7	7.6	1.2	34.9	2.1	
Delay (s)	59.3	61.0		182.2	178.6	48.8	65.5	55.2	44.8	76.7	17.7	
Level of Service	E	E		F	F	D	E	E	D	E	B	
Approach Delay (s)		60.7			127.6			48.7			51.9	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1	100	73	5	46	50	799	43	12	1690	6
Future Volume (vph)	35	1	100	73	5	46	50	799	43	12	1690	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1618		1805	1640		1805	1792	1615	1805	1792	1615
Flt Permitted	0.72	1.00		0.63	1.00		0.04	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1369	1618		1192	1640		81	1792	1615	466	1792	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	38	1	110	80	5	51	55	878	47	13	1857	7
RTOR Reduction (vph)	0	98	0	0	46	0	0	0	12	0	0	2
Lane Group Flow (vph)	38	13	0	80	10	0	55	878	35	13	1857	5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	13.6	13.6		13.6	13.6		98.1	95.8	95.8	97.8	93.4	93.4
Effective Green, g (s)	13.6	13.6		13.6	13.6		98.1	95.8	95.8	97.8	93.4	93.4
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.75	0.74	0.74	0.75	0.72	0.72
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	143	169		124	171		123	1320	1190	371	1287	1160
v/s Ratio Prot		0.01			0.01		c0.02	0.49		0.00	c1.04	
v/s Ratio Perm	0.03			c0.07			0.32		0.02	0.03		0.00
v/c Ratio	0.27	0.07		0.65	0.06		0.45	0.67	0.03	0.04	1.44	0.00
Uniform Delay, d1	53.6	52.5		55.9	52.4		35.7	8.8	4.6	6.7	18.3	5.2
Progression Factor	1.00	1.00		1.00	1.00		1.88	0.61	0.00	0.73	0.89	1.00
Incremental Delay, d2	1.0	0.2		11.0	0.1		0.6	1.7	0.0	0.0	199.7	0.0
Delay (s)	54.6	52.7		66.8	52.6		67.8	7.1	0.0	4.9	216.0	5.2
Level of Service	D	D		E	D		E	A	A	A	F	A
Approach Delay (s)		53.2			61.0			10.1			213.8	
Approach LOS		D			E			B			F	

Intersection Summary			
HCM 2000 Control Delay	136.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	5	27	284	2	560	15	857	131	273	1438	28
Future Volume (vph)	50	5	27	284	2	560	15	857	131	273	1438	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1761			1810	1568	1805	1845	1615	1787	1789	
Flt Permitted		0.37			0.67	1.00	0.06	1.00	1.00	0.06	1.00	
Satd. Flow (perm)		676			1279	1568	107	1845	1615	106	1789	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	5	30	312	2	615	16	942	144	300	1580	31
RTOR Reduction (vph)	0	14	0	0	0	203	0	0	30	0	1	0
Lane Group Flow (vph)	0	76	0	0	314	412	16	942	114	300	1610	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	3%	0%	1%	6%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		29.3			29.3	29.3	71.2	71.2	71.2	84.1	89.2	
Effective Green, g (s)		29.3			29.3	29.3	71.2	71.2	71.2	84.1	89.2	
Actuated g/C Ratio		0.23			0.23	0.23	0.55	0.55	0.55	0.65	0.69	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		152			288	353	58	1010	884	235	1227	
v/s Ratio Prot								0.51		0.13	c0.90	
v/s Ratio Perm		0.11			0.25	c0.26	0.15		0.07	0.70		
v/c Ratio		0.50			1.09	1.17	0.28	0.93	0.13	1.28	1.31	
Uniform Delay, d1		44.0			50.4	50.4	15.7	27.2	14.3	44.1	20.4	
Progression Factor		1.00			1.00	1.00	1.13	1.34	1.27	1.32	0.52	
Incremental Delay, d2		2.6			79.3	101.6	9.9	14.4	0.3	127.6	141.2	
Delay (s)		46.5			129.6	152.0	27.6	50.8	18.4	185.8	151.9	
Level of Service		D			F	F	C	D	B	F	F	
Approach Delay (s)		46.5			144.4			46.2			157.2	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	121.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	210	185	56	1408	1554	93
Future Volume (vph)	210	185	56	1408	1554	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	1792	1769	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1805	1615	85	1792	1769	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	219	193	58	1467	1619	97
RTOR Reduction (vph)	0	146	0	0	1	0
Lane Group Flow (vph)	219	47	58	1467	1715	0
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	18.2	18.2	94.4	100.3	89.4	
Effective Green, g (s)	18.2	18.2	94.4	100.3	89.4	
Actuated g/C Ratio	0.14	0.14	0.73	0.77	0.69	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	252	226	127	1382	1216	
v/s Ratio Prot	c0.12		0.02	c0.82	c0.97	
v/s Ratio Perm		0.03	0.31			
v/c Ratio	0.87	0.21	0.46	1.06	1.41	
Uniform Delay, d1	54.7	49.5	34.0	14.9	20.3	
Progression Factor	1.00	1.00	1.01	0.70	0.67	
Incremental Delay, d2	25.0	0.2	0.3	32.5	185.0	
Delay (s)	79.8	49.7	34.7	42.9	198.6	
Level of Service	E	D	C	D	F	
Approach Delay (s)	65.7			42.5	198.6	
Approach LOS	E			D	F	

Intersection Summary			
HCM 2000 Control Delay	118.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	83	1003	90	117	39	1274	343	2	52	554	830
Future Volume (vph)	237	83	1003	90	117	39	1274	343	2	52	554	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1881	1524	1805	1828		3367	1880		1805	1900	1599
Flt Permitted	0.50	1.00	1.00	0.70	1.00		0.95	1.00		0.49	1.00	1.00
Satd. Flow (perm)	915	1881	1524	1332	1828		3367	1880		922	1900	1599
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)	247	86	1045	94	122	41	1327	357	2	54	577	865
RTOR Reduction (vph)	0	0	533	0	9	0	0	0	0	0	0	175
Lane Group Flow (vph)	247	86	512	94	154	0	1327	359	0	54	577	690
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	27.4	19.1	19.1	27.6	18.1		39.0	72.4		77.4	38.8	38.8
Effective Green, g (s)	27.4	19.1	19.1	27.6	18.1		39.0	72.4		77.4	38.8	38.8
Actuated g/C Ratio	0.21	0.15	0.15	0.21	0.14		0.30	0.56		0.60	0.30	0.30
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	251	276	223	313	254		1010	1047		582	567	477
v/s Ratio Prot	c0.07	0.05		0.02	0.08		c0.39	0.19		0.00	0.30	
v/s Ratio Perm	0.14		c0.34	0.04						0.05		c0.43
v/c Ratio	0.98	0.31	2.30	0.30	0.60		1.31	0.34		0.09	1.02	1.45
Uniform Delay, d1	50.0	49.6	55.5	42.5	52.6		45.5	15.8		11.2	45.6	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.86	0.72		0.27	0.83	0.73
Incremental Delay, d2	51.9	0.2	596.8	0.2	2.8		141.9	0.1		0.0	38.8	210.2
Delay (s)	101.9	49.8	652.3	42.7	55.4		181.0	11.4		3.1	76.6	243.7
Level of Service	F	D	F	D	E		F	B		A	E	F
Approach Delay (s)		516.0			50.7			144.8			170.6	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	254.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	0	59	0	0	0	94	526	0	2	1378	117
Future Volume (vph)	62	0	59	0	0	0	94	526	0	2	1378	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1599				1787	3471		1805	3610	1615
Flt Permitted	0.95		1.00				0.12	1.00		0.43	1.00	1.00
Satd. Flow (perm)	1805		1599				233	3471		820	3610	1615
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)	69	0	66	0	0	0	104	584	0	2	1531	130
RTOR Reduction (vph)	0	0	61	0	0	0	0	0	0	0	0	34
Lane Group Flow (vph)	69	0	5	0	0	0	104	584	0	2	1531	96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	10.7		10.7				101.7	107.7		92.7	92.7	92.7
Effective Green, g (s)	10.7		10.7				101.7	107.7		92.7	92.7	92.7
Actuated g/C Ratio	0.08		0.08				0.78	0.83		0.71	0.71	0.71
Clearance Time (s)	5.6		5.6				6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	148		131				289	2875		584	2574	1151
v/s Ratio Prot	c0.04		0.00				c0.02	0.17			c0.42	
v/s Ratio Perm							0.26			0.00		0.06
v/c Ratio	0.47		0.04				0.36	0.20		0.00	0.59	0.08
Uniform Delay, d1	56.9		54.9				6.6	2.3		5.4	9.3	5.7
Progression Factor	1.00		1.00				1.56	0.62		1.00	1.00	1.00
Incremental Delay, d2	2.3		0.1				0.6	0.1		0.0	1.0	0.1
Delay (s)	59.2		55.1				11.0	1.6		5.4	10.3	5.8
Level of Service	E		E				B	A		A	B	A
Approach Delay (s)		57.2			0.0			3.0			10.0	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
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	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	44	0	138	72	1	22	31	544	12	2	10	1286
Future Volume (vph)	44	0	138	72	1	22	31	544	12	2	10	1286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1811	1615	1805	3438	1615		1799	1900
Flt Permitted		0.70	1.00		0.69	1.00	0.06	1.00	1.00		0.42	1.00
Satd. Flow (perm)		1336	1615		1315	1615	116	3438	1615		791	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.88	0.88
Adj. Flow (vph)	50	0	157	82	1	25	35	618	14	2	11	1461
RTOR Reduction (vph)	0	0	43	0	0	22	0	0	4	0	0	0
Lane Group Flow (vph)	0	50	114	0	83	3	35	618	10	0	13	1461
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	2%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		11.8	11.8		11.8	11.8	65.7	65.7	65.7		65.7	65.7
Effective Green, g (s)		11.8	11.8		11.8	11.8	65.7	65.7	65.7		65.7	65.7
Actuated g/C Ratio		0.13	0.13		0.13	0.13	0.73	0.73	0.73		0.73	0.73
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		174	210		171	210	84	2495	1172		574	1379
v/s Ratio Prot								0.18				c0.77
v/s Ratio Perm		0.04	c0.07		0.06	0.00	0.30		0.01		0.02	
v/c Ratio		0.29	0.54		0.49	0.02	0.42	0.25	0.01		0.02	1.06
Uniform Delay, d1		35.6	36.8		36.5	34.3	4.9	4.1	3.4		3.5	12.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	2.8		2.2	0.0	6.9	0.1	0.0		0.0	41.7
Delay (s)		36.5	39.6		38.7	34.3	11.7	4.3	3.4		3.5	54.1
Level of Service		D	D		D	C	B	A	A		A	D
Approach Delay (s)		38.9			37.7			4.6				53.1
Approach LOS		D			D			A				D

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	15
RTOR Reduction (vph)	4
Lane Group Flow (vph)	11
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	65.7
Effective Green, g (s)	65.7
Actuated g/C Ratio	0.73
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1172
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	3.4
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.4
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Future Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.26	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	306	1881	1583	488	1851	
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)	239	367	151	564	210	499	37	290	339	502	715	138
RTOR Reduction (vph)	0	0	117	0	0	220	0	0	267	0	6	0
Lane Group Flow (vph)	239	367	34	564	210	279	37	290	72	502	847	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	19.3	19.3	19.3	39.4	39.4	39.4	28.9	24.8	24.8	39.5	30.2	
Effective Green, g (s)	19.3	19.3	19.3	39.4	39.4	39.4	28.9	24.8	24.8	39.5	30.2	
Actuated g/C Ratio	0.17	0.17	0.17	0.34	0.34	0.34	0.25	0.21	0.21	0.34	0.26	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	299	315	268	611	643	511	128	401	337	266	480	
v/s Ratio Prot	0.13	c0.19		c0.31	0.11		0.01	0.15		c0.15	0.46	
v/s Ratio Perm			0.02			0.18	0.06		0.05	c0.49		
v/c Ratio	0.80	1.17	0.13	0.92	0.33	0.55	0.29	0.72	0.21	1.89	1.76	
Uniform Delay, d1	46.6	48.5	41.3	37.0	28.6	31.2	35.4	42.6	37.7	36.5	43.0	
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	13.4	103.3	0.2	21.7	1.4	4.1	0.5	8.8	0.9	413.2	352.6	
Delay (s)	60.1	151.8	41.5	58.7	29.9	35.3	35.9	51.4	38.6	449.7	395.6	
Level of Service	E	F	D	E	C	D	D	D	D	F	F	
Approach Delay (s)		100.8			44.8			44.0			415.7	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	179.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	23.5
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	5	44	112	17	75	32	834	78	74	1087	34
Future Volume (vph)	29	5	44	112	17	75	32	834	78	74	1087	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1724			1821	1615	1805	3321		1787	1810	1615
Flt Permitted		0.79			0.76	1.00	0.07	1.00		0.22	1.00	1.00
Satd. Flow (perm)		1393			1442	1615	126	3321		411	1810	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	33	6	50	127	19	85	36	948	89	84	1235	39
RTOR Reduction (vph)	0	42	0	0	0	71	0	5	0	0	0	12
Lane Group Flow (vph)	0	47	0	0	146	14	36	1032	0	84	1235	27
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	8%	0%	1%	5%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		13.1			14.0	14.0	60.5	48.6		53.8	60.5	60.5
Effective Green, g (s)		13.1			14.0	14.0	60.5	48.6		53.8	60.5	60.5
Actuated g/C Ratio		0.15			0.16	0.16	0.69	0.56		0.62	0.69	0.69
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		209			231	258	87	1848		335	1254	1119
v/s Ratio Prot								0.31		0.01	c0.68	
v/s Ratio Perm		0.03			c0.10	0.01	0.29			0.14		0.02
v/c Ratio		0.22			0.63	0.05	0.41	0.56		0.25	0.98	0.02
Uniform Delay, d1		32.6			34.2	31.0	5.8	12.4		7.4	13.0	4.2
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			4.1	0.0	4.3	0.5		0.1	21.7	0.0
Delay (s)		32.8			38.3	31.1	10.1	12.9		7.6	34.6	4.2
Level of Service		C			D	C	B	B		A	C	A
Approach Delay (s)		32.8			35.7			12.8			32.1	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	85.9%	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 (vph)	71	2	65	96	5	103	90	801	46	41	1035	15
Future Volume (vph)	71	2	65	96	5	103	90	801	46	41	1035	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1723	1615	1805	1900	1599	1805	3312	1615	1787	3438	1615
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1715	1723	1615	1805	1900	1599	239	3312	1615	474	3438	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	81	2	74	109	6	117	102	910	52	47	1176	17
RTOR Reduction (vph)	0	0	68	0	0	103	0	0	27	0	0	9
Lane Group Flow (vph)	41	42	6	109	6	14	102	910	25	47	1176	8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	9%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	7.6	7.6	7.6	11.4	11.4	11.4	54.8	47.3	47.3	50.2	45.0	45.0
Effective Green, g (s)	7.6	7.6	7.6	11.4	11.4	11.4	54.8	47.3	47.3	50.2	45.0	45.0
Actuated g/C Ratio	0.08	0.08	0.08	0.12	0.12	0.12	0.57	0.49	0.49	0.52	0.47	0.47
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	135	135	127	213	224	188	257	1623	791	317	1603	753
v/s Ratio Prot	0.02	c0.02		c0.06	0.00		c0.03	0.27		0.01	c0.34	
v/s Ratio Perm			0.00			0.01	0.19		0.02	0.07		0.00
v/c Ratio	0.30	0.31	0.05	0.51	0.03	0.07	0.40	0.56	0.03	0.15	0.73	0.01
Uniform Delay, d1	42.0	42.0	41.1	39.9	37.6	37.9	13.0	17.3	12.7	11.8	20.9	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.0	0.1	1.5	0.0	0.1	0.7	0.7	0.0	0.2	1.5	0.0
Delay (s)	42.9	42.9	41.2	41.5	37.7	38.0	13.7	18.0	12.8	12.0	22.4	13.8
Level of Service	D	D	D	D	D	D	B	B	B	B	C	B
Approach Delay (s)		42.1			39.6			17.4			21.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	25.0
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 (vph)	475	0	222	0	0	0	0	557	481	360	1025	0
Future Volume (vph)	475	0	222	0	0	0	0	557	481	360	1025	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1568					3406	1538	1805	3438	
Flt Permitted	0.95		1.00					1.00	1.00	0.37	1.00	
Satd. Flow (perm)	3433		1568					3406	1538	701	3438	
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)	516	0	241	0	0	0	0	605	523	391	1114	0
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	304	0	0	0
Lane Group Flow (vph)	516	0	126	0	0	0	0	605	219	391	1114	0
Heavy Vehicles (%)	2%	0%	3%	2%	2%	2%	0%	6%	5%	0%	5%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.8		18.8					37.6	37.6	52.6	58.2	
Effective Green, g (s)	18.8		18.8					37.6	37.6	52.6	58.2	
Actuated g/C Ratio	0.21		0.21					0.42	0.42	0.59	0.65	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	718		328					1426	643	595	2228	
v/s Ratio Prot								0.18		c0.11	0.32	
v/s Ratio Perm	c0.15		0.08						0.14	c0.28		
v/c Ratio	0.72		0.39					0.42	0.34	0.66	0.50	
Uniform Delay, d1	33.0		30.5					18.4	17.7	10.1	8.2	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6		1.8					0.6	1.0	2.9	0.6	
Delay (s)	37.6		32.4					19.1	18.7	13.0	8.8	
Level of Service	D		C					B	B	B	A	
Approach Delay (s)		36.0			0.0			18.9			9.9	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	478	0	374	220	812	0	0	907	1049
Future Volume (vph)	0	0	0	478	0	374	220	812	0	0	907	1049
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1752		1553	1752	3471			3539	1568
Flt Permitted				0.95		1.00	0.19	1.00			1.00	1.00
Satd. Flow (perm)				1752		1553	344	3471			3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.25	0.25	0.96	0.96
Adj. Flow (vph)	0	0	0	498	0	390	229	846	0	0	945	1093
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	0	0	0	471
Lane Group Flow (vph)	0	0	0	498	0	270	229	846	0	0	945	622
Heavy Vehicles (%)	2%	2%	2%	3%	0%	4%	3%	4%	0%	0%	2%	3%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				37.9		37.9	66.9	72.9			53.4	53.4
Effective Green, g (s)				37.9		37.9	66.9	72.9			53.4	53.4
Actuated g/C Ratio				0.30		0.30	0.54	0.59			0.43	0.43
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				534		473	338	2035			1520	673
v/s Ratio Prot							c0.07	0.24			0.27	
v/s Ratio Perm				c0.28		0.17	0.29					c0.40
v/c Ratio				0.93		0.57	0.68	0.42			0.62	0.92
Uniform Delay, d1				42.0		36.3	18.1	14.1			27.6	33.5
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				23.6		2.0	5.3	0.3			1.2	19.4
Delay (s)				65.6		38.3	23.4	14.4			28.8	52.9
Level of Service				E		D	C	B			C	D
Approach Delay (s)		0.0			53.6			16.3			41.8	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	124.3	Sum of lost time (s)	19.5
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	49	681	102	23	23	329	819	38	21	1172	171
Future Volume (vph)	156	49	681	102	23	23	329	819	38	21	1172	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	1787	3438	1583	1805	3505	1615
Flt Permitted	0.44	1.00	1.00	0.72	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	837	1881	1599	1375	1881	1615	1787	3438	1583	1805	3505	1615
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)	162	51	709	106	24	24	343	853	40	22	1221	178
RTOR Reduction (vph)	0	0	147	0	0	22	0	0	20	0	0	83
Lane Group Flow (vph)	163	51	562	106	24	2	343	853	20	22	1221	95
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	27.4	27.4	27.4	9.0	9.0	9.0	9.0	48.2	48.2	4.2	43.4	43.4
Effective Green, g (s)	27.4	27.4	27.4	9.0	9.0	9.0	9.0	48.2	48.2	4.2	43.4	43.4
Actuated g/C Ratio	0.28	0.28	0.28	0.09	0.09	0.09	0.09	0.49	0.49	0.04	0.44	0.44
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	354	526	447	126	173	148	164	1694	780	77	1555	716
v/s Ratio Prot	0.06	0.03			0.01		c0.19	c0.25		0.01	c0.35	
v/s Ratio Perm	0.07		c0.35	0.08		0.00			0.01			0.06
v/c Ratio	0.46	0.10	1.26	0.84	0.14	0.01	2.09	0.50	0.03	0.29	0.79	0.13
Uniform Delay, d1	28.1	26.0	35.2	43.7	40.8	40.4	44.4	16.7	12.7	45.3	23.2	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	133.1	36.6	0.3	0.0	511.4	1.1	0.1	5.7	4.1	0.4
Delay (s)	29.0	26.1	168.3	80.3	41.1	40.4	555.8	17.8	12.8	51.0	27.3	16.5
Level of Service	C	C	F	F	D	D	F	B	B	D	C	B
Approach Delay (s)		135.8			68.0			166.9			26.3	
Approach LOS		F			E			F			C	

Intersection Summary			
HCM 2000 Control Delay	101.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	10	271	60	17	38	159	782	60	23	1033	123
Future Volume (vph)	196	10	271	60	17	38	159	782	60	23	1033	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1712			1769		1787	1792	1615	1805	1845	1615
Flt Permitted		0.82			0.57		0.07	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)		1430			1042		134	1792	1615	380	1845	1615
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)	209	11	288	64	18	40	169	832	64	24	1099	131
RTOR Reduction (vph)	0	47	0	0	18	0	0	0	27	0	0	67
Lane Group Flow (vph)	0	461	0	0	104	0	169	832	37	24	1099	64
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		19.0			19.0		66.2	56.6	56.6	48.6	45.5	45.5
Effective Green, g (s)		19.0			19.0		66.2	56.6	56.6	48.6	45.5	45.5
Actuated g/C Ratio		0.19			0.19		0.68	0.58	0.58	0.50	0.47	0.47
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		278			202		263	1038	935	234	859	752
v/s Ratio Prot							c0.07	c0.46		0.00	c0.60	
v/s Ratio Perm		c0.32			0.10		0.37		0.02	0.05		0.04
v/c Ratio		1.66			0.52		0.64	0.80	0.04	0.10	1.28	0.09
Uniform Delay, d1		39.4			35.2		24.9	16.1	8.8	14.6	26.1	14.5
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		312.2			2.2		5.3	6.5	0.1	0.2	134.7	0.2
Delay (s)		351.5			37.5		30.2	22.7	8.9	14.8	160.8	14.7
Level of Service		F			D		C	C	A	B	F	B
Approach Delay (s)		351.5			37.5			23.0			142.7	
Approach LOS		F			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	131.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	23.0
Intersection Capacity Utilization	114.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	321	589	203	239	265	324	465	227	305	387	20
Future Volume (vph)	34	321	589	203	239	265	324	465	227	305	387	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1787	1881	1568	1770	1881	1568	1752	1886	
Flt Permitted	0.60	1.00	1.00	0.36	1.00	1.00	0.18	1.00	1.00	0.18	1.00	
Satd. Flow (perm)	1134	1900	1615	687	1881	1568	327	1881	1568	324	1886	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	37	353	647	223	263	291	356	511	249	335	425	22
RTOR Reduction (vph)	0	0	178	0	0	135	0	0	117	0	2	0
Lane Group Flow (vph)	37	353	469	223	263	156	356	511	132	335	445	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	3%	2%	1%	3%	3%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	49.2	44.7	44.7	64.5	53.1	53.1	31.2	22.8	22.8	31.1	22.8	
Effective Green, g (s)	49.2	44.7	44.7	64.5	53.1	53.1	31.2	22.8	22.8	31.1	22.8	
Actuated g/C Ratio	0.42	0.38	0.38	0.55	0.45	0.45	0.27	0.19	0.19	0.27	0.19	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	502	725	617	500	853	711	190	366	305	187	367	
v/s Ratio Prot	0.00	0.19		c0.05	0.14		c0.13	0.27		0.13	0.24	
v/s Ratio Perm	0.03		c0.29	0.20		0.10	c0.36		0.08	0.35		
v/c Ratio	0.07	0.49	0.76	0.45	0.31	0.22	1.87	1.40	0.43	1.79	1.21	
Uniform Delay, d1	20.1	27.4	31.5	15.1	20.3	19.4	39.8	47.1	41.4	39.9	47.1	
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	0.1	1.5	7.0	0.6	0.6	0.4	412.5	194.2	1.0	376.7	118.7	
Delay (s)	20.1	28.9	38.5	15.7	20.9	19.8	452.3	241.3	42.4	416.7	165.8	
Level of Service	C	C	D	B	C	B	F	F	D	F	F	
Approach Delay (s)		34.6			19.0			264.2			273.3	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	150.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	28.3
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	564	173	29	23	151	95	10	439	0	85	467	212
Future Volume (vph)	564	173	29	23	151	95	10	439	0	85	467	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810			1802		1805	1776		1805	1810	1553
Flt Permitted		0.62			0.93		0.32	1.00		0.35	1.00	1.00
Satd. Flow (perm)		1154			1681		613	1776		673	1810	1553
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)	594	182	31	24	159	100	11	462	0	89	492	223
RTOR Reduction (vph)	0	2	0	0	21	0	0	0	0	0	0	131
Lane Group Flow (vph)	0	805	0	0	262	0	11	462	0	89	492	92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	7%	0%	0%	5%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		29.0			29.0		28.9	28.9		28.9	28.9	28.9
Effective Green, g (s)		29.0			29.0		28.9	28.9		28.9	28.9	28.9
Actuated g/C Ratio		0.41			0.41		0.41	0.41		0.41	0.41	0.41
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		475			692		251	729		276	743	637
v/s Ratio Prot								0.26			c0.27	
v/s Ratio Perm		c0.70			0.16		0.02			0.13		0.06
v/c Ratio		1.70			0.38		0.04	0.63		0.32	0.66	0.14
Uniform Delay, d1		20.7			14.4		12.5	16.5		14.1	16.8	13.0
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		321.8			0.5		0.2	2.5		1.4	2.9	0.2
Delay (s)		342.5			14.9		12.6	19.0		15.5	19.7	13.2
Level of Service		F			B		B	B		B	B	B
Approach Delay (s)		342.5			14.9			18.9			17.5	
Approach LOS		F			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	128.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1443	2	2	19	0	19	0	1087	10	12	747	1053
Future Volume (vph)	1443	2	2	19	0	19	0	1087	10	12	747	1053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1441	1446		1805	0			3435		1805	1810	1417
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1441	1446		1805	0			3435		290	1810	1417
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)	1535	2	2	20	0	20	0	1156	11	13	795	1120
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	264
Lane Group Flow (vph)	767	772	0	20	0	0	0	1167	0	13	795	856
Heavy Vehicles (%)	19%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	14%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	111.2	111.2		4.5	0.0			26.2		28.7	34.7	34.7
Effective Green, g (s)	111.2	111.2		4.5	0.0			26.2		28.7	34.7	34.7
Actuated g/C Ratio	0.66	0.66		0.03	0.00			0.16		0.17	0.21	0.21
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	953	956		48	0			535		72	373	292
v/s Ratio Prot	0.53	c0.53		c0.01				0.34		0.00	0.44	
v/s Ratio Perm										0.03		c0.60
v/c Ratio	0.80	0.81		0.42	0.00			2.18		0.18	2.13	2.93
Uniform Delay, d1	20.6	20.7		80.5	84.0			71.0		59.7	66.7	66.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.3	6.3		5.8	0.0			537.7		1.2	518.0	878.0
Delay (s)	26.8	27.0		86.3	84.0			608.7		60.9	584.7	944.7
Level of Service	C	C		F	F			F		E	F	F
Approach Delay (s)		26.9			85.2			608.7			790.3	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	487.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	168.1	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	82	1	658	20	853	5	1550	994	576	1021	71
Future Volume (vph)	85	82	1	658	20	853	5	1550	994	576	1021	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1815			1542	1583	1805	3574	1357	1736	3406	1615
Flt Permitted		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1815			1542	1583	1805	3574	1357	1736	3406	1615
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)	90	87	1	700	21	907	5	1649	1057	613	1086	76
RTOR Reduction (vph)	0	0	0	0	0	239	0	0	224	0	0	37
Lane Group Flow (vph)	0	178	0	0	721	668	5	1649	833	613	1086	39
Heavy Vehicles (%)	3%	1%	0%	18%	0%	2%	0%	1%	19%	4%	6%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		22.1			53.4	53.4	1.5	58.3	58.3	54.0	110.6	110.6
Effective Green, g (s)		22.1			53.4	53.4	1.5	58.3	58.3	54.0	110.6	110.6
Actuated g/C Ratio		0.10			0.25	0.25	0.01	0.27	0.27	0.25	0.52	0.52
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		186			383	393	12	970	368	436	1755	832
v/s Ratio Prot		c0.10			c0.47		0.00	0.46		c0.35	0.32	
v/s Ratio Perm						0.42			c0.61			0.02
v/c Ratio		0.96			1.88	1.70	0.42	1.70	2.26	1.41	0.62	0.05
Uniform Delay, d1		95.8			80.6	80.6	106.1	78.2	78.2	80.3	37.0	25.8
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		53.0			406.9	325.8	21.8	319.4	576.8	196.0	1.0	0.1
Delay (s)		148.8			487.5	406.4	127.9	397.6	655.0	276.3	38.0	25.9
Level of Service		F			F	F	F	F	F	F	D	C
Approach Delay (s)		148.8			442.3			497.5			119.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	366.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	214.6	Sum of lost time (s)	27.0
Intersection Capacity Utilization	135.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	0	79	28	5	5	529	1913	41	12	1563	284
Future Volume (vph)	89	0	79	28	5	5	529	1913	41	12	1563	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.94			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1733			1801		1805	3505	1615	1805	3374	1615
Flt Permitted		0.81			0.63		0.08	1.00	1.00	0.05	1.00	1.00
Satd. Flow (perm)		1445			1171		157	3505	1615	99	3374	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	98	0	87	31	5	5	581	2102	45	13	1718	312
RTOR Reduction (vph)	0	90	0	0	4	0	0	0	13	0	0	62
Lane Group Flow (vph)	0	95	0	0	37	0	581	2102	32	13	1718	250
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		13.8			13.8		77.8	77.1	77.1	78.2	48.3	48.3
Effective Green, g (s)		13.8			13.8		77.8	77.1	77.1	78.2	48.3	48.3
Actuated g/C Ratio		0.13			0.13		0.71	0.71	0.71	0.72	0.44	0.44
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)		182			147		556	2472	1139	88	1490	713
v/s Ratio Prot							c0.28	0.60		0.00	c0.51	
v/s Ratio Perm		c0.07			0.03		0.46		0.02	0.10		0.15
v/c Ratio		0.52			0.25		1.04	0.85	0.03	0.15	1.15	0.35
Uniform Delay, d1		44.7			43.1		33.8	11.9	4.8	14.4	30.5	20.1
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.1			0.9		50.4	3.3	0.0	0.8	77.0	0.6
Delay (s)		49.7			44.0		84.3	15.2	4.9	15.2	107.5	20.8
Level of Service		D			D		F	B	A	B	F	C
Approach Delay (s)		49.7			44.0			29.7			93.7	
Approach LOS		D			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	17.7
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	327	872	170	269	265	722	1132	153	370	817	90
Future Volume (vph)	143	327	872	170	269	265	722	1132	153	370	817	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
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)	1805	1900	1495	1805	1900	1583	1752	3541		1787	3556	
Flt Permitted	0.36	1.00	1.00	0.20	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	683	1900	1495	381	1900	1583	160	3541		192	3556	
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)	152	348	928	181	286	282	768	1204	163	394	869	96
RTOR Reduction (vph)	0	0	242	0	0	215	0	7	0	0	6	0
Lane Group Flow (vph)	152	348	686	181	286	67	768	1360	0	394	959	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%	3%	0%	1%	1%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	47.3	33.4	33.4	51.0	35.1	35.1	79.2	54.2		56.8	39.2	
Effective Green, g (s)	47.3	33.4	33.4	51.0	35.1	35.1	79.2	54.2		56.8	39.2	
Actuated g/C Ratio	0.32	0.23	0.23	0.35	0.24	0.24	0.54	0.37		0.39	0.27	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	325	431	339	286	453	377	444	1304		264	947	
v/s Ratio Prot	0.04	0.18		c0.07	0.15		c0.39	0.38		0.18	0.27	
v/s Ratio Perm	0.11		c0.46	0.15		0.04	c0.54			0.40		
v/c Ratio	0.47	0.81	2.02	0.63	0.63	0.18	1.73	1.04		1.49	1.01	
Uniform Delay, d1	37.6	53.8	56.8	36.9	50.2	44.5	47.2	46.4		45.1	53.9	
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	1.1	11.2	471.0	4.5	3.2	0.3	337.7	36.9		240.6	32.5	
Delay (s)	38.7	65.0	527.8	41.5	53.4	44.8	384.9	83.4		285.7	86.4	
Level of Service	D	E	F	D	D	D	F	F		F	F	
Approach Delay (s)		363.0			47.3			191.8			144.2	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	204.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.72		
Actuated Cycle Length (s)	147.1	Sum of lost time (s)	26.3
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	84	23	0	23	73	1447	20	20	1169	39
Future Volume (vph)	65	0	84	23	0	23	73	1447	20	20	1169	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615			1729		1805	3603		1805	3558	
Flt Permitted	0.72	1.00			0.79		0.14	1.00		0.10	1.00	
Satd. Flow (perm)	1374	1615			1407		263	3603		181	3558	
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)	72	0	93	26	0	26	81	1608	22	22	1299	43
RTOR Reduction (vph)	0	82	0	0	46	0	0	1	0	0	2	0
Lane Group Flow (vph)	72	11	0	0	6	0	81	1629	0	22	1340	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	10.4	10.4			10.4		62.5	57.0		56.9	54.6	
Effective Green, g (s)	10.4	10.4			10.4		62.5	57.0		56.9	54.6	
Actuated g/C Ratio	0.12	0.12			0.12		0.70	0.64		0.64	0.61	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	160	188			164		279	2304		157	2180	
v/s Ratio Prot		0.01					c0.02	c0.45		0.00	0.38	
v/s Ratio Perm	c0.05				0.00		0.19			0.09		
v/c Ratio	0.45	0.06			0.04		0.29	0.71		0.14	0.61	
Uniform Delay, d1	36.7	35.0			34.9		6.5	10.6		8.4	10.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.1			0.1		0.6	1.3		0.4	0.8	
Delay (s)	38.7	35.1			35.0		7.1	11.8		8.8	11.5	
Level of Service	D	D			D		A	B		A	B	
Approach Delay (s)		36.7			35.0			11.6			11.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	19.4
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	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	11	0	1	17	0	21	21	1454	65	15	31	1208
Future Volume (vph)	11	0	1	17	0	21	21	1454	65	15	31	1208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1615		1805	1615		1805	5154			1793	3610
Flt Permitted	0.83	1.00		0.83	1.00		0.21	1.00			0.12	1.00
Satd. Flow (perm)	1583	1615		1583	1615		404	5154			235	3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93
Adj. Flow (vph)	12	0	1	18	0	23	23	1563	70	16	33	1299
RTOR Reduction (vph)	0	1	0	0	22	0	0	2	0	0	0	0
Lane Group Flow (vph)	12	0	0	18	1	0	23	1631	0	0	49	1299
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	4.8	4.8		4.8	4.8		70.1	70.1			74.4	81.5
Effective Green, g (s)	4.8	4.8		4.8	4.8		70.1	70.1			74.4	81.5
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.70	0.70			0.74	0.82
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	75	77		75	77		283	3612			241	2942
v/s Ratio Prot		0.00			0.00			0.32			0.01	c0.36
v/s Ratio Perm	0.01			c0.01			0.06				0.14	
v/c Ratio	0.16	0.00		0.24	0.01		0.08	0.45			0.20	0.44
Uniform Delay, d1	45.7	45.3		45.8	45.3		4.7	6.5			3.8	2.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			0.55	0.58
Incremental Delay, d2	0.4	0.0		0.6	0.0		0.6	0.4			0.1	0.4
Delay (s)	46.0	45.3		46.4	45.4		5.3	6.9			2.2	2.0
Level of Service	D	D		D	D		A	A			A	A
Approach Delay (s)		46.0			45.8			6.9				1.9
Approach LOS		D			D			A				A

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	15
Future Volume (vph)	15
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	16
RTOR Reduction (vph)	3
Lane Group Flow (vph)	13
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	81.5
Effective Green, g (s)	81.5
Actuated g/C Ratio	0.82
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1316
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	1.7
Progression Factor	0.00
Incremental Delay, d2	0.0
Delay (s)	0.0
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	776	177	392	1109	1091	498
Future Volume (vph)	776	177	392	1109	1091	498
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1615	1805	5187	5187	1509
Flt Permitted	0.95	1.00	0.11	1.00	1.00	1.00
Satd. Flow (perm)	3303	1615	212	5187	5187	1509
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	882	201	445	1260	1240	566
RTOR Reduction (vph)	0	150	0	0	0	350
Lane Group Flow (vph)	882	51	445	1260	1240	216
Heavy Vehicles (%)	6%	0%	0%	0%	0%	7%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	25.5	25.5	60.1	60.1	38.1	38.1
Effective Green, g (s)	25.5	25.5	60.1	60.1	38.1	38.1
Actuated g/C Ratio	0.26	0.26	0.60	0.60	0.38	0.38
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	842	411	348	3117	1976	574
v/s Ratio Prot	c0.27		c0.18	0.24	0.24	
v/s Ratio Perm		0.03	c0.59			0.14
v/c Ratio	1.05	0.12	1.28	0.40	0.63	0.38
Uniform Delay, d1	37.2	28.7	26.5	10.5	25.2	22.4
Progression Factor	1.00	1.00	1.03	1.76	0.56	2.67
Incremental Delay, d2	44.2	0.0	144.8	0.4	1.4	1.8
Delay (s)	81.4	28.7	172.0	18.9	15.6	61.3
Level of Service	F	C	F	B	B	E
Approach Delay (s)	71.6			58.9	30.0	
Approach LOS	E			E	C	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	17	40	1	68	1813	1547	61
Future Volume (vph)	17	40	1	68	1813	1547	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.90			1.00	1.00	0.99	
Flt Protected	0.99			0.95	1.00	1.00	
Satd. Flow (prot)	3251			1805	4893	6089	
Flt Permitted	0.99			0.09	1.00	1.00	
Satd. Flow (perm)	3251			163	4893	6089	
Peak-hour factor, PHF	0.90	0.90	0.92	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	44	1	76	2014	1719	68
RTOR Reduction (vph)	41	0	0	0	0	3	0
Lane Group Flow (vph)	22	0	0	77	2014	1784	0
Heavy Vehicles (%)	0%	0%	2%	0%	6%	7%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	6.4			79.3	79.3	67.0	
Effective Green, g (s)	6.4			79.3	79.3	67.0	
Actuated g/C Ratio	0.06			0.79	0.79	0.67	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	208			206	3880	4079	
v/s Ratio Prot	c0.01			0.02	c0.41	0.29	
v/s Ratio Perm				0.28			
v/c Ratio	0.10			0.37	0.52	0.44	
Uniform Delay, d1	44.1			3.9	3.6	7.7	
Progression Factor	1.00			2.22	0.12	1.55	
Incremental Delay, d2	0.1			0.3	0.4	0.2	
Delay (s)	44.2			9.0	0.8	12.1	
Level of Service	D			A	A	B	
Approach Delay (s)	44.2				1.1	12.1	
Approach LOS	D				A	B	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	567	182	316	1514	1428	949
Future Volume (vph)	567	182	316	1514	1428	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.09	1.00	1.00	1.00
Satd. Flow (perm)	3467	1615	166	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	644	207	359	1720	1623	1078
RTOR Reduction (vph)	0	141	0	0	0	408
Lane Group Flow (vph)	644	66	359	1720	1623	670
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	22.2	22.2	63.5	63.5	41.3	41.3
Effective Green, g (s)	22.2	22.2	63.5	63.5	41.3	41.3
Actuated g/C Ratio	0.22	0.22	0.64	0.64	0.41	0.41
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	769	358	395	3107	2002	647
v/s Ratio Prot	c0.19		c0.16	0.35	0.33	
v/s Ratio Perm		0.04	0.42			c0.43
v/c Ratio	0.84	0.18	0.91	0.55	0.81	1.04
Uniform Delay, d1	37.2	31.6	28.8	10.3	25.9	29.4
Progression Factor	1.00	1.00	1.11	0.21	0.93	2.69
Incremental Delay, d2	7.6	0.1	22.0	0.6	1.3	30.4
Delay (s)	44.8	31.7	53.8	2.8	25.4	109.2
Level of Service	D	C	D	A	C	F
Approach Delay (s)	41.6			11.6	58.8	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	153	5	95	76	1	87	2	104	1729	247	52	177
Future Volume (vph)	153	5	95	76	1	87	2	104	1729	247	52	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.95		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1751		1805	1900	1568		1787	4954			1783
Flt Permitted		0.81		0.60	1.00	1.00		0.09	1.00			0.08
Satd. Flow (perm)		1468		1139	1900	1568		163	4954			148
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91
Adj. Flow (vph)	168	5	104	84	1	96	2	114	1900	271	57	195
RTOR Reduction (vph)	0	23	0	0	0	75	0	0	16	0	0	0
Lane Group Flow (vph)	0	254	0	84	1	21	0	116	2155	0	0	252
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	2%	1%	3%	1%	2%	1%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		22.0		22.0	22.0	22.0		53.7	46.1			62.7
Effective Green, g (s)		22.0		22.0	22.0	22.0		53.7	46.1			62.7
Actuated g/C Ratio		0.22		0.22	0.22	0.22		0.54	0.46			0.63
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		322		250	418	344		210	2283			290
v/s Ratio Prot					0.00			0.04	0.43			c0.10
v/s Ratio Perm		c0.17		0.07		0.01		0.25				0.44
v/c Ratio		0.79		0.34	0.00	0.06		0.55	0.94			0.87
Uniform Delay, d1		36.8		32.8	30.4	30.8		19.5	25.7			28.8
Progression Factor		1.00		1.00	1.00	1.00		1.11	0.85			0.95
Incremental Delay, d2		13.0		0.3	0.0	0.0		1.4	8.0			2.7
Delay (s)		49.9		33.1	30.4	30.9		23.1	29.9			29.9
Level of Service		D		C	C	C		C	C			C
Approach Delay (s)		49.9			31.9				29.5			
Approach LOS		D			C				C			

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2203	32
Future Volume (vph)	2203	32
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	4715	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	4715	1615
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	2421	35
RTOR Reduction (vph)	0	17
Lane Group Flow (vph)	2421	18
Heavy Vehicles (%)	10%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	50.6	50.6
Effective Green, g (s)	50.6	50.6
Actuated g/C Ratio	0.51	0.51
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2385	817
v/s Ratio Prot	c0.51	
v/s Ratio Perm		0.01
v/c Ratio	1.02	0.02
Uniform Delay, d1	24.7	12.3
Progression Factor	1.07	1.00
Incremental Delay, d2	9.9	0.0
Delay (s)	36.4	12.3
Level of Service	D	B
Approach Delay (s)	35.5	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	632	0	0	0	0	664	1357	665	1834	0
Future Volume (vph)	105	0	632	0	0	0	0	664	1357	665	1834	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	1656	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.22	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	382	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	119	0	718	0	0	0	0	755	1542	756	2084	0
RTOR Reduction (vph)	0	0	93	0	0	0	0	0	397	0	0	0
Lane Group Flow (vph)	119	0	625	0	0	0	0	755	1145	756	2084	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Effective Green, g (s)	24.0		24.0					38.3	38.3	63.3	63.3	
Actuated g/C Ratio	0.24		0.24					0.38	0.38	0.63	0.63	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	433		379					1316	600	463	2096	
v/s Ratio Prot								0.22		c0.28	0.63	
v/s Ratio Perm	0.07		c0.39						c0.73	0.75		
v/c Ratio	0.27		1.65					0.57	1.91	1.63	0.99	
Uniform Delay, d1	30.9		38.0					24.4	30.9	18.9	18.2	
Progression Factor	1.00		1.00					1.60	2.76	1.33	1.57	
Incremental Delay, d2	0.3		303.1					0.9	411.5	285.7	4.7	
Delay (s)	31.2		341.1					39.9	496.7	310.9	33.3	
Level of Service	C		F					D	F	F	C	
Approach Delay (s)		297.1			0.0			346.5			107.2	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	225.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	150.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1269	0	637	301	468	0	0	1230	38
Future Volume (vph)	0	0	0	1269	0	637	301	468	0	0	1230	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	168	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1410	0	708	334	520	0	0	1367	42
RTOR Reduction (vph)	0	0	0	0	0	253	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	1410	0	455	334	520	0	0	1367	15
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				28.1		28.1	59.5	59.5			36.5	36.5
Effective Green, g (s)				28.1		28.1	59.5	59.5			36.5	36.5
Actuated g/C Ratio				0.28		0.28	0.60	0.60			0.36	0.36
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		432	343	2105			1208	589
v/s Ratio Prot							c0.15	0.15			c0.41	
v/s Ratio Perm				c0.43		0.30	0.43					0.01
v/c Ratio				1.53		1.05	0.97	0.25			1.13	0.03
Uniform Delay, d1				36.0		36.0	31.0	9.6			31.8	20.4
Progression Factor				1.00		1.00	2.05	0.47			1.00	1.00
Incremental Delay, d2				245.9		57.9	37.7	0.2			70.1	0.1
Delay (s)				281.9		93.9	101.2	4.7			101.8	20.4
Level of Service				F		F	F	A			F	C
Approach Delay (s)		0.0			219.0			42.5			99.4	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	146.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	150.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	66	140	9	29	181	676	249	32	1062	41
Future Volume (vph)	15	5	66	140	9	29	181	676	249	32	1062	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1757	1615	1665	1685	1615	1787	3406	1615	1787	3438	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.16	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1715	1757	1615	1665	1685	1615	296	3406	1615	706	3438	1615
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)	16	5	71	151	10	31	195	727	268	34	1142	44
RTOR Reduction (vph)	0	0	69	0	0	28	0	0	102	0	0	19
Lane Group Flow (vph)	10	11	2	80	81	3	195	727	166	34	1142	25
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	1%	6%	0%	1%	5%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	3.1	3.1	3.1	9.9	9.9	9.9	73.6	64.4	64.4	61.2	58.0	58.0
Effective Green, g (s)	3.1	3.1	3.1	9.9	9.9	9.9	73.6	64.4	64.4	61.2	58.0	58.0
Actuated g/C Ratio	0.03	0.03	0.03	0.10	0.10	0.10	0.71	0.62	0.62	0.59	0.56	0.56
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	51	52	48	158	160	154	348	2115	1002	450	1922	903
v/s Ratio Prot	0.01	c0.01		0.05	c0.05		c0.05	0.21		0.00	c0.33	
v/s Ratio Perm			0.00			0.00	0.35		0.10	0.04		0.02
v/c Ratio	0.20	0.21	0.04	0.51	0.51	0.02	0.56	0.34	0.17	0.08	0.59	0.03
Uniform Delay, d1	49.1	49.1	48.9	44.6	44.6	42.5	9.5	9.5	8.3	8.9	15.1	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.5	0.3	0.9	0.9	0.0	1.2	0.4	0.4	0.0	1.4	0.1
Delay (s)	50.5	50.6	49.1	45.5	45.5	42.5	10.7	9.9	8.7	8.9	16.4	10.3
Level of Service	D	D	D	D	D	D	B	A	A	A	B	B
Approach Delay (s)		49.5			45.0			9.8			16.0	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	23.1
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 (vph)	29	2	66	46	1	52	74	610	35	41	1022	29
Future Volume (vph)	29	2	66	46	1	52	74	610	35	41	1022	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1815	1615	1805	1900	1599		1764	1615		1745	1599
Flt Permitted		0.74	1.00	0.73	1.00	1.00		0.48	1.00		0.95	1.00
Satd. Flow (perm)		1403	1615	1396	1900	1599		857	1615		1666	1599
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)	32	2	73	51	1	58	82	678	39	46	1136	32
RTOR Reduction (vph)	0	0	66	0	0	52	0	0	11	0	0	9
Lane Group Flow (vph)	0	34	7	51	1	6	0	760	28	0	1182	23
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	8%	0%	0%	9%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		6.8	6.8	6.8	6.8	6.8		48.9	48.9		48.9	48.9
Effective Green, g (s)		6.8	6.8	6.8	6.8	6.8		48.9	48.9		48.9	48.9
Actuated g/C Ratio		0.10	0.10	0.10	0.10	0.10		0.72	0.72		0.72	0.72
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		140	162	140	190	160		619	1166		1203	1154
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.02	0.00	c0.04		0.00		c0.89	0.02		0.71	0.01
v/c Ratio		0.24	0.05	0.36	0.01	0.04		1.23	0.02		0.98	0.02
Uniform Delay, d1		28.1	27.5	28.4	27.4	27.5		9.4	2.7		9.0	2.6
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.1	1.6	0.0	0.1		116.3	0.0		22.1	0.0
Delay (s)		29.0	27.6	30.0	27.4	27.6		125.7	2.7		31.1	2.7
Level of Service		C	C	C	C	C		F	A		C	A
Approach Delay (s)		28.1			28.7			119.7			30.3	
Approach LOS		C			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	62.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	104	0	45	17	0	24	12	85	2199	12	10	10
Future Volume (vph)	104	0	45	17	0	24	12	85	2199	12	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91			1.00
Frt		1.00	0.85		0.92			1.00	1.00			1.00
Flt Protected		0.95	1.00		0.98			0.95	1.00			0.95
Satd. Flow (prot)		1770	1553		1715			1805	5132			1805
Flt Permitted		0.73	1.00		0.81			0.08	1.00			0.08
Satd. Flow (perm)		1358	1553		1427			149	5132			159
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	108	0	47	18	0	25	13	89	2291	12	11	10
RTOR Reduction (vph)	0	0	42	0	39	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	108	5	0	4	0	0	102	2304	0	0	21
Heavy Vehicles (%)	2%	0%	4%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		custom	pm+pt	NA		custom	pm+pt
Protected Phases		4			8			1	6			5
Permitted Phases	4		4	8			1	6			5	2
Actuated Green, G (s)		8.3	8.3		8.3			56.3	51.0			49.7
Effective Green, g (s)		8.3	8.3		8.3			56.3	51.0			49.7
Actuated g/C Ratio		0.10	0.10		0.10			0.70	0.64			0.62
Clearance Time (s)		7.2	7.2		7.2			5.9	5.6			5.9
Vehicle Extension (s)		2.5	2.5		2.5			2.2	5.0			0.2
Lane Grp Cap (vph)		140	161		148			214	3271			139
v/s Ratio Prot								c0.03	c0.45			0.00
v/s Ratio Perm		c0.08	0.00		0.00			0.30				0.09
v/c Ratio		0.77	0.03		0.03			0.48	0.70			0.15
Uniform Delay, d1		34.9	32.2		32.2			10.7	9.5			7.7
Progression Factor		1.00	1.00		1.00			1.00	1.00			0.64
Incremental Delay, d2		21.9	0.1		0.1			0.9	1.3			0.0
Delay (s)		56.8	32.3		32.3			11.5	10.8			4.9
Level of Service		E	C		C			B	B			A
Approach Delay (s)		49.4			32.3				10.9			
Approach LOS		D			C				B			

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1580	41
Future Volume (vph)	1580	41
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.6	5.6
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1615
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1646	43
RTOR Reduction (vph)	0	17
Lane Group Flow (vph)	1646	26
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	47.7	47.7
Effective Green, g (s)	47.7	47.7
Actuated g/C Ratio	0.60	0.60
Clearance Time (s)	5.6	5.6
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2110	962
v/s Ratio Prot	c0.47	
v/s Ratio Perm		0.02
v/c Ratio	0.78	0.03
Uniform Delay, d1	12.2	6.6
Progression Factor	0.67	1.00
Incremental Delay, d2	0.3	0.0
Delay (s)	8.4	6.6
Level of Service	A	A
Approach Delay (s)	8.3	
Approach LOS	A	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	24	196	2322	815	305	2519	527	1	827	804	706	6
Future Volume (vph)	24	196	2322	815	305	2519	527	1	827	804	706	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.95	1.00	
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3440	5085	1583	3400	5085	1599		3467	3574	1599	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3440	5085	1583	3400	5085	1599		3467	3574	1599	
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)	25	202	2394	840	314	2597	543	1	853	829	728	6
RTOR Reduction (vph)	0	0	0	194	0	0	108	0	0	0	152	0
Lane Group Flow (vph)	0	227	2394	646	314	2597	435	0	854	829	576	0
Heavy Vehicles (%)	0%	2%	2%	2%	3%	2%	1%	0%	1%	1%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	1	1	6		5	2		3	3	8		7
Permitted Phases				6			2				8	
Actuated Green, G (s)		14.2	67.8	67.8	14.5	69.1	69.1		24.0	32.4	32.4	
Effective Green, g (s)		14.2	67.8	67.8	14.5	69.1	69.1		24.0	32.4	32.4	
Actuated g/C Ratio		0.09	0.42	0.42	0.09	0.43	0.43		0.15	0.20	0.20	
Clearance Time (s)		7.5	7.2	7.2	8.5	7.2	7.2		8.0	7.6	7.6	
Vehicle Extension (s)		2.5	5.0	5.0	2.5	5.0	5.0		2.5	3.0	3.0	
Lane Grp Cap (vph)		305	2154	670	308	2196	690		520	723	323	
v/s Ratio Prot		0.07	c0.47		0.09	c0.51			c0.25	0.23		
v/s Ratio Perm				0.41			0.27				c0.36	
v/c Ratio		0.74	1.11	0.96	1.02	1.18	0.63		1.64	1.15	1.78	
Uniform Delay, d1		71.1	46.1	44.9	72.8	45.5	35.5		68.0	63.8	63.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.04	1.07	
Incremental Delay, d2		9.0	57.4	27.1	56.3	87.2	4.3		295.8	78.8	362.8	
Delay (s)		80.1	103.5	72.1	129.1	132.6	39.8		363.5	145.2	431.0	
Level of Service		F	F	E	F	F	D		F	F	F	
Approach Delay (s)			94.3			117.7				308.8		
Approach LOS			F			F				F		

Intersection Summary			
HCM 2000 Control Delay	161.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	135.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	442	521	267
Future Volume (vph)	442	521	267
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.7	7.6	7.6
Lane Util. Factor	0.97	0.95	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3502	3539	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3502	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	456	537	275
RTOR Reduction (vph)	0	0	211
Lane Group Flow (vph)	462	537	64
Heavy Vehicles (%)	0%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Actuated Green, G (s)	14.3	22.4	22.4
Effective Green, g (s)	14.3	22.4	22.4
Actuated g/C Ratio	0.09	0.14	0.14
Clearance Time (s)	7.7	7.6	7.6
Vehicle Extension (s)	2.5	3.0	3.0
Lane Grp Cap (vph)	312	495	221
v/s Ratio Prot	0.13	0.15	
v/s Ratio Perm			0.04
v/c Ratio	1.48	1.08	0.29
Uniform Delay, d1	72.8	68.8	61.7
Progression Factor	1.01	0.95	1.71
Incremental Delay, d2	229.2	60.6	0.6
Delay (s)	302.5	126.1	105.8
Level of Service	F	F	F
Approach Delay (s)		185.7	
Approach LOS		F	

Intersection Summary

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	102	90	79	94	1361	1067	82
Future Volume (vph)	102	90	79	94	1361	1067	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8			5.7	6.1	6.1	
Lane Util. Factor	1.00			1.00	0.95	0.95	
Frt	0.94			1.00	1.00	0.99	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	1734			1805	3574	3538	
Flt Permitted	0.97			0.95	1.00	1.00	
Satd. Flow (perm)	1734			1805	3574	3538	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	105	93	81	97	1403	1100	85
RTOR Reduction (vph)	41	0	0	0	0	7	0
Lane Group Flow (vph)	157	0	0	178	1403	1178	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		Prot	Prot	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases							
Actuated Green, G (s)	10.3			9.5	57.8	42.6	
Effective Green, g (s)	10.3			9.5	57.8	42.6	
Actuated g/C Ratio	0.13			0.12	0.72	0.53	
Clearance Time (s)	5.8			5.7	6.1	6.1	
Vehicle Extension (s)	2.1			2.1	5.1	5.1	
Lane Grp Cap (vph)	223			214	2582	1883	
v/s Ratio Prot	c0.09			c0.10	0.39	c0.33	
v/s Ratio Perm							
v/c Ratio	0.70			0.83	0.54	0.63	
Uniform Delay, d1	33.4			34.5	5.1	13.1	
Progression Factor	1.00			0.87	2.23	0.62	
Incremental Delay, d2	8.2			9.7	0.3	1.0	
Delay (s)	41.6			39.8	11.6	9.1	
Level of Service	D			D	B	A	
Approach Delay (s)	41.6				14.8	9.1	
Approach LOS	D				B	A	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	67.5%	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 (vph)	19	1	13	57	5	104	23	1318	120	54	1079	2
Future Volume (vph)	19	1	13	57	5	104	23	1318	120	54	1079	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749			1816	1583	1805	1859		1805	1881	1615
Flt Permitted		0.79			0.72	1.00	0.09	1.00		0.08	1.00	1.00
Satd. Flow (perm)		1415			1366	1583	162	1859		149	1881	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	19	1	13	58	5	105	23	1331	121	55	1090	2
RTOR Reduction (vph)	0	12	0	0	0	95	0	3	0	0	0	1
Lane Group Flow (vph)	0	21	0	0	63	10	23	1449	0	55	1090	1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		7.0			7.4	7.4	54.4	51.0		54.4	52.3	52.3
Effective Green, g (s)		7.0			7.4	7.4	54.4	51.0		54.4	52.3	52.3
Actuated g/C Ratio		0.09			0.09	0.09	0.68	0.64		0.68	0.65	0.65
Clearance Time (s)		6.7			6.3	6.3	5.6	6.3		5.6	6.3	6.3
Vehicle Extension (s)		2.1			2.1	2.1	2.1	8.0		2.1	5.1	5.1
Lane Grp Cap (vph)		123			126	146	153	1185		171	1229	1055
v/s Ratio Prot							0.00	c0.78		c0.01	0.58	
v/s Ratio Perm		0.01			c0.05	0.01	0.10			0.20		0.00
v/c Ratio		0.17			0.50	0.07	0.15	1.22		0.32	0.89	0.00
Uniform Delay, d1		33.8			34.5	33.1	12.7	14.5		18.4	11.4	4.8
Progression Factor		1.00			1.00	1.00	1.23	2.73		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.4	0.1	0.2	106.9		0.5	9.7	0.0
Delay (s)		34.1			35.9	33.2	15.9	146.4		18.9	21.1	4.8
Level of Service		C			D	C	B	F		B	C	A
Approach Delay (s)		34.1			34.2			144.4			20.9	
Approach LOS		C			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	86.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	406	576	865	730	117
Future Volume (vph)	78	406	576	865	730	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5		5.2	5.6	5.6	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.98	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1644		1787	1863	1849	
Flt Permitted	0.99		0.05	1.00	1.00	
Satd. Flow (perm)	1644		95	1863	1849	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	80	419	594	892	753	121
RTOR Reduction (vph)	108	0	0	0	3	0
Lane Group Flow (vph)	391	0	594	892	871	0
Heavy Vehicles (%)	0%	2%	1%	2%	1%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases			6			
Actuated Green, G (s)	45.6		123.3	123.3	74.4	
Effective Green, g (s)	45.6		123.3	123.3	74.4	
Actuated g/C Ratio	0.25		0.68	0.68	0.41	
Clearance Time (s)	5.5		5.2	5.6	5.6	
Vehicle Extension (s)	3.1		2.1	5.1	5.1	
Lane Grp Cap (vph)	416		475	1276	764	
v/s Ratio Prot	c0.24		c0.30	0.48	0.47	
v/s Ratio Perm			c0.55			
v/c Ratio	0.94		1.25	0.70	1.14	
Uniform Delay, d1	65.9		61.0	17.1	52.8	
Progression Factor	1.00		1.00	1.00	0.88	
Incremental Delay, d2	29.6		129.2	3.2	76.7	
Delay (s)	95.5		190.3	20.3	123.4	
Level of Service	F		F	C	F	
Approach Delay (s)	95.5			88.3	123.4	
Approach LOS	F			F	F	

Intersection Summary			
HCM 2000 Control Delay	100.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	120.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	39	49	88	21	48	15	770	160	66	709	29
Future Volume (vph)	16	39	49	88	21	48	15	770	160	66	709	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1826	1615	1805	1836		1805	1866	
Flt Permitted		0.94			0.53	1.00	0.31	1.00		0.23	1.00	
Satd. Flow (perm)		1671			1001	1615	598	1836		432	1866	
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)	17	41	52	94	22	51	16	819	170	70	754	31
RTOR Reduction (vph)	0	19	0	0	0	18	0	3	0	0	1	0
Lane Group Flow (vph)	0	91	0	0	116	33	16	986	0	70	784	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		23.7			23.7	23.7	145.0	145.0		145.0	145.0	
Effective Green, g (s)		23.7			23.7	23.7	145.0	145.0		145.0	145.0	
Actuated g/C Ratio		0.13			0.13	0.13	0.81	0.81		0.81	0.81	
Clearance Time (s)		5.3			5.3	5.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		220			131	212	481	1479		348	1503	
v/s Ratio Prot								c0.54			0.42	
v/s Ratio Perm		0.05			c0.12	0.02	0.03			0.16		
v/c Ratio		0.41			0.89	0.15	0.03	0.67		0.20	0.52	
Uniform Delay, d1		71.8			76.8	69.3	3.5	7.3		4.1	5.9	
Progression Factor		1.00			1.00	1.00	0.69	0.46		0.51	0.46	
Incremental Delay, d2		1.3			45.6	0.3	0.1	1.7		1.2	1.2	
Delay (s)		73.0			122.4	69.6	2.5	5.1		3.2	3.8	
Level of Service		E			F	E	A	A		A	A	
Approach Delay (s)		73.0			106.3			5.0			3.8	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.3
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 (vph)	0	523	31	107	603	104	153	646	154	168	585	295
Future Volume (vph)	0	523	31	107	603	104	153	646	154	168	585	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1868		1770	1834		1787	1830		1770	1881	1615
Flt Permitted		1.00		0.07	1.00		0.21	1.00		0.07	1.00	1.00
Satd. Flow (perm)		1868		135	1834		404	1830		137	1881	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	539	32	110	622	107	158	666	159	173	603	304
RTOR Reduction (vph)	0	1	0	0	3	0	0	5	0	0	0	87
Lane Group Flow (vph)	0	570	0	110	726	0	158	820	0	173	603	217
Heavy Vehicles (%)	0%	1%	0%	2%	1%	3%	1%	1%	0%	2%	1%	0%
Turn Type		NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		46.5		61.5	61.5		100.6	88.5		93.4	84.9	84.9
Effective Green, g (s)		46.5		61.5	61.5		100.6	88.5		93.4	84.9	84.9
Actuated g/C Ratio		0.26		0.34	0.34		0.56	0.49		0.52	0.47	0.47
Clearance Time (s)		8.5		8.5	8.5		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)		3.1		3.1	3.1		2.1	7.1		2.1	7.1	7.1
Lane Grp Cap (vph)		482		105	626		318	899		148	887	761
v/s Ratio Prot		0.30		0.04	c0.40		0.03	c0.45		c0.06	0.32	
v/s Ratio Perm				0.32			0.24			c0.55		0.13
v/c Ratio		1.18		1.05	1.16		0.50	0.91		1.17	0.68	0.29
Uniform Delay, d1		66.8		53.8	59.2		26.2	42.2		42.3	37.0	29.0
Progression Factor		1.00		1.00	1.00		0.97	0.90		1.00	1.00	1.00
Incremental Delay, d2		101.3		101.2	88.6		0.4	13.1		126.6	4.2	0.9
Delay (s)		168.1		155.0	147.9		25.9	51.0		168.8	41.2	30.0
Level of Service		F		F	F		C	D		F	D	C
Approach Delay (s)		168.1			148.8			46.9			58.5	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	95.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	145.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1126	330	335	508	477	1014
Future Volume (vph)	1126	330	335	508	477	1014
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1211	355	360	546	513	1090
RTOR Reduction (vph)	0	185	0	0	0	629
Lane Group Flow (vph)	1211	170	360	546	513	461
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	Prot
Protected Phases	7	4	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	51.1	51.1	12.4	56.6	38.7	38.7
Effective Green, g (s)	51.1	51.1	12.4	56.6	38.7	38.7
Actuated g/C Ratio	0.43	0.43	0.10	0.47	0.32	0.32
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.3
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1476	680	358	878	606	505
v/s Ratio Prot	c0.35	0.11	c0.10	0.29	0.27	c0.29
v/s Ratio Perm						
v/c Ratio	0.82	0.25	1.01	0.62	0.85	0.91
Uniform Delay, d1	30.4	22.1	53.8	23.7	37.9	39.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.4	49.0	3.3	11.7	22.0
Delay (s)	34.7	22.6	102.8	27.0	49.5	61.0
Level of Service	C	C	F	C	D	E
Approach Delay (s)	31.9			57.1	57.3	
Approach LOS	C			E	E	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	188	59	696	205	943	129	528	921	785	449	23
Future Volume (vph)	142	188	59	696	205	943	129	528	921	785	449	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1818		1681	1738	1599	1805	1881	1599	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1818		1681	1738	1599	1805	1881	1599	3467	1851	
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)	146	194	61	718	211	972	133	544	949	809	463	24
RTOR Reduction (vph)	0	8	0	0	0	272	0	0	375	0	1	0
Lane Group Flow (vph)	146	247	0	460	469	700	133	544	574	809	486	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	18.4	18.4		33.4	33.4	33.4	13.1	48.8	48.8	24.4	59.5	
Effective Green, g (s)	18.4	18.4		33.4	33.4	33.4	13.1	48.8	48.8	24.4	59.5	
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.22	0.09	0.33	0.33	0.16	0.40	
Clearance Time (s)	6.6	6.6		6.6	6.6	6.6	6.2	6.2	6.2	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	221	223		374	386	356	157	611	520	563	734	
v/s Ratio Prot	0.08	c0.14		0.27	0.27		0.07	0.29		c0.23	0.26	
v/s Ratio Perm						c0.44			c0.36			
v/c Ratio	0.66	1.11		1.23	1.22	1.97	0.85	0.89	1.10	1.44	0.66	
Uniform Delay, d1	62.8	65.8		58.3	58.3	58.3	67.5	48.1	50.6	62.8	37.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.78	
Incremental Delay, d2	5.6	92.3		124.8	118.3	444.8	31.1	17.6	70.9	202.5	2.7	
Delay (s)	68.4	158.1		183.1	176.6	503.1	98.6	65.7	121.5	263.2	31.7	
Level of Service	E	F		F	F	F	F	E	F	F	C	
Approach Delay (s)		125.4			345.1			100.9			176.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	210.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	6	79	52	2	38	90	1466	57	59	1127	13
Future Volume (vph)	22	6	79	52	2	38	90	1466	57	59	1127	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	1367		1805	1583		1444	1881	1615	1752	1881	1583
Flt Permitted	0.73	1.00		0.66	1.00		0.09	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1284	1367		1262	1583		144	1881	1615	65	1881	1583
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)	23	6	82	54	2	40	94	1527	59	61	1174	14
RTOR Reduction (vph)	0	76	0	0	37	0	0	0	14	0	0	4
Lane Group Flow (vph)	23	12	0	54	5	0	94	1527	45	61	1174	10
Heavy Vehicles (%)	8%	0%	21%	0%	0%	3%	25%	1%	0%	3%	1%	2%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6		2	2		6
Actuated Green, G (s)	11.8	11.8		11.8	11.8		119.9	114.2	114.2	119.6	109.8	109.8
Effective Green, g (s)	11.8	11.8		11.8	11.8		119.9	114.2	114.2	119.6	109.8	109.8
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.80	0.76	0.76	0.80	0.73	0.73
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	6.3	6.3	5.8	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0	5.0	2.0	5.0	5.0
Lane Grp Cap (vph)	101	107		99	124		202	1432	1229	112	1376	1158
v/s Ratio Prot		0.01			0.00		c0.03	c0.81		0.02	0.62	
v/s Ratio Perm	0.02			c0.04			0.34		0.03	0.42		0.01
v/c Ratio	0.23	0.12		0.55	0.04		0.47	1.07	0.04	0.54	0.85	0.01
Uniform Delay, d1	64.8	64.3		66.5	63.9		24.2	17.9	4.4	45.1	14.3	5.4
Progression Factor	1.00	1.00		1.00	1.00		1.91	0.61	0.11	0.83	0.92	1.00
Incremental Delay, d2	1.2	0.5		6.0	0.1		0.1	31.6	0.0	0.8	1.9	0.0
Delay (s)	66.0	64.7		72.5	64.0		46.2	42.6	0.5	38.3	15.1	5.4
Level of Service	E	E		E	E		D	D	A	D	B	A
Approach Delay (s)		65.0			68.8			41.3			16.2	
Approach LOS		E			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	8	12	178	12	347	13	1399	163	394	1379	34
Future Volume (vph)	25	8	12	178	12	347	13	1399	163	394	1379	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1720			1783	1615	1805	1881	1583	1752	1857	
Flt Permitted		0.45			0.75	1.00	0.05	1.00	1.00	0.05	1.00	
Satd. Flow (perm)		801			1394	1615	90	1881	1583	88	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	8	12	182	12	354	13	1428	166	402	1407	35
RTOR Reduction (vph)	0	9	0	0	0	272	0	0	25	0	1	0
Lane Group Flow (vph)	0	37	0	0	194	82	13	1428	141	402	1441	0
Heavy Vehicles (%)	0%	0%	14%	1%	14%	0%	0%	1%	2%	3%	2%	0%
Turn Type	custom	NA		Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	
Protected Phases		4			4			6		5	2	
Permitted Phases	8			4		4	6		6	6		
Actuated Green, G (s)		19.3			19.3	19.3	84.2	84.2	84.2	114.1	119.2	
Effective Green, g (s)		19.3			19.3	19.3	84.2	84.2	84.2	114.1	119.2	
Actuated g/C Ratio		0.13			0.13	0.13	0.56	0.56	0.56	0.76	0.79	
Clearance Time (s)		5.7			5.7	5.7	5.8	5.8	5.8	5.1	5.8	
Vehicle Extension (s)		3.0			3.0	3.0	5.5	5.5	5.5	3.0	5.5	
Lane Grp Cap (vph)		103			179	207	50	1055	888	398	1475	
v/s Ratio Prot								c0.76		0.20	c0.78	
v/s Ratio Perm		0.05			c0.14	0.05	0.14		0.09	0.57		
v/c Ratio		0.36			1.08	0.40	0.26	1.35	0.16	1.01	0.98	
Uniform Delay, d1		59.7			65.3	60.0	16.9	32.9	15.8	53.5	14.2	
Progression Factor		1.00			1.00	1.00	1.09	0.91	1.26	1.16	0.50	
Incremental Delay, d2		2.2			91.4	1.3	1.1	159.7	0.0	16.0	3.5	
Delay (s)		61.9			156.7	61.3	19.6	189.5	20.0	78.0	10.7	
Level of Service		E			F	E	B	F	C	E	B	
Approach Delay (s)		61.9			95.1			170.6			25.3	
Approach LOS		E			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	92.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	161	132	167	1605	1675	181
Future Volume (vph)	161	132	167	1605	1675	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.9	6.2	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1568	1787	1881	1842	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1770	1568	69	1881	1842	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	168	138	174	1672	1745	189
RTOR Reduction (vph)	0	109	0	0	2	0
Lane Group Flow (vph)	168	29	174	1672	1932	0
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	6			
Actuated Green, G (s)	14.7	14.7	117.9	123.8	108.8	
Effective Green, g (s)	14.7	14.7	117.9	123.8	108.8	
Actuated g/C Ratio	0.10	0.10	0.79	0.83	0.73	
Clearance Time (s)	5.3	5.3	5.9	6.2	6.2	
Vehicle Extension (s)	2.1	2.1	2.1	5.0	2.0	
Lane Grp Cap (vph)	173	153	158	1552	1336	
v/s Ratio Prot	c0.09		0.07	c0.89	c1.05	
v/s Ratio Perm		0.02	0.79			
v/c Ratio	0.97	0.19	1.10	1.08	1.45	
Uniform Delay, d1	67.4	62.2	67.1	13.1	20.6	
Progression Factor	1.00	1.00	0.80	1.93	0.57	
Incremental Delay, d2	59.4	0.3	54.8	36.2	201.0	
Delay (s)	126.9	62.4	108.4	61.4	212.6	
Level of Service	F	E	F	E	F	
Approach Delay (s)	97.8			65.8	212.6	
Approach LOS	F			E	F	

Intersection Summary			
HCM 2000 Control Delay	137.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	161	1147	133	108	49	1143	607	17	65	575	350
Future Volume (vph)	511	161	1147	133	108	49	1143	607	17	65	575	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1599	1805	1786		3467	1874		1805	1881	1583
Flt Permitted	0.31	1.00	1.00	0.53	1.00		0.95	1.00		0.22	1.00	1.00
Satd. Flow (perm)	569	1863	1599	1012	1786		3467	1874		418	1881	1583
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)	538	169	1207	140	114	52	1203	639	18	68	605	368
RTOR Reduction (vph)	0	0	416	0	11	0	0	0	0	0	0	162
Lane Group Flow (vph)	538	169	791	140	155	0	1203	657	0	68	605	206
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8		4	4						6		2
Actuated Green, G (s)	42.4	30.4	30.4	42.6	13.1		35.2	76.6		82.4	47.6	47.6
Effective Green, g (s)	42.4	30.4	30.4	42.6	13.1		35.2	76.6		82.4	47.6	47.6
Actuated g/C Ratio	0.28	0.20	0.20	0.28	0.09		0.23	0.51		0.55	0.32	0.32
Clearance Time (s)	5.7	6.9	6.9	5.5	6.9		6.0	6.2		6.4	6.2	6.2
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		3.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	395	377	324	351	155		813	956		283	596	502
v/s Ratio Prot	c0.27	0.09		0.03	0.09		c0.35	0.35		0.01	c0.32	
v/s Ratio Perm	0.12		c0.49	0.08						0.12		0.13
v/c Ratio	1.36	0.45	2.44	0.40	1.00		1.48	0.69		0.24	1.02	0.41
Uniform Delay, d1	50.3	52.4	59.8	41.8	68.5		57.4	27.7		20.6	51.2	40.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.99	0.97		1.88	0.96	1.58
Incremental Delay, d2	178.6	0.3	657.6	0.3	72.4		216.5	0.4		0.2	39.7	2.3
Delay (s)	228.9	52.8	717.4	42.1	140.8		273.2	27.2		38.8	89.0	65.8
Level of Service	F	D	F	D	F		F	C		D	F	E
Approach Delay (s)		521.4			95.6			186.3			77.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	284.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	124.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	0	133	0	0	0	67	1098	0	1	857	113
Future Volume (vph)	152	0	133	0	0	0	67	1098	0	1	857	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00		1.00				1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85				1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805		1615				1805	3574		1805	3539	1615
Flt Permitted	0.95		1.00				0.28	1.00		0.24	1.00	1.00
Satd. Flow (perm)	1805		1615				533	3574		455	3539	1615
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)	163	0	143	0	0	0	72	1181	0	1	922	122
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	163	0	18	0	0	0	72	1181	0	1	922	91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Prot		Prot				D.P+P	NA		Perm	NA	Perm
Protected Phases	4		4	3	3		5	2			6	
Permitted Phases							6			6		6
Actuated Green, G (s)	18.8		18.8				113.2	119.6		106.4	106.4	106.4
Effective Green, g (s)	18.8		18.8				113.2	119.6		106.4	106.4	106.4
Actuated g/C Ratio	0.13		0.13				0.75	0.80		0.71	0.71	0.71
Clearance Time (s)	5.6		5.6				6.4	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0				3.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)	226		202				459	2849		322	2510	1145
v/s Ratio Prot	c0.09		0.01				0.01	c0.33			0.26	
v/s Ratio Perm							0.11			0.00		0.06
v/c Ratio	0.72		0.09				0.16	0.41		0.00	0.37	0.08
Uniform Delay, d1	63.1		58.0				5.1	4.6		6.4	8.6	6.7
Progression Factor	1.00		1.00				0.86	1.07		1.00	1.00	1.00
Incremental Delay, d2	10.8		0.2				0.0	0.1		0.0	0.4	0.1
Delay (s)	73.9		58.2				4.4	5.1		6.4	9.0	6.9
Level of Service	E		E				A	A		A	A	A
Approach Delay (s)		66.5			0.0			5.0			8.7	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.6
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	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	0	103	37	0	13	152	1025	72	2	23	832
Future Volume (vph)	24	0	103	37	0	13	152	1025	72	2	23	832
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1805	1615		1805	1442	1805	3539	1568		1805	1863
Flt Permitted		0.73	1.00		0.74	1.00	0.25	1.00	1.00		0.25	1.00
Satd. Flow (perm)		1390	1615		1408	1442	467	3539	1568		474	1863
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)	25	0	108	39	0	14	160	1079	76	2	24	876
RTOR Reduction (vph)	0	0	97	0	0	13	0	0	23	0	0	0
Lane Group Flow (vph)	0	25	11	0	39	1	160	1079	53	0	26	876
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	2%	3%	0%	0%	2%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.Pm	NA	Perm	D.Pm	D.Pm	NA
Protected Phases		4			8			6				2
Permitted Phases	4		4	8		8	2		6	6	6	
Actuated Green, G (s)		6.6	6.6		6.6	6.6	44.2	44.2	44.2		44.2	44.2
Effective Green, g (s)		6.6	6.6		6.6	6.6	44.2	44.2	44.2		44.2	44.2
Actuated g/C Ratio		0.10	0.10		0.10	0.10	0.69	0.69	0.69		0.69	0.69
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	5.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		143	167		145	149	323	2451	1086		328	1290
v/s Ratio Prot								0.30				c0.47
v/s Ratio Perm		0.02	0.01		c0.03	0.00	0.34		0.03		0.05	
v/c Ratio		0.17	0.07		0.27	0.01	0.50	0.44	0.05		0.08	0.68
Uniform Delay, d1		26.1	25.8		26.4	25.7	4.6	4.3	3.1		3.2	5.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6	0.2		1.0	0.0	2.5	0.3	0.0		0.2	1.9
Delay (s)		26.7	26.0		27.4	25.7	7.1	4.6	3.2		3.4	7.6
Level of Service		C	C		C	C	A	A	A		A	A
Approach Delay (s)		26.1			26.9			4.8				7.3
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	34
Future Volume (vph)	34
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	36
RTOR Reduction (vph)	11
Lane Group Flow (vph)	25
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	44.2
Effective Green, g (s)	44.2
Actuated g/C Ratio	0.69
Clearance Time (s)	6.5
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1118
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	3.1
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Future Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.16	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	317	1881	1583	307	1793	
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)	213	272	108	421	371	687	127	492	478	433	393	235
RTOR Reduction (vph)	0	0	90	0	0	191	0	0	237	0	19	0
Lane Group Flow (vph)	213	272	18	421	371	496	127	492	241	433	609	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		
Actuated Green, G (s)	18.6	18.6	18.6	39.4	39.4	39.4	32.2	23.5	23.5	33.6	24.3	
Effective Green, g (s)	18.6	18.6	18.6	39.4	39.4	39.4	32.2	23.5	23.5	33.6	24.3	
Actuated g/C Ratio	0.16	0.16	0.16	0.34	0.34	0.34	0.28	0.21	0.21	0.29	0.21	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	288	300	252	615	642	545	199	386	325	209	381	
v/s Ratio Prot	0.12	c0.15		0.24	0.20		0.05	0.26		c0.17	0.34	
v/s Ratio Perm			0.01			c0.31	0.13		0.15	c0.44		
v/c Ratio	0.74	0.91	0.07	0.68	0.58	0.91	0.64	1.27	0.74	2.07	1.60	
Uniform Delay, d1	45.5	47.0	40.5	32.1	30.6	35.8	33.6	45.4	42.6	36.6	45.0	
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	9.0	29.0	0.1	6.1	3.8	21.8	4.9	142.4	11.7	498.4	281.5	
Delay (s)	54.6	76.0	40.6	38.2	34.4	57.6	38.4	187.8	54.3	535.0	326.5	
Level of Service	D	E	D	D	C	E	D	F	D	F	F	
Approach Delay (s)		61.8			46.3			112.3			411.6	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	157.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	23.5
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	38	86	101	17	150	46	1191	115	226	840	63
Future Volume (vph)	111	38	86	101	17	150	46	1191	115	226	840	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1718			1822	1583	1752	3499		1787	1863	1568
Flt Permitted		0.79			0.58	1.00	0.21	1.00		0.10	1.00	1.00
Satd. Flow (perm)		1390			1104	1583	383	3499		185	1863	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	113	39	88	103	17	153	47	1215	117	231	857	64
RTOR Reduction (vph)	0	23	0	0	0	120	0	7	0	0	0	23
Lane Group Flow (vph)	0	217	0	0	120	33	47	1325	0	231	857	41
Heavy Vehicles (%)	2%	4%	3%	0%	0%	2%	3%	2%	0%	1%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	D.Pm	NA		D.P+P	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8		8	2			6		2
Actuated Green, G (s)		18.0			18.9	18.9	55.7	40.6		49.0	55.7	55.7
Effective Green, g (s)		18.0			18.9	18.9	55.7	40.6		49.0	55.7	55.7
Actuated g/C Ratio		0.21			0.22	0.22	0.64	0.46		0.56	0.64	0.64
Clearance Time (s)		7.0			6.1	6.1	6.7	6.7		6.7	6.7	6.7
Vehicle Extension (s)		2.0			2.0	2.0	4.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		286			238	342	244	1625		257	1187	999
v/s Ratio Prot								0.38		0.09	c0.46	
v/s Ratio Perm		c0.16			0.11	0.02	0.12			c0.42		0.03
v/c Ratio		0.76			0.50	0.10	0.19	0.82		0.90	0.72	0.04
Uniform Delay, d1		32.7			30.1	27.4	6.6	20.2		20.0	10.6	5.9
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		9.8			0.6	0.0	0.5	3.4		30.1	2.4	0.0
Delay (s)		42.5			30.7	27.5	7.1	23.6		50.0	13.0	5.9
Level of Service		D			C	C	A	C		D	B	A
Approach Delay (s)		42.5			28.9			23.1			20.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	20.4
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	16	234	33	15	45	228	1159	65	122	861	85
Future Volume (vph)	345	16	234	33	15	45	228	1159	65	122	861	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1698	1711	1615	1719	1900	1509	1787	3539	1538	1805	3505	1615
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	1698	1711	1615	1719	1900	1509	322	3539	1538	253	3505	1615
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)	359	17	244	34	16	47	238	1207	68	127	897	89
RTOR Reduction (vph)	0	0	98	0	0	44	0	0	37	0	0	53
Lane Group Flow (vph)	187	189	146	34	16	3	238	1207	31	127	897	36
Heavy Vehicles (%)	1%	0%	0%	5%	0%	7%	1%	2%	5%	0%	3%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4	6		6	2		2
Actuated Green, G (s)	18.5	18.5	18.5	6.0	6.0	6.0	67.0	50.7	50.7	53.6	44.0	44.0
Effective Green, g (s)	18.5	18.5	18.5	6.0	6.0	6.0	67.0	50.7	50.7	53.6	44.0	44.0
Actuated g/C Ratio	0.17	0.17	0.17	0.05	0.05	0.05	0.61	0.46	0.46	0.49	0.40	0.40
Clearance Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0	5.0	2.5	2.0	2.0
Lane Grp Cap (vph)	286	288	272	93	103	82	413	1634	710	259	1404	647
v/s Ratio Prot	0.11	c0.11		c0.02	0.01		c0.09	c0.34		0.04	0.26	
v/s Ratio Perm			0.09			0.00	0.27		0.02	0.20		0.02
v/c Ratio	0.65	0.66	0.54	0.37	0.16	0.03	0.58	0.74	0.04	0.49	0.64	0.06
Uniform Delay, d1	42.7	42.7	41.7	50.1	49.5	49.1	13.8	24.1	16.2	17.7	26.5	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	4.7	1.6	1.8	0.5	0.1	1.6	2.2	0.1	1.1	0.7	0.0
Delay (s)	47.4	47.4	43.3	51.8	50.0	49.3	15.4	26.3	16.3	18.8	27.2	20.2
Level of Service	D	D	D	D	D	D	B	C	B	B	C	C
Approach Delay (s)		45.8			50.3			24.1			25.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	25.0
Intersection Capacity Utilization	71.4%	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 (vph)	1091	0	466	0	0	0	0	1080	627	345	1002	0
Future Volume (vph)	1091	0	466	0	0	0	0	1080	627	345	1002	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467		1583					3574	1568	1805	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.14	1.00	
Satd. Flow (perm)	3467		1583					3574	1568	266	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.25	0.25	0.25	0.25	0.96	0.96	0.96	0.96	0.25
Adj. Flow (vph)	1136	0	485	0	0	0	0	1125	653	359	1044	0
RTOR Reduction (vph)	0	0	136	0	0	0	0	0	312	0	0	0
Lane Group Flow (vph)	1136	0	349	0	0	0	0	1125	341	359	1044	0
Heavy Vehicles (%)	1%	0%	2%	0%	0%	0%	0%	1%	3%	0%	2%	0%
Turn Type	Perm		Perm					NA	Perm	D.P+P	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2	2		
Actuated Green, G (s)	18.7		18.7					48.8	48.8	69.3	74.9	
Effective Green, g (s)	18.7		18.7					48.8	48.8	69.3	74.9	
Actuated g/C Ratio	0.18		0.18					0.46	0.46	0.65	0.70	
Clearance Time (s)	6.4		6.4					6.4	6.4	5.6	6.4	
Vehicle Extension (s)	5.5		5.5					6.5	6.5	4.0	6.5	
Lane Grp Cap (vph)	609		278					1639	719	469	2491	
v/s Ratio Prot								0.31		c0.15	0.29	
v/s Ratio Perm	c0.33		0.22						0.22	c0.35		
v/c Ratio	1.87		1.26					0.69	0.47	0.77	0.42	
Uniform Delay, d1	43.9		43.9					22.8	19.9	20.4	6.6	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	395.7		140.9					2.0	1.6	7.7	0.4	
Delay (s)	439.5		184.7					24.7	21.5	28.2	7.0	
Level of Service	F		F					C	C	C	A	
Approach Delay (s)		363.3			0.0			23.5			12.4	
Approach LOS		F			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	135.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	18.4
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	383	0	504	283	1889	0	0	964	749
Future Volume (vph)	0	0	0	383	0	504	283	1889	0	0	964	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Lane Util. Factor				1.00		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1615	1787	3574			3574	1583
Flt Permitted				0.95		1.00	0.15	1.00			1.00	1.00
Satd. Flow (perm)				1770		1615	275	3574			3574	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.94	0.94	0.94	0.94	0.94	0.25	0.25	0.94	0.94
Adj. Flow (vph)	0	0	0	407	0	536	301	2010	0	0	1026	797
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	457
Lane Group Flow (vph)	0	0	0	407	0	479	301	2010	0	0	1026	340
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type				Perm		Perm	D.P+P	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases				8		8	6					6
Actuated Green, G (s)				38.1		38.1	70.1	76.1			53.2	53.2
Effective Green, g (s)				38.1		38.1	70.1	76.1			53.2	53.2
Actuated g/C Ratio				0.30		0.30	0.55	0.60			0.42	0.42
Clearance Time (s)				6.9		6.9	6.0	6.6			6.6	6.6
Vehicle Extension (s)				4.0		4.0	3.0	5.5			5.5	5.5
Lane Grp Cap (vph)				528		481	351	2129			1488	659
v/s Ratio Prot							0.11	c0.56			0.29	
v/s Ratio Perm				0.23		c0.30	0.36					0.21
v/c Ratio				0.77		1.00	0.86	0.94			0.69	0.52
Uniform Delay, d1				40.8		44.7	23.9	23.8			30.5	27.7
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				7.3		39.8	18.3	9.8			1.9	1.6
Delay (s)				48.1		84.5	42.1	33.6			32.4	29.3
Level of Service				D		F	D	C			C	C
Approach Delay (s)		0.0			68.8			34.7			31.0	
Approach LOS		A			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	19.5
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	124	619	218	164	71	724	1553	116	59	877	349
Future Volume (vph)	354	124	619	218	164	71	724	1553	116	59	877	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	1805	3574	1615	1805	3539	1599
Flt Permitted	0.27	1.00	1.00	0.67	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	502	1900	1615	1279	1900	1615	1805	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	373	131	652	229	173	75	762	1635	122	62	923	367
RTOR Reduction (vph)	0	0	175	0	0	68	0	0	70	0	0	208
Lane Group Flow (vph)	373	131	477	229	173	7	762	1635	52	62	923	159
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.9	43.0	43.0
Effective Green, g (s)	29.0	29.0	29.0	9.0	9.0	9.0	9.0	42.1	42.1	9.9	43.0	43.0
Actuated g/C Ratio	0.29	0.29	0.29	0.09	0.09	0.09	0.09	0.43	0.43	0.10	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	328	556	473	116	172	146	164	1519	686	180	1537	694
v/s Ratio Prot	0.16	0.07			0.09		c0.42	c0.46		0.03	0.26	
v/s Ratio Perm	0.17		c0.30	c0.18		0.00			0.03			0.10
v/c Ratio	1.14	0.24	1.01	1.97	1.01	0.05	4.65	1.08	0.08	0.34	0.60	0.23
Uniform Delay, d1	31.9	26.6	35.0	45.0	45.0	41.1	45.0	28.4	16.9	41.5	21.4	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	92.2	0.2	43.3	467.8	70.1	0.1	1654.7	46.7	0.2	3.2	1.7	0.8
Delay (s)	124.1	26.7	78.3	512.8	115.1	41.2	1699.7	75.1	17.1	44.7	23.2	18.4
Level of Service	F	C	E	F	F	D	F	E	B	D	C	B
Approach Delay (s)		87.2			294.4			563.8			22.9	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	307.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	12	173	57	9	30	323	1581	74	27	1055	153
Future Volume (vph)	145	12	173	57	9	30	323	1581	74	27	1055	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1697			1740		1805	1863	1568	1805	1863	1583
Flt Permitted		0.83			0.58		0.07	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)		1435			1038		139	1863	1568	172	1863	1583
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)	151	12	180	59	9	31	336	1647	77	28	1099	159
RTOR Reduction (vph)	0	40	0	0	16	0	0	0	32	0	0	71
Lane Group Flow (vph)	0	304	0	0	83	0	336	1647	45	28	1099	88
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6		6	2		2
Actuated Green, G (s)		19.0			19.0		70.5	59.2	59.2	49.0	44.2	44.2
Effective Green, g (s)		19.0			19.0		70.5	59.2	59.2	49.0	44.2	44.2
Actuated g/C Ratio		0.19			0.19		0.69	0.58	0.58	0.48	0.43	0.43
Clearance Time (s)		6.0			6.0		8.5	6.5	6.5	6.5	8.5	8.5
Vehicle Extension (s)		3.0			3.0		3.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)		267			193		354	1081	910	159	807	685
v/s Ratio Prot							c0.15	c0.88		0.01	0.59	
v/s Ratio Perm		c0.21			0.08		0.51		0.03	0.08		0.06
v/c Ratio		1.14			0.43		0.95	1.52	0.05	0.18	1.36	0.13
Uniform Delay, d1		41.5			36.7		33.5	21.4	9.2	22.0	28.9	17.3
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		97.9			1.5		34.3	240.4	0.1	0.5	170.8	0.4
Delay (s)		139.4			38.2		67.8	261.8	9.3	22.6	199.7	17.7
Level of Service		F			D		E	F	A	C	F	B
Approach Delay (s)		139.4			38.2			220.7			173.4	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	192.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	127.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	344	426	202	395	278	865	689	204	305	605	32
Future Volume (vph)	29	344	426	202	395	278	865	689	204	305	605	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1626	1881	1568	1736	1881	1583	1787	1863	1524	1752	1863	
Flt Permitted	0.46	1.00	1.00	0.32	1.00	1.00	0.17	1.00	1.00	0.17	1.00	
Satd. Flow (perm)	795	1881	1568	588	1881	1583	329	1863	1524	322	1863	
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)	31	362	448	213	416	293	911	725	215	321	637	34
RTOR Reduction (vph)	0	0	129	0	0	92	0	0	115	0	2	0
Lane Group Flow (vph)	31	362	319	213	416	201	911	725	100	321	669	0
Heavy Vehicles (%)	11%	1%	3%	4%	1%	2%	1%	2%	6%	3%	1%	5%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8	6		6	2		
Actuated Green, G (s)	41.2	36.7	36.7	56.3	44.9	44.9	31.3	22.9	22.9	31.2	22.9	
Effective Green, g (s)	41.2	36.7	36.7	56.3	44.9	44.9	31.3	22.9	22.9	31.2	22.9	
Actuated g/C Ratio	0.38	0.34	0.34	0.52	0.41	0.41	0.29	0.21	0.21	0.29	0.21	
Clearance Time (s)	6.9	7.2	7.2	6.9	7.2	7.2	6.7	7.4	7.4	6.8	7.4	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)	335	633	528	437	775	652	207	391	320	201	391	
v/s Ratio Prot	0.00	0.19		c0.06	c0.22		c0.34	0.39		0.12	0.36	
v/s Ratio Perm	0.03		c0.20	0.19		0.13	c0.93		0.07	0.34		
v/c Ratio	0.09	0.57	0.60	0.49	0.54	0.31	4.40	1.85	0.31	1.60	1.71	
Uniform Delay, d1	21.5	29.6	30.1	16.3	24.2	21.5	35.7	43.0	36.4	35.8	43.0	
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	0.1	2.5	3.5	0.9	1.7	0.8	1541.6	394.1	0.6	290.8	331.1	
Delay (s)	21.6	32.1	33.5	17.2	25.9	22.3	1577.3	437.1	36.9	326.6	374.1	
Level of Service	C	C	C	B	C	C	F	F	D	F	F	
Approach Delay (s)		32.5			22.7			951.8			358.8	
Approach LOS		C			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	470.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.08		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	28.3
Intersection Capacity Utilization	134.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	156	29	27	250	173	43	658	1	87	530	203
Future Volume (vph)	330	156	29	27	250	173	43	658	1	87	530	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1799			1786		1671	1862		1736	1881	1615
Flt Permitted		0.42			0.95		0.27	1.00		0.14	1.00	1.00
Satd. Flow (perm)		772			1707		468	1862		264	1881	1615
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	375	177	33	31	284	197	49	748	1	99	602	231
RTOR Reduction (vph)	0	3	0	0	25	0	0	0	0	0	0	121
Lane Group Flow (vph)	0	582	0	0	487	0	49	749	0	99	602	110
Heavy Vehicles (%)	1%	3%	0%	0%	1%	0%	8%	2%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)		28.7			28.7		37.6	37.6		37.6	37.6	37.6
Effective Green, g (s)		28.7			28.7		37.6	37.6		37.6	37.6	37.6
Actuated g/C Ratio		0.36			0.36		0.48	0.48		0.48	0.48	0.48
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		4.0			4.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		281			621		223	888		125	897	770
v/s Ratio Prot								c0.40			0.32	
v/s Ratio Perm		c0.75			0.29		0.10			0.38		0.07
v/c Ratio		2.07			0.78		0.22	0.84		0.79	0.67	0.14
Uniform Delay, d1		25.1			22.3		12.0	18.0		17.3	15.8	11.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		494.8			6.8		1.0	8.1		31.6	2.6	0.2
Delay (s)		519.9			29.1		13.1	26.1		48.9	18.4	11.7
Level of Service		F			C		B	C		D	B	B
Approach Delay (s)		519.9			29.1			25.3			20.0	
Approach LOS		F			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	126.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	12.5
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1014	1	5	14	0	27	0	1131	28	38	802	1419
Future Volume (vph)	1014	1	5	14	0	27	0	1131	28	38	802	1419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		6.1	4.0			5.7		6.0	5.7	5.7
Lane Util. Factor	0.95	0.95		1.00	1.00			0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	1592		1805	0			3562		1805	1881	1553
Flt Permitted	0.95	0.95		0.95	1.00			1.00		0.15	1.00	1.00
Satd. Flow (perm)	1588	1592		1805	0			3562		287	1881	1553
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)	1045	1	5	14	0	28	0	1166	29	39	827	1463
RTOR Reduction (vph)	0	0	0	0	28	0	0	1	0	0	0	279
Lane Group Flow (vph)	522	529	0	14	0	0	0	1194	0	39	827	1184
Heavy Vehicles (%)	8%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	4%
Turn Type	Split	NA		Prot				NA		D.P+P	NA	Perm
Protected Phases	4	4		3				6		5	2	
Permitted Phases										6		2
Actuated Green, G (s)	57.1	57.1		2.6	0.0			26.5		32.5	38.5	38.5
Effective Green, g (s)	57.1	57.1		2.6	0.0			26.5		32.5	38.5	38.5
Actuated g/C Ratio	0.49	0.49		0.02	0.00			0.23		0.28	0.33	0.33
Clearance Time (s)	5.9	5.9		6.1				5.7		6.0	5.7	5.7
Vehicle Extension (s)	7.0	7.0		3.0				5.5		3.0	5.5	5.5
Lane Grp Cap (vph)	782	784		40	0			814		159	624	515
v/s Ratio Prot	0.33	c0.33		c0.01				0.34		0.01	0.44	
v/s Ratio Perm										0.06		c0.76
v/c Ratio	0.67	0.67		0.35	0.00			1.47		0.25	1.33	2.30
Uniform Delay, d1	22.2	22.3		55.8	58.0			44.7		32.9	38.7	38.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	4.1		5.2	0.0			216.9		0.8	157.3	590.6
Delay (s)	26.2	26.4		61.1	58.0			261.6		33.7	196.0	629.3
Level of Service	C	C		E	E			F		C	F	F
Approach Delay (s)		26.3			59.0			261.6			465.4	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	309.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	115.9	Sum of lost time (s)	26.7
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	100	24	725	52	917	23	1132	1018	647	1269	73
Future Volume (vph)	110	100	24	725	52	917	23	1132	1018	647	1269	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830			1731	1599	1805	3574	1538	1770	3574	1615
Flt Permitted		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830			1731	1599	1805	3574	1538	1770	3574	1615
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)	122	111	27	806	58	1019	26	1258	1131	719	1410	81
RTOR Reduction (vph)	0	2	0	0	0	223	0	0	320	0	0	42
Lane Group Flow (vph)	0	258	0	0	864	796	26	1258	811	719	1410	39
Heavy Vehicles (%)	0%	0%	0%	5%	3%	1%	0%	1%	5%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3			6			2
Actuated Green, G (s)		22.5			53.4	53.4	7.4	54.6	54.6	54.0	101.0	101.0
Effective Green, g (s)		22.5			53.4	53.4	7.4	54.6	54.6	54.0	101.0	101.0
Actuated g/C Ratio		0.11			0.25	0.25	0.04	0.26	0.26	0.26	0.48	0.48
Clearance Time (s)		7.5			6.6	6.6	6.2	6.7	6.7	6.0	6.7	6.7
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)		194			437	404	63	923	397	452	1708	771
v/s Ratio Prot		c0.14			c0.50		0.01	0.35		c0.41	0.39	
v/s Ratio Perm						0.50			c0.53			0.02
v/c Ratio		1.33			1.98	1.97	0.41	1.36	2.04	1.59	0.83	0.05
Uniform Delay, d1		94.4			79.0	79.0	99.8	78.4	78.4	78.7	47.6	29.5
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		179.8			447.9	445.8	4.3	170.3	477.6	276.1	3.9	0.1
Delay (s)		274.2			526.8	524.8	104.2	248.7	555.9	354.8	51.5	29.6
Level of Service		F			F	F	F	F	F	F	D	C
Approach Delay (s)		274.2			525.7			391.0			149.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	345.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.80		
Actuated Cycle Length (s)	211.3	Sum of lost time (s)	27.0
Intersection Capacity Utilization	145.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	0	57	7	0	0	102	2048	6	0	1927	35
Future Volume (vph)	33	0	57	7	0	0	102	2048	6	0	1927	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frt		0.91			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.98			0.95		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1674			1805		1805	3574	1615		3574	1615
Flt Permitted		0.88			0.81		0.09	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1495			1543		164	3574	1615		3574	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	33	0	58	7	0	0	103	2069	6	0	1946	35
RTOR Reduction (vph)	0	81	0	0	0	0	0	0	2	0	0	15
Lane Group Flow (vph)	0	10	0	0	7	0	103	2069	4	0	1946	20
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			2		6	6		2
Actuated Green, G (s)		8.5			8.5		53.3	58.9	58.9		46.4	46.4
Effective Green, g (s)		8.5			8.5		53.3	58.9	58.9		46.4	46.4
Actuated g/C Ratio		0.11			0.11		0.67	0.74	0.74		0.58	0.58
Clearance Time (s)		6.2			6.2		5.6	5.9	5.9		5.9	5.9
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		159			164		252	2647	1196		2085	942
v/s Ratio Prot							0.04	c0.58			c0.54	
v/s Ratio Perm		c0.01			0.00		0.24		0.00			0.01
v/c Ratio		0.06			0.04		0.41	0.78	0.00		0.93	0.02
Uniform Delay, d1		31.9			31.8		14.8	6.3	2.7		15.1	7.0
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3			0.1		1.1	1.8	0.0		8.7	0.0
Delay (s)		32.3			32.0		15.8	8.2	2.7		23.8	7.0
Level of Service		C			C		B	A	A		C	A
Approach Delay (s)		32.3			32.0			8.5			23.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	17.7
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 (vph)	196	325	667	244	494	564	736	1157	188	472	1053	256
Future Volume (vph)	196	325	667	244	494	564	736	1157	188	472	1053	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
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)	1770	1863	1583	1770	1863	1615	1770	3529		1805	3504	
Flt Permitted	0.12	1.00	1.00	0.21	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	223	1863	1583	383	1863	1615	162	3529		194	3504	
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)	209	346	710	260	526	600	783	1231	200	502	1120	272
RTOR Reduction (vph)	0	0	187	0	0	226	0	9	0	0	14	0
Lane Group Flow (vph)	209	346	523	260	526	374	783	1422	0	502	1378	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	0%	2%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	51.7	33.4	33.4	51.6	33.2	33.2	79.2	54.2		56.8	39.2	
Effective Green, g (s)	51.7	33.4	33.4	51.6	33.2	33.2	79.2	54.2		56.8	39.2	
Actuated g/C Ratio	0.35	0.22	0.22	0.34	0.22	0.22	0.53	0.36		0.38	0.26	
Clearance Time (s)	6.5	6.6	6.6	6.2	6.6	6.6	6.9	5.8		7.4	5.8	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	266	415	353	302	413	358	441	1278		263	918	
v/s Ratio Prot	0.10	0.19		c0.11	0.28		c0.39	0.40		0.22	0.39	
v/s Ratio Perm	0.18		c0.33	0.19		0.23	0.55			c0.50		
v/c Ratio	0.79	0.83	1.48	0.86	1.27	1.04	1.78	1.11		1.91	1.50	
Uniform Delay, d1	39.6	55.5	58.1	39.6	58.2	58.2	48.2	47.7		46.0	55.2	
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	14.1	14.0	231.2	21.3	140.9	59.4	358.1	62.1		422.8	231.2	
Delay (s)	53.7	69.4	289.3	60.9	199.1	117.6	406.3	109.8		468.8	286.4	
Level of Service	D	E	F	E	F	F	F	F		F	F	
Approach Delay (s)		190.2			137.9			214.6			334.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	228.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	149.6	Sum of lost time (s)	26.3
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	0	238	81	2	29	174	1669	73	67	1460	79
Future Volume (vph)	127	0	238	81	2	29	174	1669	73	67	1460	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1615			1732		1787	3587		1805	3582	
Flt Permitted	0.71	1.00			0.33		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	1328	1615			600		132	3587		139	3582	
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)	137	0	256	87	2	31	187	1795	78	72	1570	85
RTOR Reduction (vph)	0	141	0	0	12	0	0	2	0	0	4	0
Lane Group Flow (vph)	137	115	0	0	108	0	187	1871	0	72	1651	0
Heavy Vehicles (%)	1%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	16.0	16.0			16.0		66.0	57.1		60.6	54.8	
Effective Green, g (s)	16.0	16.0			16.0		66.0	57.1		60.6	54.8	
Actuated g/C Ratio	0.16	0.16			0.16		0.67	0.58		0.62	0.56	
Clearance Time (s)	6.1	6.1			6.1		6.1	6.4		6.9	6.4	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	216	262			97		238	2083		183	1996	
v/s Ratio Prot		0.07					c0.07	c0.52		0.02	0.46	
v/s Ratio Perm	0.10				c0.18		0.46			0.22		
v/c Ratio	0.63	0.44			1.12		0.79	0.90		0.39	0.83	
Uniform Delay, d1	38.4	37.1			41.1		24.7	18.1		17.4	17.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.0	1.2			126.2		15.6	6.0		1.4	3.3	
Delay (s)	44.4	38.3			167.3		40.3	24.0		18.8	21.2	
Level of Service	D	D			F		D	C		B	C	
Approach Delay (s)		40.4			167.3			25.5			21.1	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	19.4
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	32	1	34	60	0	44	32	1751	44	87	43	1513
Future Volume (vph)	32	1	34	60	0	44	32	1751	44	87	43	1513
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91			1.00	0.95
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1805	1622		1805	1509		1805	5163			1758	3610
Flt Permitted	0.73	1.00		0.73	1.00		0.15	1.00			0.08	1.00
Satd. Flow (perm)	1380	1622		1391	1509		289	5163			143	3610
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)	34	1	37	65	0	47	34	1883	47	94	46	1627
RTOR Reduction (vph)	0	34	0	0	43	0	0	1	0	0	0	0
Lane Group Flow (vph)	34	4	0	65	4	0	34	1929	0	0	140	1627
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	0%	4%	2%	4%	0%
Turn Type	D.Pm	NA		D.Pm	NA		Perm	NA		D.P+P	D.P+P	NA
Protected Phases		8			4			6		5	5	2
Permitted Phases	4			8			6			6	6	2
Actuated Green, G (s)	8.8	8.8		8.8	8.8		75.9	75.9			85.4	92.5
Effective Green, g (s)	8.8	8.8		8.8	8.8		75.9	75.9			85.4	92.5
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.66	0.66			0.74	0.80
Clearance Time (s)	6.8	6.8		6.8	6.8		6.9	6.9			7.1	6.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0			2.0	5.0
Lane Grp Cap (vph)	105	124		106	115		190	3407			239	2903
v/s Ratio Prot		0.00			0.00			0.37			0.05	c0.45
v/s Ratio Perm	0.02			c0.05			0.12				c0.38	
v/c Ratio	0.32	0.03		0.61	0.03		0.18	0.57			0.59	0.56
Uniform Delay, d1	50.3	49.2		51.5	49.2		7.5	10.6			9.8	4.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.56	3.37
Incremental Delay, d2	0.7	0.0		7.2	0.0		0.9	0.4			1.6	0.5
Delay (s)	50.9	49.2		58.6	49.2		8.5	11.0			16.9	14.0
Level of Service	D	D		E	D		A	B			B	B
Approach Delay (s)		50.0			54.7			10.9				14.1
Approach LOS		D			D			B				B

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.8
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1615
Flt Permitted	1.00
Satd. Flow (perm)	1615
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	38
RTOR Reduction (vph)	7
Lane Group Flow (vph)	31
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Actuated Green, G (s)	92.5
Effective Green, g (s)	92.5
Actuated g/C Ratio	0.80
Clearance Time (s)	6.9
Vehicle Extension (s)	5.0
Lane Grp Cap (vph)	1299
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.2
Progression Factor	3.50
Incremental Delay, d2	0.0
Delay (s)	7.9
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	791	300	531	1385	1377	650
Future Volume (vph)	791	300	531	1385	1377	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	1787	5187	5136	1615
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	144	5187	5136	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	869	330	584	1522	1513	714
RTOR Reduction (vph)	0	245	0	0	0	415
Lane Group Flow (vph)	869	85	584	1522	1513	299
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	29.5	29.5	71.1	71.1	44.1	44.1
Effective Green, g (s)	29.5	29.5	71.1	71.1	44.1	44.1
Actuated g/C Ratio	0.26	0.26	0.62	0.62	0.38	0.38
Clearance Time (s)	7.5	7.5	8.1	6.9	6.9	6.9
Vehicle Extension (s)	2.0	2.0	4.0	5.0	5.0	5.0
Lane Grp Cap (vph)	889	410	359	3206	1969	619
v/s Ratio Prot	c0.25		c0.27	0.29	0.29	
v/s Ratio Perm		0.05	c0.74			0.19
v/c Ratio	0.98	0.21	1.63	0.47	0.77	0.48
Uniform Delay, d1	42.4	33.6	36.5	11.9	31.0	26.8
Progression Factor	1.00	1.00	1.34	1.00	0.48	1.77
Incremental Delay, d2	24.4	0.1	292.8	0.4	1.9	1.0
Delay (s)	66.8	33.7	341.9	12.3	16.6	48.6
Level of Service	E	C	F	B	B	D
Approach Delay (s)	57.7			103.7	26.8	
Approach LOS	E			F	C	

Intersection Summary			
HCM 2000 Control Delay	62.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	177	234	9	204	1964	1782	173
Future Volume (vph)	177	234	9	204	1964	1782	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8			7.6	6.5	6.5	
Lane Util. Factor	0.97			1.00	0.91	0.86	
Frt	0.91			1.00	1.00	0.99	
Flt Protected	0.98			0.95	1.00	1.00	
Satd. Flow (prot)	3300			1805	5136	6391	
Flt Permitted	0.98			0.05	1.00	1.00	
Satd. Flow (perm)	3300			102	5136	6391	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	195	257	10	224	2158	1958	190
RTOR Reduction (vph)	230	0	0	0	0	10	0
Lane Group Flow (vph)	222	0	0	234	2158	2138	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		1	1	6	2	
Permitted Phases			6	6			
Actuated Green, G (s)	12.2			88.5	88.5	67.1	
Effective Green, g (s)	12.2			88.5	88.5	67.1	
Actuated g/C Ratio	0.11			0.77	0.77	0.58	
Clearance Time (s)	7.8			7.6	6.5	6.5	
Vehicle Extension (s)	2.0			2.0	5.2	5.2	
Lane Grp Cap (vph)	350			282	3952	3729	
v/s Ratio Prot	c0.07			c0.10	0.42	0.33	
v/s Ratio Perm				c0.54			
v/c Ratio	0.64			0.83	0.55	0.57	
Uniform Delay, d1	49.3			33.3	5.3	15.0	
Progression Factor	1.00			1.17	1.18	0.34	
Incremental Delay, d2	2.8			13.4	0.4	0.2	
Delay (s)	52.0			52.5	6.6	5.3	
Level of Service	D			D	A	A	
Approach Delay (s)	52.0				11.1	5.3	
Approach LOS	D				B	A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	902	225	228	1911	1730	921
Future Volume (vph)	902	225	228	1911	1730	921
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	3467	1583	140	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1002	250	253	2123	1922	1023
RTOR Reduction (vph)	0	91	0	0	0	431
Lane Group Flow (vph)	1002	159	253	2123	1922	592
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	31.4	31.4	69.3	69.3	49.1	49.1
Effective Green, g (s)	31.4	31.4	69.3	69.3	49.1	49.1
Actuated g/C Ratio	0.27	0.27	0.60	0.60	0.43	0.43
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	946	432	309	3094	2192	682
v/s Ratio Prot	c0.29		c0.11	0.41	c0.37	
v/s Ratio Perm		0.10	0.38			0.37
v/c Ratio	1.06	0.37	0.82	0.69	0.88	0.87
Uniform Delay, d1	41.8	33.8	32.8	15.5	30.2	30.0
Progression Factor	1.00	1.00	1.20	0.34	0.60	1.40
Incremental Delay, d2	46.2	0.2	13.5	1.1	1.7	4.9
Delay (s)	88.0	34.0	52.6	6.4	19.8	47.0
Level of Service	F	C	D	A	B	D
Approach Delay (s)	77.3			11.3	29.2	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
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	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	132	6	102	89	10	104	5	95	2530	183	74	111
Future Volume (vph)	132	6	102	89	10	104	5	95	2530	183	74	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Lane Util. Factor		1.00		1.00	1.00	1.00		1.00	0.91			1.00
Frt		0.94		1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected		0.97		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)		1728		1805	1624	1583		1805	5087			1759
Flt Permitted		0.82		0.57	1.00	1.00		0.07	1.00			0.06
Satd. Flow (perm)		1462		1083	1624	1583		129	5087			118
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	150	7	116	101	11	118	6	108	2875	208	84	126
RTOR Reduction (vph)	0	24	0	0	0	93	0	0	6	0	0	0
Lane Group Flow (vph)	0	249	0	101	11	25	0	114	3077	0	0	210
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		1	1	6		5	5
Permitted Phases	4			8		8	6	6			2	2
Actuated Green, G (s)		24.3		24.3	24.3	24.3		66.8	58.7			75.0
Effective Green, g (s)		24.3		24.3	24.3	24.3		66.8	58.7			75.0
Actuated g/C Ratio		0.21		0.21	0.21	0.21		0.58	0.51			0.65
Clearance Time (s)		6.8		6.8	6.8	6.8		6.7	6.3			6.7
Vehicle Extension (s)		4.0		2.0	2.0	2.0		2.0	5.2			2.0
Lane Grp Cap (vph)		308		228	343	334		192	2596			251
v/s Ratio Prot					0.01			0.04	c0.60			c0.09
v/s Ratio Perm		c0.17		0.09		0.02		0.30				0.46
v/c Ratio		0.81		0.44	0.03	0.07		0.59	1.19			0.84
Uniform Delay, d1		43.1		39.5	36.0	36.3		24.6	28.1			35.8
Progression Factor		1.00		1.00	1.00	1.00		1.23	0.94			1.29
Incremental Delay, d2		15.0		0.5	0.0	0.0		1.9	85.9			6.1
Delay (s)		58.1		40.0	36.0	36.4		32.3	112.4			52.2
Level of Service		E		D	D	D		C	F			D
Approach Delay (s)		58.1			37.9				109.6			
Approach LOS		E			D				F			

Intersection Summary			
HCM 2000 Control Delay	69.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2455	31
Future Volume (vph)	2455	31
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.3	6.3
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1615
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1615
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	2790	35
RTOR Reduction (vph)	0	16
Lane Group Flow (vph)	2790	19
Heavy Vehicles (%)	1%	0%
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	62.8	62.8
Effective Green, g (s)	62.8	62.8
Actuated g/C Ratio	0.55	0.55
Clearance Time (s)	6.3	6.3
Vehicle Extension (s)	5.1	5.1
Lane Grp Cap (vph)	2804	881
v/s Ratio Prot	c0.54	
v/s Ratio Perm		0.01
v/c Ratio	1.00	0.02
Uniform Delay, d1	25.9	12.0
Progression Factor	0.81	1.00
Incremental Delay, d2	7.6	0.0
Delay (s)	28.7	12.0
Level of Service	C	B
Approach Delay (s)	30.1	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	455	0	0	0	0	1323	1518	697	2218	0
Future Volume (vph)	94	0	455	0	0	0	0	1323	1518	697	2218	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	1752	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.07	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	132	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	102	0	495	0	0	0	0	1438	1650	758	2411	0
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	331	0	0	0
Lane Group Flow (vph)	102	0	410	0	0	0	0	1438	1319	758	2411	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Perm					NA	Perm	pm+pt	NA	
Protected Phases								6		5	2	
Permitted Phases	4		4						6	2		
Actuated Green, G (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Effective Green, g (s)	24.0		24.0					48.3	48.3	78.3	78.3	
Actuated g/C Ratio	0.21		0.21					0.42	0.42	0.68	0.68	
Clearance Time (s)	6.0		6.0					6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5		2.5					5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	362		330					1501	664	405	2433	
v/s Ratio Prot								0.40		c0.36	0.67	
v/s Ratio Perm	0.06		c0.26						c0.83	0.91		
v/c Ratio	0.28		1.24					0.96	1.99	1.87	0.99	
Uniform Delay, d1	38.3		45.5					32.4	33.4	38.2	18.0	
Progression Factor	1.00		1.00					0.51	0.96	1.08	1.74	
Incremental Delay, d2	0.3		132.6					2.1	444.7	393.1	3.8	
Delay (s)	38.6		178.1					18.6	476.8	434.4	35.2	
Level of Service	D		F					B	F	F	D	
Approach Delay (s)		154.2			0.0			263.4			130.7	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	192.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	162.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1422	0	1054	527	888	0	0	1493	127
Future Volume (vph)	0	0	0	1422	0	1054	527	888	0	0	1493	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	211	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1497	0	1109	555	935	0	0	1572	134
RTOR Reduction (vph)	0	0	0	0	0	92	0	0	0	0	0	78
Lane Group Flow (vph)	0	0	0	1497	0	1017	555	935	0	0	1572	56
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Perm	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		8	6					2
Actuated Green, G (s)				35.1		35.1	67.5	67.5			27.5	27.5
Effective Green, g (s)				35.1		35.1	67.5	67.5			27.5	27.5
Actuated g/C Ratio				0.31		0.31	0.59	0.59			0.24	0.24
Clearance Time (s)				5.9		5.9	7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0		3.0	2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		478	560	2097			854	382
v/s Ratio Prot							c0.28	0.26			c0.44	
v/s Ratio Perm				0.43		c0.65	0.30					0.04
v/c Ratio				1.41		2.13	0.99	0.45			1.84	0.15
Uniform Delay, d1				40.0		40.0	33.6	13.3			43.8	34.5
Progression Factor				1.00		1.00	1.60	2.16			1.00	1.00
Incremental Delay, d2				192.4		514.1	21.5	0.3			382.9	0.4
Delay (s)				232.3		554.0	75.4	29.0			426.6	34.9
Level of Service				F		F	E	C			F	C
Approach Delay (s)		0.0			369.2			46.3			395.9	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	294.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	162.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	12	236	557	6	145	89	1190	665	94	829	13
Future Volume (vph)	27	12	236	557	6	145	89	1190	665	94	829	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1771	1583	1698	1704	1599	1805	3539	1599	1752	3574	1615
Flt Permitted	0.95	0.98	1.00	0.95	0.95	1.00	0.25	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1715	1771	1583	1698	1704	1599	466	3539	1599	201	3574	1615
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)	29	13	254	599	6	156	96	1280	715	101	891	14
RTOR Reduction (vph)	0	0	245	0	0	101	0	0	236	0	0	7
Lane Group Flow (vph)	21	21	9	299	306	55	96	1280	479	101	891	7
Heavy Vehicles (%)	0%	0%	2%	1%	0%	1%	0%	2%	1%	3%	1%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7	6		6	2		2
Actuated Green, G (s)	4.0	4.0	4.0	19.3	19.3	19.3	61.4	54.6	54.6	62.8	55.3	55.3
Effective Green, g (s)	4.0	4.0	4.0	19.3	19.3	19.3	61.4	54.6	54.6	62.8	55.3	55.3
Actuated g/C Ratio	0.04	0.04	0.04	0.18	0.18	0.18	0.57	0.50	0.50	0.58	0.51	0.51
Clearance Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	6.0	5.4	5.4	6.0	5.4	5.4
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0	2.0	2.0	5.7	5.7	2.0	6.3	6.3
Lane Grp Cap (vph)	63	65	58	302	303	284	347	1780	804	223	1821	823
v/s Ratio Prot	c0.01	0.01		0.18	c0.18		0.02	c0.36		c0.03	0.25	
v/s Ratio Perm			0.01			0.03	0.14		0.30	0.23		0.00
v/c Ratio	0.33	0.32	0.16	0.99	1.01	0.19	0.28	0.72	0.60	0.45	0.49	0.01
Uniform Delay, d1	50.9	50.9	50.6	44.5	44.6	38.0	11.7	21.0	19.1	14.9	17.4	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	2.1	1.0	48.9	54.2	0.1	0.2	2.5	3.2	0.5	0.9	0.0
Delay (s)	53.2	53.0	51.6	93.4	98.8	38.1	11.8	23.5	22.3	15.4	18.3	13.1
Level of Service	D	D	D	F	F	D	B	C	C	B	B	B
Approach Delay (s)		51.8			84.2			22.6			18.0	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	108.5	Sum of lost time (s)	23.1
Intersection Capacity Utilization	74.6%	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 (vph)	6	5	16	75	2	126	17	1266	79	50	845	9
Future Volume (vph)	6	5	16	75	2	126	17	1266	79	50	845	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		1846	1615	1770	1900	1553		1862	1583		1870	1615
Flt Permitted		0.83	1.00	0.75	1.00	1.00		0.98	1.00		0.29	1.00
Satd. Flow (perm)		1575	1615	1397	1900	1553		1832	1583		542	1615
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	7	5	18	82	2	138	19	1391	87	55	929	10
RTOR Reduction (vph)	0	0	16	0	0	49	0	0	26	0	0	3
Lane Group Flow (vph)	0	12	2	82	2	89	0	1410	61	0	984	7
Heavy Vehicles (%)	0%	0%	0%	2%	0%	4%	0%	2%	2%	7%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Actuated Green, G (s)		8.2	8.2	8.2	8.2	8.2		47.9	47.9		47.9	47.9
Effective Green, g (s)		8.2	8.2	8.2	8.2	8.2		47.9	47.9		47.9	47.9
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12		0.70	0.70		0.70	0.70
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		4.0	4.0		5.0	5.0
Lane Grp Cap (vph)		189	194	168	228	186		1288	1113		381	1135
v/s Ratio Prot					0.00							
v/s Ratio Perm		0.01	0.00	c0.06		0.06		0.77	0.04		c1.82	0.00
v/c Ratio		0.06	0.01	0.49	0.01	0.48		1.09	0.05		2.58	0.01
Uniform Delay, d1		26.5	26.4	28.0	26.4	27.9		10.1	3.1		10.1	3.0
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0	2.2	0.0	1.9		55.1	0.1		719.8	0.0
Delay (s)		26.7	26.4	30.2	26.4	29.9		65.2	3.2		729.9	3.0
Level of Service		C	C	C	C	C		E	A		F	A
Approach Delay (s)		26.5			30.0			61.6			722.6	
Approach LOS		C			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	298.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.28		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX I: BUILD CAPACITY ANALYSIS REPORTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	33	465	70	16	17	225	559	26	14	801	116
Future Volume (vph)	107	33	465	70	16	17	225	559	26	14	801	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	3467	3438	1583	1805	3505	1615
Flt Permitted	0.47	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	878	1881	1599	1396	1881	1615	3467	3438	1583	1805	3505	1615
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)	111	34	484	73	17	18	234	582	27	15	834	121
RTOR Reduction (vph)	0	0	340	0	0	16	0	0	12	0	0	66
Lane Group Flow (vph)	111	34	144	73	17	2	234	582	15	15	834	55
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	22.9	22.9	22.9	10.0	10.0	10.0	12.5	55.1	55.1	1.9	44.5	44.5
Effective Green, g (s)	22.9	22.9	22.9	10.0	10.0	10.0	12.5	55.1	55.1	1.9	44.5	44.5
Actuated g/C Ratio	0.23	0.23	0.23	0.10	0.10	0.10	0.13	0.56	0.56	0.02	0.45	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	269	439	374	142	192	164	442	1934	890	35	1593	734
v/s Ratio Prot	0.03	0.02			0.01		c0.07	0.17		0.01	c0.24	
v/s Ratio Perm	c0.07		c0.09	0.05		0.00			0.01			0.03
v/c Ratio	0.41	0.08	0.38	0.51	0.09	0.01	0.53	0.30	0.02	0.43	0.52	0.07
Uniform Delay, d1	30.8	29.3	31.6	41.6	39.8	39.5	39.9	11.3	9.4	47.5	19.1	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.5	2.3	0.1	0.0	1.5	0.4	0.0	22.0	1.2	0.2
Delay (s)	31.9	29.3	32.0	44.0	40.0	39.5	41.4	11.7	9.5	69.5	20.3	15.3
Level of Service	C	C	C	D	D	D	D	B	A	E	C	B
Approach Delay (s)		31.9			42.6			19.9			20.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	24.0
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 (vph)	242	85	422	149	112	49	494	1061	79	40	599	238
Future Volume (vph)	242	85	422	149	112	49	494	1061	79	40	599	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	3502	3574	1615	1805	3539	1599
Flt Permitted	0.45	1.00	1.00	0.70	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	852	1900	1615	1329	1900	1615	3502	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	255	89	444	157	118	52	520	1117	83	42	631	251
RTOR Reduction (vph)	0	0	327	0	0	45	0	0	41	0	0	156
Lane Group Flow (vph)	255	89	117	157	118	7	520	1117	42	42	631	95
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.0	29.0	29.0	14.0	14.0	14.0	21.1	55.5	55.5	7.1	41.5	41.5
Effective Green, g (s)	29.0	29.0	29.0	14.0	14.0	14.0	21.1	55.5	55.5	7.1	41.5	41.5
Actuated g/C Ratio	0.26	0.26	0.26	0.13	0.13	0.13	0.19	0.51	0.51	0.06	0.38	0.38
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	302	502	427	169	242	206	674	1809	817	116	1340	605
v/s Ratio Prot	c0.07	0.05			0.06		c0.15	c0.31		0.02	0.18	
v/s Ratio Perm	c0.15		0.07	0.12		0.00			0.03			0.06
v/c Ratio	0.84	0.18	0.28	0.93	0.49	0.03	0.77	0.62	0.05	0.36	0.47	0.16
Uniform Delay, d1	37.1	31.1	32.0	47.3	44.5	41.9	42.0	19.4	13.7	49.1	25.7	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.9	0.1	0.3	48.4	1.1	0.0	5.8	1.6	0.1	5.4	1.2	0.6
Delay (s)	56.1	31.2	32.2	95.7	45.6	41.9	47.8	21.0	13.8	54.4	26.9	23.0
Level of Service	E	C	C	F	D	D	D	C	B	D	C	C
Approach Delay (s)		39.8			69.0			28.8			27.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	24.0
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 (vph)	131	40	567	86	20	20	274	682	32	17	977	142
Future Volume (vph)	131	40	567	86	20	20	274	682	32	17	977	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	3467	3438	1583	1805	3505	1615
Flt Permitted	0.45	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	839	1881	1599	1386	1881	1615	3467	3438	1583	1805	3505	1615
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)	136	42	591	90	21	21	285	710	33	18	1018	148
RTOR Reduction (vph)	0	0	327	0	0	19	0	0	15	0	0	83
Lane Group Flow (vph)	136	42	264	90	21	2	285	710	18	18	1018	65
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	23.7	23.7	23.7	9.0	9.0	9.0	14.0	53.6	53.6	3.9	43.5	43.5
Effective Green, g (s)	23.7	23.7	23.7	9.0	9.0	9.0	14.0	53.6	53.6	3.9	43.5	43.5
Actuated g/C Ratio	0.24	0.24	0.24	0.09	0.09	0.09	0.14	0.54	0.54	0.04	0.44	0.44
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	283	449	382	125	170	146	489	1857	855	70	1536	708
v/s Ratio Prot	0.04	0.02			0.01		c0.08	0.21		0.01	c0.29	
v/s Ratio Perm	0.07		c0.17	0.06		0.00			0.01			0.04
v/c Ratio	0.48	0.09	0.69	0.72	0.12	0.01	0.58	0.38	0.02	0.26	0.66	0.09
Uniform Delay, d1	31.3	29.4	34.4	43.9	41.5	41.1	39.9	13.2	10.6	46.2	22.0	16.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	4.9	16.9	0.2	0.0	2.1	0.6	0.0	5.4	2.3	0.3
Delay (s)	32.6	29.5	39.4	60.7	41.7	41.1	42.0	13.8	10.6	51.7	24.3	16.5
Level of Service	C	C	D	E	D	D	D	B	B	D	C	B
Approach Delay (s)		37.6			54.6			21.5			23.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	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)	24.0
Intersection Capacity Utilization	82.9%	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 (vph)	295	104	515	182	137	60	603	1295	96	49	731	290
Future Volume (vph)	295	104	515	182	137	60	603	1295	96	49	731	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	3502	3574	1615	1805	3539	1599
Flt Permitted	0.39	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	727	1900	1615	1305	1900	1615	3502	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	109	542	192	144	63	635	1363	101	52	769	305
RTOR Reduction (vph)	0	0	334	0	0	55	0	0	52	0	0	187
Lane Group Flow (vph)	311	109	208	192	144	8	635	1363	49	52	769	118
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.0	29.0	29.0	14.0	14.0	14.0	23.1	53.7	53.7	9.7	40.3	40.3
Effective Green, g (s)	29.0	29.0	29.0	14.0	14.0	14.0	23.1	53.7	53.7	9.7	40.3	40.3
Actuated g/C Ratio	0.26	0.26	0.26	0.13	0.13	0.13	0.21	0.49	0.49	0.09	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	277	499	424	165	240	204	732	1738	785	158	1291	583
v/s Ratio Prot	c0.09	0.06			0.08		c0.18	c0.38		0.03	0.22	
v/s Ratio Perm	c0.20		0.13	0.15		0.00			0.03			0.07
v/c Ratio	1.12	0.22	0.49	1.16	0.60	0.04	0.87	0.78	0.06	0.33	0.60	0.20
Uniform Delay, d1	39.6	31.8	34.4	48.2	45.6	42.3	42.2	23.5	15.0	47.3	28.4	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	91.2	0.2	0.7	120.9	3.4	0.1	10.9	3.6	0.2	3.4	2.0	0.8
Delay (s)	130.8	32.0	35.1	169.1	48.9	42.4	53.1	27.2	15.2	50.7	30.5	24.8
Level of Service	F	C	D	F	D	D	D	C	B	D	C	C
Approach Delay (s)		65.7			105.7			34.4			29.9	
Approach LOS		E			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	87.7%	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 (vph)	128	40	558	84	19	20	270	671	31	17	961	140
Future Volume (vph)	128	40	558	84	19	20	270	671	31	17	961	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	3467	3438	1583	1805	3505	1615
Flt Permitted	0.44	1.00	1.00	0.73	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	829	1881	1599	1386	1881	1615	3467	3438	1583	1805	3505	1615
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)	133	42	581	88	20	21	281	699	32	18	1001	146
RTOR Reduction (vph)	0	0	335	0	0	19	0	0	16	0	0	87
Lane Group Flow (vph)	133	42	246	88	20	2	281	699	16	18	1001	59
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	26.0	26.0	26.0	8.7	8.7	8.7	13.7	48.6	48.6	3.8	38.7	38.7
Effective Green, g (s)	26.0	26.0	26.0	8.7	8.7	8.7	13.7	48.6	48.6	3.8	38.7	38.7
Actuated g/C Ratio	0.27	0.27	0.27	0.09	0.09	0.09	0.14	0.50	0.50	0.04	0.40	0.40
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	335	507	431	125	169	145	492	1733	798	71	1407	648
v/s Ratio Prot	0.05	0.02			0.01		c0.08	0.20		0.01	c0.29	
v/s Ratio Perm	0.06		c0.15	0.06		0.00			0.01			0.04
v/c Ratio	0.40	0.08	0.57	0.70	0.12	0.01	0.57	0.40	0.02	0.25	0.71	0.09
Uniform Delay, d1	28.0	26.3	30.4	42.6	40.3	39.9	38.6	14.9	12.0	44.9	24.2	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	1.5	15.4	0.2	0.0	1.9	0.7	0.0	5.3	3.1	0.3
Delay (s)	28.8	26.3	31.9	58.0	40.6	40.0	40.5	15.6	12.0	50.2	27.3	18.2
Level of Service	C	C	C	E	D	D	D	B	B	D	C	B
Approach Delay (s)		31.0			52.3			22.4			26.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	81.9%	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 (vph)	290	102	507	179	134	59	593	1273	95	48	719	286
Future Volume (vph)	290	102	507	179	134	59	593	1273	95	48	719	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	3502	3574	1615	1805	3539	1599
Flt Permitted	0.39	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	742	1900	1615	1307	1900	1615	3502	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	107	534	188	141	62	624	1340	100	51	757	301
RTOR Reduction (vph)	0	0	328	0	0	54	0	0	56	0	0	190
Lane Group Flow (vph)	305	107	206	188	141	8	624	1340	44	51	757	111
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	34.0	34.0	34.0	14.0	14.0	14.0	23.0	48.6	48.6	9.6	35.2	35.2
Effective Green, g (s)	34.0	34.0	34.0	14.0	14.0	14.0	23.0	48.6	48.6	9.6	35.2	35.2
Actuated g/C Ratio	0.31	0.31	0.31	0.13	0.13	0.13	0.21	0.44	0.44	0.09	0.32	0.32
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	361	586	498	166	241	205	730	1576	712	157	1130	510
v/s Ratio Prot	c0.11	0.06			0.07		c0.18	c0.37		0.03	0.21	
v/s Ratio Perm	0.15		0.13	c0.14		0.00			0.03			0.07
v/c Ratio	0.84	0.18	0.41	1.13	0.59	0.04	0.85	0.85	0.06	0.32	0.67	0.22
Uniform Delay, d1	33.0	27.9	30.2	48.1	45.4	42.2	42.0	27.5	17.7	47.3	32.5	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	1.00
Incremental Delay, d2	16.4	0.1	0.4	109.9	3.0	0.1	10.0	6.0	0.2	3.4	3.2	1.0
Delay (s)	49.4	28.0	30.6	158.0	48.3	42.3	51.9	33.5	17.9	50.6	35.6	28.4
Level of Service	D	C	C	F	D	D	D	C	B	D	D	C
Approach Delay (s)		36.4			100.1			38.3			34.4	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	86.6%	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 (vph)	156	49	681	102	23	23	329	819	38	21	1172	171
Future Volume (vph)	156	49	681	102	23	23	329	819	38	21	1172	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1881	1599	1805	1881	1615	3467	3438	1583	1805	3505	1615
Flt Permitted	0.49	1.00	1.00	0.72	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	914	1881	1599	1375	1881	1615	3467	3438	1583	1805	3505	1615
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)	162	51	709	106	24	24	343	853	40	22	1221	178
RTOR Reduction (vph)	0	0	321	0	0	21	0	0	20	0	0	93
Lane Group Flow (vph)	163	51	388	106	24	3	343	853	20	22	1221	85
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	1%	5%	2%	0%	3%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	29.7	29.7	29.7	11.4	11.4	11.4	15.8	49.7	49.7	4.1	38.0	38.0
Effective Green, g (s)	29.7	29.7	29.7	11.4	11.4	11.4	15.8	49.7	49.7	4.1	38.0	38.0
Actuated g/C Ratio	0.29	0.29	0.29	0.11	0.11	0.11	0.16	0.49	0.49	0.04	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	373	550	467	154	211	181	539	1683	775	72	1312	604
v/s Ratio Prot	0.05	0.03			0.01		c0.10	0.25		0.01	c0.35	
v/s Ratio Perm	0.07		c0.24	0.08		0.00			0.01			0.05
v/c Ratio	0.44	0.09	0.83	0.69	0.11	0.01	0.64	0.51	0.03	0.31	0.93	0.14
Uniform Delay, d1	28.1	26.1	33.5	43.3	40.5	40.1	40.2	17.6	13.4	47.3	30.5	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	11.7	11.1	0.2	0.0	2.8	1.1	0.1	6.7	13.0	0.5
Delay (s)	29.0	26.2	45.2	54.4	40.7	40.1	42.9	18.7	13.4	54.0	43.5	21.5
Level of Service	C	C	D	D	D	D	D	B	B	D	D	C
Approach Delay (s)		41.3			50.1			25.2			40.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	101.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	124	619	218	164	71	724	1553	116	59	877	349
Future Volume (vph)	354	124	619	218	164	71	724	1553	116	59	877	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1615	1805	1900	1615	3502	3574	1615	1805	3539	1599
Flt Permitted	0.31	1.00	1.00	0.67	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	589	1900	1615	1279	1900	1615	3502	3574	1615	1805	3539	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	373	131	652	229	173	75	762	1635	122	62	923	367
RTOR Reduction (vph)	0	0	321	0	0	66	0	0	68	0	0	191
Lane Group Flow (vph)	373	131	331	229	173	9	762	1635	54	62	923	176
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	1%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Actuated Green, G (s)	34.0	34.0	34.0	14.0	14.0	14.0	24.0	48.9	48.9	10.3	35.2	35.2
Effective Green, g (s)	34.0	34.0	34.0	14.0	14.0	14.0	24.0	48.9	48.9	10.3	35.2	35.2
Actuated g/C Ratio	0.31	0.31	0.31	0.13	0.13	0.13	0.22	0.44	0.44	0.09	0.32	0.32
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	2.5	2.5	2.5	2.5	2.5	4.0	5.0	5.0	6.0	5.0	5.0
Lane Grp Cap (vph)	330	580	493	161	239	203	755	1571	710	167	1120	506
v/s Ratio Prot	c0.14	0.07			0.09		c0.22	c0.46		0.03	0.26	
v/s Ratio Perm	0.20		0.21	c0.18		0.01			0.03			0.11
v/c Ratio	1.13	0.23	0.67	1.42	0.72	0.05	1.01	1.04	0.08	0.37	0.82	0.35
Uniform Delay, d1	35.6	28.8	33.7	48.6	46.7	42.7	43.6	31.2	18.1	47.4	35.1	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	89.6	0.1	3.3	222.3	9.7	0.1	35.1	34.1	0.2	3.9	6.9	1.9
Delay (s)	125.2	28.9	37.0	270.9	56.5	42.8	78.7	65.2	18.3	51.3	42.1	31.1
Level of Service	F	C	D	F	E	D	E	E	B	D	D	C
Approach Delay (s)		64.6			157.2			67.0			39.5	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	67.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

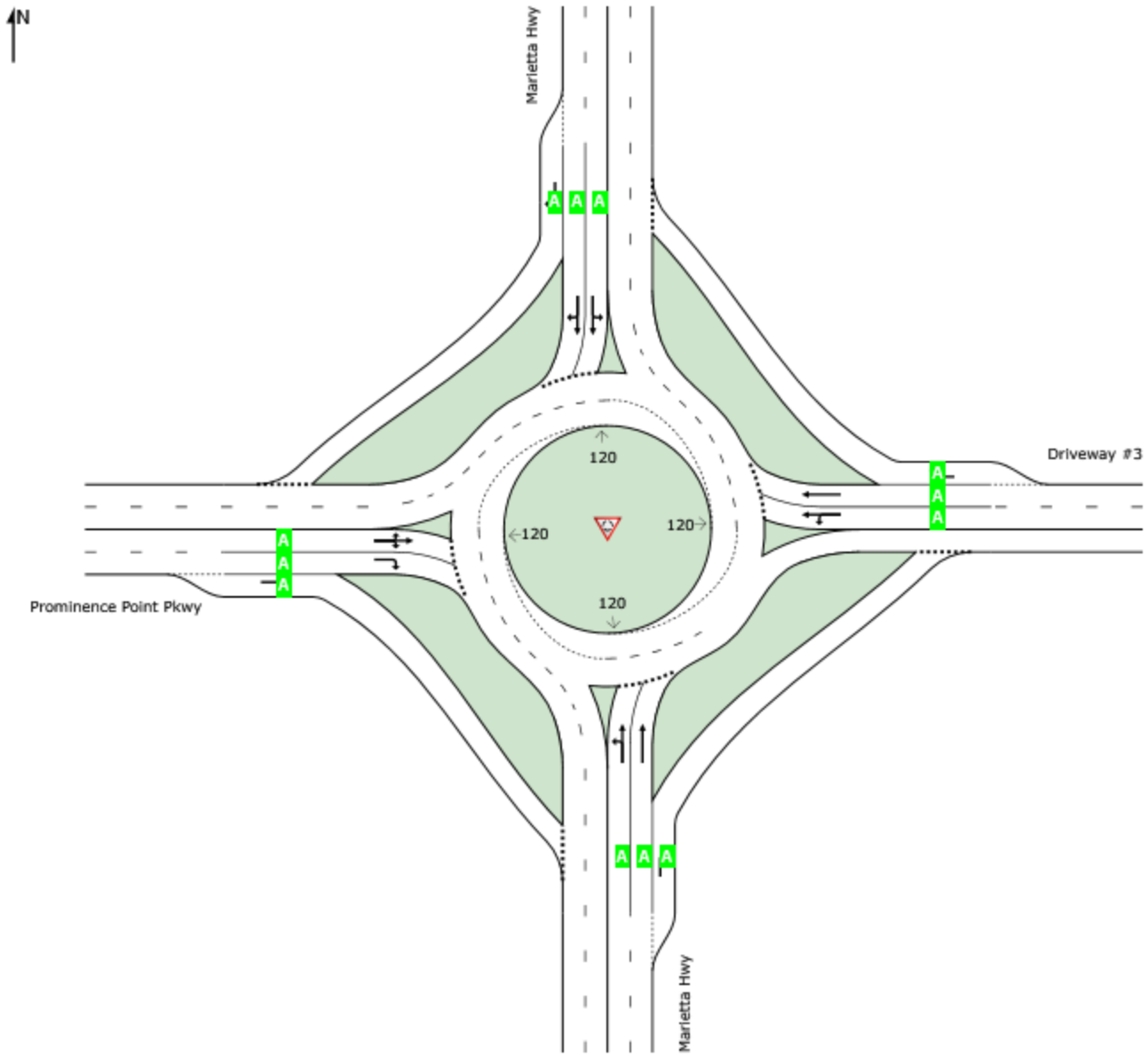
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2028 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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Project: G:\Shared drives\2021 Projects\210187 - Old Highway 5 Corridor Study\Operational Improvements\1_Marietta Hwy at Prominence Point Pkwy (#21)\Multilane Roundabout\#21_Build without Dev_Roundabout.sip9

LANE SUMMARY

Site: [#21-Prominence Point_2028 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	387	2.6	1245	0.311	100	5.8	LOS A	1.8	46.8	Full	1600	0.0	0.0
Lane 2[d]	429	4.4	1380	0.311	100	5.3	LOS A	1.9	48.6	Full	1600	0.0	0.0
Lane 3	27	37.5	1126	0.024	100	3.4	LOS A	0.1	3.3	Short	300	0.0	NA
Approach	844	4.6		0.311		5.5	LOS A	1.9	48.6				
East: Driveway #3													
Lane 1[d]	73	10.0	970	0.075	100	4.4	LOS A	0.3	8.5	Full	1600	0.0	0.0
Lane 2	17	7.1	663	0.025	33[5]	5.7	LOS A	0.1	2.5	Full	1600	0.0	0.0
Lane 3	18	0.0	1184	0.015	100	3.2	LOS A	0.1	1.5	Short	200	0.0	NA
Approach	107	7.9		0.075		4.4	LOS A	0.3	8.5				
North: Marietta Hwy													
Lane 1	392	3.5	1114	0.352	100	6.7	LOS A	1.9	48.3	Full	1600	0.0	0.0
Lane 2[d]	457	3.6	1299	0.352	100	6.0	LOS A	1.9	49.8	Full	1600	0.0	0.0
Lane 3	121	3.8	1343	0.090	26[5]	3.4	LOS A	0.4	10.4	Short	300	0.0	NA
Approach	970	3.6		0.352		6.0	LOS A	1.9	49.8				
West: Prominence Point Pkwy													
Lane 1	242	4.1	777	0.312	100	8.3	LOS A	1.4	36.6	Full	1600	0.0	0.0
Lane 2[d]	330	1.8	1058	0.312	100	6.5	LOS A	1.5	39.1	Full	1600	0.0	0.0
Lane 3	58	1.8	936	0.062	20[6]	4.4	LOS A	0.3	7.7	Short	300	0.0	NA
Approach	630	2.7		0.312		7.0	LOS A	1.5	39.1				
Intersection	2551	3.9		0.352		6.0	LOS A	1.9	49.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From S To Exit:	W	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	234	153	-	387	2.6	1245	0.311	100	NA	NA
Lane 2	-	429	-	429	4.4	1380	0.311	100	NA	NA
Lane 3	-	-	27	27	37.5	1126	0.024	100	0.0	2
Approach	234	582	27	844	4.6		0.311			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	73	-	-	73	10.0	970	0.075	100	NA	NA
Lane 2	-	17	-	17	7.1	663	0.025	33[5]	NA	NA
Lane 3	-	-	18	18	0.0	1184	0.015	100	0.0	2
Approach	73	17	18	107	7.9		0.075			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	15	377	-	392	3.5	1114	0.352	100	NA	NA
Lane 2	-	457	-	457	3.6	1299	0.352	100	NA	NA
Lane 3	-	-	121	121	3.8	1343	0.090	26[5]	0.0	2
Approach	15	834	121	970	3.6		0.352			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	111	34	96	242	4.1	777	0.312	100	NA	NA
Lane 2	-	-	330	330	1.8	1058	0.312	100	NA	NA
Lane 3	-	-	58	58	1.8	936	0.062	20[6]	0.0	2
Approach	111	34	484	630	2.7		0.312			

	Total	%HV	Deg.Satn (v/c)
Intersection	2551	3.9	0.352

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy												

Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

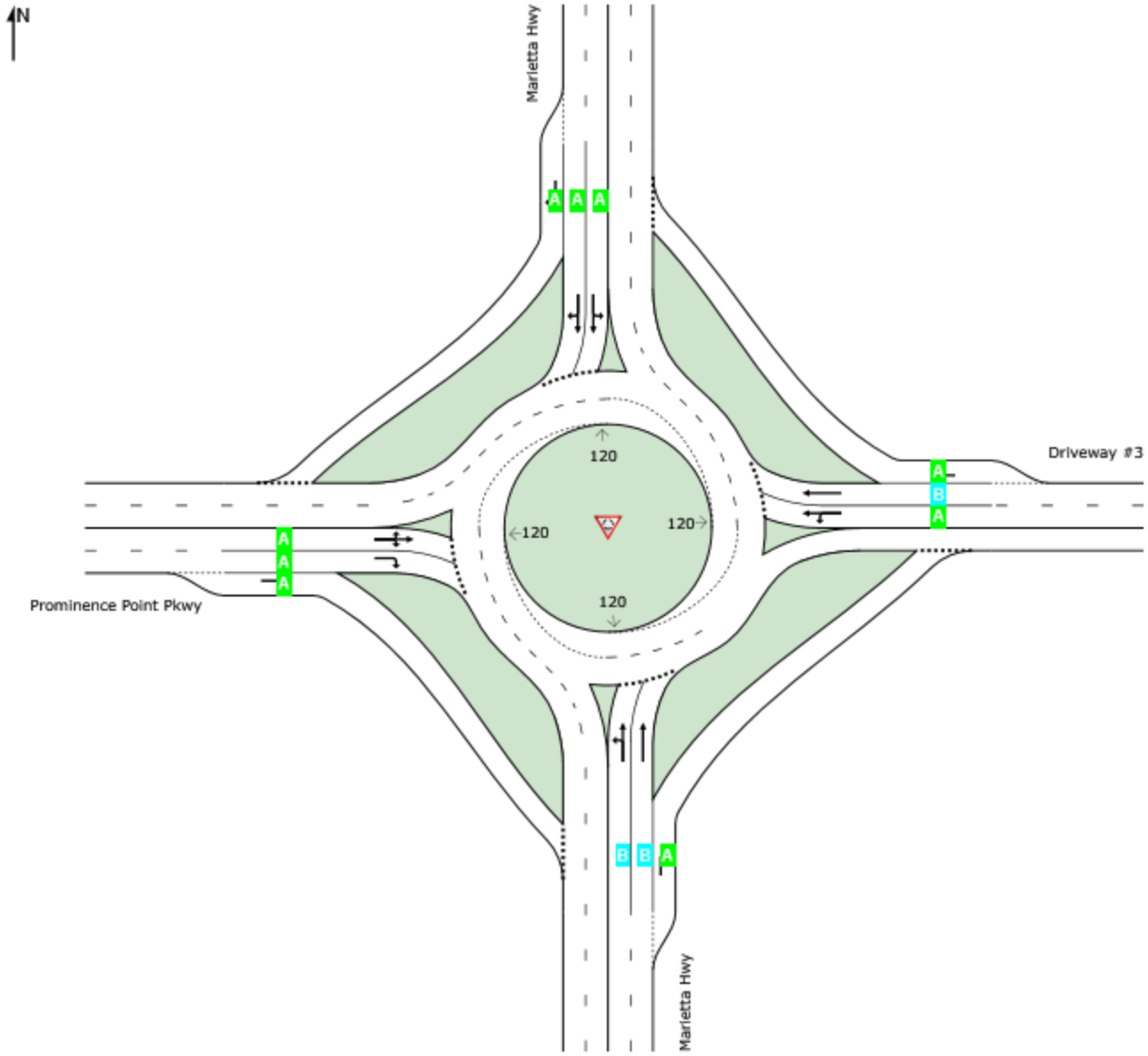
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2028 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2028 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	754	0.2	1063	0.709	100	14.7	LOS B	11.2	281.1	Full	1600	0.0	0.0
Lane 2[d]	883	0.7	1245	0.709	100	13.2	LOS B	11.4	286.3	Full	1600	0.0	0.0
Lane 3	83	0.0	1487	0.056	100	2.8	LOS A	0.3	6.5	Short	300	0.0	NA
Approach	1720	0.5		0.709		13.3	LOS B	11.4	286.3				
East: Driveway #3													
Lane 1[d]	166	0.0	642	0.259	100	8.9	LOS A	1.6	39.3	Full	1600	0.0	0.0
Lane 2	108	0.0	418	0.259	100	13.0	LOS B	1.3	32.9	Full	1600	0.0	0.0
Lane 3	52	0.0	776	0.066	100	5.3	LOS A	0.4	9.4	Short	200	0.0	NA
Approach	326	0.0		0.259		9.7	LOS A	1.6	39.3				
North: Marietta Hwy													
Lane 1	297	1.5	792	0.375	100	9.1	LOS A	2.2	55.5	Full	1600	0.0	0.0
Lane 2[d]	375	1.7	1000	0.375	100	7.6	LOS A	2.3	59.4	Full	1600	0.0	0.0
Lane 3	251	0.5	1091	0.230	61[5]	5.4	LOS A	1.3	33.0	Short	300	0.0	NA
Approach	923	1.3		0.375		7.5	LOS A	2.3	59.4				
West: Prominence Point Pkwy													
Lane 1	344	0.4	838	0.411	100	9.3	LOS A	2.4	59.9	Full	1600	0.0	0.0
Lane 2[d]	374	0.4	1063	0.352	86[5]	7.0	LOS A	1.9	47.5	Full	1600	0.0	0.0
Lane 3	70	0.4	991	0.070	17[5]	4.3	LOS A	0.3	8.5	Short	300	0.0	NA
Approach	788	0.4		0.411		7.8	LOS A	2.4	59.9				
Intersection	3758	0.6		0.709		10.4	LOS B	11.4	286.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

To Exit:	W	N	E							
Lane 1	520	234	-	754	0.2	1063	0.709	100	NA	NA
Lane 2	-	883	-	883	0.7	1245	0.709	100	NA	NA
Lane 3	-	-	83	83	0.0	1487	0.056	100	0.0	2
Approach	520	1117	83	1720	0.5		0.709			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	157	9	-	166	0.0	642	0.259	100	NA	NA
Lane 2	-	108	-	108	0.0	418	0.259	100	NA	NA
Lane 3	-	-	52	52	0.0	776	0.066	100	0.0	2
Approach	157	118	52	326	0.0		0.259			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	42	255	-	297	1.5	792	0.375	100	NA	NA
Lane 2	-	375	-	375	1.7	1000	0.375	100	NA	NA
Lane 3	-	-	251	251	0.5	1091	0.230	61[5]	0.0	2
Approach	42	631	251	923	1.3		0.375			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	255	89	-	344	0.4	838	0.411	100	NA	NA
Lane 2	-	-	374	374	0.4	1063	0.352	86[5]	NA	NA
Lane 3	-	-	70	70	0.4	991	0.070	17[5]	0.0	2
Approach	255	89	444	788	0.4		0.411			

	Total	%HV	Deg.Satn (v/c)
Intersection	3758	0.6	0.709

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

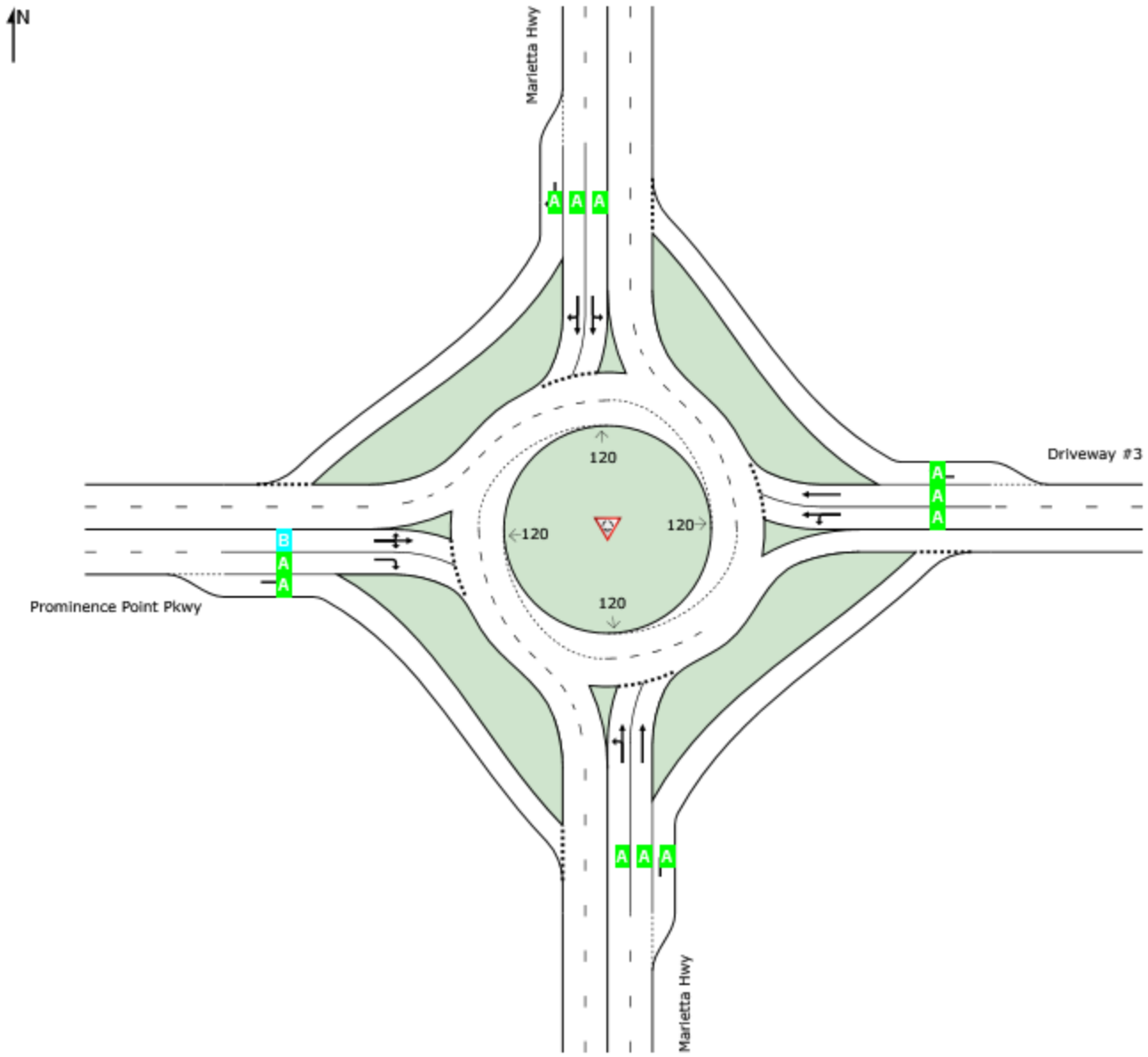
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2048 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2048 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	463	2.6	1232	0.376	100	6.6	LOS A	2.4	61.5	Full	1600	0.0	0.0
Lane 2[d]	532	4.4	1416	0.376	100	5.9	LOS A	2.5	64.7	Full	1600	0.0	0.0
Lane 3	33	37.5	1170	0.028	100	3.3	LOS A	0.1	4.0	Short	300	0.0	NA
Approach	1029	4.6		0.376		6.1	LOS A	2.5	64.7				
East: Driveway #3													
Lane 1[d]	90	10.0	963	0.093	100	4.6	LOS A	0.4	11.3	Full	1600	0.0	0.0
Lane 2	21	7.1	721	0.029	31[5]	5.3	LOS A	0.1	3.1	Full	1600	0.0	0.0
Lane 3	21	0.0	1184	0.018	100	3.2	LOS A	0.1	2.0	Short	200	0.0	NA
Approach	131	8.0		0.093		4.5	LOS A	0.4	11.3				
North: Marietta Hwy													
Lane 1	466	3.5	1085	0.430	100	8.0	LOS A	2.5	64.1	Full	1600	0.0	0.0
Lane 2[d]	569	3.6	1323	0.430	100	6.9	LOS A	2.6	67.4	Full	1600	0.0	0.0
Lane 3	148	3.8	1374	0.108	25[5]	3.5	LOS A	0.5	13.1	Short	300	0.0	NA
Approach	1183	3.6		0.430		6.9	LOS A	2.6	67.4				
West: Prominence Point Pkwy													
Lane 1	284	4.2	710	0.400	100	10.4	LOS B	2.2	56.9	Full	1600	0.0	0.0
Lane 2[d]	415	1.8	1037	0.400	100	7.8	LOS A	2.4	60.9	Full	1600	0.0	0.0
Lane 3	71	1.8	883	0.080	20[6]	4.8	LOS A	0.4	11.3	Short	300	0.0	NA
Approach	769	2.7		0.400		8.5	LOS A	2.4	60.9				
Intersection	3113	3.9		0.430		6.9	LOS A	2.6	67.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From S To Exit:	W	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	285	178	-	463	2.6	1232	0.376	100	NA	NA
Lane 2	-	532	-	532	4.4	1416	0.376	100	NA	NA
Lane 3	-	-	33	33	37.5	1170	0.028	100	0.0	2
Approach	285	710	33	1029	4.6		0.376			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	90	-	-	90	10.0	963	0.093	100	NA	NA
Lane 2	-	21	-	21	7.1	721	0.029	31[5]	NA	NA
Lane 3	-	-	21	21	0.0	1184	0.018	100	0.0	2
Approach	90	21	21	131	8.0		0.093			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	449	-	466	3.5	1085	0.430	100	NA	NA
Lane 2	-	569	-	569	3.6	1323	0.430	100	NA	NA
Lane 3	-	-	148	148	3.8	1374	0.108	25[5]	0.0	2
Approach	18	1018	148	1183	3.6		0.430			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	136	42	105	284	4.2	710	0.400	100	NA	NA
Lane 2	-	-	415	415	1.8	1037	0.400	100	NA	NA
Lane 3	-	-	71	71	1.8	883	0.080	20[6]	0.0	2
Approach	136	42	591	769	2.7		0.400			

	Total	%HV	Deg.Satn (v/c)
Intersection	3113	3.9	0.430

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy												

Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

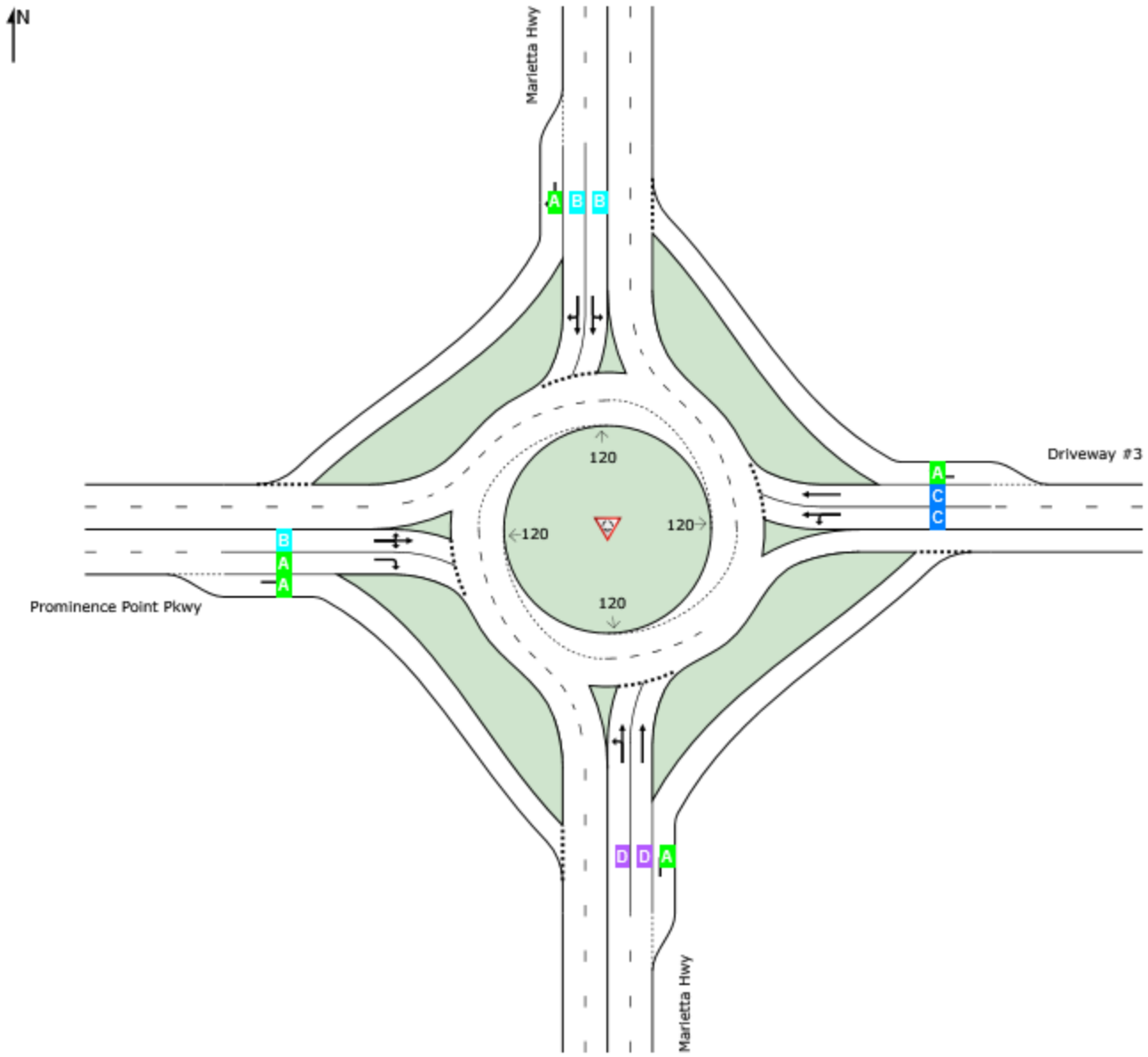
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2048 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	D	C	B	B	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2048 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	898	0.2	1002	0.896	100	29.4	LOS D	26.8	670.3	Full	1600	0.0	0.0
Lane 2[d]	1100	0.7	1227	0.896	100	25.7	LOS D	29.1	732.2	Full	1600	0.0	0.0
Lane 3	101	0.0	1534	0.066	100	2.8	LOS A	0.3	8.1	Short	300	0.0	NA
Approach	2099	0.5		0.896		26.2	LOS D	29.1	732.2				
East: Driveway #3													
Lane 1[d]	204	0.0	452	0.451	100	16.6	LOS C	3.6	90.2	Full	1600	0.0	0.0
Lane 2	132	0.0	293	0.451	100	24.3	LOS C	2.8	70.2	Full	1600	0.0	0.0
Lane 3	63	0.0	621	0.102	100	7.0	LOS A	0.7	17.0	Short	200	0.0	NA
Approach	399	0.0		0.451		17.7	LOS C	3.6	90.2				
North: Marietta Hwy													
Lane 1	350	1.4	676	0.518	100	13.5	LOS B	4.2	106.0	Full	1600	0.0	0.0
Lane 2[d]	471	1.7	909	0.518	100	10.7	LOS B	4.7	118.2	Full	1600	0.0	0.0
Lane 3	305	0.5	1010	0.302	58[5]	6.6	LOS A	2.0	50.6	Short	300	0.0	NA
Approach	1126	1.3		0.518		10.5	LOS B	4.7	118.2				
West: Prominence Point Pkwy													
Lane 1	420	0.4	742	0.566	100	13.8	LOS B	4.4	111.2	Full	1600	0.0	0.0
Lane 2[d]	457	0.4	1016	0.450	79[5]	8.7	LOS A	3.1	78.8	Full	1600	0.0	0.0
Lane 3	85	0.4	948	0.090	16[5]	4.6	LOS A	0.5	12.2	Short	300	0.0	NA
Approach	962	0.4		0.566		10.6	LOS B	4.4	111.2				
Intersection	4586	0.6		0.896		18.3	LOS C	29.1	732.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

To Exit:	W	N	E							
Lane 1	635	263	-	898	0.2	1002	0.896	100	NA	NA
Lane 2	-	1100	-	1100	0.7	1227	0.896	100	NA	NA
Lane 3	-	-	101	101	0.0	1534	0.066	100	0.0	2
Approach	635	1363	101	2099	0.5		0.896			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	192	12	-	204	0.0	452	0.451	100	NA	NA
Lane 2	-	132	-	132	0.0	293	0.451	100	NA	NA
Lane 3	-	-	63	63	0.0	621	0.102	100	0.0	2
Approach	192	144	63	399	0.0		0.451			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	52	299	-	350	1.4	676	0.518	100	NA	NA
Lane 2	-	471	-	471	1.7	909	0.518	100	NA	NA
Lane 3	-	-	305	305	0.5	1010	0.302	58[5]	0.0	2
Approach	52	769	305	1126	1.3		0.518			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	311	109	-	420	0.4	742	0.566	100	NA	NA
Lane 2	-	-	457	457	0.4	1016	0.450	79[5]	NA	NA
Lane 3	-	-	85	85	0.4	948	0.090	16[5]	0.0	2
Approach	311	109	542	962	0.4		0.566			

	Total	%HV	Deg.Satn (v/c)
Intersection	4586	0.6	0.896

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

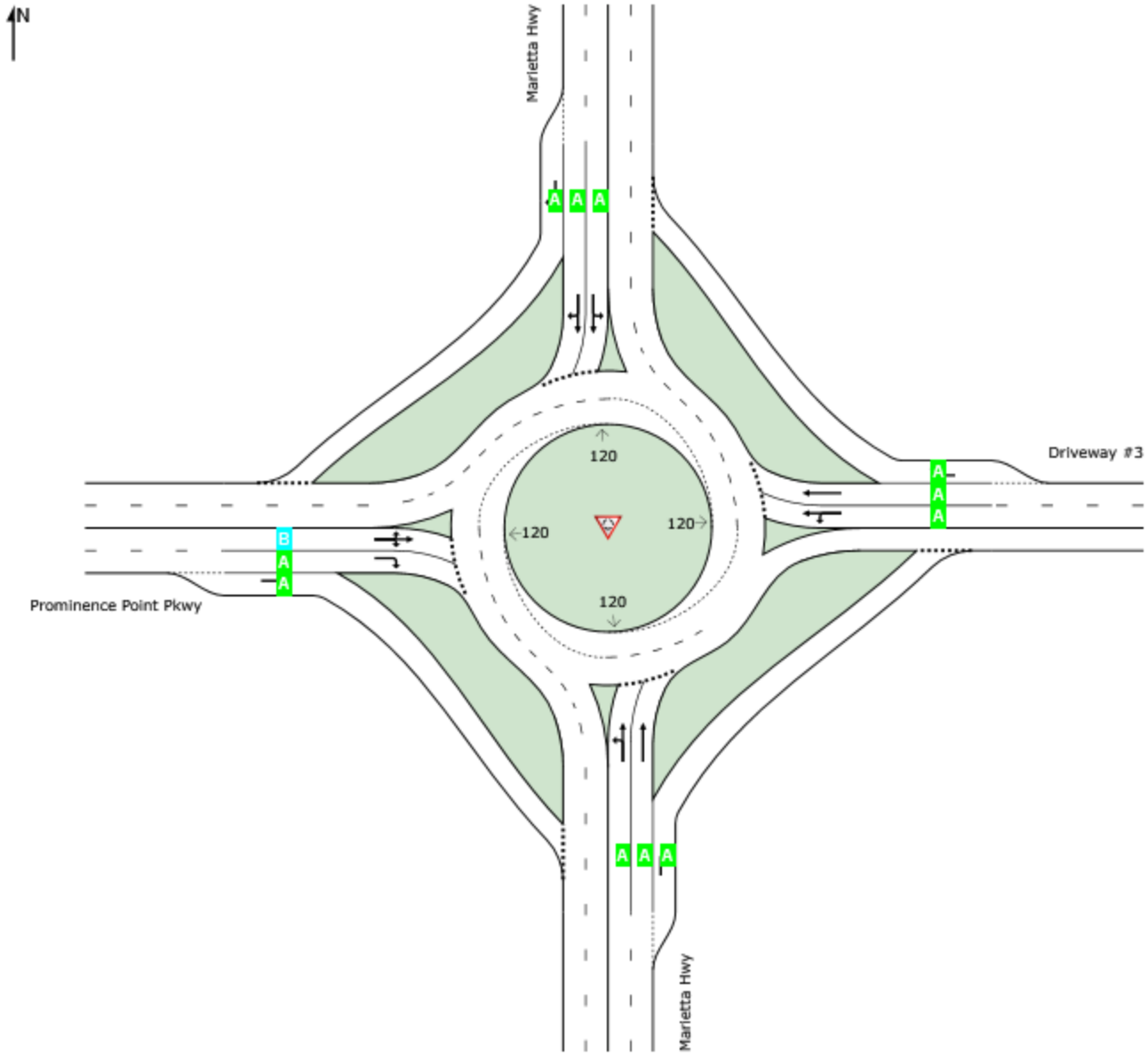
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2028 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2028 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	463	2.6	1205	0.385	100	6.8	LOS A	2.5	63.2	Full	1600	0.0	0.0
Lane 2[d]	517	4.4	1344	0.385	100	6.3	LOS A	2.5	65.9	Full	1600	0.0	0.0
Lane 3	32	37.5	1113	0.029	100	3.5	LOS A	0.1	4.1	Short	300	0.0	NA
Approach	1013	4.6		0.385		6.4	LOS A	2.5	65.9				
East: Driveway #3													
Lane 1[d]	87	10.0	888	0.098	100	5.0	LOS A	0.4	11.8	Full	1600	0.0	0.0
Lane 2	20	7.1	624	0.032	32[5]	6.2	LOS A	0.1	3.3	Full	1600	0.0	0.0
Lane 3	21	0.0	1107	0.019	100	3.4	LOS A	0.1	2.1	Short	200	0.0	NA
Approach	128	7.9		0.098		4.9	LOS A	0.4	11.8				
North: Marietta Hwy													
Lane 1	467	3.5	1058	0.442	100	8.3	LOS A	2.6	66.2	Full	1600	0.0	0.0
Lane 2[d]	552	3.6	1249	0.442	100	7.4	LOS A	2.7	69.0	Full	1600	0.0	0.0
Lane 3	146	3.8	1300	0.112	25[5]	3.7	LOS A	0.5	13.5	Short	300	0.0	NA
Approach	1165	3.6		0.442		7.3	LOS A	2.7	69.0				
West: Prominence Point Pkwy													
Lane 1	285	4.1	680	0.420	100	11.2	LOS B	2.4	61.1	Full	1600	0.0	0.0
Lane 2[d]	403	1.8	960	0.420	100	8.6	LOS A	2.6	65.3	Full	1600	0.0	0.0
Lane 3	68	1.8	811	0.084	20[6]	5.3	LOS A	0.4	11.4	Short	300	0.0	NA
Approach	756	2.7		0.420		9.3	LOS A	2.6	65.3				
Intersection	3061	3.9		0.442		7.4	LOS A	2.7	69.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From S To Exit:	W	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	281	182	-	463	2.6	1205	0.385	100	NA	NA
Lane 2	-	517	-	517	4.4	1344	0.385	100	NA	NA
Lane 3	-	-	32	32	37.5	1113	0.029	100	0.0	2
Approach	281	699	32	1013	4.6		0.385			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	87	-	-	87	10.0	888	0.098	100	NA	NA
Lane 2	-	20	-	20	7.1	624	0.032	32[5]	NA	NA
Lane 3	-	-	21	21	0.0	1107	0.019	100	0.0	2
Approach	87	20	21	128	7.9		0.098			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	449	-	467	3.5	1058	0.442	100	NA	NA
Lane 2	-	552	-	552	3.6	1249	0.442	100	NA	NA
Lane 3	-	-	146	146	3.8	1300	0.112	25[5]	0.0	2
Approach	18	1001	146	1165	3.6		0.442			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	133	42	110	285	4.1	680	0.420	100	NA	NA
Lane 2	-	-	403	403	1.8	960	0.420	100	NA	NA
Lane 3	-	-	68	68	1.8	811	0.084	20[6]	0.0	2
Approach	133	42	581	756	2.7		0.420			

	Total	%HV	Deg.Satn (v/c)
Intersection	3061	3.9	0.442

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy												

Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

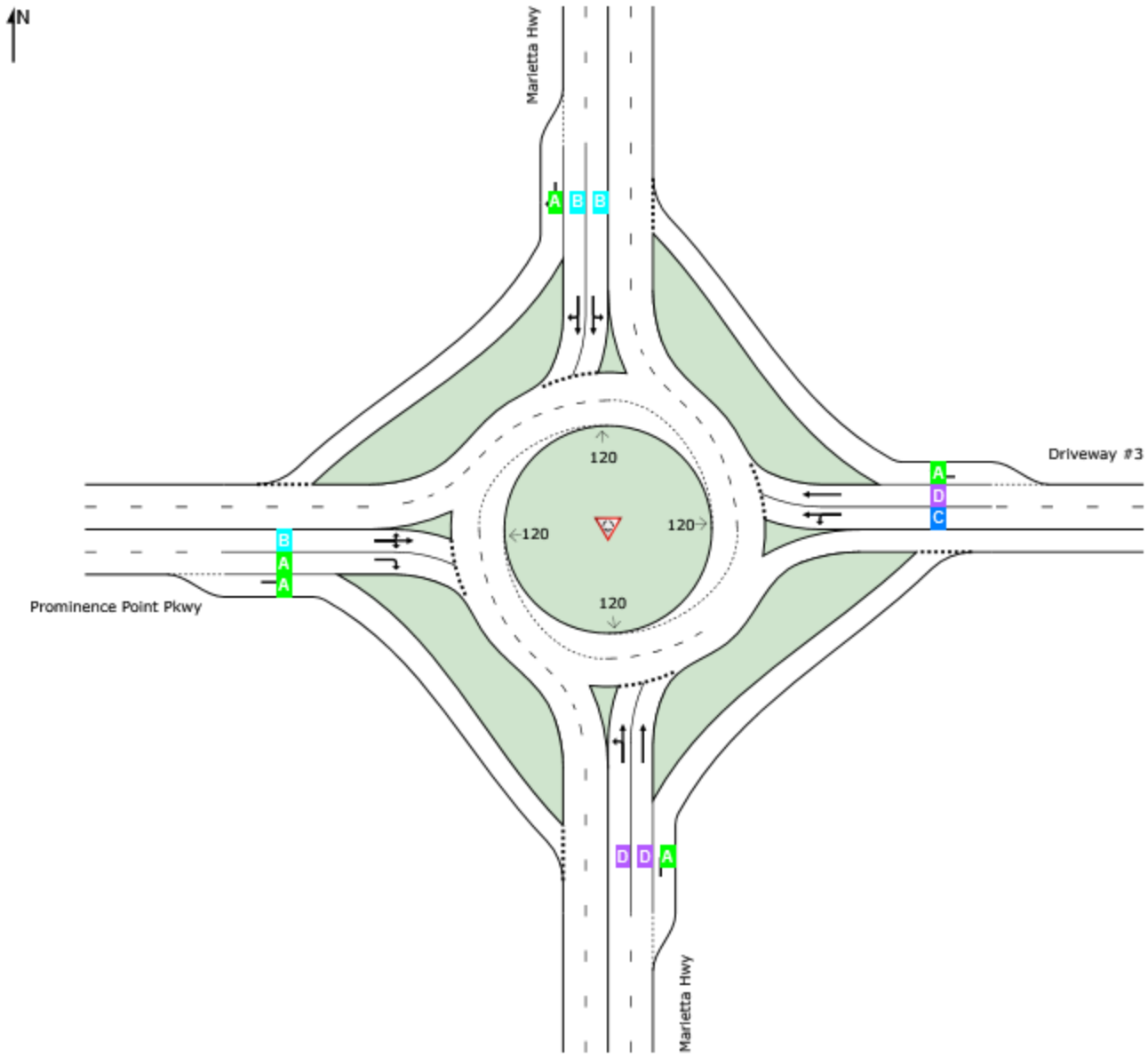
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2028 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	D	C	B	B	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2028 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	899	0.2	979	0.918	100	32.9	LOS D	29.6	740.5	Full	1600	0.0	0.0
Lane 2[d]	1066	0.7	1161	0.918	100	29.4	LOS D	32.0	805.7	Full	1600	0.0	0.0
Lane 3	100	0.0	1458	0.069	100	3.0	LOS A	0.3	8.3	Short	300	0.0	NA
Approach	2064	0.5		0.918		29.6	LOS D	32.0	805.7				
East: Driveway #3													
Lane 1[d]	200	0.0	430	0.466	100	17.8	LOS C	3.6	89.2	Full	1600	0.0	0.0
Lane 2	129	0.0	278	0.466	100	26.2	LOS D	2.9	71.5	Full	1600	0.0	0.0
Lane 3	62	0.0	586	0.106	100	7.4	LOS A	0.7	16.7	Short	200	0.0	NA
Approach	392	0.0		0.466		18.9	LOS C	3.6	89.2				
North: Marietta Hwy													
Lane 1	351	1.5	659	0.534	100	14.2	LOS B	4.4	110.5	Full	1600	0.0	0.0
Lane 2[d]	456	1.7	855	0.534	100	11.6	LOS B	4.8	122.2	Full	1600	0.0	0.0
Lane 3	301	0.5	952	0.316	59[5]	7.1	LOS A	2.1	51.6	Short	300	0.0	NA
Approach	1108	1.3		0.534		11.2	LOS B	4.8	122.2				
West: Prominence Point Pkwy													
Lane 1	413	0.4	723	0.571	100	14.3	LOS B	4.5	112.3	Full	1600	0.0	0.0
Lane 2[d]	450	0.4	947	0.476	83[5]	9.6	LOS A	3.4	85.9	Full	1600	0.0	0.0
Lane 3	83	0.4	877	0.095	17[5]	5.0	LOS A	0.5	12.5	Short	300	0.0	NA
Approach	946	0.4		0.571		11.2	LOS B	4.5	112.3				
Intersection	4511	0.6		0.918		20.3	LOS C	32.0	805.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

To Exit:	W	N	E							
Lane 1	624	274	-	899	0.2	979	0.918	100	NA	NA
Lane 2	-	1066	-	1066	0.7	1161	0.918	100	NA	NA
Lane 3	-	-	100	100	0.0	1458	0.069	100	0.0	2
Approach	624	1340	100	2064	0.5		0.918			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	188	12	-	200	0.0	430	0.466	100	NA	NA
Lane 2	-	129	-	129	0.0	278	0.466	100	NA	NA
Lane 3	-	-	62	62	0.0	586	0.106	100	0.0	2
Approach	188	141	62	392	0.0		0.466			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	51	301	-	351	1.5	659	0.534	100	NA	NA
Lane 2	-	456	-	456	1.7	855	0.534	100	NA	NA
Lane 3	-	-	301	301	0.5	952	0.316	59[5]	0.0	2
Approach	51	757	301	1108	1.3		0.534			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	305	107	-	413	0.4	723	0.571	100	NA	NA
Lane 2	-	-	450	450	0.4	947	0.476	83[5]	NA	NA
Lane 3	-	-	83	83	0.4	877	0.095	17[5]	0.0	2
Approach	305	107	534	946	0.4		0.571			

	Total	%HV	Deg.Satn (v/c)
Intersection	4511	0.6	0.918

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

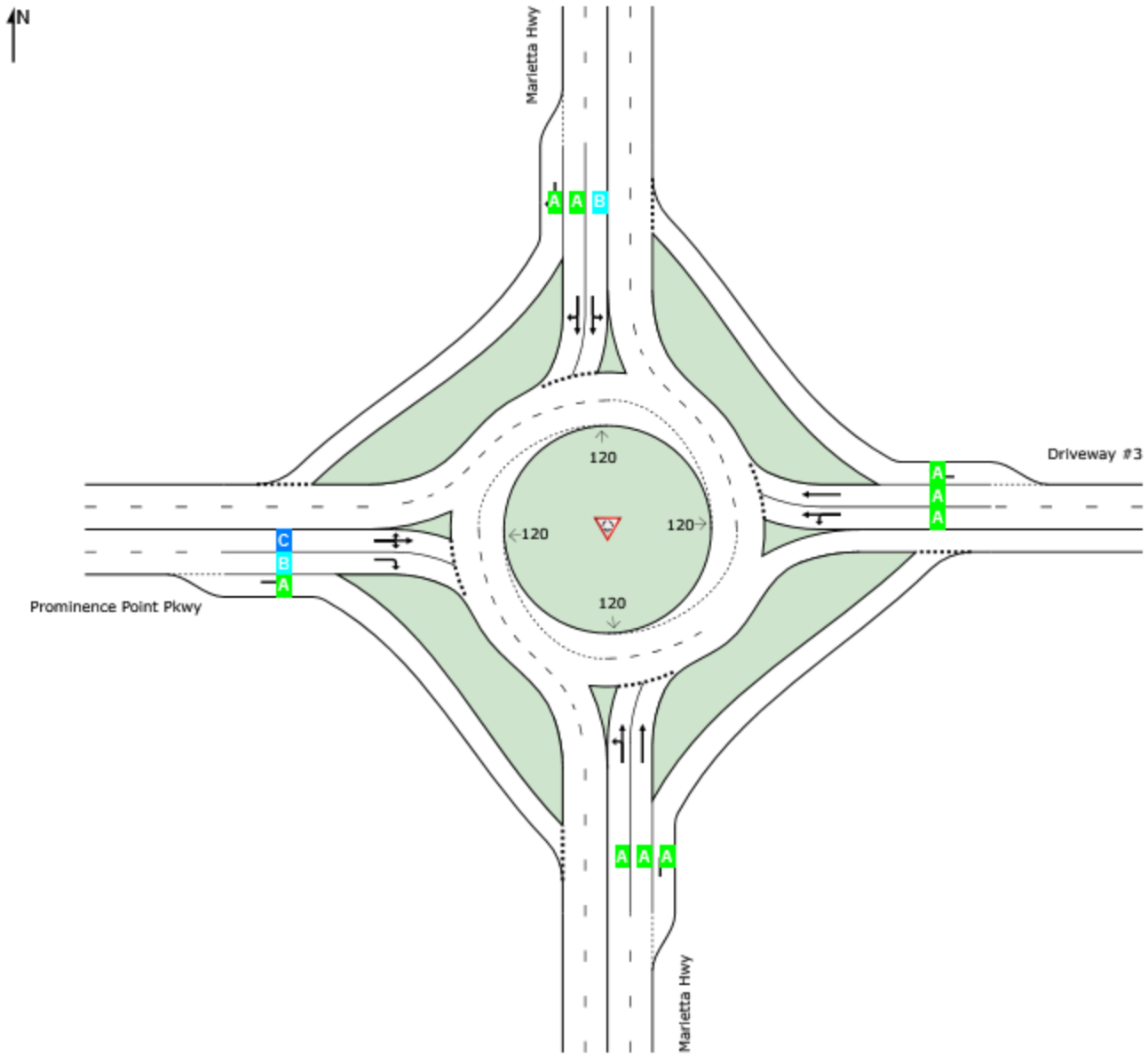
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2048 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#21-Prominence Point_2048 AM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	554	2.5	1184	0.468	100	8.0	LOS A	3.3	85.4	Full	1600	0.0	0.0
Lane 2[d]	642	4.4	1371	0.468	100	7.3	LOS A	3.5	90.4	Full	1600	0.0	0.0
Lane 3	40	37.5	1154	0.034	100	3.4	LOS A	0.2	5.0	Short	300	0.0	NA
Approach	1235	4.6		0.468		7.5	LOS A	3.5	90.4				
East: Driveway #3													
Lane 1[d]	106	10.0	859	0.124	100	5.4	LOS A	0.6	16.3	Full	1600	0.0	0.0
Lane 2	24	7.1	677	0.035	29[5]	5.7	LOS A	0.2	4.1	Full	1600	0.0	0.0
Lane 3	24	0.0	1078	0.022	100	3.5	LOS A	0.1	2.7	Short	200	0.0	NA
Approach	154	8.0		0.124		5.2	LOS A	0.6	16.3				
North: Marietta Hwy													
Lane 1	555	3.5	1018	0.546	100	10.4	LOS B	4.7	120.6	Full	1600	0.0	0.0
Lane 2[d]	688	3.6	1260	0.546	100	9.0	LOS A	4.6	118.9	Full	1600	0.0	0.0
Lane 3	178	3.8	1319	0.135	25[5]	3.8	LOS A	0.7	17.5	Short	300	0.0	NA
Approach	1421	3.6		0.546		8.9	LOS A	4.7	120.6				
West: Prominence Point Pkwy													
Lane 1	337	4.2	596	0.565	100	16.4	LOS C	4.0	102.5	Full	1600	0.0	0.0
Lane 2[d]	511	1.8	905	0.565	100	11.9	LOS B	4.7	118.6	Full	1600	0.0	0.0
Lane 3	75	1.8	667	0.113	20[6]	6.7	LOS A	0.7	18.5	Short	300	0.0	NA
Approach	923	2.7		0.565		13.1	LOS B	4.7	118.6				
Intersection	3733	3.9		0.565		9.3	LOS A	4.7	120.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From S To Exit:	W	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	343	211	-	554	2.5	1184	0.468	100	NA	NA
Lane 2	-	642	-	642	4.4	1371	0.468	100	NA	NA
Lane 3	-	-	40	40	37.5	1154	0.034	100	0.0	2
Approach	343	853	40	1235	4.6		0.468			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	106	-	-	106	10.0	859	0.124	100	NA	NA
Lane 2	-	24	-	24	7.1	677	0.035	29[5]	NA	NA
Lane 3	-	-	24	24	0.0	1078	0.022	100	0.0	2
Approach	106	24	24	154	8.0		0.124			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	22	533	-	555	3.5	1018	0.546	100	NA	NA
Lane 2	-	688	-	688	3.6	1260	0.546	100	NA	NA
Lane 3	-	-	178	178	3.8	1319	0.135	25[5]	0.0	2
Approach	22	1221	178	1421	3.6		0.546			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	163	51	123	337	4.2	596	0.565	100	NA	NA
Lane 2	-	-	511	511	1.8	905	0.565	100	NA	NA
Lane 3	-	-	75	75	1.8	667	0.113	20[6]	0.0	2
Approach	163	51	709	923	2.7		0.565			

	Total	%HV	Deg.Satn (v/c)
Intersection	3733	3.9	0.565

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy												

Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

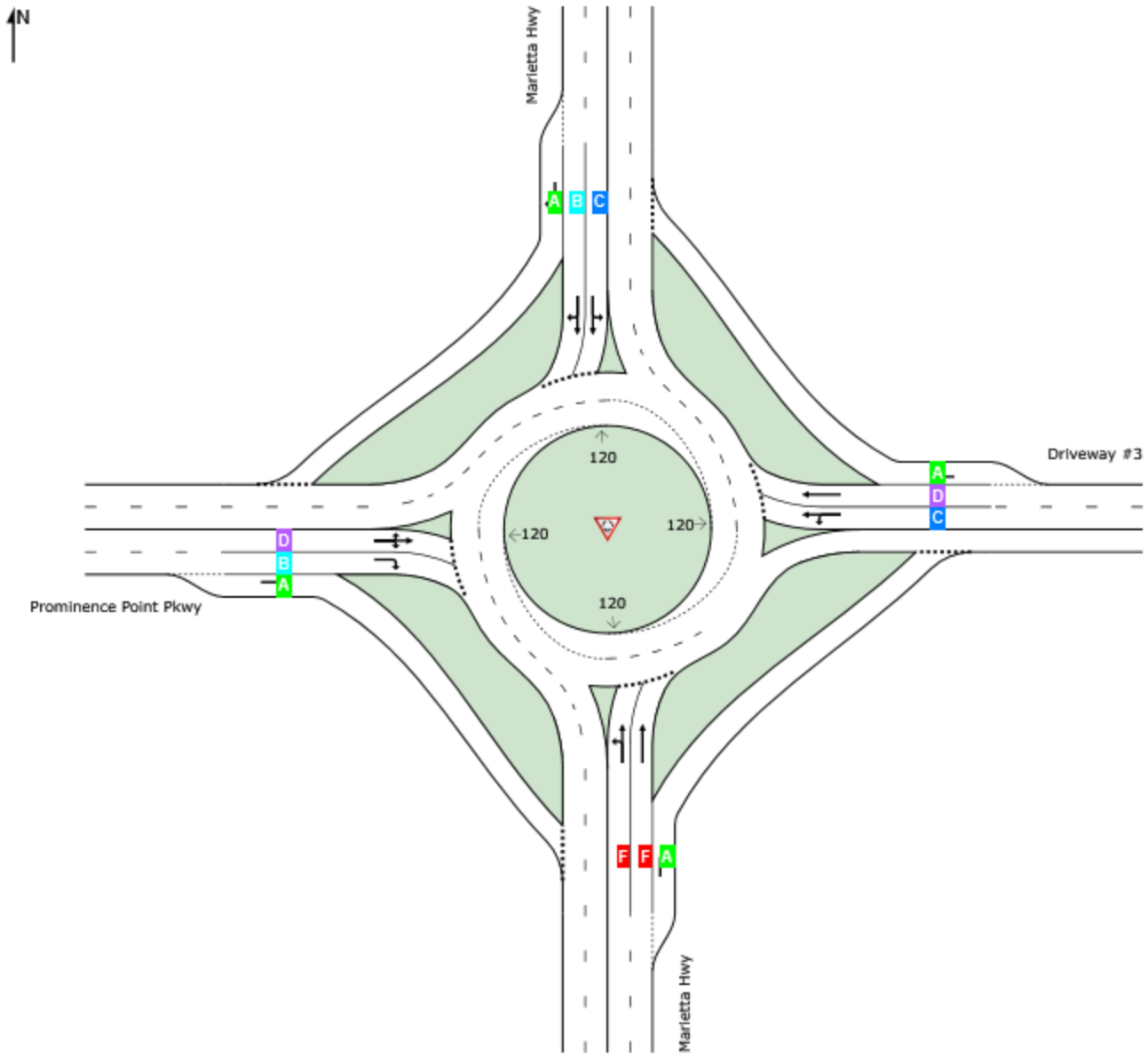
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#21-Prominence Point_2048 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	F	C	B	C	F



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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Project: G:\Shared drives\2021 Projects\210187 - Old Highway 5 Corridor Study\Operational Improvements\1_Marietta Hwy at Prominence Point Pkwy (#21)\Multilane Roundabout\#21_Build with Dev_Roundabout.sip9

LANE SUMMARY

Site: [#21-Prominence Point_2048 PM (Site Folder: General)]

Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	1068	0.2	894	1.194	100	116.3	LOS F	83.7	2097.1	Full	1600	0.0	13.6
Lane 2[d]	1329	0.7	1114	1.194	100	112.1	LOS F	99.7	2506.1	Full	1600	0.0	20.4
Lane 3	122	0.0	1499	0.081	100	3.0	LOS A	0.4	10.4	Short	300	0.0	NA
Approach	2519	0.5		1.194		108.6	LOS F	99.7	2506.1				
East: Driveway #3													
Lane 1[d]	244	0.0	421	0.580	100	22.6	LOS C	5.2	129.8	Full	1600	0.0	0.0
Lane 2	158	0.0	272	0.580	100	32.8	LOS D	4.0	98.9	Full	1600	0.0	0.0
Lane 3	75	0.0	604	0.124	100	7.4	LOS A	0.8	20.6	Short	200	0.0	NA
Approach	477	0.0		0.580		23.6	LOS C	5.2	129.8				
North: Marietta Hwy													
Lane 1	417	1.4	649	0.643	100	18.2	LOS C	6.3	158.9	Full	1600	0.0	0.0
Lane 2[d]	568	1.7	883	0.643	100	14.3	LOS B	7.2	182.9	Full	1600	0.0	0.0
Lane 3	367	0.5	996	0.369	57[5]	7.6	LOS A	2.5	62.8	Short	300	0.0	NA
Approach	1353	1.3		0.643		13.7	LOS B	7.2	182.9				
West: Prominence Point Pkwy													
Lane 1	503	0.4	630	0.799	100	28.5	LOS D	9.4	236.1	Full	1600	0.0	0.0
Lane 2[d]	552	0.4	900	0.614	77[5]	13.2	LOS B	5.8	145.0	Full	1600	0.0	0.0
Lane 3	99	0.4	808	0.123	15[5]	5.7	LOS A	0.7	18.5	Short	300	0.0	NA
Approach	1155	0.4		0.799		19.2	LOS C	9.4	236.1				
Intersection	5503	0.6		1.194		59.2	LOS F	99.7	2506.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

To Exit:	W	N	E							
Lane 1	762	306	-	1068	0.2	894	1.194	100	NA	NA
Lane 2	-	1329	-	1329	0.7	1114	1.194	100	NA	NA
Lane 3	-	-	122	122	0.0	1499	0.081	100	0.0	2
Approach	762	1635	122	2519	0.5		1.194			

East: Driveway #3

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	229	15	-	244	0.0	421	0.580	100	NA	NA
Lane 2	-	158	-	158	0.0	272	0.580	100	NA	NA
Lane 3	-	-	75	75	0.0	604	0.124	100	0.0	2
Approach	229	173	75	477	0.0		0.580			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	62	355	-	417	1.4	649	0.643	100	NA	NA
Lane 2	-	568	-	568	1.7	883	0.643	100	NA	NA
Lane 3	-	-	367	367	0.5	996	0.369	57[5]	0.0	2
Approach	62	923	367	1353	1.3		0.643			

West: Prominence Point Pkwy

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	373	131	-	503	0.4	630	0.799	100	NA	NA
Lane 2	-	-	552	552	0.4	900	0.614	77[5]	NA	NA
Lane 3	-	-	99	99	0.4	808	0.123	15[5]	0.0	2
Approach	373	131	652	1155	0.4		0.799			

	Total	%HV	Deg.Satn (v/c)
Intersection	5503	0.6	1.194

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Driveway #3 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

Full Length Lane	2	Merge Analysis not applied.
West Exit: Prominence Point Pkwy Merge Type: **Not Applied**		
Full Length Lane	1	Merge Analysis not applied.
Full Length Lane	2	Merge Analysis not applied.

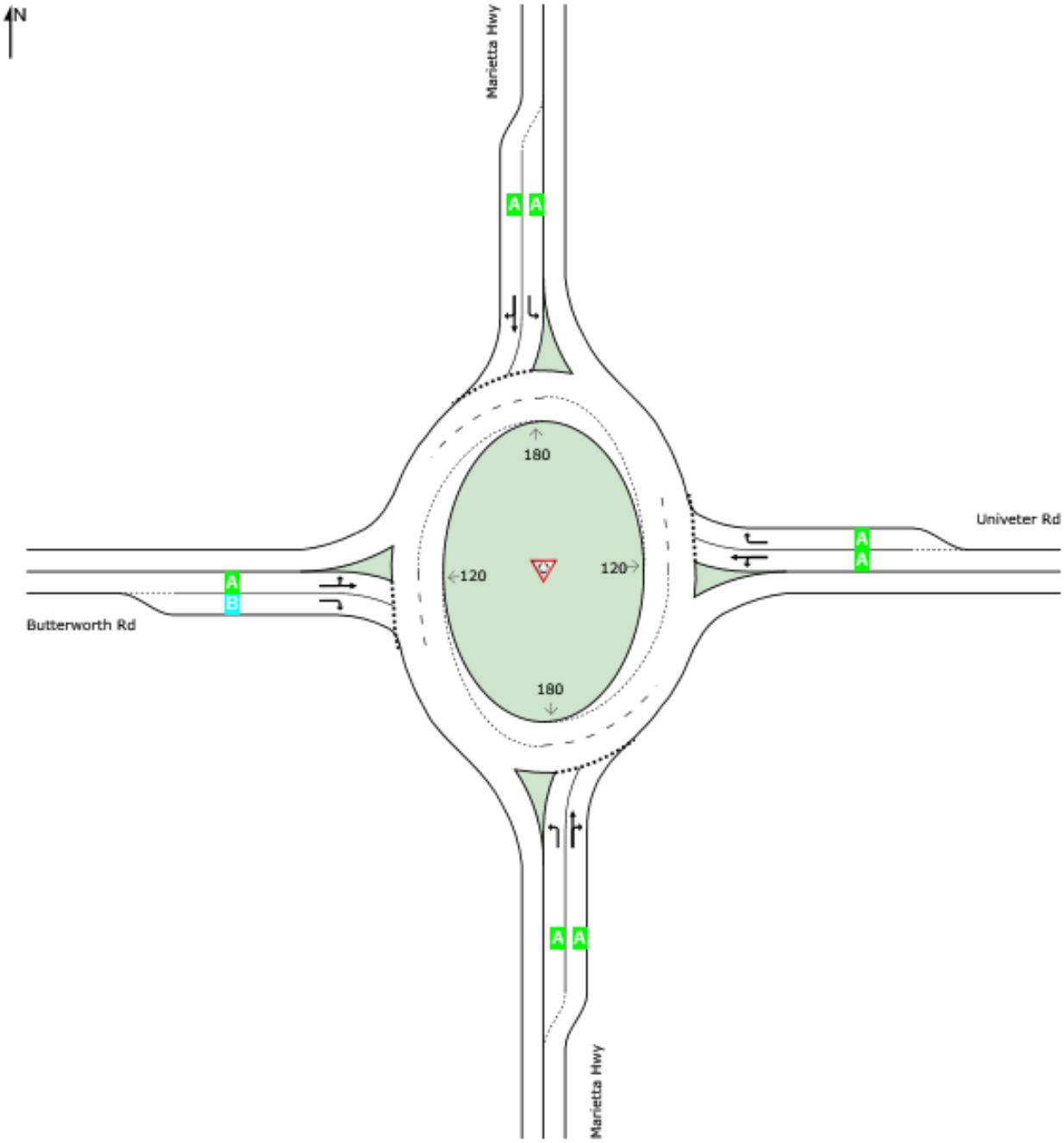
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	234	6.5	771	0.303	100	8.2	LOS A	1.6	42.1	Short	400	0.0	NA
Lane 2[d]	497	4.2	1027	0.484	100	9.2	LOS A	3.5	90.4	Full	1600	0.0	0.0
Approach	731	5.0		0.484		8.9	LOS A	3.5	90.4				
East: Univeter Rd													
Lane 1[d]	318	4.4	868	0.366	100	8.4	LOS A	1.9	48.0	Full	1600	0.0	0.0
Lane 2	191	9.2	673	0.283	100	8.9	LOS A	1.3	34.4	Short	300	0.0	NA
Approach	508	6.2		0.366		8.6	LOS A	1.9	48.0				
North: Marietta Hwy													
Lane 1	219	6.4	795	0.275	100	7.6	LOS A	1.5	39.6	Short	450	0.0	NA
Lane 2[d]	292	5.5	945	0.309	100	7.1	LOS A	1.8	47.9	Full	1600	0.0	0.0
Approach	511	5.9		0.309		7.3	LOS A	1.8	47.9				
West: Butterworth Rd													
Lane 1	255	1.4	729	0.349	100	9.3	LOS A	1.7	42.8	Full	1600	0.0	0.0
Lane 2[d]	423	2.8	867	0.488	100	10.5	LOS B	3.4	87.0	Short	200	0.0	NA
Approach	678	2.3		0.488		10.1	LOS B	3.4	87.0				
Intersection	2427	4.7		0.488		8.8	LOS A	3.5	90.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	234	-	-	234	6.5	771	0.303	100	0.0	2
Lane 2	-	334	163	497	4.2	1027	0.484	100	NA	NA
Approach	234	334	163	731	5.0		0.484			

East: Univeter Rd										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	146	172	-	318	4.4	868	0.366	100	NA	NA
Lane 2	-	-	191	191	9.2	673	0.283	100	0.0	1
Approach	146	172	191	508	6.2		0.366			

North: Marietta Hwy										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	219	-	-	219	6.4	795	0.275	100	0.0	2
Lane 2	-	278	14	292	5.5	945	0.309	100	NA	NA
Approach	219	278	14	511	5.9		0.309			

West: Butterworth Rd										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	231	-	255	1.4	729	0.349	100	NA	NA
Lane 2	-	-	423	423	2.8	867	0.488	100	0.0	1
Approach	24	231	423	678	2.3		0.488			

	Total	%HV	Deg.Satn (v/c)
Intersection	2427	4.7	0.488

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

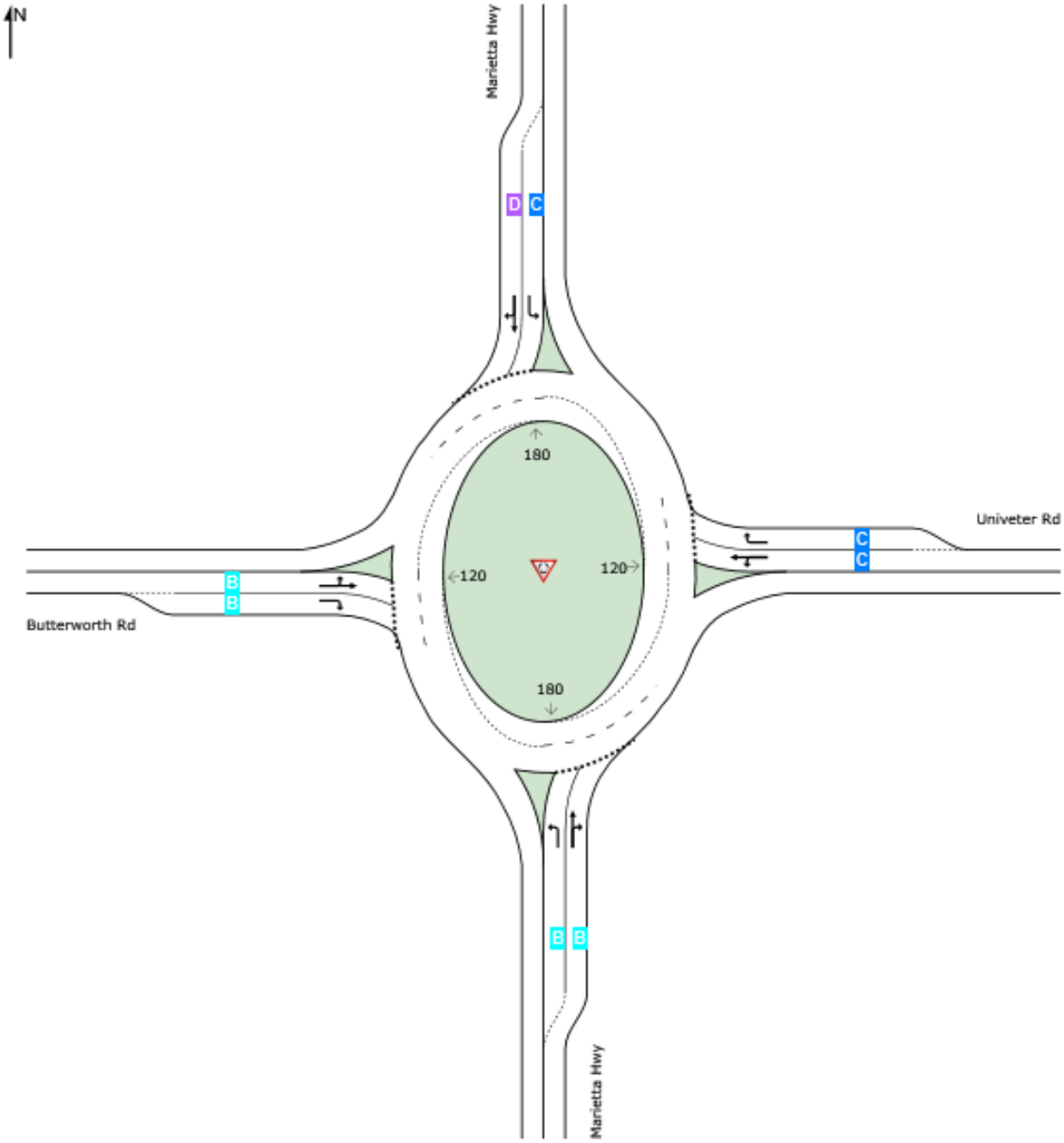
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	C	D	B	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	622	1.4	936	0.665	100	14.5	LOS B	8.5	214.9	Short	400	0.0	NA
Lane 2[d]	641	2.6	1027	0.624	100	12.3	LOS B	7.2	184.2	Full	1600	0.0	0.0
Approach	1263	2.0		0.665		13.3	LOS B	8.5	214.9				
East: Univeter Rd													
Lane 1[d]	429	1.9	634	0.678	100	20.2	LOS C	6.2	156.8	Full	1600	0.0	0.0
Lane 2	200	1.8	461	0.434	100	15.9	LOS C	2.4	61.4	Short	300	0.0	NA
Approach	629	1.9		0.678		18.8	LOS C	6.2	156.8				
North: Marietta Hwy													
Lane 1	219	2.7	429	0.511	100	19.4	LOS C	4.1	104.9	Short	450	0.0	NA
Lane 2[d]	458	1.3	585	0.782	100	28.7	LOS D	11.7	295.4	Full	1600	0.0	0.0
Approach	677	1.8		0.782		25.7	LOS D	11.7	295.4				
West: Butterworth Rd													
Lane 1	268	2.2	665	0.404	100	11.1	LOS B	2.4	61.6	Full	1600	0.0	0.0
Lane 2[d]	306	2.7	740	0.414	100	10.3	LOS B	2.6	66.4	Short	200	0.0	NA
Approach	575	2.4		0.414		10.7	LOS B	2.6	66.4				
Intersection	3144	2.0		0.782		16.6	LOS C	11.7	295.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	622	-	-	622	1.4	936	0.665	100	0.0	2
Lane 2	-	495	146	641	2.6	1027	0.624	100	NA	NA
Approach	622	495	146	1263	2.0		0.665			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	145	284	-	429	1.9	634	0.678	100	NA	NA
Lane 2	-	-	200	200	1.8	461	0.434	100	0.0	1
Approach	145	284	200	629	1.9		0.678			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	219	-	-	219	2.7	429	0.511	100	0.0	2
Lane 2	-	435	23	458	1.3	585	0.782	100	NA	NA
Approach	219	435	23	677	1.8		0.782			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	247	-	268	2.2	665	0.404	100	NA	NA
Lane 2	-	-	306	306	2.7	740	0.414	100	0.0	1
Approach	21	247	306	575	2.4		0.414			

	Total	%HV	Deg.Satn (v/c)
Intersection	3144	2.0	0.782

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

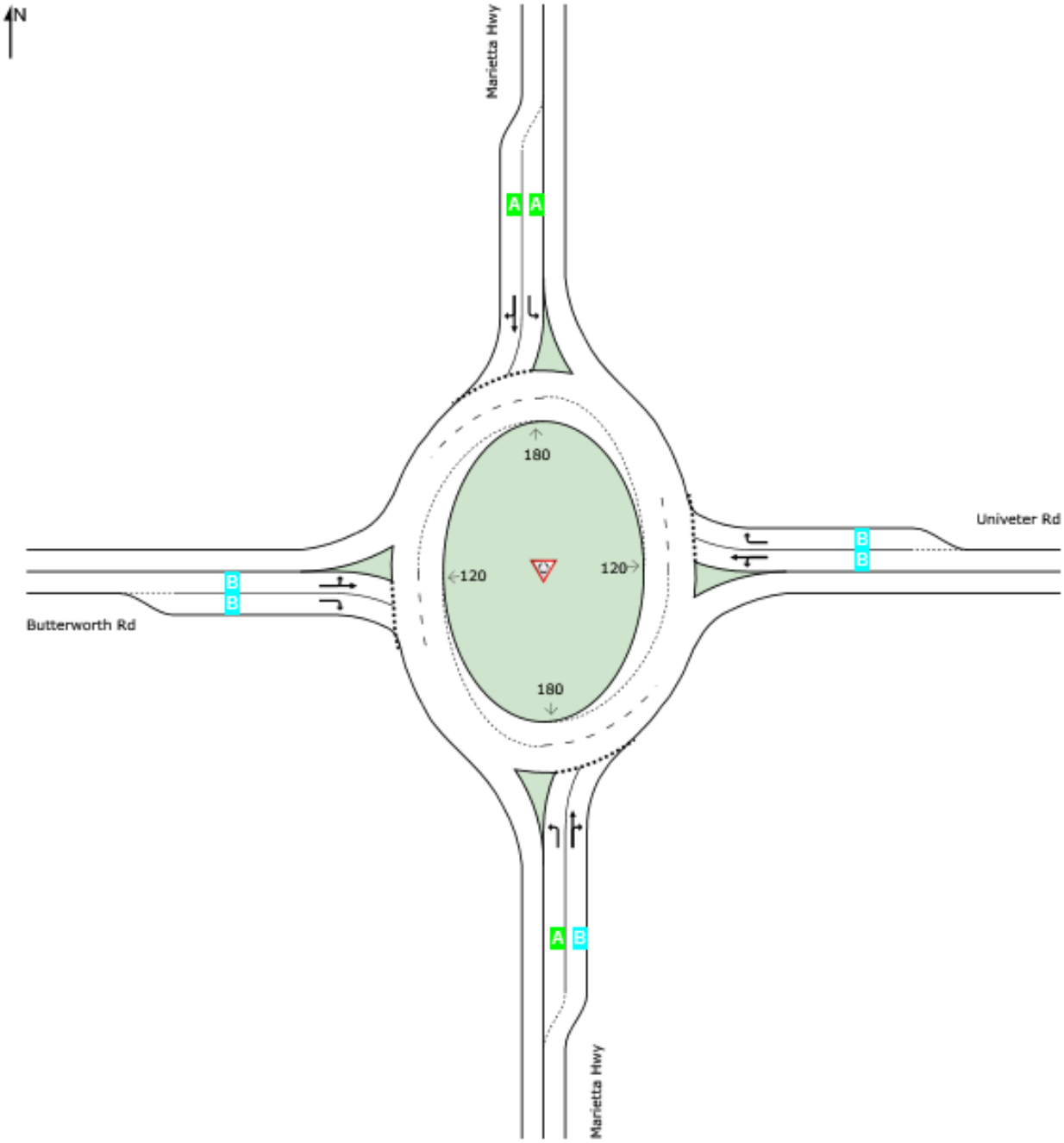
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	285	6.5	743	0.384	100	9.8	LOS A	2.2	58.7	Short	400	0.0	NA
Lane 2[d]	606	4.2	1004	0.604	100	11.9	LOS B	6.6	171.2	Full	1600	0.0	0.0
Approach	892	5.0		0.604		11.2	LOS B	6.6	171.2				
East: Univeter Rd													
Lane 1[d]	387	4.4	845	0.458	100	10.1	LOS B	3.0	78.8	Full	1600	0.0	0.0
Lane 2	233	9.2	634	0.367	100	10.8	LOS B	1.9	51.1	Short	300	0.0	NA
Approach	620	6.2		0.458		10.4	LOS B	3.0	78.8				
North: Marietta Hwy													
Lane 1	267	6.4	726	0.368	100	9.7	LOS A	2.2	59.0	Short	450	0.0	NA
Lane 2[d]	356	5.6	900	0.395	100	8.6	LOS A	2.7	69.8	Full	1600	0.0	0.0
Approach	623	5.9		0.395		9.1	LOS A	2.7	69.8				
West: Butterworth Rd													
Lane 1	311	1.4	684	0.454	100	11.9	LOS B	2.9	72.2	Full	1600	0.0	0.0
Lane 2[d]	517	2.8	841	0.615	100	14.0	LOS B	5.7	145.5	Short	200	0.0	NA
Approach	827	2.3		0.615		13.2	LOS B	5.7	145.5				
Intersection	2962	4.7		0.615		11.1	LOS B	6.6	171.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	285	-	-	285	6.5	743	0.384	100	0.0	2
Lane 2	-	407	199	606	4.2	1004	0.604	100	NA	NA
Approach	285	407	199	892	5.0		0.604			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	178	209	-	387	4.4	845	0.458	100	NA	NA
Lane 2	-	-	233	233	9.2	634	0.367	100	0.0	1
Approach	178	209	233	620	6.2		0.458			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	267	-	-	267	6.4	726	0.368	100	0.0	2
Lane 2	-	339	17	356	5.6	900	0.395	100	NA	NA
Approach	267	339	17	623	5.9		0.395			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	281	-	311	1.4	684	0.454	100	NA	NA
Lane 2	-	-	517	517	2.8	841	0.615	100	0.0	1
Approach	29	281	517	827	2.3		0.615			

	Total	%HV	Deg.Satn (v/c)
Intersection	2962	4.7	0.615

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

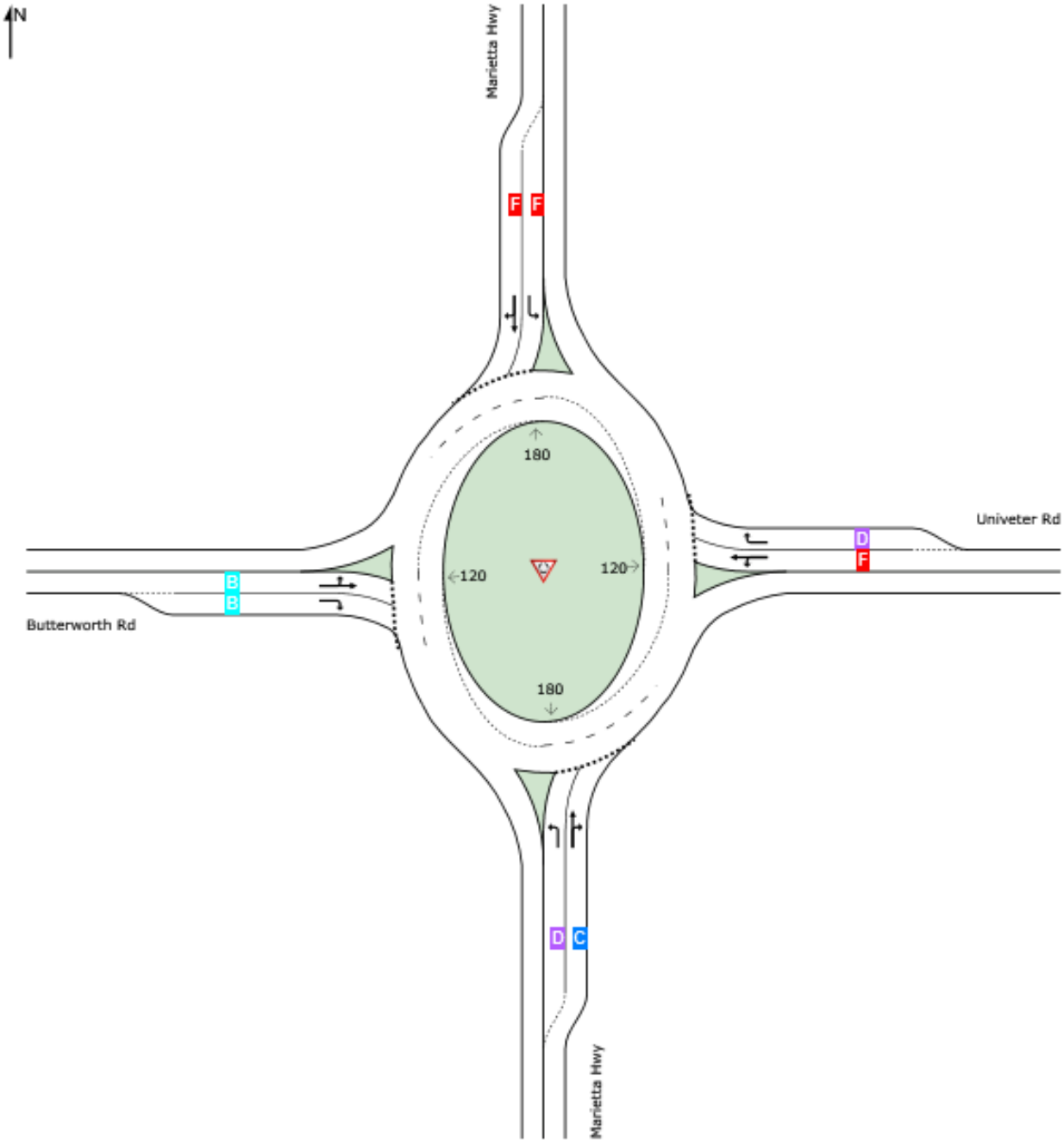
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	F	F	B	F



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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Project: G:\Shared drives\2021 Projects\210187 - Old Highway 5 Corridor Study\Operational Improvements\2_Marietta Hwy at Butterworth-Univeter (#23)\Single Lane Roundabout\#23_Build without Dev_Single Lane Roundabout.sip9

LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	759	1.4	869	0.873	100	29.4	LOS D	20.5	518.7	Short	400	0.0	NA
Lane 2[d]	783	2.6	1002	0.782	100	19.0	LOS C	14.4	367.0	Full	1600	0.0	0.0
Approach	1542	2.0		0.873		24.1	LOS C	20.5	518.7				
East: Univeter Rd													
Lane 1[d]	524	1.9	531	0.988	100	64.0	LOS F	20.6	521.7	Full	1600	0.0	0.0
Lane 2	244	1.8	379	0.644	100	28.5	LOS D	4.7	119.7	Short	300	0.0	NA
Approach	768	1.9		0.988		52.7	LOS F	20.6	521.7				
North: Marietta Hwy													
Lane 1	267	2.7	296	0.904	100	68.8	LOS F	13.6	348.4	Short	450	0.0	NA
Lane 2[d]	559	1.3	411	1.361	100	204.2	LOS F	66.0	1667.9	Full	1600	0.0	6.2
Approach	826	1.8		1.361		160.4	LOS F	66.0	1667.9				
West: Butterworth Rd													
Lane 1	327	2.1	671	0.488	100	12.8	LOS B	3.4	86.1	Full	1600	0.0	0.0
Lane 2[d]	374	2.7	777	0.481	100	11.3	LOS B	3.4	88.0	Short	200	0.0	NA
Approach	701	2.4		0.488		12.0	LOS B	3.4	88.0				
Intersection	3838	2.0		1.361		57.0	LOS F	66.0	1667.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	759	-	-	759	1.4	869	0.873	100	13.3	2
Lane 2	-	604	179	783	2.6	1002	0.782	100	NA	NA
Approach	759	604	179	1542	2.0		0.873			

East: Univeter Rd										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	177	347	-	524	1.9	531	0.988	100	NA	NA
Lane 2	-	-	244	244	1.8	379	0.644	100	0.0	1
Approach	177	347	244	768	1.9		0.988			

North: Marietta Hwy										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	267	-	-	267	2.7	296	0.904	100	0.0	2
Lane 2	-	531	28	559	1.3	411	1.361	100	NA	NA
Approach	267	531	28	826	1.8		1.361			

West: Butterworth Rd										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	302	-	327	2.1	671	0.488	100	NA	NA
Lane 2	-	-	374	374	2.7	777	0.481	100	0.0	1
Approach	25	302	374	701	2.4		0.488			

	Total	%HV	Deg.Satn (v/c)
Intersection	3838	2.0	1.361

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

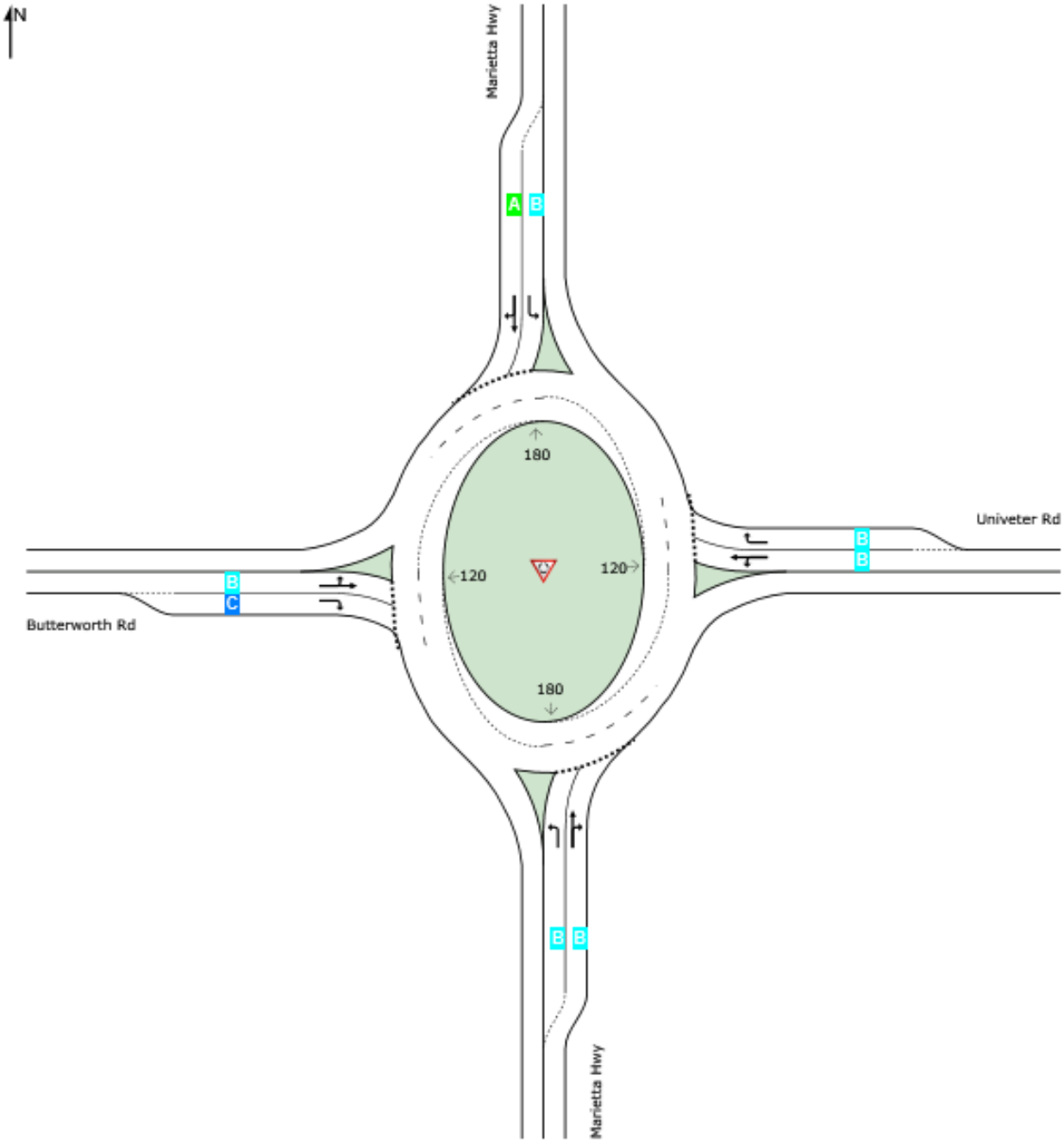
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	280	6.5	703	0.398	100	10.5	LOS B	2.4	62.7	Short	400	0.0	NA
Lane 2[d]	597	4.2	946	0.631	100	13.2	LOS B	7.3	189.3	Full	1600	0.0	0.0
Approach	877	5.0		0.631		12.4	LOS B	7.3	189.3				
East: Univeter Rd													
Lane 1[d]	382	4.4	789	0.484	100	11.2	LOS B	3.4	86.8	Full	1600	0.0	0.0
Lane 2	228	9.2	602	0.380	100	11.5	LOS B	2.0	53.9	Short	300	0.0	NA
Approach	611	6.2		0.484		11.3	LOS B	3.4	86.8				
North: Marietta Hwy													
Lane 1	263	6.4	703	0.375	100	10.1	LOS B	2.3	59.3	Short	450	0.0	NA
Lane 2[d]	351	5.6	847	0.414	100	9.3	LOS A	2.8	73.5	Full	1600	0.0	0.0
Approach	614	5.9		0.414		9.6	LOS A	2.8	73.5				
West: Butterworth Rd													
Lane 1	306	1.4	652	0.470	100	12.7	LOS B	3.0	76.0	Full	1600	0.0	0.0
Lane 2[d]	508	2.8	786	0.647	100	15.8	LOS C	6.3	160.3	Short	200	0.0	NA
Approach	815	2.3		0.647		14.6	LOS B	6.3	160.3				
Intersection	2916	4.7		0.647		12.2	LOS B	7.3	189.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	280	-	-	280	6.5	703	0.398	100	0.0	2
Lane 2	-	401	196	597	4.2	946	0.631	100	NA	NA
Approach	280	401	196	877	5.0		0.631			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	176	206	-	382	4.4	789	0.484	100	NA	NA
Lane 2	-	-	228	228	9.2	602	0.380	100	0.0	1
Approach	176	206	228	611	6.2		0.484			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	263	-	-	263	6.4	703	0.375	100	0.0	2
Lane 2	-	334	17	351	5.6	847	0.414	100	NA	NA
Approach	263	334	17	614	5.9		0.414			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	277	-	306	1.4	652	0.470	100	NA	NA
Lane 2	-	-	508	508	2.8	786	0.647	100	0.0	1
Approach	29	277	508	815	2.3		0.647			

	Total	%HV	Deg.Satn (v/c)
Intersection	2916	4.7	0.647

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

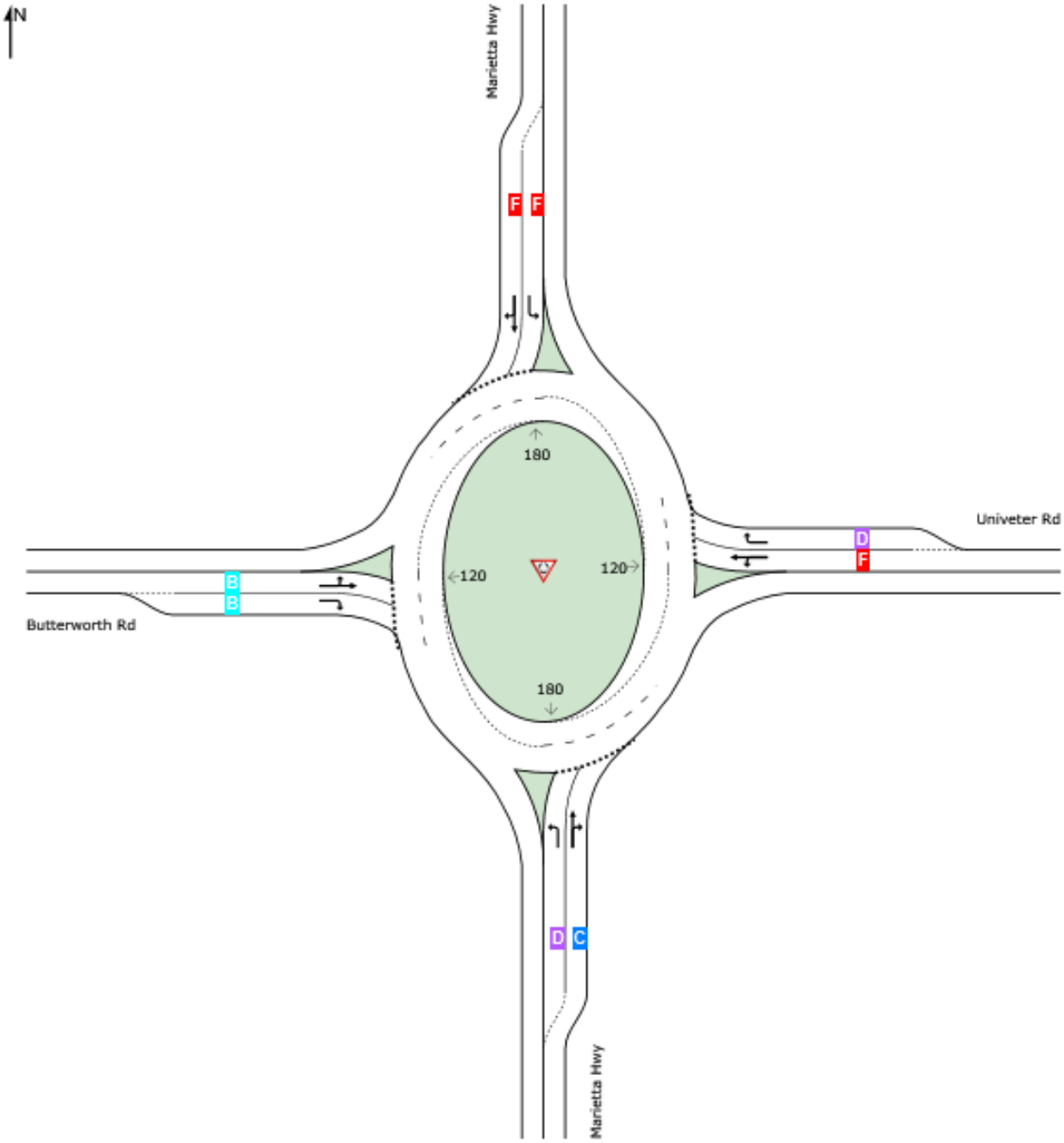
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	D	F	F	B	F



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	746	1.4	850	0.878	100	30.5	LOS D	20.8	526.9	Short	400	0.0	NA
Lane 2[d]	771	2.6	946	0.815	100	22.2	LOS C	16.3	416.7	Full	1600	0.0	0.0
Approach	1517	2.0		0.878		26.3	LOS D	20.8	526.9				
East: Univeter Rd													
Lane 1[d]	516	1.9	490	1.052	100	84.3	LOS F	26.1	663.4	Full	1600	0.0	0.0
Lane 2	240	1.8	351	0.683	100	33.2	LOS D	5.1	130.0	Short	300	0.0	NA
Approach	756	1.9		1.052		68.1	LOS F	26.1	663.4				
North: Marietta Hwy													
Lane 1	263	2.7	294	0.895	100	67.2	LOS F	12.9	328.2	Short	450	0.0	NA
Lane 2[d]	549	1.3	405	1.356	100	202.9	LOS F	64.0	1617.5	Full	1600	0.0	5.3
Approach	813	1.7		1.356		158.9	LOS F	64.0	1617.5				
West: Butterworth Rd													
Lane 1	322	2.2	657	0.491	100	13.1	LOS B	3.4	86.2	Full	1600	0.0	0.0
Lane 2[d]	367	2.7	733	0.502	100	12.2	LOS B	3.7	93.5	Short	200	0.0	NA
Approach	689	2.4		0.502		12.6	LOS B	3.7	93.5				
Intersection	3775	2.0		1.356		60.7	LOS F	64.0	1617.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	746	-	-	746	1.4	850	0.878	100	13.8	2
Lane 2	-	595	176	771	2.6	946	0.815	100	NA	NA
Approach	746	595	176	1517	2.0		0.878			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	175	341	-	516	1.9	490	1.052	100	NA	NA
Lane 2	-	-	240	240	1.8	351	0.683	100	0.0	1
Approach	175	341	240	756	1.9		1.052			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	263	-	-	263	2.7	294	0.895	100	0.0	2
Lane 2	-	522	27	549	1.3	405	1.356	100	NA	NA
Approach	263	522	27	813	1.7		1.356			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	297	-	322	2.2	657	0.491	100	NA	NA
Lane 2	-	-	367	367	2.7	733	0.502	100	0.0	1
Approach	25	297	367	689	2.4		0.502			

	Total	%HV	Deg.Satn (v/c)
Intersection	3775	2.0	1.356

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

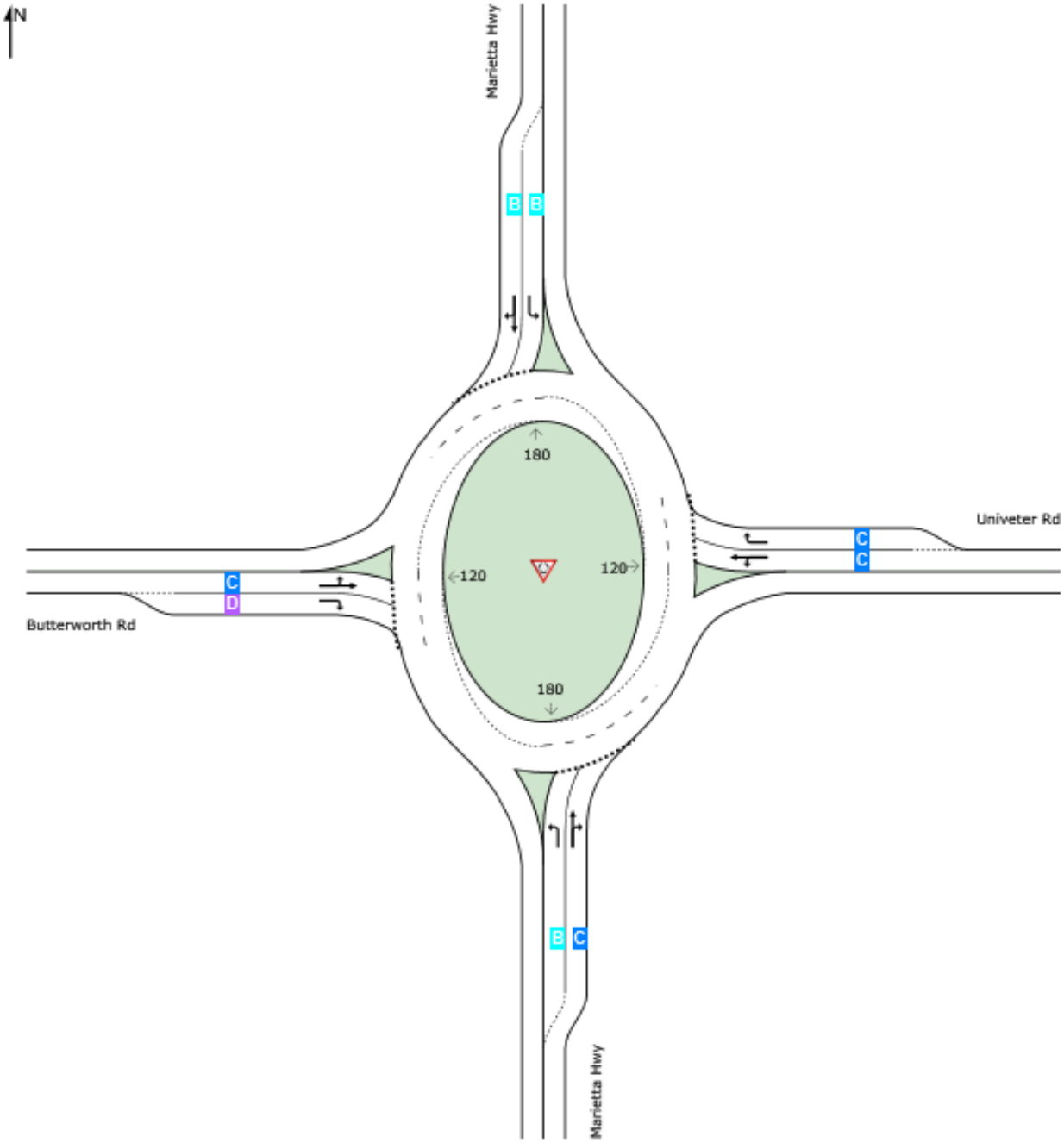
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	C	B	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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Project: G:\Shared drives\2021 Projects\210187 - Old Highway 5 Corridor Study\Operational Improvements\2_Marietta Hwy at Butterworth-Univeter (#23)\Single Lane Roundabout\#23_Build with Dev_Single Lane Roundabout.sip9

LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	341	6.5	656	0.520	100	13.9	LOS B	4.3	113.1	Short	400	0.0	NA
Lane 2[d]	728	4.2	896	0.813	100	22.9	LOS C	15.6	402.1	Full	1600	0.0	0.0
Approach	1069	4.9		0.813		20.0	LOS C	15.6	402.1				
East: Univeter Rd													
Lane 1[d]	465	4.4	742	0.627	100	15.8	LOS C	5.8	150.9	Full	1600	0.0	0.0
Lane 2	279	9.2	546	0.511	100	15.9	LOS C	3.4	92.5	Short	300	0.0	NA
Approach	744	6.2		0.627		15.8	LOS C	5.8	150.9				
North: Marietta Hwy													
Lane 1	321	6.4	610	0.526	100	15.0	LOS B	4.5	119.4	Short	450	0.0	NA
Lane 2[d]	428	5.6	770	0.556	100	13.2	LOS B	5.6	145.1	Full	1600	0.0	0.0
Approach	749	5.9		0.556		13.9	LOS B	5.6	145.1				
West: Butterworth Rd													
Lane 1	374	1.4	590	0.634	100	19.3	LOS C	5.4	136.4	Full	1600	0.0	0.0
Lane 2[d]	620	2.8	737	0.842	100	29.4	LOS D	13.1	334.0	Short	200	0.0	NA
Approach	994	2.3		0.842		25.6	LOS D	13.1	334.0				
Intersection	3557	4.7		0.842		19.4	LOS C	15.6	402.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	341	-	-	341	6.5	656	0.520	100	0.0	2
Lane 2	-	489	239	728	4.2	896	0.813	100	NA	NA
Approach	341	489	239	1069	4.9		0.813			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	214	252	-	465	4.4	742	0.627	100	NA	NA
Lane 2	-	-	279	279	9.2	546	0.511	100	0.0	1
Approach	214	252	279	744	6.2		0.627			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	321	-	-	321	6.4	610	0.526	100	0.0	2
Lane 2	-	407	21	428	5.6	770	0.556	100	NA	NA
Approach	321	407	21	749	5.9		0.556			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	338	-	374	1.4	590	0.634	100	NA	NA
Lane 2	-	-	620	620	2.8	737	0.842	100	23.1	1
Approach	36	338	620	994	2.3		0.842			

	Total	%HV	Deg.Satn (v/c)
Intersection	3557	4.7	0.842

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Univeter Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Marietta Hwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Butterworth Rd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

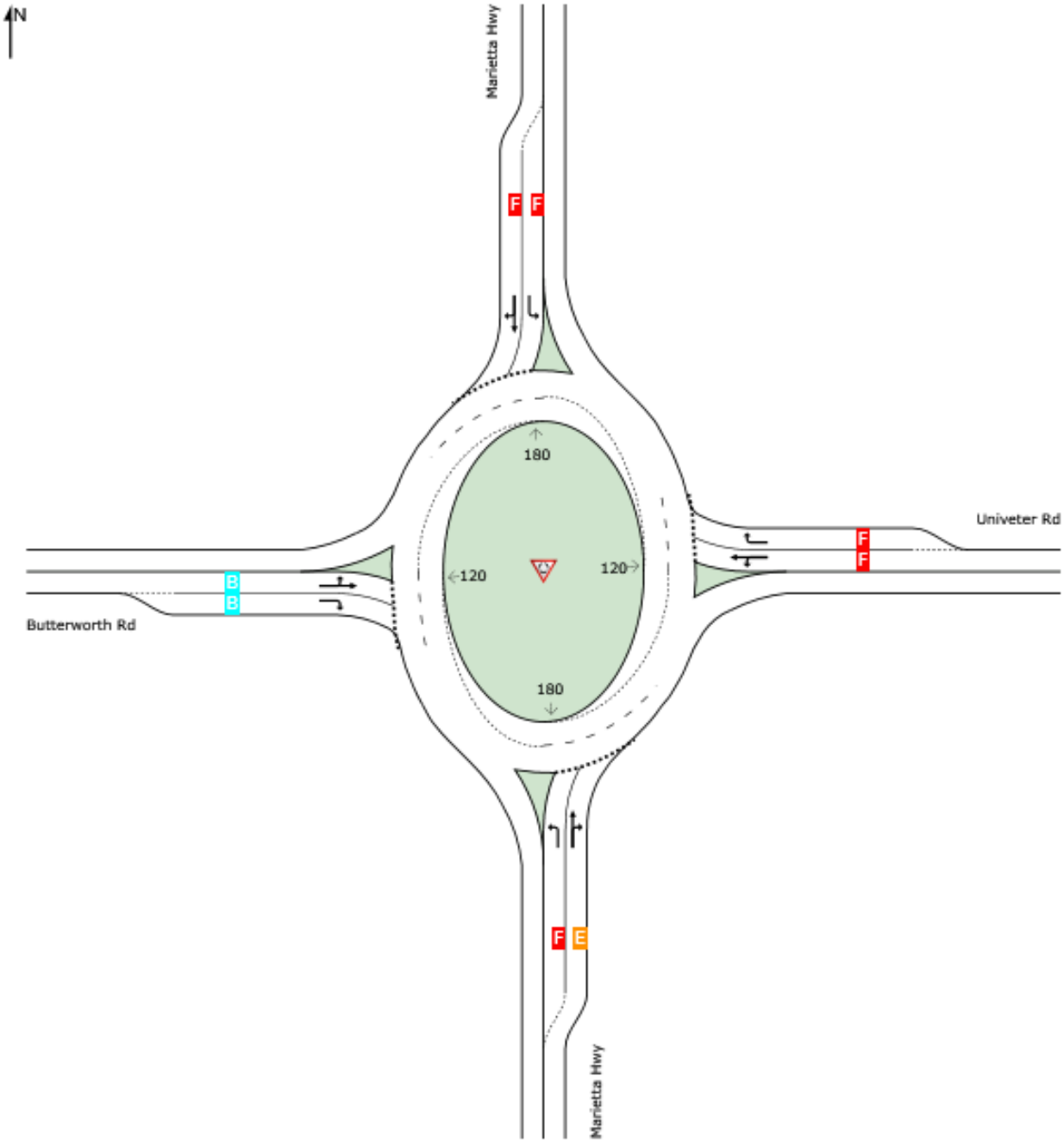
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	F	F	F	B	F



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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Project: G:\Shared drives\2021 Projects\210187 - Old Highway 5 Corridor Study\Operational Improvements\2_Marietta Hwy at Butterworth-Univeter (#23)\Single Lane Roundabout\#23_Build with Dev_Single Lane Roundabout.sip9

LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	911	1.4	814	1.119	100	90.4	LOS F	58.5	1479.0	Short	400	0.0	NA
Lane 2[d]	940	2.6	947	0.993	100	48.3	LOS E	38.4	979.5	Full	1600	0.0	2.7[8]
Approach	1851	2.0		1.119		69.0	LOS F	58.5	1479.0				
East: Univeter Rd													
Lane 1[d]	628	1.9	459	1.369	100	204.3	LOS F	66.6	1688.9	Full	1600	0.0	6.6
Lane 2	293	1.8	323	0.905	100	65.0	LOS F	10.4	262.8	Short	300	0.0	NA
Approach	921	1.9		1.369		160.1	LOS F	66.6	1688.9				
North: Marietta Hwy													
Lane 1	321	2.7	281	1.144	100	137.7	LOS F	28.7	733.2	Short	450	0.0	NA
Lane 2[d]	671	1.3	390	1.719	100	358.6	LOS F	108.6	2743.0	Full	1600	0.0	24.3
Approach	992	1.8		1.719		287.1	LOS F	108.6	2743.0				
West: Butterworth Rd													
Lane 1	393	2.2	714	0.550	100	13.8	LOS B	4.4	112.1	Full	1600	0.0	0.0
Lane 2[d]	448	2.7	819	0.548	100	12.3	LOS B	4.6	116.8	Short	200	0.0	NA
Approach	841	2.4		0.550		13.0	LOS B	4.6	116.8				
Intersection	4604	2.0		1.719		124.0	LOS F	108.6	2743.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	911	-	-	911	1.4	814	1.119	100	100.0	2
Lane 2	-	725	215	940	2.6	947	0.993	100	NA	NA

Approach	911	725	215	1851	2.0		1.119			
East: Univeter Rd										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	213	416	-	628	1.9	459	1.369	100	NA	NA
Lane 2	-	-	293	293	1.8	323	0.905	100	1.2	1
Approach	213	416	293	921	1.9		1.369			
North: Marietta Hwy										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	321	-	-	321	2.7	281	1.144	100	22.1	2
Lane 2	-	637	34	671	1.3	390	1.719	100	NA	NA
Approach	321	637	34	992	1.8		1.719			
West: Butterworth Rd										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	31	362	-	393	2.2	714	0.550	100	NA	NA
Lane 2	-	-	448	448	2.7	819	0.548	100	0.0	1
Approach	31	362	448	841	2.4		0.550			
	Total	%HV	Deg.Satn (v/c)							
Intersection	4604	2.0		1.719						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: Univeter Rd Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
North Exit: Marietta Hwy Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Butterworth Rd Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									

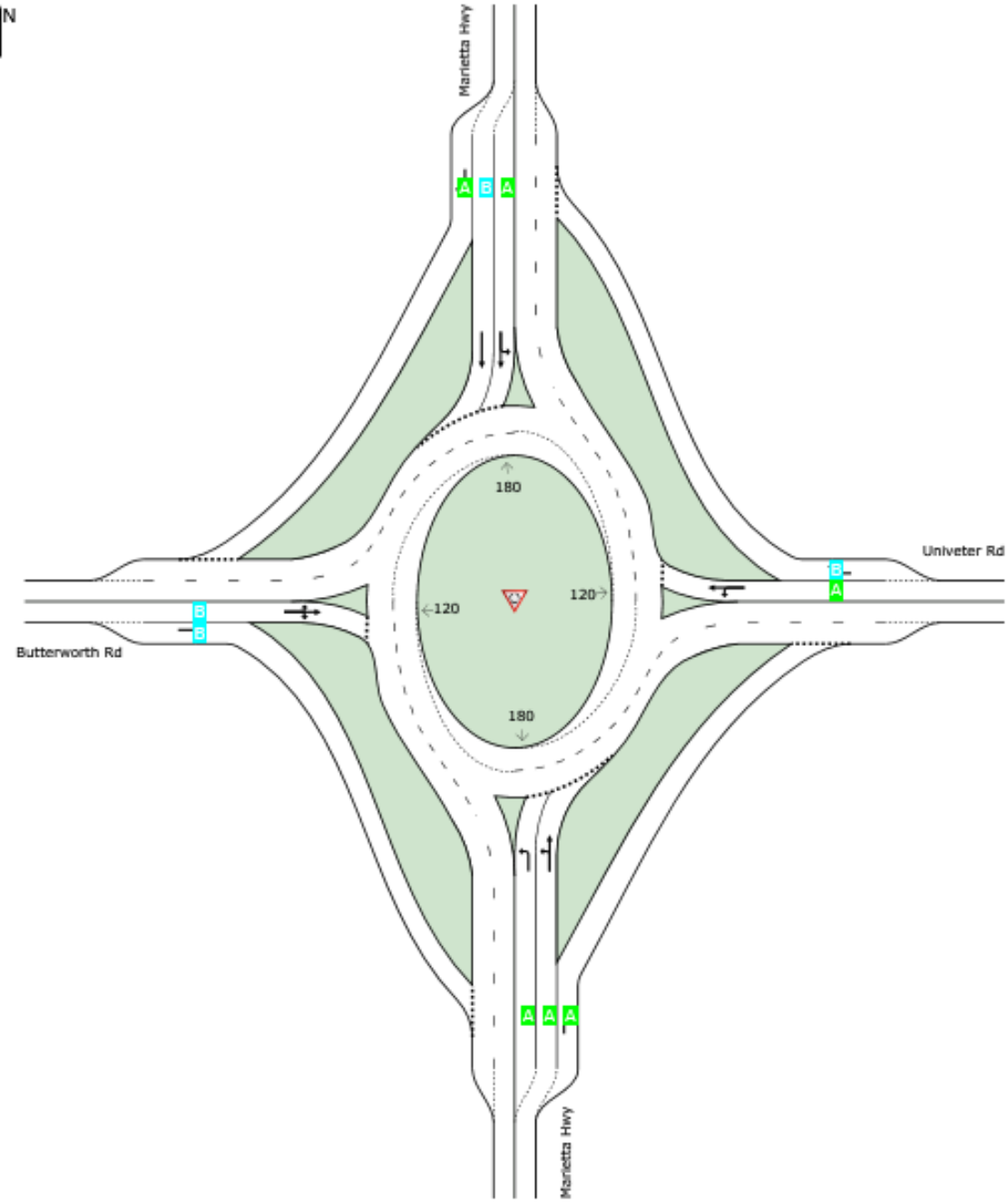
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	B	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	234	6.5	991	0.236	93[5]	5.9	LOS A	1.3	34.0	Short	400	0.0	NA
Lane 2[d]	334	3.6	1321	0.253	100	9.3	LOS A	1.5	39.8	Full	1600	0.0	0.0
Lane 3	163	5.5	1379	0.118	100	7.9	LOS A	0.5	13.3	Short	300	0.0	NA
Approach	731	5.0		0.253		7.9	LOS A	1.5	39.8				
East: Univeter Rd													
Lane 1[d]	318	4.4	881	0.361	100	10.0	LOS A	1.8	45.9	Full	1600	0.0	0.0
Lane 2	191	9.2	939	0.203	100	10.2	LOS B	1.0	26.5	Short	300	0.0	NA
Approach	508	6.2		0.361		10.0	LOS B	1.8	45.9				
North: Marietta Hwy													
Lane 1[d]	322	6.0	1218	0.264	100	5.3	LOS A	1.7	43.8	Short	450	0.0	NA
Lane 2	175	5.0	934	0.187	71[6]	11.2	LOS B	1.0	26.7	Full	1600	0.0	0.0
Lane 3	14	16.7	1235	0.011	100	6.3	LOS A	0.0	1.2	Short	200	0.0	NA
Approach	511	5.9		0.264		7.4	LOS A	1.7	43.8				
West: Butterworth Rd													
Lane 1[d]	437	2.0	875	0.499	100	13.0	LOS B	3.6	92.3	Full	1600	0.0	0.0
Lane 2	241	2.8	925	0.260	52[6]	12.0	LOS B	1.2	29.7	Short	200	0.0	NA
Approach	678	2.3		0.499		12.6	LOS B	3.6	92.3				
Intersection	2427	4.7		0.499		9.6	LOS A	3.6	92.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	234	-	-	234	6.5	991	0.236	93[5]	0.0	2
Lane 2	-	334	-	334	3.6	1321	0.253	100	NA	NA
Lane 3	-	-	163	163	5.5	1379	0.118	100	0.0	2
Approach	234	334	163	731	5.0		0.253			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	146	172	-	318	4.4	881	0.361	100	NA	NA
Lane 2	-	-	191	191	9.2	939	0.203	100	0.0	1
Approach	146	172	191	508	6.2		0.361			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	219	103	-	322	6.0	1218	0.264	100	0.0	2
Lane 2	-	175	-	175	5.0	934	0.187	71[6]	NA	NA
Lane 3	-	-	14	14	16.7	1235	0.011	100	0.0	2
Approach	219	278	14	511	5.9		0.264			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	231	182	437	2.0	875	0.499	100	NA	NA
Lane 2	-	-	241	241	2.8	925	0.260	52[6]	0.0	1
Approach	24	231	423	678	2.3		0.499			

	Total	%HV	Deg.Satn (v/c)
Intersection	2427	4.7	0.499

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	432	451	3.00	2.00	416	1338	0.311	2.7	5.5
Merge Lane	1	-	100.0	Merge Lane is not Opposed				432	1800	0.240	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	219	233	3.00	2.00	394	1564	0.252	2.3	4.3
Merge Lane	1	-	100.0	Merge Lane is not Opposed				219	1800	0.122	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	24	25	3.00	2.00	524	1775	0.295	2.0	4.4
Merge Lane	1	-	100.0	Merge Lane is not Opposed				24	1800	0.013	0.0	0.0

West Exit: Butterworth Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	234	249	3.00	2.00	185	1548	0.120	2.3	3.2
Merge Lane	1	-	100.0	Merge Lane is not Opposed				234	1800	0.130	0.0	0.0

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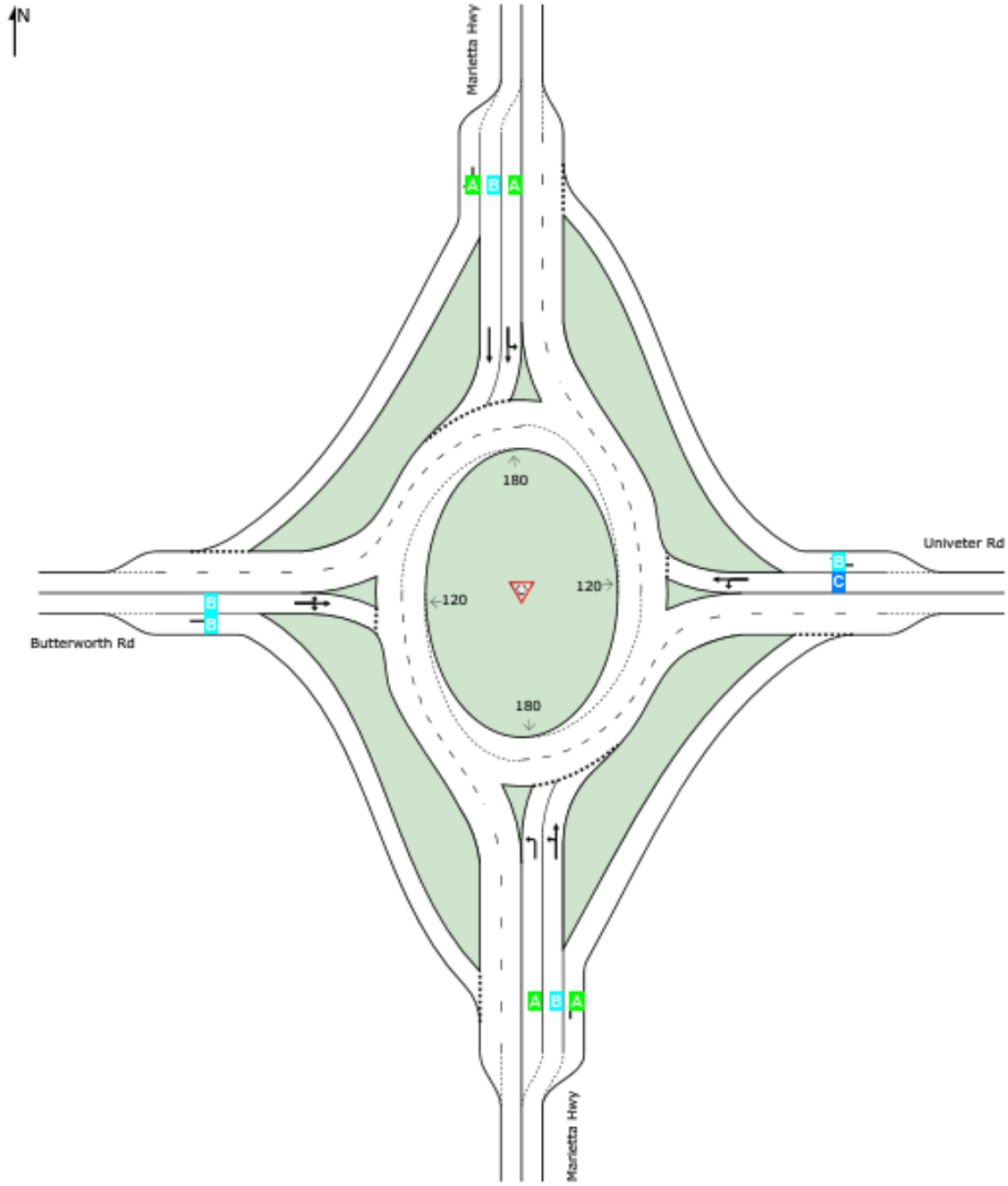
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	C	B	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	490	1.4	1046	0.469	100	8.8	LOS A	3.3	82.2	Short	400	0.0	NA
Lane 2[d]	627	1.5	1337	0.469	100	12.8	LOS B	3.4	87.2	Full	1600	0.0	0.0
Lane 3	146	6.2	1351	0.108	100	7.8	LOS A	0.5	12.4	Short	300	0.0	NA
Approach	1263	2.0		0.469		10.7	LOS B	3.4	87.2				
East: Univeter Rd													
Lane 1[d]	429	1.9	668	0.642	100	21.7	LOS C	5.5	139.4	Full	1600	0.0	0.0
Lane 2	200	1.8	901	0.222	100	11.5	LOS B	1.2	30.2	Short	300	0.0	NA
Approach	629	1.9		0.642		18.5	LOS C	5.5	139.4				
North: Marietta Hwy													
Lane 1[d]	431	1.9	1035	0.417	100	8.0	LOS A	3.0	76.7	Short	450	0.0	NA
Lane 2	222	1.1	752	0.296	71[6]	14.0	LOS B	1.7	42.8	Full	1600	0.0	0.0
Lane 3	23	5.0	1169	0.020	100	9.2	LOS A	0.1	2.3	Short	200	0.0	NA
Approach	677	1.8		0.417		10.0	LOS B	3.0	76.7				
West: Butterworth Rd													
Lane 1[d]	362	2.3	773	0.469	100	14.0	LOS B	3.2	82.2	Full	1600	0.0	0.0
Lane 2	212	2.7	870	0.244	52[6]	12.4	LOS B	1.1	28.9	Short	200	0.0	NA
Approach	575	2.4		0.469		13.4	LOS B	3.2	82.2				
Intersection	3144	2.0		0.642		12.6	LOS B	5.5	139.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	490	-	-	490	1.4	1046	0.469	100	0.0	2
Lane 2	132	495	-	627	1.5	1337	0.469	100	NA	NA
Lane 3	-	-	146	146	6.2	1351	0.108	100	0.0	2
Approach	622	495	146	1263	2.0		0.469			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	145	284	-	429	1.9	668	0.642	100	NA	NA
Lane 2	-	-	200	200	1.8	901	0.222	100	0.0	1
Approach	145	284	200	629	1.9		0.642			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	219	213	-	431	1.9	1035	0.417	100	0.0	2
Lane 2	-	222	-	222	1.1	752	0.296	71[6]	NA	NA
Lane 3	-	-	23	23	5.0	1169	0.020	100	0.0	2
Approach	219	435	23	677	1.8		0.417			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	247	94	362	2.3	773	0.469	100	NA	NA
Lane 2	-	-	212	212	2.7	870	0.244	52[6]	0.0	1
Approach	21	247	306	575	2.4		0.469			

	Total	%HV	Deg.Satn (v/c)
Intersection	3144	2.0	0.642

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	452	462	3.00	2.00	435	1326	0.328	2.7	5.7
Merge Lane	1	-	100.0	Merge Lane is not Opposed				452	1800	0.251	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	219	225	3.00	2.00	394	1572	0.250	2.3	4.3
Merge Lane	1	-	100.0	Merge Lane is not Opposed				219	1800	0.122	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	21	23	3.00	2.00	695	1777	0.391	2.0	5.3
Merge Lane	1	-	100.0	Merge Lane is not Opposed				21	1800	0.012	0.0	0.0
West Exit: Butterworth Rd												

Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	490	497	3.00	2.00	439	1290	0.341	2.8	5.9
Merge Lane	1	-	100.0	Merge Lane is not Opposed				490	1800	0.272	0.0	0.0

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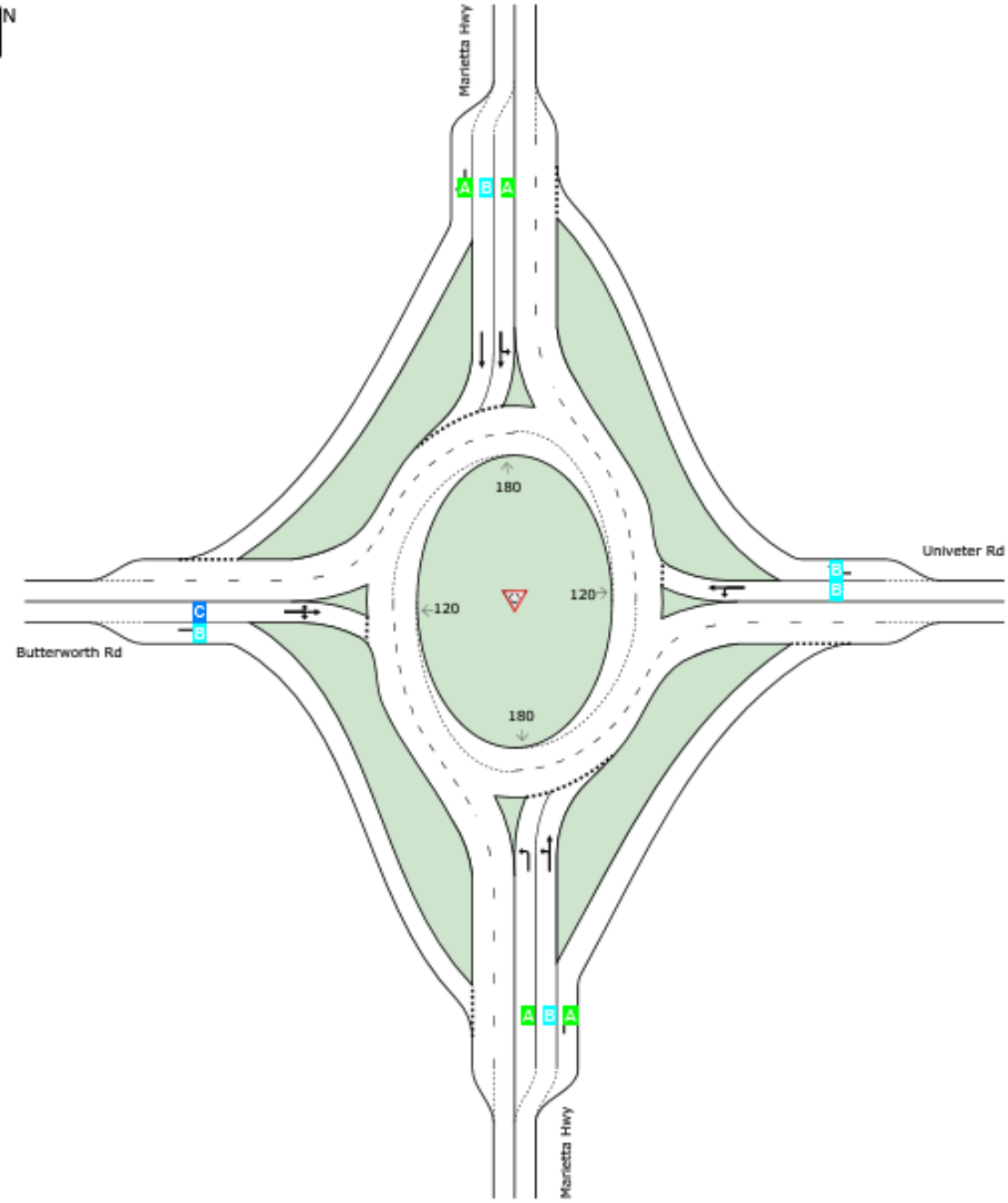
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	B	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	285	6.5	937	0.305	97[5]	7.1	LOS A	1.9	48.9	Short	400	0.0	NA
Lane 2[d]	407	3.6	1302	0.313	100	10.6	LOS B	2.2	56.5	Full	1600	0.0	0.0
Lane 3	199	5.5	1408	0.141	100	8.8	LOS A	0.6	16.9	Short	300	0.0	NA
Approach	892	5.0		0.313		9.1	LOS A	2.2	56.5				
East: Univeter Rd													
Lane 1[d]	387	4.4	869	0.446	100	11.6	LOS B	2.8	73.1	Full	1600	0.0	0.0
Lane 2	233	9.2	935	0.249	100	11.4	LOS B	1.3	35.3	Short	300	0.0	NA
Approach	620	6.2		0.446		11.5	LOS B	2.8	73.1				
North: Marietta Hwy													
Lane 1[d]	397	5.9	1179	0.336	100	6.3	LOS A	2.5	64.8	Short	450	0.0	NA
Lane 2	210	5.0	878	0.239	71[6]	13.6	LOS B	1.5	38.0	Full	1600	0.0	0.0
Lane 3	17	16.7	1260	0.013	100	6.6	LOS A	0.1	1.6	Short	200	0.0	NA
Approach	623	5.9		0.336		8.8	LOS A	2.5	64.8				
West: Butterworth Rd													
Lane 1[d]	527	2.0	850	0.620	100	16.8	LOS C	6.0	152.2	Full	1600	0.0	0.0
Lane 2	300	2.8	929	0.323	52[6]	14.4	LOS B	1.6	39.8	Short	200	0.0	NA
Approach	827	2.3		0.620		15.9	LOS C	6.0	152.2				
Intersection	2962	4.7		0.620		11.4	LOS B	6.0	152.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	285	-	-	285	6.5	937	0.305	97[5]	0.0	2
Lane 2	-	407	-	407	3.6	1302	0.313	100	NA	NA
Lane 3	-	-	199	199	5.5	1408	0.141	100	0.0	2
Approach	285	407	199	892	5.0		0.313			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	178	209	-	387	4.4	869	0.446	100	NA	NA
Lane 2	-	-	233	233	9.2	935	0.249	100	0.0	1
Approach	178	209	233	620	6.2		0.446			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	267	129	-	397	5.9	1179	0.336	100	0.0	2
Lane 2	-	210	-	210	5.0	878	0.239	71[6]	NA	NA
Lane 3	-	-	17	17	16.7	1260	0.013	100	0.0	2
Approach	267	339	17	623	5.9		0.336			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	281	217	527	2.0	850	0.620	100	NA	NA
Lane 2	-	-	300	300	2.8	929	0.323	52[6]	0.0	1
Approach	29	281	517	827	2.3		0.620			

	Total	%HV	Deg.Satn (v/c)
Intersection	2962	4.7	0.620

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	524	548	3.00	2.00	510	1236	0.412	2.9	7.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				524	1800	0.291	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	267	284	3.00	2.00	480	1511	0.318	2.4	5.1
Merge Lane	1	-	100.0	Merge Lane is not Opposed				267	1800	0.149	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	29	31	3.00	2.00	640	1769	0.362	2.0	5.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				29	1800	0.016	0.0	0.0

West Exit: Butterworth Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	285	304	3.00	2.00	226	1491	0.152	2.4	3.6
Merge Lane	1	-	100.0	Merge Lane is not Opposed				285	1800	0.158	0.0	0.0

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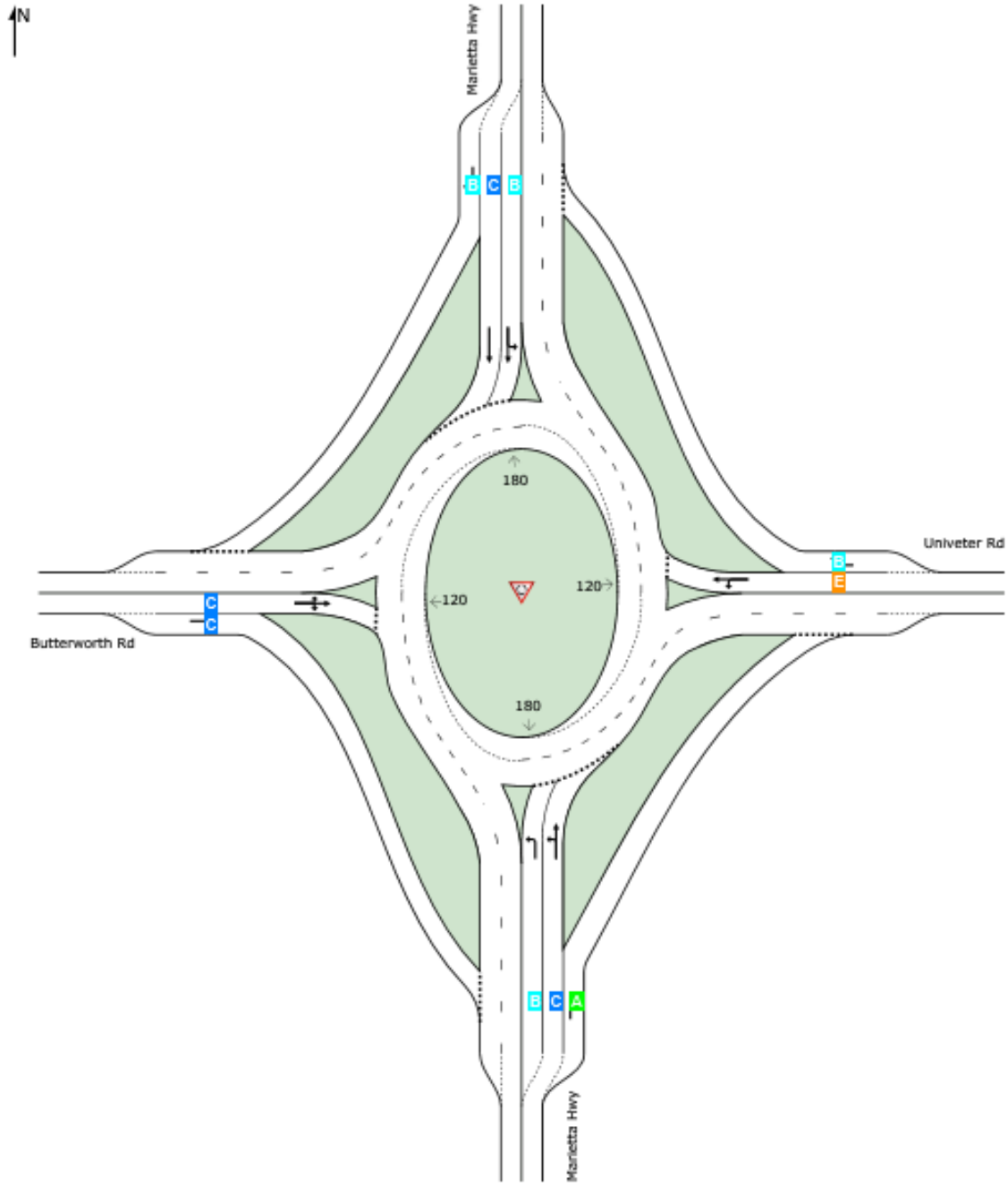
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	E	B	C	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	582	1.4	975	0.597	100	12.0	LOS B	6.5	164.4	Short	400	0.0	NA
Lane 2[d]	781	1.5	1307	0.597	100	16.4	LOS C	6.8	172.7	Full	1600	0.0	0.0
Lane 3	179	6.2	1369	0.131	100	8.7	LOS A	0.6	16.1	Short	300	0.0	NA
Approach	1542	2.0		0.597		13.9	LOS B	6.8	172.7				
East: Univeter Rd													
Lane 1[d]	524	1.9	581	0.903	100	48.9	LOS E	14.2	361.0	Full	1600	0.0	0.0
Lane 2	244	1.8	847	0.288	100	13.7	LOS B	1.8	44.5	Short	300	0.0	NA
Approach	768	1.9		0.903		37.7	LOS E	14.2	361.0				
North: Marietta Hwy													
Lane 1[d]	532	1.9	928	0.573	100	11.8	LOS B	6.0	152.2	Short	450	0.0	NA
Lane 2	266	1.1	655	0.406	71[6]	18.6	LOS C	2.9	72.1	Full	1600	0.0	0.0
Lane 3	28	5.0	1137	0.025	100	11.3	LOS B	0.1	3.3	Short	200	0.0	NA
Approach	826	1.8		0.573		14.0	LOS B	6.0	152.2				
West: Butterworth Rd													
Lane 1[d]	432	2.3	711	0.608	100	19.2	LOS C	5.5	141.0	Full	1600	0.0	0.0
Lane 2	269	2.7	849	0.317	52[6]	15.2	LOS C	1.6	41.2	Short	200	0.0	NA
Approach	701	2.4		0.608		17.6	LOS C	5.5	141.0				
Intersection	3838	2.0		0.903		19.4	LOS C	14.2	361.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	582	-	-	582	1.4	975	0.597	100	0.0	2
Lane 2	177	604	-	781	1.5	1307	0.597	100	NA	NA
Lane 3	-	-	179	179	6.2	1369	0.131	100	0.0	2
Approach	759	604	179	1542	2.0		0.597			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	177	347	-	524	1.9	581	0.903	100	NA	NA
Lane 2	-	-	244	244	1.8	847	0.288	100	0.0	1
Approach	177	347	244	768	1.9		0.903			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	267	264	-	532	1.9	928	0.573	100	0.0	2
Lane 2	-	266	-	266	1.1	655	0.406	71[6]	NA	NA
Lane 3	-	-	28	28	5.0	1137	0.025	100	0.0	2
Approach	267	531	28	826	1.8		0.573			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	302	105	432	2.3	711	0.608	100	NA	NA
Lane 2	-	-	269	269	2.7	849	0.317	52[6]	0.0	1
Approach	25	302	374	701	2.4		0.608			

	Total	%HV	Deg.Satn (v/c)
Intersection	3838	2.0	0.903

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	546	559	3.00	2.00	535	1225	0.437	2.9	7.4
Merge Lane	1	-	100.0	Merge Lane is not Opposed				546	1800	0.303	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	267	275	3.00	2.00	481	1521	0.316	2.4	5.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				267	1800	0.149	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	25	28	3.00	2.00	848	1772	0.479	2.0	6.3
Merge Lane	1	-	100.0	Merge Lane is not Opposed				25	1800	0.014	0.0	0.0
West Exit: Butterworth Rd												

Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	582	590	3.00	2.00	552	1191	0.464	3.0	7.9
Merge Lane	1	-	100.0	Merge Lane is not Opposed				582	1800	0.324	0.0	0.0

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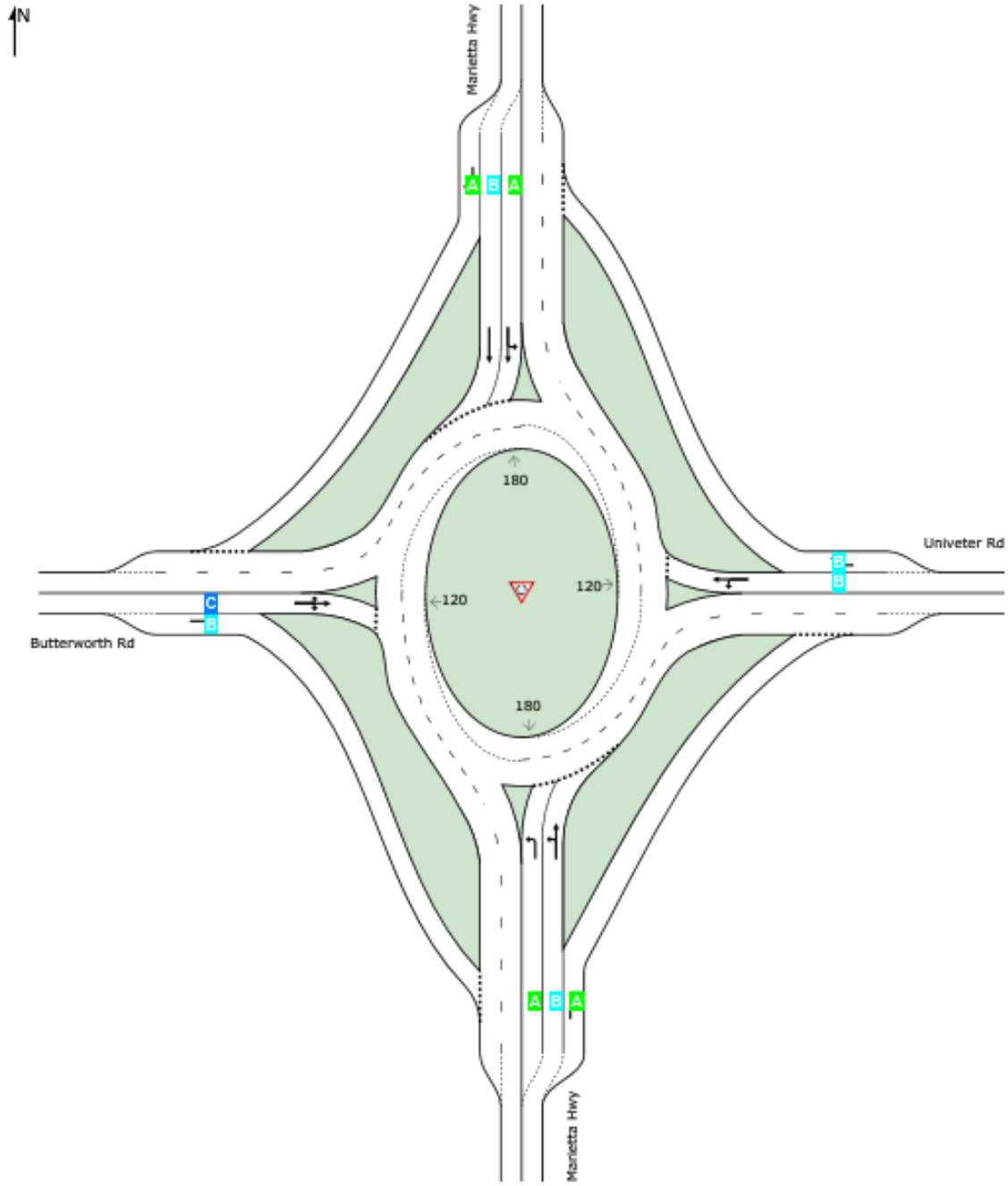
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	B	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	280	6.5	905	0.309	95[5]	7.3	LOS A	1.9	49.1	Short	400	0.0	NA
Lane 2[d]	401	3.6	1226	0.327	100	10.9	LOS B	2.3	57.9	Full	1600	0.0	0.0
Lane 3	196	5.5	1321	0.148	100	9.0	LOS A	0.7	17.6	Short	300	0.0	NA
Approach	877	5.0		0.327		9.3	LOS A	2.3	57.9				
East: Univeter Rd													
Lane 1[d]	382	4.4	812	0.470	100	12.6	LOS B	3.1	80.5	Full	1600	0.0	0.0
Lane 2	228	9.2	881	0.259	100	11.8	LOS B	1.4	36.4	Short	300	0.0	NA
Approach	611	6.2		0.470		12.3	LOS B	3.1	80.5				
North: Marietta Hwy													
Lane 1[d]	388	5.9	1110	0.350	100	6.8	LOS A	2.5	65.7	Short	450	0.0	NA
Lane 2	208	5.0	839	0.248	71[6]	13.8	LOS B	1.5	38.8	Full	1600	0.0	0.0
Lane 3	17	16.7	1185	0.014	100	6.7	LOS A	0.1	1.7	Short	200	0.0	NA
Approach	614	5.9		0.350		9.2	LOS A	2.5	65.7				
West: Butterworth Rd													
Lane 1[d]	519	2.0	796	0.653	100	18.6	LOS C	6.6	167.6	Full	1600	0.0	0.0
Lane 2	295	2.8	868	0.340	52[6]	14.8	LOS B	1.6	41.5	Short	200	0.0	NA
Approach	815	2.3		0.653		17.2	LOS C	6.6	167.6				
Intersection	2916	4.7		0.653		12.1	LOS B	6.6	167.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	280	-	-	280	6.5	905	0.309	95[5]	0.0	2
Lane 2	-	401	-	401	3.6	1226	0.327	100	NA	NA
Lane 3	-	-	196	196	5.5	1321	0.148	100	0.0	2
Approach	280	401	196	877	5.0		0.327			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	176	206	-	382	4.4	812	0.470	100	NA	NA
Lane 2	-	-	228	228	9.2	881	0.259	100	0.0	1
Approach	176	206	228	611	6.2		0.470			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	263	125	-	388	5.9	1110	0.350	100	0.0	2
Lane 2	-	208	-	208	5.0	839	0.248	71[6]	NA	NA
Lane 3	-	-	17	17	16.7	1185	0.014	100	0.0	2
Approach	263	334	17	614	5.9		0.350			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	277	213	519	2.0	796	0.653	100	NA	NA
Lane 2	-	-	295	295	2.8	868	0.340	52[6]	0.0	1
Approach	29	277	508	815	2.3		0.653			

	Total	%HV	Deg.Satn (v/c)
Intersection	2916	4.7	0.653

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	514	538	3.00	2.00	504	1247	0.404	2.9	6.9
Merge Lane	1	-	100.0	Merge Lane is not Opposed				514	1800	0.286	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	263	280	3.00	2.00	473	1516	0.312	2.4	5.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				263	1800	0.146	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	29	31	3.00	2.00	629	1769	0.356	2.0	4.9
Merge Lane	1	-	100.0	Merge Lane is not Opposed				29	1800	0.016	0.0	0.0

West Exit: Butterworth Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	280	298	3.00	2.00	223	1497	0.149	2.4	3.6
Merge Lane	1	-	100.0	Merge Lane is not Opposed				280	1800	0.156	0.0	0.0

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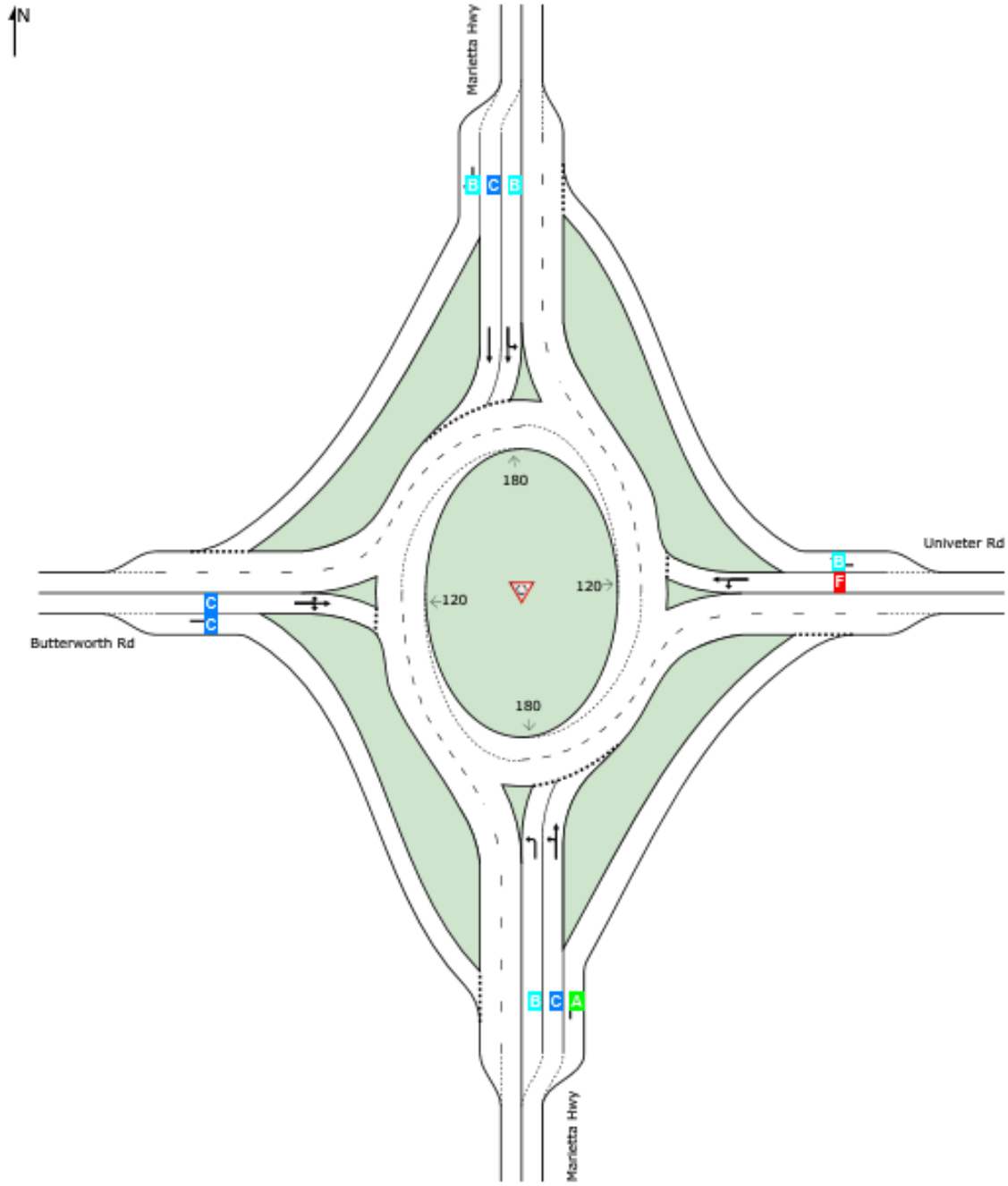
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	E	C	C	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

LANE SUMMARY

Site: [#23-Butterworth/Univeter_2028 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	583	1.4	948	0.615	100	12.7	LOS B	6.9	175.5	Short	400	0.0	NA
Lane 2[d]	758	1.5	1234	0.615	100	17.0	LOS C	7.3	185.6	Full	1600	0.0	0.0
Lane 3	176	6.2	1286	0.137	100	8.9	LOS A	0.6	16.6	Short	300	0.0	NA
Approach	1517	2.0		0.615		14.4	LOS B	7.3	185.6				
East: Univeter Rd													
Lane 1[d]	516	1.9	539	0.958	100	61.6	LOS F	17.6	445.9	Full	1600	0.0	0.0
Lane 2	240	1.8	798	0.301	100	14.1	LOS B	1.8	45.5	Short	300	0.0	NA
Approach	756	1.9		0.958		46.5	LOS E	17.6	445.9				
North: Marietta Hwy													
Lane 1[d]	521	1.9	863	0.604	100	13.4	LOS B	6.5	164.0	Short	450	0.0	NA
Lane 2	264	1.1	616	0.429	71[6]	19.5	LOS C	3.0	76.7	Full	1600	0.0	0.0
Lane 3	27	5.0	1052	0.026	100	11.3	LOS B	0.1	3.4	Short	200	0.0	NA
Approach	813	1.7		0.604		15.3	LOS C	6.5	164.0				
West: Butterworth Rd													
Lane 1[d]	425	2.3	665	0.639	100	21.2	LOS C	6.0	152.3	Full	1600	0.0	0.0
Lane 2	264	2.7	794	0.333	52[6]	15.7	LOS C	1.7	42.6	Short	200	0.0	NA
Approach	689	2.4		0.639		19.1	LOS C	6.0	152.3				
Intersection	3775	2.0		0.958		21.9	LOS C	17.6	445.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	583	-	-	583	1.4	948	0.615	100	0.0	2
Lane 2	164	595	-	758	1.5	1234	0.615	100	NA	NA
Lane 3	-	-	176	176	6.2	1286	0.137	100	0.0	2
Approach	746	595	176	1517	2.0		0.615			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	175	341	-	516	1.9	539	0.958	100	NA	NA
Lane 2	-	-	240	240	1.8	798	0.301	100	0.0	1
Approach	175	341	240	756	1.9		0.958			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	263	258	-	521	1.9	863	0.604	100	0.0	2
Lane 2	-	264	-	264	1.1	616	0.429	71[6]	NA	NA
Lane 3	-	-	27	27	5.0	1052	0.026	100	0.0	2
Approach	263	522	27	813	1.7		0.604			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	297	103	425	2.3	665	0.639	100	NA	NA
Lane 2	-	-	264	264	2.7	794	0.333	52[6]	0.0	1
Approach	25	297	367	689	2.4		0.639			

	Total	%HV	Deg.Satn (v/c)
Intersection	3775	2.0	0.958

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	536	548	3.00	2.00	528	1235	0.428	2.9	7.2
Merge Lane	1	-	100.0	Merge Lane is not Opposed				536	1800	0.298	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	263	270	3.00	2.00	473	1526	0.310	2.4	5.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				263	1800	0.146	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	25	28	3.00	2.00	835	1772	0.471	2.0	6.2
Merge Lane	1	-	100.0	Merge Lane is not Opposed				25	1800	0.014	0.0	0.0
West Exit: Butterworth Rd												

Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	583	591	3.00	2.00	532	1190	0.447	3.0	7.7
Merge Lane	1	-	100.0	Merge Lane is not Opposed				583	1800	0.324	0.0	0.0

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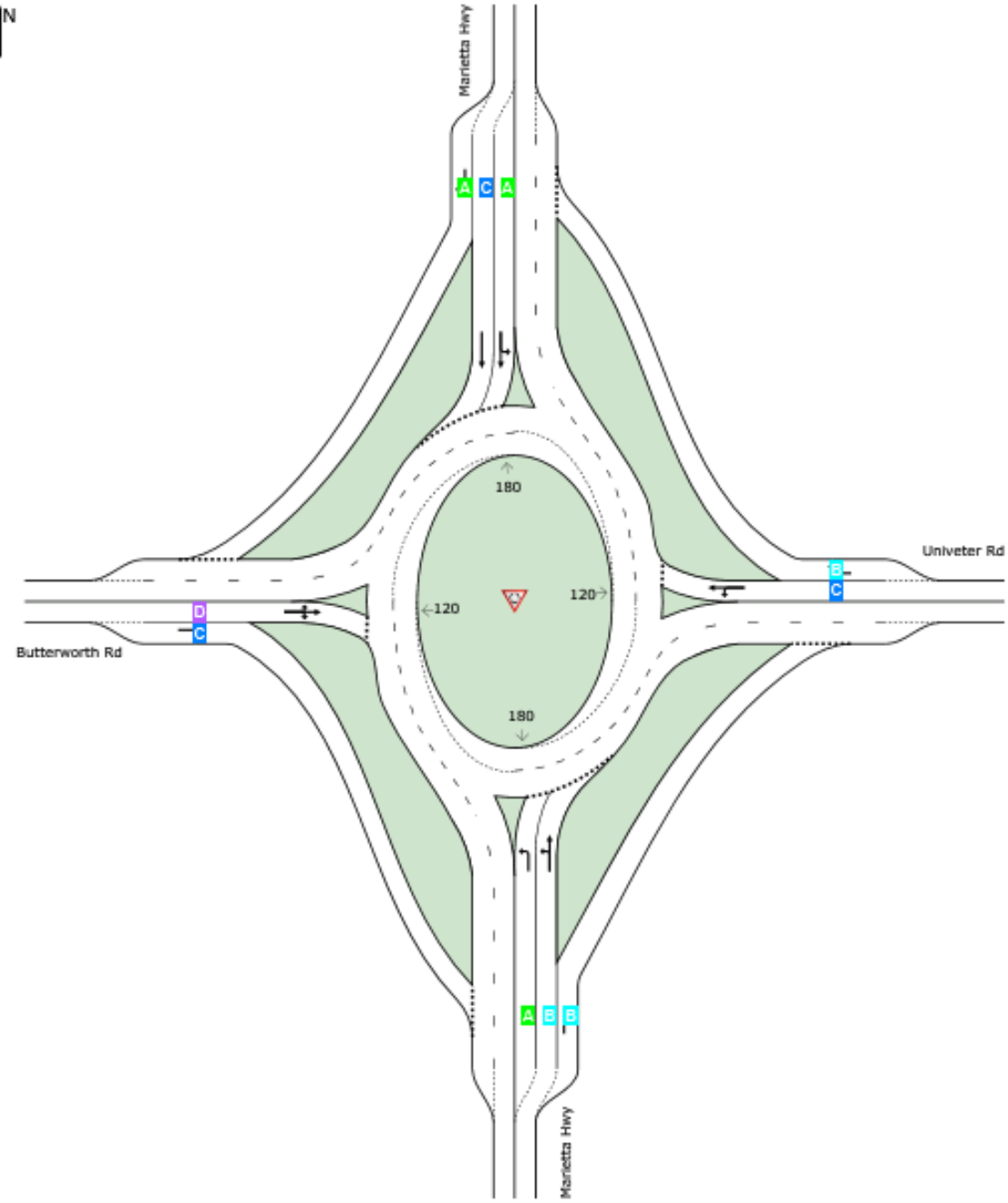
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	C	B	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 AM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	341	6.5	819	0.417	99[5]	9.6	LOS A	3.0	77.7	Short	400	0.0	NA
Lane 2[d]	489	3.6	1161	0.422	100	13.3	LOS B	3.4	87.9	Full	1600	0.0	0.0
Lane 3	239	5.5	1324	0.181	100	10.3	LOS B	0.9	23.4	Short	300	0.0	NA
Approach	1069	4.9		0.422		11.4	LOS B	3.4	87.9				
East: Univeter Rd													
Lane 1[d]	465	4.4	772	0.602	100	16.7	LOS C	5.2	135.2	Full	1600	0.0	0.0
Lane 2	279	9.2	852	0.327	100	13.7	LOS B	1.9	51.0	Short	300	0.0	NA
Approach	744	6.2		0.602		15.6	LOS C	5.2	135.2				
North: Marietta Hwy													
Lane 1[d]	479	5.9	1021	0.469	100	9.0	LOS A	4.2	110.8	Short	450	0.0	NA
Lane 2	250	5.0	750	0.333	71[6]	18.6	LOS C	2.3	59.3	Full	1600	0.0	0.0
Lane 3	21	16.7	1191	0.018	100	7.2	LOS A	0.1	2.2	Short	200	0.0	NA
Approach	749	5.9		0.469		12.1	LOS B	4.2	110.8				
West: Butterworth Rd													
Lane 1[d]	618	1.9	737	0.839	100	32.5	LOS D	13.3	336.9	Full	1600	0.0	0.0
Lane 2	375	2.8	858	0.437	52[6]	19.4	LOS C	2.7	68.9	Short	200	0.0	NA
Approach	994	2.3		0.839		27.5	LOS D	13.3	336.9				
Intersection	3557	4.7		0.839		16.9	LOS C	13.3	336.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	341	-	-	341	6.5	819	0.417	99[5]	0.0	2
Lane 2	-	489	-	489	3.6	1161	0.422	100	NA	NA
Lane 3	-	-	239	239	5.5	1324	0.181	100	0.0	2
Approach	341	489	239	1069	4.9		0.422			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	214	252	-	465	4.4	772	0.602	100	NA	NA
Lane 2	-	-	279	279	9.2	852	0.327	100	0.0	1
Approach	214	252	279	744	6.2		0.602			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	321	158	-	479	5.9	1021	0.469	100	0.0	2
Lane 2	-	250	-	250	5.0	750	0.333	71[6]	NA	NA
Lane 3	-	-	21	21	16.7	1191	0.018	100	0.0	2
Approach	321	407	21	749	5.9		0.469			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	338	245	618	1.9	737	0.839	100	NA	NA
Lane 2	-	-	375	375	2.8	858	0.437	52[6]	0.0	1
Approach	36	338	620	994	2.3		0.839			

	Total	%HV	Deg.Satn (v/c)
Intersection	3557	4.7	0.839

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	616	645	3.00	2.00	625	1134	0.551	3.2	9.8
Merge Lane	1	-	100.0	Merge Lane is not Opposed				616	1800	0.342	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	321	342	3.00	2.00	577	1452	0.397	2.5	6.1
Merge Lane	1	-	100.0	Merge Lane is not Opposed				321	1800	0.178	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	36	38	3.00	2.00	768	1762	0.436	2.0	5.8
Merge Lane	1	-	100.0	Merge Lane is not Opposed				36	1800	0.020	0.0	0.0

West Exit: Butterworth Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	341	363	3.00	2.00	273	1429	0.191	2.5	4.1
Merge Lane	1	-	100.0	Merge Lane is not Opposed				341	1800	0.189	0.0	0.0

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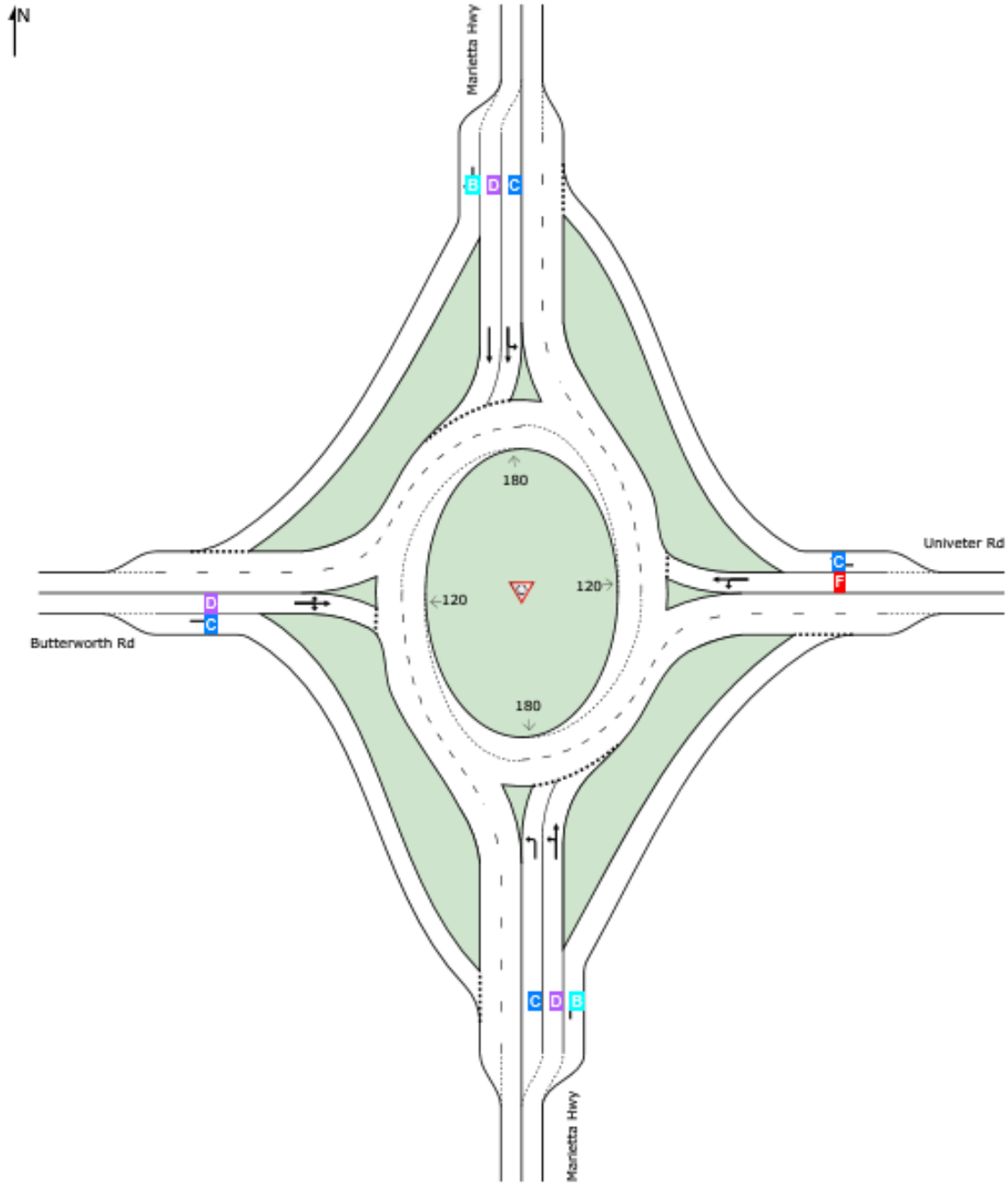
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	F	C	D	F



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#23-Butterworth/Univeter_2048 PM (Site Folder: General)]

Marietta Hwy at Butterworth Rd/Univeter Rd
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Marietta Hwy													
Lane 1	691	1.4	853	0.810	100	23.5	LOS C	15.1	382.1	Short	400	0.0	NA
Lane 2[d]	945	1.5	1167	0.810	100	26.7	LOS D	17.4	439.8	Full	1600	0.0	0.0
Lane 3	215	6.2	1287	0.167	100	10.2	LOS B	0.8	22.0	Short	300	0.0	NA
Approach	1851	2.0		0.810		23.6	LOS C	17.4	439.8				
East: Univeter Rd													
Lane 1[d]	628	1.9	420	1.495	100	265.8	LOS F	78.9	2001.7	Full	1600	0.0	12.0
Lane 2	293	1.8	701	0.418	100	18.5	LOS C	3.1	78.2	Short	300	0.0	NA
Approach	921	1.9		1.495		187.3	LOS F	78.9	2001.7				
North: Marietta Hwy													
Lane 1[d]	638	1.9	818	0.780	100	22.0	LOS C	12.0	305.7	Short	450	0.0	NA
Lane 2	320	1.1	578	0.554	71[6]	25.7	LOS D	4.8	120.5	Full	1600	0.0	0.0
Lane 3	34	5.0	987	0.034	100	13.0	LOS B	0.2	5.1	Short	200	0.0	NA
Approach	992	1.8		0.780		22.9	LOS C	12.0	305.7				
West: Butterworth Rd													
Lane 1[d]	506	2.3	628	0.806	100	33.5	LOS D	10.7	271.6	Full	1600	0.0	0.0
Lane 2	335	2.7	799	0.420	52[6]	19.1	LOS C	2.6	65.6	Short	200	0.0	NA
Approach	841	2.4		0.806		27.8	LOS D	10.7	271.6				
Intersection	4604	2.0		1.495		56.9	LOS F	78.9	2001.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Marietta Hwy

Mov.	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane
From S To Exit:	W	N	E			veh/h	v/c	%	%	No.

Lane 1	691	-	-	691	1.4	853	0.810	100	3.7	2
Lane 2	220	725	-	945	1.5	1167	0.810	100	NA	NA
Lane 3	-	-	215	215	6.2	1287	0.167	100	0.0	2
Approach	911	725	215	1851	2.0		0.810			

East: Univeter Rd

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	213	416	-	628	1.9	420	1.495	100	NA	NA
Lane 2	-	-	293	293	1.8	701	0.418	100	0.0	1
Approach	213	416	293	921	1.9		1.495			

North: Marietta Hwy

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	321	317	-	638	1.9	818	0.780	100	0.0	2
Lane 2	-	320	-	320	1.1	578	0.554	71[6]	NA	NA
Lane 3	-	-	34	34	5.0	987	0.034	100	0.0	2
Approach	321	637	34	992	1.8		0.780			

West: Butterworth Rd

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	31	362	113	506	2.3	628	0.806	100	NA	NA
Lane 2	-	-	335	335	2.7	799	0.420	52[6]	0.0	1
Approach	31	362	448	841	2.4		0.806			

	Total	%HV	Deg.Satn (v/c)
Intersection	4604	2.0	1.495

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	572	585	3.00	2.00	655	1197	0.547	3.0	9.3
Merge Lane	1	-	100.0	Merge Lane is not Opposed				572	1800	0.318	0.0	0.0
East Exit: Univeter Rd Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	321	330	3.00	2.00	577	1464	0.394	2.5	6.0
Merge Lane	1	-	100.0	Merge Lane is not Opposed				321	1800	0.178	0.0	0.0
North Exit: Marietta Hwy Merge Type: **Priority**												
Exit Short Lane	2	300	0.0	31	34	3.00	2.00	1018	1766	0.576	2.0	7.7
Merge Lane	1	-	100.0	Merge Lane is not Opposed				31	1800	0.017	0.0	0.0
West Exit: Butterworth Rd												

Merge Type: **Priority**												
Exit Short Lane	2	350	0.0	691	700	3.00	2.00	532	1074	0.495	3.4	9.1
Merge Lane	1	-	100.0	Merge Lane is not Opposed				691	1800	0.384	0.0	0.0

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	22	12	613	23	427	10	172	335	738	531	3
Future Volume (vph)	9	22	12	613	23	427	10	172	335	738	531	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1800		1715	1725	2814	1805	1810	2787	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1800		1715	1725	2814	1805	1810	2787	3467	1826	
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)	10	24	13	659	25	459	11	185	360	794	571	3
RTOR Reduction (vph)	0	12	0	0	0	233	0	0	0	0	0	0
Lane Group Flow (vph)	10	25	0	343	341	226	11	185	360	794	574	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		29.3	29.3	64.0	2.6	34.5	63.8	34.7	66.0	
Effective Green, g (s)	6.5	6.5		29.3	29.3	64.0	2.6	34.5	63.8	34.7	66.0	
Actuated g/C Ratio	0.05	0.05		0.23	0.23	0.49	0.02	0.27	0.49	0.27	0.51	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	90	90		386	388	1385	36	480	1367	925	927	
v/s Ratio Prot	0.01	c0.01		c0.20	0.20	0.04	0.01	0.10	0.06	c0.23	c0.31	
v/s Ratio Perm						0.04			0.07			
v/c Ratio	0.11	0.27		0.89	0.88	0.16	0.31	0.39	0.26	0.86	0.62	
Uniform Delay, d1	59.0	59.5		48.8	48.6	18.2	62.8	39.1	19.4	45.3	23.0	
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	0.6		21.1	19.6	0.1	1.8	1.1	0.1	8.0	3.1	
Delay (s)	59.2	60.1		69.9	68.2	18.3	64.6	40.2	19.5	53.3	26.1	
Level of Service	E	E		E	E	B	E	D	B	D	C	
Approach Delay (s)		59.9			48.7			27.2			41.9	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
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 (vph)	97	128	40	475	140	644	88	361	629	536	307	16
Future Volume (vph)	97	128	40	475	140	644	88	361	629	536	307	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1819		1681	1738	2814	1805	1881	2814	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1819		1681	1738	2814	1805	1881	2814	3467	1851	
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)	100	132	41	490	144	664	91	372	648	553	316	16
RTOR Reduction (vph)	0	7	0	0	0	305	0	0	0	0	1	0
Lane Group Flow (vph)	100	166	0	314	320	359	91	372	648	553	331	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	16.5	16.5		32.0	32.0	57.7	11.3	50.8	82.8	25.7	64.6	
Effective Green, g (s)	16.5	16.5		32.0	32.0	57.7	11.3	50.8	82.8	25.7	64.6	
Actuated g/C Ratio	0.11	0.11		0.21	0.21	0.38	0.08	0.34	0.55	0.17	0.43	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	198	200		358	370	1082	135	637	1553	594	797	
v/s Ratio Prot	0.06	c0.09		c0.19	0.18	0.06	0.05	c0.20	0.09	c0.16	0.18	
v/s Ratio Perm						0.07			0.14			
v/c Ratio	0.51	0.83		0.88	0.86	0.33	0.67	0.58	0.42	0.93	0.42	
Uniform Delay, d1	62.9	65.4		57.1	56.9	32.5	67.6	40.9	19.6	61.3	29.6	
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	0.7	22.8		20.7	18.5	0.2	10.0	3.9	0.2	21.5	1.6	
Delay (s)	63.6	88.2		77.8	75.4	32.7	77.5	44.8	19.7	82.7	31.2	
Level of Service	E	F		E	E	C	E	D	B	F	C	
Approach Delay (s)		79.2			54.2			32.9			63.4	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	81.1%	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 (vph)	11	27	15	748	28	521	12	210	409	900	648	4
Future Volume (vph)	11	27	15	748	28	521	12	210	409	900	648	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1799		1715	1725	2814	1805	1810	2787	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1799		1715	1725	2814	1805	1810	2787	3467	1826	
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)	12	29	16	804	30	560	13	226	440	968	697	4
RTOR Reduction (vph)	0	15	0	0	0	255	0	0	0	0	0	0
Lane Group Flow (vph)	12	30	0	418	416	305	13	226	440	968	701	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		33.2	33.2	70.9	2.6	27.6	60.8	37.7	62.1	
Effective Green, g (s)	6.5	6.5		33.2	33.2	70.9	2.6	27.6	60.8	37.7	62.1	
Actuated g/C Ratio	0.05	0.05		0.26	0.26	0.55	0.02	0.21	0.47	0.29	0.48	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	90	89		437	440	1534	36	384	1303	1005	872	
v/s Ratio Prot	0.01	c0.02		c0.24	0.24	0.06	0.01	0.12	0.09	c0.28	c0.38	
v/s Ratio Perm						0.05			0.07			
v/c Ratio	0.13	0.33		0.96	0.95	0.20	0.36	0.59	0.34	0.96	0.80	
Uniform Delay, d1	59.1	59.7		47.7	47.5	15.1	62.9	46.1	21.9	45.5	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	0.2	0.8		31.8	29.2	0.1	2.2	3.6	0.2	19.9	7.8	
Delay (s)	59.3	60.5		79.5	76.8	15.1	65.1	49.6	22.0	65.4	36.6	
Level of Service	E	E		E	E	B	E	D	C	E	D	
Approach Delay (s)		60.2			52.8			32.0			53.3	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	156	49	580	171	786	107	442	767	653	375	20
Future Volume (vph)	118	156	49	580	171	786	107	442	767	653	375	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1818		1681	1738	2814	1805	1881	2814	3467	1850	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1818		1681	1738	2814	1805	1881	2814	3467	1850	
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)	122	161	51	598	176	810	110	456	791	673	387	21
RTOR Reduction (vph)	0	8	0	0	0	224	0	0	0	0	1	0
Lane Group Flow (vph)	122	204	0	383	391	586	110	456	791	673	407	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	18.1	18.1		33.7	33.7	58.1	12.2	48.8	82.5	24.4	60.4	
Effective Green, g (s)	18.1	18.1		33.7	33.7	58.1	12.2	48.8	82.5	24.4	60.4	
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.39	0.08	0.33	0.55	0.16	0.40	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	217	219		377	390	1089	146	611	1547	563	744	
v/s Ratio Prot	0.07	c0.11		c0.23	0.23	0.09	0.06	c0.24	0.11	c0.19	0.22	
v/s Ratio Perm						0.12			0.17			
v/c Ratio	0.56	0.93		1.02	1.00	0.54	0.75	0.75	0.51	1.20	0.55	
Uniform Delay, d1	62.2	65.3		58.1	58.1	35.6	67.4	45.1	21.1	62.8	34.3	
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	2.0	41.7		50.4	46.2	0.5	17.6	8.1	0.3	104.4	2.9	
Delay (s)	64.2	107.0		108.6	104.4	36.1	85.0	53.2	21.4	167.2	37.2	
Level of Service	E	F		F	F	D	F	D	C	F	D	
Approach Delay (s)		91.4			70.5			37.2			118.1	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	27	15	736	28	513	12	206	402	885	637	4
Future Volume (vph)	11	27	15	736	28	513	12	206	402	885	637	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1799		1715	1725	2814	1805	1810	2787	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1799		1715	1725	2814	1805	1810	2787	3467	1826	
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)	12	29	16	791	30	552	13	222	432	952	685	4
RTOR Reduction (vph)	0	15	0	0	0	254	0	0	0	0	0	0
Lane Group Flow (vph)	12	30	0	411	410	298	13	222	432	952	689	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.5	6.5		32.7	32.7	70.1	2.6	28.4	61.1	37.4	62.6	
Effective Green, g (s)	6.5	6.5		32.7	32.7	70.1	2.6	28.4	61.1	37.4	62.6	
Actuated g/C Ratio	0.05	0.05		0.25	0.25	0.54	0.02	0.22	0.47	0.29	0.48	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	90	89		431	433	1517	36	395	1309	997	879	
v/s Ratio Prot	0.01	c0.02		c0.24	0.24	0.06	0.01	0.12	0.08	c0.27	c0.38	
v/s Ratio Perm						0.05			0.07			
v/c Ratio	0.13	0.33		0.95	0.95	0.20	0.36	0.56	0.33	0.95	0.78	
Uniform Delay, d1	59.1	59.7		47.9	47.8	15.4	62.9	45.3	21.6	45.5	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	0.2	0.8		31.5	29.8	0.1	2.2	3.0	0.1	18.4	6.9	
Delay (s)	59.3	60.5		79.4	77.6	15.5	65.1	48.3	21.8	63.9	35.0	
Level of Service	E	E		E	E	B	E	D	C	E	C	
Approach Delay (s)		60.2			53.2			31.4			51.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	154	48	570	168	773	106	433	755	643	368	19
Future Volume (vph)	116	154	48	570	168	773	106	433	755	643	368	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1819		1681	1738	2814	1805	1881	2814	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1819		1681	1738	2814	1805	1881	2814	3467	1851	
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)	120	159	49	588	173	797	109	446	778	663	379	20
RTOR Reduction (vph)	0	7	0	0	0	231	0	0	0	0	1	0
Lane Group Flow (vph)	120	201	0	376	385	566	109	446	778	663	398	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	17.9	17.9		33.9	33.9	58.3	12.2	48.8	82.7	24.4	60.4	
Effective Green, g (s)	17.9	17.9		33.9	33.9	58.3	12.2	48.8	82.7	24.4	60.4	
Actuated g/C Ratio	0.12	0.12		0.23	0.23	0.39	0.08	0.33	0.55	0.16	0.40	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	215	217		379	392	1093	146	611	1551	563	745	
v/s Ratio Prot	0.07	c0.11		c0.22	0.22	0.08	0.06	c0.24	0.11	c0.19	0.21	
v/s Ratio Perm						0.12			0.16			
v/c Ratio	0.56	0.93		0.99	0.98	0.52	0.75	0.73	0.50	1.18	0.53	
Uniform Delay, d1	62.3	65.4		57.9	57.7	35.1	67.4	44.8	20.9	62.8	34.1	
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	1.8	40.2		43.9	40.5	0.4	16.5	7.5	0.3	97.3	2.7	
Delay (s)	64.1	105.6		101.8	98.2	35.5	83.9	52.3	21.1	160.1	36.8	
Level of Service	E	F		F	F	D	F	D	C	F	D	
Approach Delay (s)		90.4			67.0			36.7			113.8	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	93.2%	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 (vph)	13	33	18	898	34	626	15	252	491	1080	777	5
Future Volume (vph)	13	33	18	898	34	626	15	252	491	1080	777	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1800		1715	1725	2814	1805	1810	2787	3467	1826	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1800		1715	1725	2814	1805	1810	2787	3467	1826	
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)	14	35	19	966	37	673	16	271	528	1161	835	5
RTOR Reduction (vph)	0	15	0	0	0	285	0	0	0	0	0	0
Lane Group Flow (vph)	14	39	0	502	501	388	16	271	528	1161	840	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	2%	1%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	6.6	6.6		33.6	33.6	71.0	2.8	27.4	61.0	37.4	61.4	
Effective Green, g (s)	6.6	6.6		33.6	33.6	71.0	2.8	27.4	61.0	37.4	61.4	
Actuated g/C Ratio	0.05	0.05		0.26	0.26	0.55	0.02	0.21	0.47	0.29	0.47	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	91	91		443	445	1536	38	381	1307	997	862	
v/s Ratio Prot	0.01	c0.02		c0.29	0.29	0.07	0.01	0.15	0.10	c0.33	c0.46	
v/s Ratio Perm						0.07			0.09			
v/c Ratio	0.15	0.43		1.13	1.13	0.25	0.42	0.71	0.40	1.16	0.97	
Uniform Delay, d1	59.0	59.9		48.2	48.2	15.5	62.8	47.6	22.6	46.3	33.5	
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	1.2		84.5	81.7	0.1	2.7	7.6	0.2	85.1	25.1	
Delay (s)	59.3	61.0		132.7	129.9	15.6	65.5	55.2	22.8	131.4	58.6	
Level of Service	E	E		F	F	B	E	E	C	F	E	
Approach Delay (s)		60.7			84.8			34.4			100.9	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM 2000 Control Delay	82.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	188	59	696	205	943	129	528	921	785	449	23
Future Volume (vph)	142	188	59	696	205	943	129	528	921	785	449	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Lane Util. Factor	1.00	1.00		0.95	0.95	0.88	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1818		1681	1738	2814	1805	1881	2814	3467	1851	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1818		1681	1738	2814	1805	1881	2814	3467	1851	
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)	146	194	61	718	211	972	133	544	949	809	463	24
RTOR Reduction (vph)	0	8	0	0	0	162	0	0	0	0	1	0
Lane Group Flow (vph)	146	247	0	460	469	810	133	544	949	809	486	0
Heavy Vehicles (%)	0%	1%	0%	2%	0%	1%	0%	1%	1%	1%	2%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		7	7	5	1	6	7	5	2	
Permitted Phases						7			6			
Actuated Green, G (s)	18.4	18.4		33.4	33.4	57.8	13.1	48.8	82.2	24.4	59.5	
Effective Green, g (s)	18.4	18.4		33.4	33.4	57.8	13.1	48.8	82.2	24.4	59.5	
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.39	0.09	0.33	0.55	0.16	0.40	
Clearance Time (s)	6.6	6.6		6.6	6.6	5.6	6.2	6.2	6.6	5.6	6.2	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)	221	223		374	386	1084	157	611	1542	563	734	
v/s Ratio Prot	0.08	c0.14		c0.27	0.27	0.12	0.07	c0.29	0.14	c0.23	0.26	
v/s Ratio Perm						0.17			0.20			
v/c Ratio	0.66	1.11		1.23	1.22	0.75	0.85	0.89	0.62	1.44	0.66	
Uniform Delay, d1	62.8	65.8		58.3	58.3	39.8	67.5	48.1	23.1	62.8	37.0	
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	5.6	92.3		124.8	118.3	2.9	31.1	17.6	0.7	206.6	4.7	
Delay (s)	68.4	158.1		183.1	176.6	42.7	98.6	65.7	23.9	269.4	41.7	
Level of Service	E	F		F	F	D	F	E	C	F	D	
Approach Delay (s)		125.4			109.7			44.0			183.8	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	108.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	57	0	62	80	27	869	234	2	36	378	567
Future Volume (vph)	162	57	0	62	80	27	869	234	2	36	378	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	1881		1805	1828		3367	1879		1805	1900	1599
Flt Permitted	0.95	1.00		0.72	1.00		0.95	1.00		0.59	1.00	1.00
Satd. Flow (perm)	3367	1881		1365	1828		3367	1879		1119	1900	1599
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)	169	59	0	65	83	28	905	244	2	38	394	591
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	169	59	0	65	102	0	905	246	0	38	394	591
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	10.9	16.5		23.3	12.2		48.8	77.1		81.7	33.3	130.0
Effective Green, g (s)	10.9	16.5		23.3	12.2		48.8	77.1		81.7	33.3	130.0
Actuated g/C Ratio	0.08	0.13		0.18	0.09		0.38	0.59		0.63	0.26	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	282	238		267	171		1263	1114		727	486	1599
v/s Ratio Prot	c0.05	0.03		0.01	c0.06		c0.27	0.13		0.00	c0.21	
v/s Ratio Perm				0.03						0.03		c0.37
v/c Ratio	0.60	0.25		0.24	0.60		0.72	0.22		0.05	0.81	0.37
Uniform Delay, d1	57.4	51.2		45.4	56.5		34.7	12.4		9.2	45.4	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.86	0.74		0.30	0.87	1.00
Incremental Delay, d2	2.3	0.2		0.2	3.7		2.6	0.3		0.0	10.6	0.6
Delay (s)	59.7	51.4		45.6	60.2		32.4	9.5		2.8	50.1	0.6
Level of Service	E	D		D	E		C	A		A	D	A
Approach Delay (s)		57.6			54.8			27.5			19.8	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
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 (vph)	349	110	0	91	74	33	780	414	12	44	393	239
Future Volume (vph)	349	110	0	91	74	33	780	414	12	44	393	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863		1805	1787		3467	1874		1805	1881	1583
Flt Permitted	0.95	1.00		0.63	1.00		0.95	1.00		0.42	1.00	1.00
Satd. Flow (perm)	3433	1863		1191	1787		3467	1874		792	1881	1583
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)	367	116	0	96	78	35	821	436	13	46	414	252
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	367	116	0	96	102	0	821	449	0	46	414	252
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	20.4	22.8		33.4	12.8		42.3	86.6		91.6	49.7	150.0
Effective Green, g (s)	20.4	22.8		33.4	12.8		42.3	86.6		91.6	49.7	150.0
Actuated g/C Ratio	0.14	0.15		0.22	0.09		0.28	0.58		0.61	0.33	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	466	283		308	152		977	1081		517	623	1583
v/s Ratio Prot	c0.11	0.06		0.02	c0.06		c0.24	0.24		0.00	c0.22	
v/s Ratio Perm				0.05						0.05		0.16
v/c Ratio	0.79	0.41		0.31	0.67		0.84	0.41		0.09	0.66	0.16
Uniform Delay, d1	62.7	57.5		47.9	66.6		50.7	17.6		12.4	43.0	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.91	0.81		1.23	1.00	1.00
Incremental Delay, d2	7.9	0.4		0.2	8.8		4.7	0.8		0.0	5.4	0.2
Delay (s)	70.6	57.9		48.1	75.4		50.8	15.1		15.3	48.5	0.2
Level of Service	E	E		D	E		D	B		B	D	A
Approach Delay (s)		67.6			62.8			38.2			29.3	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
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 (vph)	198	70	0	76	98	33	1061	285	2	44	461	692
Future Volume (vph)	198	70	0	76	98	33	1061	285	2	44	461	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	1881		1805	1829		3367	1879		1805	1900	1599
Flt Permitted	0.55	1.00		0.71	1.00		0.95	1.00		0.54	1.00	1.00
Satd. Flow (perm)	1950	1881		1348	1829		3367	1879		1035	1900	1599
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)	206	73	0	79	102	34	1105	297	2	46	480	721
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	206	73	0	79	126	0	1105	299	0	46	480	721
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	D.P+P	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	8			4						6		Free
Actuated Green, G (s)	23.3	16.4		23.5	14.3		44.2	76.8		81.5	37.7	130.0
Effective Green, g (s)	23.3	16.4		23.5	14.3		44.2	76.8		81.5	37.7	130.0
Actuated g/C Ratio	0.18	0.13		0.18	0.11		0.34	0.59		0.63	0.29	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	447	237		268	201		1144	1110		676	551	1599
v/s Ratio Prot	0.03	0.04		0.02	0.07		c0.33	0.16		0.00	c0.25	
v/s Ratio Perm	0.05			0.04						0.04		c0.45
v/c Ratio	0.46	0.31		0.29	0.63		0.97	0.27		0.07	0.87	0.45
Uniform Delay, d1	46.7	51.6		45.6	55.3		42.2	12.9		9.4	43.8	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.72		0.28	0.83	1.00
Incremental Delay, d2	0.3	0.3		0.2	4.4		12.5	0.3		0.0	13.9	0.8
Delay (s)	46.9	51.9		45.8	59.7		48.2	9.7		2.6	50.4	0.8
Level of Service	D	D		D	E		D	A		A	D	A
Approach Delay (s)		48.2			54.6			40.0			20.0	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	426	134	0	111	90	40	952	505	15	54	480	291
Future Volume (vph)	426	134	0	111	90	40	952	505	15	54	480	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863		1805	1788		3467	1873		1805	1881	1583
Flt Permitted	0.95	1.00		0.58	1.00		0.95	1.00		0.33	1.00	1.00
Satd. Flow (perm)	3433	1863		1094	1788		3467	1873		620	1881	1583
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)	448	141	0	117	95	42	1002	532	16	57	505	306
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	448	141	0	117	126	0	1002	548	0	57	505	306
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	23.8	26.4		37.8	13.8		43.3	81.7		87.2	44.3	150.0
Effective Green, g (s)	23.8	26.4		37.8	13.8		43.3	81.7		87.2	44.3	150.0
Actuated g/C Ratio	0.16	0.18		0.25	0.09		0.29	0.54		0.58	0.30	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	544	327		329	164		1000	1020		403	555	1583
v/s Ratio Prot	c0.13	0.08		0.03	c0.07		c0.29	0.29		0.01	c0.27	
v/s Ratio Perm				0.06						0.08		0.19
v/c Ratio	0.82	0.43		0.36	0.77		1.00	0.54		0.14	0.91	0.19
Uniform Delay, d1	61.1	55.1		44.9	66.5		53.4	22.0		15.6	50.9	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.95	0.93		1.42	1.00	1.00
Incremental Delay, d2	9.3	0.3		0.2	17.5		19.7	0.9		0.1	20.9	0.3
Delay (s)	70.4	55.4		45.2	84.0		70.6	21.4		22.1	71.7	0.3
Level of Service	E	E		D	F		E	C		C	E	A
Approach Delay (s)		66.8			66.1			53.2			43.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	68	0	74	96	32	1043	281	2	43	454	680
Future Volume (vph)	194	68	0	74	96	32	1043	281	2	43	454	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	1881		1805	1829		3367	1879		1805	1900	1599
Flt Permitted	0.95	1.00		0.71	1.00		0.95	1.00		0.54	1.00	1.00
Satd. Flow (perm)	3367	1881		1350	1829		3367	1879		1035	1900	1599
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)	202	71	0	77	100	33	1086	293	2	45	473	708
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	202	71	0	77	124	0	1086	295	0	45	473	708
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	11.8	18.0		25.1	13.1		43.4	75.2		79.9	36.9	130.0
Effective Green, g (s)	11.8	18.0		25.1	13.1		43.4	75.2		79.9	36.9	130.0
Actuated g/C Ratio	0.09	0.14		0.19	0.10		0.33	0.58		0.61	0.28	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	305	260		285	184		1124	1086		663	539	1599
v/s Ratio Prot	c0.06	0.04		0.01	0.07		c0.32	0.16		0.00	c0.25	
v/s Ratio Perm				0.04						0.04		c0.44
v/c Ratio	0.66	0.27		0.27	0.67		0.97	0.27		0.07	0.88	0.44
Uniform Delay, d1	57.2	50.1		44.2	56.4		42.6	13.7		10.0	44.4	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.73		0.29	0.84	1.00
Incremental Delay, d2	4.1	0.2		0.2	7.4		13.1	0.3		0.0	14.8	0.8
Delay (s)	61.3	50.3		44.4	63.8		49.4	10.4		2.9	52.0	0.8
Level of Service	E	D		D	E		D	B		A	D	A
Approach Delay (s)		58.5			56.7			41.1			20.6	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	86.9%	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 (vph)	419	132	0	109	89	40	936	497	14	53	471	287
Future Volume (vph)	419	132	0	109	89	40	936	497	14	53	471	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863		1805	1787		3467	1874		1805	1881	1583
Flt Permitted	0.95	1.00		0.58	1.00		0.95	1.00		0.33	1.00	1.00
Satd. Flow (perm)	3433	1863		1103	1787		3467	1874		636	1881	1583
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)	441	139	0	115	94	42	985	523	15	56	496	302
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	441	139	0	115	125	0	985	538	0	56	496	302
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	23.6	26.3		37.6	13.8		42.3	82.0		87.4	45.5	150.0
Effective Green, g (s)	23.6	26.3		37.6	13.8		42.3	82.0		87.4	45.5	150.0
Actuated g/C Ratio	0.16	0.18		0.25	0.09		0.28	0.55		0.58	0.30	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	540	326		329	164		977	1024		412	570	1583
v/s Ratio Prot	c0.13	0.07		0.03	c0.07		c0.28	0.29		0.00	c0.26	
v/s Ratio Perm				0.06						0.07		0.19
v/c Ratio	0.82	0.43		0.35	0.76		1.01	0.52		0.14	0.87	0.19
Uniform Delay, d1	61.1	55.1		45.0	66.5		53.9	21.6		15.3	49.5	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.95	0.92		1.45	1.00	1.00
Incremental Delay, d2	8.8	0.3		0.2	17.0		21.9	0.9		0.1	16.1	0.3
Delay (s)	69.9	55.5		45.3	83.5		73.2	20.9		22.3	65.4	0.3
Level of Service	E	E		D	F		E	C		C	E	A
Approach Delay (s)		66.5			66.0			54.7			39.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
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 (vph)	237	83	0	90	117	39	1274	343	2	52	554	830
Future Volume (vph)	237	83	0	90	117	39	1274	343	2	52	554	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	1881		1805	1828		3367	1880		1805	1900	1599
Flt Permitted	0.95	1.00		0.70	1.00		0.95	1.00		0.49	1.00	1.00
Satd. Flow (perm)	3367	1881		1332	1828		3367	1880		940	1900	1599
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)	247	86	0	94	122	41	1327	357	2	54	577	865
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	247	86	0	94	153	0	1327	359	0	54	577	865
Heavy Vehicles (%)	4%	1%	6%	0%	0%	0%	4%	1%	0%	0%	0%	1%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	9.3	15.4		24.0	14.5		39.0	76.1		81.0	42.4	130.0
Effective Green, g (s)	9.3	15.4		24.0	14.5		39.0	76.1		81.0	42.4	130.0
Actuated g/C Ratio	0.07	0.12		0.18	0.11		0.30	0.59		0.62	0.33	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	240	222		277	203		1010	1100		618	619	1599
v/s Ratio Prot	c0.07	0.05		0.02	0.08		c0.39	0.19		0.00	c0.30	
v/s Ratio Perm				0.04						0.05		c0.54
v/c Ratio	1.03	0.39		0.34	0.75		1.31	0.33		0.09	0.93	0.54
Uniform Delay, d1	60.4	52.9		45.6	56.0		45.5	13.8		9.7	42.4	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.86	0.70		0.26	0.82	1.00
Incremental Delay, d2	65.9	0.4		0.3	13.2		141.9	0.1		0.0	18.9	1.1
Delay (s)	126.2	53.4		45.9	69.2		181.0	9.8		2.6	53.6	1.1
Level of Service	F	D		D	E		F	A		A	D	A
Approach Delay (s)		107.4			60.7			144.5			21.4	
Approach LOS		F			E			F			C	

Intersection Summary			
HCM 2000 Control Delay	86.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	161	0	133	108	49	1143	607	17	65	575	350
Future Volume (vph)	511	161	0	133	108	49	1143	607	17	65	575	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863		1805	1786		3467	1874		1805	1881	1583
Flt Permitted	0.95	1.00		0.53	1.00		0.95	1.00		0.22	1.00	1.00
Satd. Flow (perm)	3433	1863		1004	1786		3467	1874		425	1881	1583
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)	538	169	0	140	114	52	1203	639	18	68	605	368
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	538	169	0	140	155	0	1203	657	0	68	605	368
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot	NA		D.P+P	NA		Prot	NA		D.P+P	NA	Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases				4						6		Free
Actuated Green, G (s)	26.7	29.7		42.0	15.1		43.2	77.2		83.0	40.2	150.0
Effective Green, g (s)	26.7	29.7		42.0	15.1		43.2	77.2		83.0	40.2	150.0
Actuated g/C Ratio	0.18	0.20		0.28	0.10		0.29	0.51		0.55	0.27	1.00
Clearance Time (s)	5.7	6.9		5.5	6.9		6.0	6.2		6.4	6.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	611	368		346	179		998	964		288	504	1583
v/s Ratio Prot	c0.16	0.09		0.03	c0.09		c0.35	0.35		0.01	c0.32	
v/s Ratio Perm				0.08						0.12		0.23
v/c Ratio	0.88	0.46		0.40	0.87		1.21	0.68		0.24	1.20	0.23
Uniform Delay, d1	60.1	53.1		42.3	66.5		53.4	27.2		20.2	54.9	0.0
Progression Factor	1.00	1.00		1.00	1.00		0.99	0.98		1.67	0.97	1.00
Incremental Delay, d2	13.6	0.3		0.3	32.0		93.4	0.4		0.1	107.2	0.3
Delay (s)	73.7	53.4		42.5	98.4		146.4	27.0		33.9	160.4	0.3
Level of Service	E	D		D	F		F	C		C	F	A
Approach Delay (s)		68.8			72.9			104.2			95.6	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	93.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.2
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Future Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.37	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	699	1881	1583	760	1900	1599
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)	163	251	103	385	143	340	25	198	232	343	487	93
RTOR Reduction (vph)	0	0	87	0	0	248	0	0	183	0	0	61
Lane Group Flow (vph)	163	251	16	385	143	92	25	198	49	343	487	32
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	19.1	19.1	19.1	32.7	32.7	32.7	29.0	25.6	25.6	50.9	42.0	42.0
Effective Green, g (s)	19.1	19.1	19.1	32.7	32.7	32.7	29.0	25.6	25.6	50.9	42.0	42.0
Actuated g/C Ratio	0.16	0.16	0.16	0.27	0.27	0.27	0.24	0.21	0.21	0.42	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	286	301	255	489	515	409	199	399	336	482	662	557
v/s Ratio Prot	0.09	c0.13		c0.21	0.08		0.00	0.11		c0.12	c0.26	
v/s Ratio Perm			0.01			0.06	0.03		0.03	0.18		0.02
v/c Ratio	0.57	0.83	0.06	0.79	0.28	0.23	0.13	0.50	0.15	0.71	0.74	0.06
Uniform Delay, d1	46.9	49.2	43.1	40.7	34.6	34.1	35.4	41.8	38.6	25.7	34.4	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	17.4	0.1	12.1	1.3	1.3	0.1	2.7	0.6	5.1	5.8	0.1
Delay (s)	49.0	66.6	43.2	52.8	35.9	35.4	35.5	44.5	39.1	30.8	40.2	26.2
Level of Service	D	E	D	D	D	D	D	D	D	C	D	C
Approach Delay (s)		56.4			43.2			41.3			35.3	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	23.5
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 (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Future Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.59	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	1108	1881	1583	441	1900	1615
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)	146	186	74	287	254	469	87	336	327	296	267	160
RTOR Reduction (vph)	0	0	64	0	0	259	0	0	210	0	0	75
Lane Group Flow (vph)	146	186	10	287	254	210	87	336	117	296	267	85
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	16.6	16.6	16.6	32.6	32.6	32.6	36.0	29.6	29.6	54.7	42.8	42.8
Effective Green, g (s)	16.6	16.6	16.6	32.6	32.6	32.6	36.0	29.6	29.6	54.7	42.8	42.8
Actuated g/C Ratio	0.14	0.14	0.14	0.27	0.27	0.27	0.30	0.24	0.24	0.45	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	241	251	211	478	499	424	362	457	385	410	668	567
v/s Ratio Prot	0.08	c0.10		c0.16	0.14		0.01	0.18		c0.12	0.14	
v/s Ratio Perm			0.01			0.13	0.06		0.07	c0.21		0.05
v/c Ratio	0.61	0.74	0.05	0.60	0.51	0.49	0.24	0.74	0.30	0.72	0.40	0.15
Uniform Delay, d1	49.5	50.5	45.7	38.9	37.8	37.6	31.7	42.4	37.6	24.5	29.8	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	10.6	0.1	5.5	3.7	4.1	0.1	8.2	1.3	6.4	1.1	0.3
Delay (s)	53.1	61.1	45.7	44.4	41.4	41.7	31.9	50.7	38.9	30.9	30.9	27.3
Level of Service	D	E	D	D	D	D	C	D	D	C	C	C
Approach Delay (s)		55.4			42.4			43.4			30.1	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	121.7	Sum of lost time (s)	23.5
Intersection Capacity Utilization	77.5%	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 (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Future Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.26	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	498	1881	1583	529	1900	1599
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)	199	307	126	470	175	415	30	241	283	420	595	114
RTOR Reduction (vph)	0	0	105	0	0	310	0	0	231	0	0	72
Lane Group Flow (vph)	199	307	21	470	175	105	30	241	52	420	595	42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	21.8	21.8	21.8	32.5	32.5	32.5	27.3	23.6	23.6	56.9	47.7	47.7
Effective Green, g (s)	21.8	21.8	21.8	32.5	32.5	32.5	27.3	23.6	23.6	56.9	47.7	47.7
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.21	0.18	0.18	0.44	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	305	321	272	454	478	380	142	344	289	494	702	591
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.18	0.31	
v/s Ratio Perm			0.01			0.07	0.04		0.03	c0.19		0.03
v/c Ratio	0.65	0.96	0.08	1.04	0.37	0.28	0.21	0.70	0.18	0.85	0.85	0.07
Uniform Delay, d1	50.1	53.1	45.1	48.2	39.8	38.8	41.1	49.4	44.5	28.0	37.3	26.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	38.3	0.1	51.6	2.2	1.8	0.3	9.2	0.8	13.4	10.7	0.1
Delay (s)	54.5	91.4	45.2	99.9	41.9	40.6	41.4	58.6	45.4	41.4	48.0	26.5
Level of Service	D	F	D	F	D	D	D	E	D	D	D	C
Approach Delay (s)		70.6			67.1			50.9			43.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Future Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.56	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	1050	1881	1583	263	1900	1615
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)	178	227	91	349	309	572	105	410	399	361	326	195
RTOR Reduction (vph)	0	0	77	0	0	261	0	0	207	0	0	78
Lane Group Flow (vph)	178	227	14	349	309	311	105	410	192	361	326	117
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	18.6	18.6	18.6	32.5	32.5	32.5	30.8	22.6	22.6	54.2	40.5	40.5
Effective Green, g (s)	18.6	18.6	18.6	32.5	32.5	32.5	30.8	22.6	22.6	54.2	40.5	40.5
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.25	0.18	0.18	0.44	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	267	278	234	471	491	417	310	345	290	432	625	531
v/s Ratio Prot	0.10	c0.12		0.20	0.17		0.02	c0.22		c0.18	0.17	
v/s Ratio Perm			0.01			c0.20	0.06		0.12	0.19		0.07
v/c Ratio	0.67	0.82	0.06	0.74	0.63	0.75	0.34	1.19	0.66	0.84	0.52	0.22
Uniform Delay, d1	49.3	50.6	44.8	41.4	40.0	41.5	36.8	50.2	46.7	32.6	33.5	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	16.3	0.1	10.1	6.0	11.5	0.2	110.1	8.6	13.4	2.0	0.6
Delay (s)	54.9	66.9	44.8	51.5	46.0	53.0	37.0	160.4	55.3	46.0	35.4	30.5
Level of Service	D	E	D	D	D	D	D	F	E	D	D	C
Approach Delay (s)		58.5			50.8			100.3			38.7	
Approach LOS		E			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	61.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Future Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.19	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	362	1881	1583	648	1900	1599
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)	196	301	124	462	172	409	30	238	278	412	586	113
RTOR Reduction (vph)	0	0	103	0	0	303	0	0	217	0	0	73
Lane Group Flow (vph)	196	301	21	462	172	106	30	238	61	412	586	40
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	21.6	21.6	21.6	32.5	32.5	32.5	31.3	27.6	27.6	53.7	44.5	44.5
Effective Green, g (s)	21.6	21.6	21.6	32.5	32.5	32.5	31.3	27.6	27.6	53.7	44.5	44.5
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.25	0.22	0.22	0.43	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	310	326	277	467	491	390	132	413	347	456	673	566
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.15	0.31	
v/s Ratio Perm			0.01			0.07	0.05		0.04	c0.24		0.03
v/c Ratio	0.63	0.92	0.08	0.99	0.35	0.27	0.23	0.58	0.18	0.90	0.87	0.07
Uniform Delay, d1	48.3	51.2	43.6	46.4	37.9	37.1	37.0	43.8	39.8	29.2	37.9	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	30.7	0.1	39.1	2.0	1.7	0.3	3.8	0.7	21.3	13.3	0.2
Delay (s)	52.0	81.9	43.7	85.5	39.9	38.8	37.3	47.6	40.5	50.5	51.1	27.0
Level of Service	D	F	D	F	D	D	D	D	D	D	D	C
Approach Delay (s)		64.8			59.7			43.4			48.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	125.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Future Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.57	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	1053	1881	1583	268	1900	1615
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)	175	223	89	344	304	563	104	403	392	355	322	193
RTOR Reduction (vph)	0	0	76	0	0	264	0	0	209	0	0	76
Lane Group Flow (vph)	175	223	13	344	304	299	104	403	183	355	322	117
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	18.9	18.9	18.9	32.4	32.4	32.4	39.1	31.0	31.0	57.0	43.4	43.4
Effective Green, g (s)	18.9	18.9	18.9	32.4	32.4	32.4	39.1	31.0	31.0	57.0	43.4	43.4
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.31	0.25	0.25	0.45	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	265	276	232	459	478	406	372	462	389	362	653	555
v/s Ratio Prot	0.10	c0.12		c0.19	0.16		0.02	0.21		c0.16	0.17	
v/s Ratio Perm			0.01			0.19	0.07		0.12	c0.28		0.07
v/c Ratio	0.66	0.81	0.06	0.75	0.64	0.74	0.28	0.87	0.47	0.98	0.49	0.21
Uniform Delay, d1	50.6	51.8	46.0	43.1	41.6	42.9	31.9	45.6	40.6	34.1	32.7	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	15.4	0.1	10.7	6.3	11.3	0.2	18.3	2.5	42.0	1.7	0.5
Delay (s)	56.0	67.2	46.0	53.8	47.9	54.3	32.0	63.9	43.1	76.2	34.3	29.8
Level of Service	E	E	D	D	D	D	C	E	D	E	C	C
Approach Delay (s)		59.3			52.6			51.1			50.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	126.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	89.1%	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 (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Future Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	1752	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	322	1881	1583	347	1900	1599
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)	239	367	151	564	210	499	37	290	339	502	715	138
RTOR Reduction (vph)	0	0	125	0	0	343	0	0	250	0	0	74
Lane Group Flow (vph)	239	367	26	564	210	156	37	290	89	502	715	64
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	22.3	22.3	22.3	32.4	32.4	32.4	28.7	23.6	23.6	58.6	48.0	48.0
Effective Green, g (s)	22.3	22.3	22.3	32.4	32.4	32.4	28.7	23.6	23.6	58.6	48.0	48.0
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.22	0.18	0.18	0.45	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	307	323	274	446	469	372	128	338	284	469	695	585
v/s Ratio Prot	0.13	c0.19		c0.31	0.11		0.01	0.15		c0.24	0.38	
v/s Ratio Perm			0.02			0.10	0.05		0.06	c0.24		0.04
v/c Ratio	0.78	1.14	0.09	1.26	0.45	0.42	0.29	0.86	0.31	1.07	1.03	0.11
Uniform Delay, d1	52.0	54.4	45.9	49.3	41.8	41.4	42.3	52.1	46.7	35.7	41.5	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	1.00
Incremental Delay, d2	11.3	92.2	0.1	136.0	3.1	3.4	0.5	21.2	1.8	61.6	41.7	0.2
Delay (s)	63.4	146.6	46.0	185.3	44.9	44.9	42.8	73.4	48.5	97.4	83.3	27.7
Level of Service	E	F	D	F	D	D	D	E	D	F	F	C
Approach Delay (s)		100.3			107.1			59.0			82.8	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	89.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	131.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Future Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	1770	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.53	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	987	1881	1583	264	1900	1615
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)	213	272	108	421	371	687	127	492	478	433	393	235
RTOR Reduction (vph)	0	0	90	0	0	266	0	0	210	0	0	77
Lane Group Flow (vph)	213	272	18	421	371	421	127	492	268	433	393	158
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6	2		2
Actuated Green, G (s)	21.2	21.2	21.2	32.4	32.4	32.4	31.2	22.5	22.5	57.4	43.2	43.2
Effective Green, g (s)	21.2	21.2	21.2	32.4	32.4	32.4	31.2	22.5	22.5	57.4	43.2	43.2
Actuated g/C Ratio	0.16	0.16	0.16	0.25	0.25	0.25	0.24	0.17	0.17	0.45	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	291	303	255	449	468	398	291	328	276	459	637	541
v/s Ratio Prot	0.12	c0.15		0.24	0.20		0.03	c0.26		c0.21	0.21	
v/s Ratio Perm			0.01			c0.27	0.08		0.17	0.21		0.10
v/c Ratio	0.73	0.90	0.07	0.94	0.79	1.06	0.44	1.50	0.97	0.94	0.62	0.29
Uniform Delay, d1	51.1	52.7	45.5	47.2	45.1	48.2	39.8	53.2	52.8	37.2	35.9	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	1.00
Incremental Delay, d2	8.6	27.0	0.1	29.4	12.9	61.4	0.4	240.4	47.1	28.3	3.1	0.8
Delay (s)	59.7	79.7	45.6	76.6	58.0	109.6	40.2	293.6	99.9	65.6	39.0	32.4
Level of Service	E	E	D	E	E	F	D	F	F	E	D	C
Approach Delay (s)		66.3			87.3			179.9			48.4	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	98.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	128.8	Sum of lost time (s)	23.5
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Future Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	332	1881	1583	3400	1851	
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)	163	251	103	385	143	340	25	198	232	343	487	93
RTOR Reduction (vph)	0	0	87	0	0	248	0	0	178	0	5	0
Lane Group Flow (vph)	163	251	16	385	143	92	25	198	54	343	575	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	19.2	19.2	19.2	32.7	32.7	32.7	31.3	27.9	27.9	17.1	41.8	
Effective Green, g (s)	19.2	19.2	19.2	32.7	32.7	32.7	31.3	27.9	27.9	17.1	41.8	
Actuated g/C Ratio	0.16	0.16	0.16	0.27	0.27	0.27	0.26	0.23	0.23	0.14	0.35	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	287	302	257	490	516	409	127	435	366	482	642	
v/s Ratio Prot	0.09	c0.13		c0.21	0.08		0.01	0.11		c0.10	c0.31	
v/s Ratio Perm			0.01			0.06	0.05		0.03			
v/c Ratio	0.57	0.83	0.06	0.79	0.28	0.23	0.20	0.46	0.15	0.71	0.90	
Uniform Delay, d1	46.8	49.0	43.0	40.6	34.5	34.0	34.7	39.7	36.8	49.3	37.2	
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	2.1	17.1	0.1	12.0	1.3	1.3	0.3	2.1	0.5	5.1	16.5	
Delay (s)	48.9	66.1	43.0	52.6	35.9	35.3	34.9	41.8	37.3	54.4	53.7	
Level of Service	D	E	D	D	D	D	C	D	D	D	D	
Approach Delay (s)		56.1			43.1			39.2			54.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Future Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.37	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	682	1881	1583	3433	1793	
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)	146	186	74	287	254	469	87	336	327	296	267	160
RTOR Reduction (vph)	0	0	64	0	0	256	0	0	207	0	17	0
Lane Group Flow (vph)	146	186	10	287	254	213	87	336	120	296	410	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	16.3	16.3	16.3	32.8	32.8	32.8	36.0	29.6	29.6	15.7	39.1	
Effective Green, g (s)	16.3	16.3	16.3	32.8	32.8	32.8	36.0	29.6	29.6	15.7	39.1	
Actuated g/C Ratio	0.14	0.14	0.14	0.28	0.28	0.28	0.31	0.25	0.25	0.13	0.33	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	244	255	214	497	518	440	267	472	397	457	594	
v/s Ratio Prot	0.08	c0.10		c0.16	0.14		0.02	0.18		c0.09	c0.23	
v/s Ratio Perm			0.01			0.13	0.08		0.08			
v/c Ratio	0.60	0.73	0.05	0.58	0.49	0.49	0.33	0.71	0.30	0.65	0.69	
Uniform Delay, d1	47.7	48.7	44.1	36.6	35.6	35.5	30.3	40.3	35.8	48.5	34.2	
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	3.3	9.4	0.1	4.8	3.3	3.8	0.3	7.2	1.2	3.3	5.1	
Delay (s)	51.0	58.1	44.1	41.4	38.9	39.3	30.5	47.4	37.0	51.8	39.3	
Level of Service	D	E	D	D	D	D	C	D	D	D	D	
Approach Delay (s)		53.0			39.8			40.9			44.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	117.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Future Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.15	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	277	1881	1583	3400	1851	
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)	199	307	126	470	175	415	30	241	283	420	595	114
RTOR Reduction (vph)	0	0	104	0	0	308	0	0	221	0	5	0
Lane Group Flow (vph)	199	307	22	470	175	107	30	241	62	420	704	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.1	27.4	27.4	20.4	44.3	
Effective Green, g (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.1	27.4	27.4	20.4	44.3	
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.25	0.22	0.22	0.16	0.35	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	313	329	280	467	491	390	113	410	345	552	652	
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.38	
v/s Ratio Perm			0.01			0.07	0.06		0.04			
v/c Ratio	0.64	0.93	0.08	1.01	0.36	0.28	0.27	0.59	0.18	0.76	1.08	
Uniform Delay, d1	48.2	51.2	43.5	46.5	38.0	37.2	38.4	44.0	39.9	50.3	40.6	
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	3.7	32.6	0.1	43.3	2.0	1.7	0.5	4.1	0.7	6.3	58.6	
Delay (s)	51.9	83.7	43.6	89.8	40.0	38.9	38.8	48.1	40.7	56.6	99.3	
Level of Service	D	F	D	F	D	D	D	D	D	E	F	
Approach Delay (s)		65.7			61.7			43.8			83.4	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	125.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Future Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.21	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	386	1881	1583	3433	1793	
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)	178	227	91	349	309	572	105	410	399	361	326	195
RTOR Reduction (vph)	0	0	77	0	0	262	0	0	207	0	17	0
Lane Group Flow (vph)	178	227	14	349	309	310	105	410	192	361	504	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	18.9	18.9	18.9	32.5	32.5	32.5	39.4	31.2	31.2	17.8	41.0	
Effective Green, g (s)	18.9	18.9	18.9	32.5	32.5	32.5	39.4	31.2	31.2	17.8	41.0	
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.32	0.25	0.25	0.14	0.33	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	270	281	236	468	488	415	214	473	398	493	593	
v/s Ratio Prot	0.10	c0.12		0.20	0.17		0.03	0.22		c0.11	c0.28	
v/s Ratio Perm			0.01			c0.20	0.12		0.12			
v/c Ratio	0.66	0.81	0.06	0.75	0.63	0.75	0.49	0.87	0.48	0.73	0.85	
Uniform Delay, d1	49.5	50.7	44.9	41.9	40.4	41.9	32.0	44.4	39.5	50.8	38.6	
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	5.1	15.1	0.1	10.3	6.1	11.6	0.6	17.2	2.6	5.7	12.8	
Delay (s)	54.6	65.9	45.0	52.3	46.6	53.6	32.7	61.5	42.0	56.5	51.4	
Level of Service	D	E	D	D	D	D	C	E	D	E	D	
Approach Delay (s)		58.0			51.4			49.7			53.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	123.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	83.6%	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 (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Future Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	263	1881	1583	3400	1851	
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)	196	301	124	462	172	409	30	238	278	412	586	113
RTOR Reduction (vph)	0	0	103	0	0	303	0	0	214	0	5	0
Lane Group Flow (vph)	196	301	21	462	172	106	30	238	64	412	694	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	21.6	21.6	21.6	32.5	32.5	32.5	32.6	28.9	28.9	18.7	44.1	
Effective Green, g (s)	21.6	21.6	21.6	32.5	32.5	32.5	32.6	28.9	28.9	18.7	44.1	
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.26	0.23	0.23	0.15	0.35	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	311	327	278	468	493	391	114	434	365	507	651	
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.37	
v/s Ratio Perm			0.01			0.07	0.06		0.04			
v/c Ratio	0.63	0.92	0.08	0.99	0.35	0.27	0.26	0.55	0.18	0.81	1.07	
Uniform Delay, d1	48.1	51.0	43.4	46.1	37.7	36.9	37.3	42.4	38.6	51.6	40.5	
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	3.6	30.2	0.1	38.6	1.9	1.7	0.5	3.2	0.7	9.9	54.1	
Delay (s)	51.7	81.1	43.5	84.7	39.7	38.6	37.8	45.6	39.3	61.4	94.7	
Level of Service	D	F	D	F	D	D	D	D	D	E	F	
Approach Delay (s)		64.3			59.2			41.9			82.3	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	65.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	125.2	Sum of lost time (s)	23.5
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Future Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.22	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	405	1881	1583	3433	1793	
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)	175	223	89	344	304	563	104	403	392	355	322	193
RTOR Reduction (vph)	0	0	76	0	0	261	0	0	207	0	17	0
Lane Group Flow (vph)	175	223	13	344	304	302	104	403	185	355	498	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	18.6	18.6	18.6	32.5	32.5	32.5	39.1	31.0	31.0	17.7	40.8	
Effective Green, g (s)	18.6	18.6	18.6	32.5	32.5	32.5	39.1	31.0	31.0	17.7	40.8	
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.32	0.25	0.25	0.14	0.33	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	267	278	234	471	491	417	218	472	397	492	593	
v/s Ratio Prot	0.10	c0.12		c0.19	0.16		0.03	0.21		c0.10	c0.28	
v/s Ratio Perm			0.01			0.19	0.12		0.12			
v/c Ratio	0.66	0.80	0.06	0.73	0.62	0.72	0.48	0.85	0.47	0.72	0.84	
Uniform Delay, d1	49.3	50.6	44.8	41.4	40.0	41.3	31.8	44.0	39.1	50.4	38.2	
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	5.1	14.8	0.1	9.6	5.8	10.4	0.6	15.8	2.4	5.3	11.9	
Delay (s)	54.4	65.4	44.9	51.0	45.7	51.7	32.4	59.8	41.5	55.8	50.1	
Level of Service	D	E	D	D	D	D	C	E	D	E	D	
Approach Delay (s)		57.7			50.0			48.7			52.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	123.3	Sum of lost time (s)	23.5
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 (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Future Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	251	1881	1583	3400	1851	
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)	239	367	151	564	210	499	37	290	339	502	715	138
RTOR Reduction (vph)	0	0	125	0	0	297	0	0	255	0	5	0
Lane Group Flow (vph)	239	367	26	564	210	202	37	290	84	502	848	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	22.3	22.3	22.3	32.4	32.4	32.4	34.3	30.3	30.3	20.3	46.8	
Effective Green, g (s)	22.3	22.3	22.3	32.4	32.4	32.4	34.3	30.3	30.3	20.3	46.8	
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.27	0.24	0.24	0.16	0.36	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	312	328	279	454	477	379	115	442	372	535	672	
v/s Ratio Prot	0.13	c0.19		c0.31	0.11		0.01	0.15		c0.15	c0.46	
v/s Ratio Perm			0.02			0.13	0.08		0.05			
v/c Ratio	0.77	1.12	0.09	1.24	0.44	0.53	0.32	0.66	0.23	0.94	1.26	
Uniform Delay, d1	50.8	53.3	44.8	48.2	40.6	41.7	38.1	44.5	39.8	53.6	41.0	
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	10.3	85.7	0.1	126.5	2.9	5.3	0.6	5.6	0.9	24.5	129.5	
Delay (s)	61.0	139.0	44.9	174.7	43.5	46.9	38.7	50.1	40.7	78.1	170.5	
Level of Service	E	F	D	F	D	D	D	D	D	E	F	
Approach Delay (s)		95.6			103.0			44.7			136.3	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	103.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	128.8	Sum of lost time (s)	23.5
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Future Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	234	1881	1583	3433	1793	
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)	213	272	108	421	371	687	127	492	478	433	393	235
RTOR Reduction (vph)	0	0	90	0	0	253	0	0	208	0	17	0
Lane Group Flow (vph)	213	272	18	421	371	434	127	492	270	433	611	0
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			
Actuated Green, G (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.6	31.8	31.8	19.5	42.7	
Effective Green, g (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.6	31.8	31.8	19.5	42.7	
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.32	0.25	0.25	0.15	0.33	
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	
Lane Grp Cap (vph)	292	304	256	450	470	399	179	465	392	521	596	
v/s Ratio Prot	0.12	c0.15		0.24	0.20		0.05	0.26		c0.13	c0.34	
v/s Ratio Perm			0.01			c0.27	0.18		0.17			
v/c Ratio	0.73	0.89	0.07	0.94	0.79	1.09	0.71	1.06	0.69	0.83	1.03	
Uniform Delay, d1	50.9	52.5	45.3	47.0	44.8	48.0	35.6	48.3	43.8	52.9	42.9	
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	8.3	26.5	0.1	29.0	12.7	70.9	10.0	57.9	7.5	11.1	43.6	
Delay (s)	59.2	79.0	45.4	76.0	57.5	118.9	45.6	106.2	51.3	63.9	86.4	
Level of Service	E	E	D	E	E	F	D	F	D	E	F	
Approach Delay (s)		65.8			91.3			75.3			77.2	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	80.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	128.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Future Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.32	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	616	1881	1583	3400	1900	1599
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)	163	251	103	385	143	340	25	198	232	343	487	93
RTOR Reduction (vph)	0	0	86	0	0	246	0	0	182	0	0	62
Lane Group Flow (vph)	163	251	17	385	143	94	25	198	50	343	487	31
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	19.0	19.0	19.0	32.9	32.9	32.9	29.1	25.7	25.7	17.3	39.8	39.8
Effective Green, g (s)	19.0	19.0	19.0	32.9	32.9	32.9	29.1	25.7	25.7	17.3	39.8	39.8
Actuated g/C Ratio	0.16	0.16	0.16	0.28	0.28	0.28	0.25	0.22	0.22	0.15	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	289	304	259	501	527	738	185	408	343	496	638	537
v/s Ratio Prot	0.09	c0.13		c0.21	0.08		0.00	0.11		c0.10	c0.26	
v/s Ratio Perm			0.01			0.04	0.03		0.03			0.02
v/c Ratio	0.56	0.83	0.06	0.77	0.27	0.13	0.14	0.49	0.15	0.69	0.76	0.06
Uniform Delay, d1	45.9	48.1	42.2	39.3	33.4	32.0	34.5	40.6	37.5	48.0	35.1	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	16.2	0.1	10.8	1.3	0.4	0.1	2.6	0.6	4.3	6.9	0.1
Delay (s)	47.9	64.3	42.2	50.1	34.7	32.4	34.6	43.1	38.0	52.3	42.0	26.7
Level of Service	D	E	D	D	C	C	C	D	D	D	D	C
Approach Delay (s)		54.7			40.6			40.1			44.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	78.1%	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 (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Future Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.59	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	1108	1881	1583	3433	1900	1615
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)	146	186	74	287	254	469	87	336	327	296	267	160
RTOR Reduction (vph)	0	0	64	0	0	256	0	0	207	0	0	78
Lane Group Flow (vph)	146	186	10	287	254	213	87	336	120	296	267	82
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	16.3	16.3	16.3	32.8	32.8	32.8	36.0	29.6	29.6	15.7	39.1	39.1
Effective Green, g (s)	16.3	16.3	16.3	32.8	32.8	32.8	36.0	29.6	29.6	15.7	39.1	39.1
Actuated g/C Ratio	0.14	0.14	0.14	0.28	0.28	0.28	0.31	0.25	0.25	0.13	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	244	255	214	497	518	775	374	472	397	457	630	535
v/s Ratio Prot	0.08	c0.10		c0.16	0.14		0.01	c0.18		c0.09	0.14	
v/s Ratio Perm			0.01			0.08	0.06		0.08			0.05
v/c Ratio	0.60	0.73	0.05	0.58	0.49	0.28	0.23	0.71	0.30	0.65	0.42	0.15
Uniform Delay, d1	47.7	48.7	44.1	36.6	35.6	33.3	29.9	40.3	35.8	48.5	30.6	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	9.4	0.1	4.8	3.3	0.9	0.1	7.2	1.2	3.3	1.3	0.4
Delay (s)	51.0	58.1	44.1	41.4	38.9	34.1	30.0	47.4	37.0	51.8	31.9	28.1
Level of Service	D	E	D	D	D	C	C	D	D	D	C	C
Approach Delay (s)		53.0			37.4			40.9			39.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	117.9	Sum of lost time (s)	23.5
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 (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Future Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	295	1881	1583	3400	1900	1599
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)	199	307	126	470	175	415	30	241	283	420	595	114
RTOR Reduction (vph)	0	0	104	0	0	307	0	0	219	0	0	74
Lane Group Flow (vph)	199	307	22	470	175	108	30	241	64	420	595	40
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.9	28.2	28.2	18.9	43.6	43.6
Effective Green, g (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.9	28.2	28.2	18.9	43.6	43.6
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.26	0.23	0.23	0.15	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	315	331	281	469	494	691	120	424	357	514	663	558
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.31	
v/s Ratio Perm			0.01			0.04	0.06		0.04			0.02
v/c Ratio	0.63	0.93	0.08	1.00	0.35	0.16	0.25	0.57	0.18	0.82	0.90	0.07
Uniform Delay, d1	47.8	50.8	43.1	46.2	37.6	35.6	36.6	42.9	39.0	51.3	38.5	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	31.1	0.1	42.1	2.0	0.5	0.4	3.6	0.7	10.0	16.3	0.2
Delay (s)	51.4	81.8	43.2	88.3	39.6	36.1	37.0	46.5	39.7	61.3	54.8	27.3
Level of Service	D	F	D	F	D	D	D	D	D	E	D	C
Approach Delay (s)		64.6			59.8			42.5			54.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	124.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Future Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.53	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	982	1881	1583	3433	1900	1615
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)	178	227	91	349	309	572	105	410	399	361	326	195
RTOR Reduction (vph)	0	0	77	0	0	262	0	0	207	0	0	78
Lane Group Flow (vph)	178	227	14	349	309	310	105	410	192	361	326	117
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	18.8	18.8	18.8	32.5	32.5	32.5	39.3	31.1	31.1	17.8	40.9	40.9
Effective Green, g (s)	18.8	18.8	18.8	32.5	32.5	32.5	39.3	31.1	31.1	17.8	40.9	40.9
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.32	0.25	0.25	0.14	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	269	280	236	469	489	732	364	472	397	493	628	533
v/s Ratio Prot	0.10	c0.12		c0.20	0.17		0.02	c0.22		c0.11	0.17	
v/s Ratio Perm			0.01			0.11	0.07		0.12			0.07
v/c Ratio	0.66	0.81	0.06	0.74	0.63	0.42	0.29	0.87	0.48	0.73	0.52	0.22
Uniform Delay, d1	49.5	50.7	44.9	41.8	40.3	37.8	30.6	44.3	39.4	50.7	33.5	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	15.8	0.1	10.2	6.1	1.8	0.2	17.4	2.6	5.7	1.9	0.6
Delay (s)	54.9	66.5	45.0	52.0	46.4	39.6	30.8	61.7	42.0	56.4	35.4	30.5
Level of Service	D	E	D	D	D	D	C	E	D	E	D	C
Approach Delay (s)		58.4			44.9			49.6			42.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	123.7	Sum of lost time (s)	23.5
Intersection Capacity Utilization	80.9%	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 (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Future Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	328	1881	1583	3400	1900	1599
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)	196	301	124	462	172	409	30	238	278	412	586	113
RTOR Reduction (vph)	0	0	102	0	0	302	0	0	217	0	0	74
Lane Group Flow (vph)	196	301	22	462	172	107	30	238	61	412	586	39
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.6	21.6	21.6	32.6	32.6	32.6	30.7	27.1	27.1	19.5	43.2	43.2
Effective Green, g (s)	21.6	21.6	21.6	32.6	32.6	32.6	30.7	27.1	27.1	19.5	43.2	43.2
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.25	0.22	0.22	0.16	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	313	330	280	473	498	696	123	410	345	533	660	555
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.31	
v/s Ratio Perm			0.01			0.04	0.05		0.04			0.02
v/c Ratio	0.63	0.91	0.08	0.98	0.35	0.15	0.24	0.58	0.18	0.77	0.89	0.07
Uniform Delay, d1	47.6	50.4	43.0	45.5	37.2	35.2	37.0	43.5	39.5	50.3	38.3	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	28.3	0.1	36.0	1.9	0.5	0.4	4.0	0.7	7.1	15.2	0.2
Delay (s)	51.0	78.7	43.1	81.5	39.1	35.7	37.4	47.5	40.2	57.4	53.5	27.3
Level of Service	D	E	D	F	D	D	D	D	D	E	D	C
Approach Delay (s)		62.8			56.5			43.2			52.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	124.3	Sum of lost time (s)	23.5
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Future Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.54	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	1001	1881	1583	3433	1900	1615
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)	175	223	89	344	304	563	104	403	392	355	322	193
RTOR Reduction (vph)	0	0	75	0	0	260	0	0	207	0	0	77
Lane Group Flow (vph)	175	223	14	344	304	303	104	403	185	355	322	116
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	19.0	19.0	19.0	30.6	30.6	30.6	38.9	30.8	30.8	17.5	40.4	40.4
Effective Green, g (s)	19.0	19.0	19.0	30.6	30.6	30.6	38.9	30.8	30.8	17.5	40.4	40.4
Actuated g/C Ratio	0.16	0.16	0.16	0.25	0.25	0.25	0.32	0.25	0.25	0.14	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	277	288	243	450	469	702	372	477	401	494	632	537
v/s Ratio Prot	0.10	c0.12		c0.19	0.16		0.02	c0.21		c0.10	0.17	
v/s Ratio Perm			0.01			0.11	0.07		0.12			0.07
v/c Ratio	0.63	0.77	0.06	0.76	0.65	0.43	0.28	0.84	0.46	0.72	0.51	0.22
Uniform Delay, d1	47.9	49.1	43.6	42.1	40.6	38.1	29.8	43.0	38.3	49.6	32.5	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	11.8	0.1	11.7	6.8	1.9	0.2	14.7	2.4	5.1	1.8	0.6
Delay (s)	52.0	60.9	43.6	53.8	47.4	40.0	29.9	57.8	40.7	54.7	34.4	29.7
Level of Service	D	E	D	D	D	D	C	E	D	D	C	C
Approach Delay (s)		54.5			45.8			47.1			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	121.4	Sum of lost time (s)	23.5
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 (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Future Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	260	1881	1583	3400	1900	1599
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)	239	367	151	564	210	499	37	290	339	502	715	138
RTOR Reduction (vph)	0	0	125	0	0	341	0	0	253	0	0	74
Lane Group Flow (vph)	239	367	26	564	210	158	37	290	86	502	715	64
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	22.3	22.3	22.3	32.5	32.5	32.5	33.2	29.2	29.2	21.5	46.9	46.9
Effective Green, g (s)	22.3	22.3	22.3	32.5	32.5	32.5	33.2	29.2	29.2	21.5	46.9	46.9
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.26	0.23	0.23	0.17	0.36	0.36
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	312	328	279	454	478	669	114	425	358	566	690	581
v/s Ratio Prot	0.13	c0.19		c0.31	0.11		0.01	0.15		c0.15	c0.38	
v/s Ratio Perm			0.02			0.06	0.07		0.05			0.04
v/c Ratio	0.77	1.12	0.09	1.24	0.44	0.24	0.32	0.68	0.24	0.89	1.04	0.11
Uniform Delay, d1	50.9	53.4	44.9	48.2	40.6	38.4	38.8	45.7	40.8	52.6	41.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	85.7	0.1	126.5	2.9	0.8	0.6	6.7	1.0	15.8	44.0	0.2
Delay (s)	61.1	139.1	45.0	174.8	43.5	39.2	39.4	52.4	41.8	68.3	85.0	27.5
Level of Service	E	F	D	F	D	D	D	D	D	E	F	C
Approach Delay (s)		95.7			100.0			46.3			73.0	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	81.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Future Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.42	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	784	1881	1583	3433	1900	1615
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)	213	272	108	421	371	687	127	492	478	433	393	235
RTOR Reduction (vph)	0	0	90	0	0	265	0	0	209	0	0	78
Lane Group Flow (vph)	213	272	18	421	371	422	127	492	269	433	393	157
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.3	31.6	31.6	19.4	42.5	42.5
Effective Green, g (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.3	31.6	31.6	19.4	42.5	42.5
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.31	0.25	0.25	0.15	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	292	305	257	451	471	704	313	464	390	519	630	535
v/s Ratio Prot	0.12	c0.15		c0.24	0.20		0.03	c0.26		c0.13	0.21	
v/s Ratio Perm			0.01			0.15	0.10		0.17			0.10
v/c Ratio	0.73	0.89	0.07	0.93	0.79	0.60	0.41	1.06	0.69	0.83	0.62	0.29
Uniform Delay, d1	50.7	52.3	45.1	46.8	44.6	42.1	32.6	48.2	43.8	52.8	36.1	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	26.0	0.1	28.6	12.5	3.7	0.3	58.7	7.7	11.3	3.3	0.9
Delay (s)	59.0	78.4	45.2	75.4	57.2	45.9	32.9	106.9	51.5	64.1	39.3	32.6
Level of Service	E	E	D	E	E	D	C	F	D	E	D	C
Approach Delay (s)		65.4			57.1			74.2			48.0	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	128.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	93.2%	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 (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Future Volume (vph)	150	231	95	354	132	313	23	182	213	316	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.32	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	616	1881	1583	3400	1900	1599
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)	163	251	103	385	143	340	25	198	232	343	487	93
RTOR Reduction (vph)	0	0	86	0	0	246	0	0	182	0	0	62
Lane Group Flow (vph)	163	251	17	385	143	94	25	198	50	343	487	31
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	19.0	19.0	19.0	32.9	32.9	32.9	29.1	25.7	25.7	17.3	39.8	39.8
Effective Green, g (s)	19.0	19.0	19.0	32.9	32.9	32.9	29.1	25.7	25.7	17.3	39.8	39.8
Actuated g/C Ratio	0.16	0.16	0.16	0.28	0.28	0.28	0.25	0.22	0.22	0.15	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	289	304	259	501	527	738	185	408	343	496	638	537
v/s Ratio Prot	0.09	c0.13		c0.21	0.08		0.00	0.11		c0.10	c0.26	
v/s Ratio Perm			0.01			0.04	0.03		0.03			0.02
v/c Ratio	0.56	0.83	0.06	0.77	0.27	0.13	0.14	0.49	0.15	0.69	0.76	0.06
Uniform Delay, d1	45.9	48.1	42.2	39.3	33.4	32.0	34.5	40.6	37.5	48.0	35.1	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	16.2	0.1	10.8	1.3	0.4	0.1	2.6	0.6	4.3	6.9	0.1
Delay (s)	47.9	64.3	42.2	50.1	34.7	32.4	34.6	43.1	38.0	52.3	42.0	26.7
Level of Service	D	E	D	D	C	C	C	D	D	D	D	C
Approach Delay (s)		54.7			40.6			40.1			44.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	78.1%	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 (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Future Volume (vph)	142	180	72	278	246	455	84	326	317	287	259	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.59	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	1108	1881	1583	3433	1900	1615
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)	146	186	74	287	254	469	87	336	327	296	267	160
RTOR Reduction (vph)	0	0	64	0	0	255	0	0	205	0	0	78
Lane Group Flow (vph)	146	186	10	287	254	214	87	336	122	296	267	82
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	16.2	16.2	16.2	32.7	32.7	32.7	35.0	28.6	28.6	15.8	38.2	38.2
Effective Green, g (s)	16.2	16.2	16.2	32.7	32.7	32.7	35.0	28.6	28.6	15.8	38.2	38.2
Actuated g/C Ratio	0.14	0.14	0.14	0.28	0.28	0.28	0.30	0.24	0.24	0.14	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	245	255	215	500	521	780	368	460	387	464	621	528
v/s Ratio Prot	0.08	c0.10		c0.16	0.14		0.01	c0.18		c0.09	0.14	
v/s Ratio Perm			0.01			0.08	0.06		0.08			0.05
v/c Ratio	0.60	0.73	0.05	0.57	0.49	0.27	0.24	0.73	0.31	0.64	0.43	0.16
Uniform Delay, d1	47.2	48.2	43.6	36.1	35.1	32.8	30.1	40.6	36.1	47.8	30.8	27.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	9.4	0.1	4.7	3.2	0.9	0.1	8.0	1.3	3.0	1.3	0.4
Delay (s)	50.5	57.6	43.7	40.8	38.3	33.7	30.2	48.6	37.4	50.8	32.1	28.2
Level of Service	D	E	D	D	D	C	C	D	D	D	C	C
Approach Delay (s)		52.5			36.9			41.6			38.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	116.8	Sum of lost time (s)	23.5
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 (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Future Volume (vph)	183	282	116	432	161	382	28	222	260	386	547	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	2656	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	2656	306	1881	1583	3400	1900	1599
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)	199	307	126	470	175	415	30	241	283	420	595	114
RTOR Reduction (vph)	0	0	104	0	0	307	0	0	221	0	0	74
Lane Group Flow (vph)	199	307	22	470	175	108	30	241	62	420	595	40
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.2	27.5	27.5	19.7	43.7	43.7
Effective Green, g (s)	21.8	21.8	21.8	32.5	32.5	32.5	31.2	27.5	27.5	19.7	43.7	43.7
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.25	0.22	0.22	0.16	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	314	331	281	469	494	690	120	413	348	535	664	559
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.31	
v/s Ratio Perm			0.01			0.04	0.05		0.04			0.02
v/c Ratio	0.63	0.93	0.08	1.00	0.35	0.16	0.25	0.58	0.18	0.79	0.90	0.07
Uniform Delay, d1	47.9	50.8	43.2	46.2	37.7	35.7	37.1	43.6	39.6	50.6	38.5	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	31.1	0.1	42.1	2.0	0.5	0.4	4.0	0.7	7.7	16.1	0.2
Delay (s)	51.5	81.9	43.3	88.3	39.7	36.2	37.5	47.6	40.3	58.3	54.6	27.3
Level of Service	D	F	D	F	D	D	D	D	D	E	D	C
Approach Delay (s)		64.6			59.9			43.3			53.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Future Volume (vph)	173	220	88	339	300	555	102	398	387	350	316	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	2787	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.53	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	2787	993	1881	1583	3433	1900	1615
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)	178	227	91	349	309	572	105	410	399	361	326	195
RTOR Reduction (vph)	0	0	77	0	0	261	0	0	206	0	0	78
Lane Group Flow (vph)	178	227	14	349	309	311	105	410	193	361	326	117
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	18.7	18.7	18.7	32.5	32.5	32.5	37.8	29.6	29.6	18.2	39.8	39.8
Effective Green, g (s)	18.7	18.7	18.7	32.5	32.5	32.5	37.8	29.6	29.6	18.2	39.8	39.8
Actuated g/C Ratio	0.15	0.15	0.15	0.27	0.27	0.27	0.31	0.24	0.24	0.15	0.32	0.32
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	270	281	237	474	494	739	358	454	382	510	617	524
v/s Ratio Prot	0.10	c0.12		c0.20	0.17		0.02	c0.22		c0.11	0.17	
v/s Ratio Perm			0.01			0.11	0.07		0.12			0.07
v/c Ratio	0.66	0.81	0.06	0.74	0.63	0.42	0.29	0.90	0.50	0.71	0.53	0.22
Uniform Delay, d1	48.9	50.2	44.4	41.1	39.6	37.2	31.1	45.1	40.1	49.6	33.7	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	15.1	0.1	9.8	5.9	1.8	0.2	22.8	2.9	4.6	2.0	0.6
Delay (s)	54.0	65.3	44.4	50.9	45.5	39.0	31.3	67.9	43.1	54.2	35.7	30.7
Level of Service	D	E	D	D	D	D	C	E	D	D	D	C
Approach Delay (s)		57.4			44.0			52.8			42.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	122.5	Sum of lost time (s)	23.5
Intersection Capacity Utilization	80.9%	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 (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Future Volume (vph)	180	277	114	425	158	376	28	219	256	379	539	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	328	1881	1583	3400	1900	1599
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)	196	301	124	462	172	409	30	238	278	412	586	113
RTOR Reduction (vph)	0	0	102	0	0	302	0	0	217	0	0	74
Lane Group Flow (vph)	196	301	22	462	172	107	30	238	61	412	586	39
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.6	21.6	21.6	32.6	32.6	32.6	30.7	27.1	27.1	19.5	43.2	43.2
Effective Green, g (s)	21.6	21.6	21.6	32.6	32.6	32.6	30.7	27.1	27.1	19.5	43.2	43.2
Actuated g/C Ratio	0.17	0.17	0.17	0.26	0.26	0.26	0.25	0.22	0.22	0.16	0.35	0.35
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	313	330	280	473	498	395	123	410	345	533	660	555
v/s Ratio Prot	0.11	c0.16		c0.26	0.09		0.01	0.13		c0.12	c0.31	
v/s Ratio Perm			0.01			0.07	0.05		0.04			0.02
v/c Ratio	0.63	0.91	0.08	0.98	0.35	0.27	0.24	0.58	0.18	0.77	0.89	0.07
Uniform Delay, d1	47.6	50.4	43.0	45.5	37.2	36.4	37.0	43.5	39.5	50.3	38.3	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	28.3	0.1	36.0	1.9	1.7	0.4	4.0	0.7	7.1	15.2	0.2
Delay (s)	51.0	78.7	43.1	81.5	39.1	38.1	37.4	47.5	40.2	57.4	53.5	27.3
Level of Service	D	E	D	F	D	D	D	D	D	E	D	C
Approach Delay (s)		62.8			57.5			43.2			52.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	124.3	Sum of lost time (s)	23.5
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Future Volume (vph)	170	216	86	334	295	546	101	391	380	344	312	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.53	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	996	1881	1583	3433	1900	1615
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)	175	223	89	344	304	563	104	403	392	355	322	193
RTOR Reduction (vph)	0	0	76	0	0	261	0	0	208	0	0	78
Lane Group Flow (vph)	175	223	13	344	304	302	104	403	184	355	322	115
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	18.6	18.6	18.6	32.5	32.5	32.5	38.9	30.8	30.8	17.7	40.6	40.6
Effective Green, g (s)	18.6	18.6	18.6	32.5	32.5	32.5	38.9	30.8	30.8	17.7	40.6	40.6
Actuated g/C Ratio	0.15	0.15	0.15	0.26	0.26	0.26	0.32	0.25	0.25	0.14	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	267	278	234	471	491	417	365	470	396	493	626	532
v/s Ratio Prot	0.10	c0.12		c0.19	0.16		0.02	c0.21		c0.10	0.17	
v/s Ratio Perm			0.01			0.19	0.07		0.12			0.07
v/c Ratio	0.66	0.80	0.06	0.73	0.62	0.72	0.28	0.86	0.47	0.72	0.51	0.22
Uniform Delay, d1	49.2	50.5	44.7	41.3	39.9	41.2	30.6	44.1	39.2	50.3	33.3	29.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	14.8	0.1	9.6	5.8	10.4	0.2	16.2	2.4	5.3	1.9	0.6
Delay (s)	54.3	65.3	44.8	50.9	45.6	51.6	30.8	60.2	41.6	55.6	35.2	30.4
Level of Service	D	E	D	D	D	D	C	E	D	E	D	C
Approach Delay (s)		57.6			49.9			48.7			42.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	23.5
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 (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Future Volume (vph)	220	338	139	519	193	459	34	267	312	462	658	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1509	1805	1881	1583	3400	1900	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1900	1509	260	1881	1583	3400	1900	1599
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)	239	367	151	564	210	499	37	290	339	502	715	138
RTOR Reduction (vph)	0	0	125	0	0	308	0	0	253	0	0	74
Lane Group Flow (vph)	239	367	26	564	210	191	37	290	86	502	715	64
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	0%	1%	2%	3%	0%	1%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	22.3	22.3	22.3	32.5	32.5	32.5	33.2	29.2	29.2	21.5	46.9	46.9
Effective Green, g (s)	22.3	22.3	22.3	32.5	32.5	32.5	33.2	29.2	29.2	21.5	46.9	46.9
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.26	0.23	0.23	0.17	0.36	0.36
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	312	328	279	454	478	380	114	425	358	566	690	581
v/s Ratio Prot	0.13	c0.19		c0.31	0.11		0.01	0.15		c0.15	c0.38	
v/s Ratio Perm			0.02			0.13	0.07		0.05			0.04
v/c Ratio	0.77	1.12	0.09	1.24	0.44	0.50	0.32	0.68	0.24	0.89	1.04	0.11
Uniform Delay, d1	50.9	53.4	44.9	48.2	40.6	41.3	38.8	45.7	40.8	52.6	41.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	85.7	0.1	126.5	2.9	4.7	0.6	6.7	1.0	15.8	44.0	0.2
Delay (s)	61.1	139.1	45.0	174.8	43.5	46.0	39.4	52.4	41.8	68.3	85.0	27.5
Level of Service	E	F	D	F	D	D	D	D	D	E	F	C
Approach Delay (s)		95.7			102.7			46.3			73.0	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Future Volume (vph)	207	264	105	408	360	666	123	477	464	420	381	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845	1553	1787	1863	1583	1770	1881	1583	3433	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.42	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1845	1553	1787	1863	1583	784	1881	1583	3433	1900	1615
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)	213	272	108	421	371	687	127	492	478	433	393	235
RTOR Reduction (vph)	0	0	90	0	0	253	0	0	209	0	0	78
Lane Group Flow (vph)	213	272	18	421	371	434	127	492	269	433	393	157
Heavy Vehicles (%)	2%	3%	4%	1%	2%	2%	2%	1%	2%	2%	0%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3	6		6			2
Actuated Green, G (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.3	31.6	31.6	19.4	42.5	42.5
Effective Green, g (s)	21.2	21.2	21.2	32.4	32.4	32.4	40.3	31.6	31.6	19.4	42.5	42.5
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.31	0.25	0.25	0.15	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.6	5.6	5.6	5.5	6.5	6.5	5.7	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	3.5	3.5	3.5	2.0	6.0	6.0	3.5	6.0	6.0
Lane Grp Cap (vph)	292	305	257	451	471	400	313	464	390	519	630	535
v/s Ratio Prot	0.12	c0.15		0.24	0.20		0.03	c0.26		c0.13	0.21	
v/s Ratio Perm			0.01			c0.27	0.10		0.17			0.10
v/c Ratio	0.73	0.89	0.07	0.93	0.79	1.09	0.41	1.06	0.69	0.83	0.62	0.29
Uniform Delay, d1	50.7	52.3	45.1	46.8	44.6	47.8	32.6	48.2	43.8	52.8	36.1	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	26.0	0.1	28.6	12.5	70.2	0.3	58.7	7.7	11.3	3.3	0.9
Delay (s)	59.0	78.4	45.2	75.4	57.2	118.0	32.9	106.9	51.5	64.1	39.3	32.6
Level of Service	E	E	D	E	E	F	C	F	D	E	D	C
Approach Delay (s)		65.4			90.6			74.2			48.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	128.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	93.2%	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 (vph)	0	0	0	867	0	435	206	319	0	0	840	26
Future Volume (vph)	0	0	0	867	0	435	206	319	0	0	840	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.13	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	240	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	963	0	483	229	354	0	0	933	29
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	963	0	483	229	354	0	0	933	10
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				31.5		100.0	56.1	56.1			35.9	35.9
Effective Green, g (s)				31.5		100.0	56.1	56.1			35.9	35.9
Actuated g/C Ratio				0.32		1.00	0.56	0.56			0.36	0.36
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1030		1538	324	1985			1189	579
v/s Ratio Prot							c0.09	0.10			c0.28	
v/s Ratio Perm				c0.29		0.31	0.31					0.01
v/c Ratio				0.93		0.31	0.71	0.18			0.78	0.02
Uniform Delay, d1				33.3		0.0	16.4	10.7			28.6	20.7
Progression Factor				1.00		1.00	2.74	0.73			1.00	1.00
Incremental Delay, d2				14.8		0.5	5.4	0.2			5.2	0.1
Delay (s)				48.1		0.5	50.4	8.0			33.8	20.7
Level of Service				D		A	D	A			C	C
Approach Delay (s)		0.0			32.2			24.6			33.4	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	971	0	720	360	607	0	0	1020	87
Future Volume (vph)	0	0	0	971	0	720	360	607	0	0	1020	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	168	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1022	0	758	379	639	0	0	1074	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	63
Lane Group Flow (vph)	0	0	0	1022	0	758	379	639	0	0	1074	29
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				35.1		115.0	67.5	67.5			36.6	36.6
Effective Green, g (s)				35.1		115.0	67.5	67.5			36.6	36.6
Actuated g/C Ratio				0.31		1.00	0.59	0.59			0.32	0.32
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		1568	420	2097			1137	508
v/s Ratio Prot							c0.18	0.18			0.30	
v/s Ratio Perm				c0.29		0.48	c0.35					0.02
v/c Ratio				0.97		0.48	0.90	0.30			0.94	0.06
Uniform Delay, d1				39.4		0.0	34.2	11.9			38.2	27.2
Progression Factor				1.00		1.00	1.62	1.97			1.00	1.00
Incremental Delay, d2				19.7		1.1	18.0	0.3			15.6	0.1
Delay (s)				59.1		1.1	73.2	23.9			53.8	27.3
Level of Service				E		A	E	C			D	C
Approach Delay (s)		0.0			34.4			42.2			51.7	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1058	0	531	252	389	0	0	1025	32
Future Volume (vph)	0	0	0	1058	0	531	252	389	0	0	1025	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	167	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1176	0	590	280	432	0	0	1139	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	0	0	1176	0	590	280	432	0	0	1139	13
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				28.1		100.0	59.5	59.5			36.7	36.7
Effective Green, g (s)				28.1		100.0	59.5	59.5			36.7	36.7
Actuated g/C Ratio				0.28		1.00	0.60	0.60			0.37	0.37
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		1538	339	2105			1215	592
v/s Ratio Prot							c0.12	0.12			c0.34	
v/s Ratio Perm				c0.36		0.38	0.37					0.01
v/c Ratio				1.28		0.38	0.83	0.21			0.94	0.02
Uniform Delay, d1				36.0		0.0	27.0	9.3			30.5	20.2
Progression Factor				1.00		1.00	2.21	0.58			1.00	1.00
Incremental Delay, d2				134.2		0.7	13.3	0.2			14.6	0.1
Delay (s)				170.2		0.7	72.9	5.6			45.2	20.3
Level of Service				F		A	E	A			D	C
Approach Delay (s)		0.0			113.6			32.1			44.4	
Approach LOS		A			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	130.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1185	0	878	439	741	0	0	1245	106
Future Volume (vph)	0	0	0	1185	0	878	439	741	0	0	1245	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	180	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1247	0	924	462	780	0	0	1311	112
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	72
Lane Group Flow (vph)	0	0	0	1247	0	924	462	780	0	0	1311	40
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				35.1		115.0	67.5	67.5			33.5	33.5
Effective Green, g (s)				35.1		115.0	67.5	67.5			33.5	33.5
Actuated g/C Ratio				0.31		1.00	0.59	0.59			0.29	0.29
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		1568	467	2097			1041	465
v/s Ratio Prot							c0.23	0.22			c0.37	
v/s Ratio Perm				c0.36		0.59	0.35					0.02
v/c Ratio				1.18		0.59	0.99	0.37			1.26	0.09
Uniform Delay, d1				40.0		0.0	35.5	12.5			40.8	29.6
Progression Factor				1.00		1.00	1.55	2.11			1.00	1.00
Incremental Delay, d2				90.4		1.6	29.9	0.3			124.6	0.2
Delay (s)				130.3		1.6	84.8	26.8			165.3	29.8
Level of Service				F		A	F	C			F	C
Approach Delay (s)		0.0			75.6			48.4			154.7	
Approach LOS		A			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	91.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	140.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1040	0	522	247	383	0	0	1008	31
Future Volume (vph)	0	0	0	1040	0	522	247	383	0	0	1008	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	180	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1156	0	580	274	426	0	0	1120	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	0	0	1156	0	580	274	426	0	0	1120	11
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				32.1		100.0	55.5	55.5			33.5	33.5
Effective Green, g (s)				32.1		100.0	55.5	55.5			33.5	33.5
Actuated g/C Ratio				0.32		1.00	0.56	0.56			0.34	0.34
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1050		1538	325	1964			1109	541
v/s Ratio Prot							c0.12	0.12			c0.34	
v/s Ratio Perm				c0.35		0.38	0.35					0.01
v/c Ratio				1.10		0.38	0.84	0.22			1.01	0.02
Uniform Delay, d1				34.0		0.0	26.8	11.3			33.2	22.3
Progression Factor				1.00		1.00	2.20	0.57			1.00	1.00
Incremental Delay, d2				59.7		0.7	15.8	0.2			29.5	0.1
Delay (s)				93.6		0.7	74.8	6.6			62.7	22.3
Level of Service				F		A	E	A			E	C
Approach Delay (s)		0.0			62.6			33.3			61.5	
Approach LOS		A			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1165	0	864	432	728	0	0	1224	104
Future Volume (vph)	0	0	0	1165	0	864	432	728	0	0	1224	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	187	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1226	0	909	455	766	0	0	1288	109
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	74
Lane Group Flow (vph)	0	0	0	1226	0	909	455	766	0	0	1288	35
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				35.1		115.0	67.5	67.5			32.1	32.1
Effective Green, g (s)				35.1		115.0	67.5	67.5			32.1	32.1
Actuated g/C Ratio				0.31		1.00	0.59	0.59			0.28	0.28
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		1568	489	2097			997	446
v/s Ratio Prot							c0.22	0.21			c0.36	
v/s Ratio Perm				c0.35		0.58	0.32					0.02
v/c Ratio				1.16		0.58	0.93	0.37			1.29	0.08
Uniform Delay, d1				40.0		0.0	33.8	12.5			41.5	30.6
Progression Factor				1.00		1.00	1.60	2.10			1.00	1.00
Incremental Delay, d2				82.2		1.6	17.7	0.3			138.9	0.2
Delay (s)				122.2		1.6	71.6	26.6			180.4	30.7
Level of Service				F		A	E	C			F	C
Approach Delay (s)		0.0			70.8			43.4			168.7	
Approach LOS		A			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	92.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	138.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1269	0	637	301	468	0	0	1230	38
Future Volume (vph)	0	0	0	1269	0	637	301	468	0	0	1230	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3273		1538	1770	3539			3312	1615
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3273		1538	177	3539			3312	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.25	0.25	0.90	0.90
Adj. Flow (vph)	0	0	0	1410	0	708	334	520	0	0	1367	42
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	1410	0	708	334	520	0	0	1367	14
Heavy Vehicles (%)	2%	2%	2%	7%	0%	5%	2%	2%	0%	0%	9%	0%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				28.1		100.0	59.5	59.5			34.3	34.3
Effective Green, g (s)				28.1		100.0	59.5	59.5			34.3	34.3
Actuated g/C Ratio				0.28		1.00	0.60	0.60			0.34	0.34
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				919		1538	382	2105			1136	553
v/s Ratio Prot							c0.15	0.15			c0.41	
v/s Ratio Perm				c0.43		0.46	0.37					0.01
v/c Ratio				1.53		0.46	0.87	0.25			1.20	0.03
Uniform Delay, d1				36.0		0.0	28.9	9.6			32.9	21.8
Progression Factor				1.00		1.00	2.13	0.47			1.00	1.00
Incremental Delay, d2				245.9		1.0	16.6	0.2			100.1	0.1
Delay (s)				281.9		1.0	78.0	4.7			132.9	21.9
Level of Service				F		A	E	A			F	C
Approach Delay (s)		0.0			188.0			33.4			129.6	
Approach LOS		A			F			C			F	

Intersection Summary			
HCM 2000 Control Delay	139.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	150.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1422	0	1054	527	888	0	0	1493	127
Future Volume (vph)	0	0	0	1422	0	1054	527	888	0	0	1493	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.9		4.0	7.8	6.5			6.5	6.5
Lane Util. Factor				0.97		1.00	1.00	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3467		1568	1770	3574			3574	1599
Flt Permitted				0.95		1.00	0.10	1.00			1.00	1.00
Satd. Flow (perm)				3467		1568	180	3574			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.25	0.25	0.95	0.95
Adj. Flow (vph)	0	0	0	1497	0	1109	555	935	0	0	1572	134
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	72
Lane Group Flow (vph)	0	0	0	1497	0	1109	555	935	0	0	1572	62
Heavy Vehicles (%)	0%	0%	0%	1%	0%	3%	2%	1%	0%	0%	1%	1%
Turn Type				Perm		Free	pm+pt	NA			NA	Perm
Protected Phases							1	6			2	
Permitted Phases				8		Free	6					2
Actuated Green, G (s)				35.1		115.0	67.5	67.5			33.5	33.5
Effective Green, g (s)				35.1		115.0	67.5	67.5			33.5	33.5
Actuated g/C Ratio				0.31		1.00	0.59	0.59			0.29	0.29
Clearance Time (s)				5.9			7.8	6.5			6.5	6.5
Vehicle Extension (s)				3.0			2.0	6.0			5.0	5.0
Lane Grp Cap (vph)				1058		1568	467	2097			1041	465
v/s Ratio Prot							c0.27	0.26			c0.44	
v/s Ratio Perm				c0.43		0.71	0.43					0.04
v/c Ratio				1.41		0.71	1.19	0.45			1.51	0.13
Uniform Delay, d1				40.0		0.0	35.7	13.3			40.8	30.0
Progression Factor				1.00		1.00	1.46	2.16			1.00	1.00
Incremental Delay, d2				192.4		2.7	93.4	0.3			234.5	0.3
Delay (s)				232.3		2.7	145.5	29.0			275.3	30.3
Level of Service				F		A	F	C			F	C
Approach Delay (s)		0.0			134.6			72.4			256.1	
Approach LOS		A			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	154.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	162.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	431	0	0	72	0	453	927	0	1253	454
Future Volume (vph)	0	0	431	0	0	72	0	453	927	0	1253	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.94	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1611		3438	1568		4375	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1611		3438	1568		4375	1389
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	0	0	490	0	0	78	0	515	1053	0	1424	1816
RTOR Reduction (vph)	0	0	27	0	0	34	0	0	713	0	115	415
Lane Group Flow (vph)	0	0	463	0	0	44	0	515	340	0	2217	493
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			33.0			56.5		32.3	32.3		54.3	54.3
Effective Green, g (s)			33.0			56.5		32.3	32.3		54.3	54.3
Actuated g/C Ratio			0.33			0.56		0.32	0.32		0.54	0.54
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			531			910		1110	506		2375	754
v/s Ratio Prot								0.15			c0.51	
v/s Ratio Perm			c0.29			0.03			0.22			0.35
v/c Ratio			0.87			0.05		0.46	0.67		0.96dr	0.65
Uniform Delay, d1			31.5			9.7		27.0	29.3		21.2	16.2
Progression Factor			1.00			1.00		0.48	8.80		1.26	3.02
Incremental Delay, d2			14.5			0.0		1.2	6.1		8.0	4.2
Delay (s)			46.0			9.7		14.3	263.8		34.7	53.1
Level of Service			D			A		B	F		C	D
Approach Delay (s)		46.0			9.7			181.8			39.9	
Approach LOS		D			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	81.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	64.9%	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 (vph)	0	0	311	0	0	64	0	903	1037	0	1515	476
Future Volume (vph)	0	0	311	0	0	64	0	903	1037	0	1515	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.95	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1644		3574	1583		4603	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1644		3574	1583		4603	1389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	0	0	338	0	0	70	0	982	1127	0	1647	1904
RTOR Reduction (vph)	0	0	23	0	0	15	0	0	728	0	90	428
Lane Group Flow (vph)	0	0	315	0	0	55	0	982	399	0	2509	524
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			39.0			65.5		38.3	38.3		63.3	63.3
Effective Green, g (s)			39.0			65.5		38.3	38.3		63.3	63.3
Actuated g/C Ratio			0.34			0.57		0.33	0.33		0.55	0.55
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			546			936		1190	527		2533	764
v/s Ratio Prot								c0.27			c0.54	
v/s Ratio Perm			0.20			0.03			0.25			0.38
v/c Ratio			0.58			0.06		0.83	0.76		1.02dr	0.69
Uniform Delay, d1			31.2			11.0		35.3	34.2		25.5	18.7
Progression Factor			1.00			1.00		0.61	7.86		0.84	1.63
Incremental Delay, d2			1.2			0.0		4.0	5.5		15.2	4.7
Delay (s)			32.4			11.0		25.5	274.5		36.7	35.1
Level of Service			C			B		C	F		D	D
Approach Delay (s)		32.4			11.0			158.5			36.2	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	78.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	69.8%	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 (vph)	0	0	526	0	0	88	0	553	1131	0	1529	554
Future Volume (vph)	0	0	526	0	0	88	0	553	1131	0	1529	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.94	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1611		3438	1568		4375	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1611		3438	1568		4375	1389
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	0	0	598	0	0	96	0	628	1285	0	1738	2216
RTOR Reduction (vph)	0	0	25	0	0	47	0	0	684	0	115	553
Lane Group Flow (vph)	0	0	573	0	0	49	0	628	601	0	2731	555
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			38.0			51.5		37.3	37.3		49.3	49.3
Effective Green, g (s)			38.0			51.5		37.3	37.3		49.3	49.3
Actuated g/C Ratio			0.38			0.52		0.37	0.37		0.49	0.49
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			612			829		1282	584		2156	684
v/s Ratio Prot								0.18			c0.62	
v/s Ratio Perm			0.36			0.03			c0.38			0.40
v/c Ratio			0.94			0.06		0.49	1.03		1.27	0.81
Uniform Delay, d1			29.8			12.1		24.1	31.4		25.4	21.4
Progression Factor			1.00			1.00		1.48	7.43		0.85	2.15
Incremental Delay, d2			21.8			0.0		1.0	39.7		123.6	9.4
Delay (s)			51.7			12.2		36.5	272.6		145.0	55.4
Level of Service			D			B		D	F		F	E
Approach Delay (s)		51.7			12.2			195.1			119.9	
Approach LOS		D			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	134.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	76.8%	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 (vph)	0	0	380	0	0	78	0	1102	1265	0	1848	582
Future Volume (vph)	0	0	380	0	0	78	0	1102	1265	0	1848	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.94	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1644		3574	1583		4603	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1644		3574	1583		4603	1389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	0	0	413	0	0	85	0	1198	1375	0	2009	2328
RTOR Reduction (vph)	0	0	22	0	0	17	0	0	680	0	91	538
Lane Group Flow (vph)	0	0	391	0	0	68	0	1198	695	0	3082	626
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			44.0			60.5		43.3	43.3		58.3	58.3
Effective Green, g (s)			44.0			60.5		43.3	43.3		58.3	58.3
Actuated g/C Ratio			0.38			0.53		0.38	0.38		0.51	0.51
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			616			864		1345	596		2333	704
v/s Ratio Prot								0.34			c0.67	
v/s Ratio Perm			0.24			0.04			c0.44			0.45
v/c Ratio			0.64			0.08		0.89	1.17		1.34dr	0.89
Uniform Delay, d1			29.0			13.5		33.6	35.9		28.4	25.5
Progression Factor			1.00			1.00		0.84	5.62		1.19	3.05
Incremental Delay, d2			1.9			0.0		4.2	83.5		147.3	14.3
Delay (s)			30.8			13.5		32.6	285.1		181.1	91.9
Level of Service			C			B		C	F		F	F
Approach Delay (s)		30.8			13.5			167.6			157.1	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	152.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.4
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 (vph)	0	0	518	0	0	86	0	544	1112	0	1503	545
Future Volume (vph)	0	0	518	0	0	86	0	544	1112	0	1503	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.94	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1611		3438	1568		4375	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1611		3438	1568		4375	1389
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	0	0	589	0	0	93	0	618	1264	0	1708	2180
RTOR Reduction (vph)	0	0	27	0	0	37	0	0	739	0	115	498
Lane Group Flow (vph)	0	0	562	0	0	56	0	618	525	0	2683	592
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			33.0			56.5		32.3	32.3		54.3	54.3
Effective Green, g (s)			33.0			56.5		32.3	32.3		54.3	54.3
Actuated g/C Ratio			0.33			0.56		0.32	0.32		0.54	0.54
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			531			910		1110	506		2375	754
v/s Ratio Prot								0.18			c0.61	
v/s Ratio Perm			c0.35			0.03			0.34			0.43
v/c Ratio			1.06			0.06		0.56	1.04		1.15dr	0.78
Uniform Delay, d1			33.5			9.8		27.9	33.9		22.9	18.2
Progression Factor			1.00			1.00		0.47	5.99		1.25	3.80
Incremental Delay, d2			55.5			0.0		1.5	45.2		63.9	7.5
Delay (s)			89.0			9.8		14.6	247.8		92.4	76.6
Level of Service			F			A		B	F		F	E
Approach Delay (s)		89.0			9.8			171.2			87.9	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	75.7%	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 (vph)	0	0	373	0	0	77	0	1084	1244	0	1818	571
Future Volume (vph)	0	0	373	0	0	77	0	1084	1244	0	1818	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.95	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1644		3574	1583		4604	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1644		3574	1583		4604	1389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	0	0	405	0	0	84	0	1178	1352	0	1976	2284
RTOR Reduction (vph)	0	0	23	0	0	15	0	0	728	0	90	490
Lane Group Flow (vph)	0	0	382	0	0	69	0	1178	624	0	3028	652
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			40.5			65.5		38.3	38.3		63.3	63.3
Effective Green, g (s)			40.5			65.5		38.3	38.3		63.3	63.3
Actuated g/C Ratio			0.35			0.57		0.33	0.33		0.55	0.55
Clearance Time (s)			4.5			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			3.0			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			567			936		1190	527		2534	764
v/s Ratio Prot								0.33			c0.66	
v/s Ratio Perm			0.24			0.04			c0.39			0.47
v/c Ratio			0.67			0.07		0.99	1.18		1.22dr	0.85
Uniform Delay, d1			31.6			11.1		38.2	38.4		25.9	21.9
Progression Factor			1.00			1.00		0.53	5.28		0.80	1.62
Incremental Delay, d2			3.2			0.0		16.1	92.9		91.4	10.6
Delay (s)			34.8			11.2		36.3	295.6		112.1	46.1
Level of Service			C			B		D	F		F	D
Approach Delay (s)		34.8			11.2			174.9			94.4	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	118.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	82.6%	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 (vph)	0	0	632	0	0	105	0	664	1357	0	1834	665
Future Volume (vph)	0	0	632	0	0	105	0	664	1357	0	1834	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.94	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1611		3438	1568		4375	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1611		3438	1568		4375	1389
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	0	0	718	0	0	114	0	755	1542	0	2084	2660
RTOR Reduction (vph)	0	0	25	0	0	35	0	0	684	0	115	553
Lane Group Flow (vph)	0	0	693	0	0	79	0	755	858	0	3299	777
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			38.0			51.5		37.3	37.3		49.3	49.3
Effective Green, g (s)			38.0			51.5		37.3	37.3		49.3	49.3
Actuated g/C Ratio			0.38			0.52		0.37	0.37		0.49	0.49
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			612			829		1282	584		2156	684
v/s Ratio Prot								0.22			c0.75	
v/s Ratio Perm			0.43			0.05			c0.55			0.56
v/c Ratio			1.13			0.09		0.59	1.47		1.53dr	1.14
Uniform Delay, d1			31.0			12.4		25.2	31.4		25.4	25.4
Progression Factor			1.00			1.00		1.40	5.92		0.67	3.50
Incremental Delay, d2			78.7			0.1		1.0	215.7		240.9	78.1
Delay (s)			109.7			12.4		36.2	401.2		258.0	166.7
Level of Service			F			B		D	F		F	F
Approach Delay (s)		109.7			12.4			281.2			232.4	
Approach LOS		F			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	232.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	90.1%	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 (vph)	0	0	455	0	0	94	0	1323	1518	0	2218	697
Future Volume (vph)	0	0	455	0	0	94	0	1323	1518	0	2218	697
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Lane Util. Factor			1.00			1.00		0.95	1.00		0.86	0.86
Frt			0.86			0.86		1.00	0.85		0.95	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			1611			1644		3574	1583		4603	1389
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			1611			1644		3574	1583		4603	1389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	0	0	495	0	0	102	0	1438	1650	0	2411	2788
RTOR Reduction (vph)	0	0	22	0	0	17	0	0	680	0	91	538
Lane Group Flow (vph)	0	0	473	0	0	85	0	1438	970	0	3714	856
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								6			2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)			44.0			60.5		43.3	43.3		58.3	58.3
Effective Green, g (s)			44.0			60.5		43.3	43.3		58.3	58.3
Actuated g/C Ratio			0.38			0.53		0.38	0.38		0.51	0.51
Clearance Time (s)			6.0			4.5		6.7	6.7		6.7	6.7
Vehicle Extension (s)			2.5			3.0		5.0	5.0		4.0	4.0
Lane Grp Cap (vph)			616			864		1345	596		2333	704
v/s Ratio Prot								0.40			c0.81	
v/s Ratio Perm			0.29			0.05			c0.61			0.62
v/c Ratio			0.77			0.10		1.07	1.63		1.61dr	1.22
Uniform Delay, d1			31.0			13.6		35.9	35.9		28.4	28.4
Progression Factor			1.00			1.00		0.76	4.65		1.15	2.28
Incremental Delay, d2			5.5			0.1		32.9	282.9		268.1	107.9
Delay (s)			36.5			13.7		60.1	449.5		300.7	172.6
Level of Service			D			B		E	F		F	F
Approach Delay (s)		36.5			13.7			268.1			266.3	
Approach LOS		D			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	251.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
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 (vph)	72	0	431	0	0	0	0	453	927	454	1253	0
Future Volume (vph)	72	0	431	0	0	0	0	453	927	454	1253	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	3213	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	3213	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	82	0	490	0	0	0	0	515	1053	516	1424	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	297	0	0	0
Lane Group Flow (vph)	82	0	490	0	0	0	0	515	756	516	1424	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	12.0		100.0					47.5	47.5	20.2	75.3	
Effective Green, g (s)	12.0		100.0					47.5	47.5	20.2	75.3	
Actuated g/C Ratio	0.12		1.00					0.48	0.48	0.20	0.75	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	216		1583					1633	744	649	2493	
v/s Ratio Prot								0.15		c0.16	0.43	
v/s Ratio Perm	0.05		c0.31						c0.48			
v/c Ratio	0.38		0.31					0.32	1.02	0.80	0.57	
Uniform Delay, d1	40.6		0.0					16.2	26.2	37.9	5.4	
Progression Factor	1.00		1.00					0.38	1.06	1.15	1.71	
Incremental Delay, d2	0.8		0.5					0.4	34.9	3.2	0.5	
Delay (s)	41.4		0.5					6.5	62.8	46.7	9.6	
Level of Service	D		A					A	E	D	A	
Approach Delay (s)		6.4			0.0			44.3			19.5	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	0	311	0	0	0	0	903	1037	476	1515	0
Future Volume (vph)	64	0	311	0	0	0	0	903	1037	476	1515	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	3400	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	3400	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	70	0	338	0	0	0	0	982	1127	517	1647	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	242	0	0	0
Lane Group Flow (vph)	70	0	338	0	0	0	0	982	885	517	1647	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	12.0		115.0					61.1	61.1	21.6	90.3	
Effective Green, g (s)	12.0		115.0					61.1	61.1	21.6	90.3	
Actuated g/C Ratio	0.10		1.00					0.53	0.53	0.19	0.79	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	181		1583					1898	841	638	2806	
v/s Ratio Prot								0.27		c0.15	0.46	
v/s Ratio Perm	c0.04		0.21						c0.56			
v/c Ratio	0.39		0.21					0.52	1.05	0.81	0.59	
Uniform Delay, d1	48.1		0.0					17.4	26.9	44.7	4.9	
Progression Factor	1.00		1.00					0.29	0.99	0.83	1.56	
Incremental Delay, d2	1.0		0.3					0.4	41.5	2.8	0.3	
Delay (s)	49.1		0.3					5.5	68.1	39.8	8.0	
Level of Service	D		A					A	E	D	A	
Approach Delay (s)		8.7			0.0			38.9			15.6	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	107.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	0	526	0	0	0	0	553	1131	554	1529	0
Future Volume (vph)	88	0	526	0	0	0	0	553	1131	554	1529	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	3213	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	3213	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	100	0	598	0	0	0	0	628	1285	630	1738	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	255	0	0	0
Lane Group Flow (vph)	100	0	598	0	0	0	0	628	1030	630	1738	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	12.0		100.0					45.5	45.5	22.2	75.3	
Effective Green, g (s)	12.0		100.0					45.5	45.5	22.2	75.3	
Actuated g/C Ratio	0.12		1.00					0.46	0.46	0.22	0.75	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	216		1583					1564	713	713	2493	
v/s Ratio Prot								0.18		c0.20	0.52	
v/s Ratio Perm	0.06		c0.38						c0.66			
v/c Ratio	0.46		0.38					0.40	1.44	0.88	0.70	
Uniform Delay, d1	41.0		0.0					18.2	27.2	37.6	6.4	
Progression Factor	1.00		1.00					1.69	2.39	0.86	1.81	
Incremental Delay, d2	1.1		0.7					0.6	205.9	1.3	0.1	
Delay (s)	42.1		0.7					31.3	271.2	33.6	11.8	
Level of Service	D		A					C	F	C	B	
Approach Delay (s)		6.6			0.0			192.4			17.6	
Approach LOS		A			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	83.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	115.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	0	380	0	0	0	0	1102	1265	582	1848	0
Future Volume (vph)	78	0	380	0	0	0	0	1102	1265	582	1848	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	3400	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	3400	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	85	0	413	0	0	0	0	1198	1375	633	2009	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	192	0	0	0
Lane Group Flow (vph)	85	0	413	0	0	0	0	1198	1183	633	2009	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	11.2		115.0					59.1	59.1	24.4	91.1	
Effective Green, g (s)	11.2		115.0					59.1	59.1	24.4	91.1	
Actuated g/C Ratio	0.10		1.00					0.51	0.51	0.21	0.79	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	169		1583					1836	813	721	2831	
v/s Ratio Prot								0.34		c0.19	0.56	
v/s Ratio Perm	c0.05		0.26						c0.75			
v/c Ratio	0.50		0.26					0.65	1.46	0.88	0.71	
Uniform Delay, d1	49.3		0.0					20.4	27.9	43.9	5.7	
Progression Factor	1.00		1.00					0.23	0.71	0.90	1.95	
Incremental Delay, d2	1.7		0.4					0.5	208.1	1.2	0.1	
Delay (s)	51.0		0.4					5.2	228.1	40.6	11.2	
Level of Service	D		A					A	F	D	B	
Approach Delay (s)		9.0			0.0			124.3			18.2	
Approach LOS		A			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	0	518	0	0	0	0	544	1112	545	1503	0
Future Volume (vph)	86	0	518	0	0	0	0	544	1112	545	1503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	3213	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	3213	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	98	0	589	0	0	0	0	618	1264	619	1708	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	311	0	0	0
Lane Group Flow (vph)	98	0	589	0	0	0	0	618	953	619	1708	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	12.0		100.0					44.4	44.4	23.3	75.3	
Effective Green, g (s)	12.0		100.0					44.4	44.4	23.3	75.3	
Actuated g/C Ratio	0.12		1.00					0.44	0.44	0.23	0.75	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	216		1583					1526	696	748	2493	
v/s Ratio Prot								0.18		0.19	c0.52	
v/s Ratio Perm	0.05		c0.37						c0.61			
v/c Ratio	0.45		0.37					0.40	1.37	0.83	0.69	
Uniform Delay, d1	40.9		0.0					18.8	27.8	36.4	6.3	
Progression Factor	1.00		1.00					0.50	1.04	1.15	1.54	
Incremental Delay, d2	1.1		0.7					0.6	173.3	0.7	0.1	
Delay (s)	42.1		0.7					10.0	202.3	42.5	9.9	
Level of Service	D		A					A	F	D	A	
Approach Delay (s)		6.6			0.0			139.1			18.5	
Approach LOS		A			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	63.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	113.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	0	373	0	0	0	0	1084	1244	571	1818	0
Future Volume (vph)	77	0	373	0	0	0	0	1084	1244	571	1818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	3400	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	3400	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	84	0	405	0	0	0	0	1178	1352	621	1976	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	254	0	0	0
Lane Group Flow (vph)	84	0	405	0	0	0	0	1178	1098	621	1976	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	12.0		115.0					57.6	57.6	25.1	90.3	
Effective Green, g (s)	12.0		115.0					57.6	57.6	25.1	90.3	
Actuated g/C Ratio	0.10		1.00					0.50	0.50	0.22	0.79	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	181		1583					1790	792	742	2806	
v/s Ratio Prot								0.33		0.18	c0.55	
v/s Ratio Perm	c0.05		0.26						c0.69			
v/c Ratio	0.46		0.26					0.66	1.39	0.84	0.70	
Uniform Delay, d1	48.5		0.0					21.4	28.7	43.0	5.9	
Progression Factor	1.00		1.00					0.29	0.91	0.84	1.87	
Incremental Delay, d2	1.4		0.4					0.6	178.1	0.8	0.1	
Delay (s)	49.8		0.4					6.8	204.2	36.7	11.3	
Level of Service	D		A					A	F	D	B	
Approach Delay (s)		8.9			0.0			112.3			17.3	
Approach LOS		A			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	122.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	632	0	0	0	0	664	1357	665	1834	0
Future Volume (vph)	105	0	632	0	0	0	0	664	1357	665	1834	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805		1583					3438	1568	3213	3312	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805		1583					3438	1568	3213	3312	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.25	0.88	0.88	0.88	0.88	0.25
Adj. Flow (vph)	119	0	718	0	0	0	0	755	1542	756	2084	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	271	0	0	0
Lane Group Flow (vph)	119	0	718	0	0	0	0	755	1271	756	2084	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%	0%	5%	3%	9%	9%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	15.2		100.0					41.3	41.3	23.2	72.1	
Effective Green, g (s)	15.2		100.0					41.3	41.3	23.2	72.1	
Actuated g/C Ratio	0.15		1.00					0.41	0.41	0.23	0.72	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	274		1583					1419	647	745	2387	
v/s Ratio Prot								0.22		0.24	c0.63	
v/s Ratio Perm	0.07		c0.45						c0.81			
v/c Ratio	0.43		0.45					0.53	1.97	1.01	0.87	
Uniform Delay, d1	38.5		0.0					22.1	29.4	38.4	10.5	
Progression Factor	1.00		1.00					1.68	2.25	0.81	1.76	
Incremental Delay, d2	0.8		0.9					0.7	437.0	13.8	0.5	
Delay (s)	39.3		0.9					37.9	503.0	44.8	19.0	
Level of Service	D		A					D	F	D	B	
Approach Delay (s)		6.4			0.0			350.1			25.9	
Approach LOS		A			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	147.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	132.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	455	0	0	0	0	1323	1518	697	2218	0
Future Volume (vph)	94	0	455	0	0	0	0	1323	1518	697	2218	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		4.0					6.7	6.7	7.6	6.7	
Lane Util. Factor	1.00		1.00					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736		1583					3574	1583	3400	3574	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736		1583					3574	1583	3400	3574	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.25	0.92	0.92	0.92	0.92	0.25
Adj. Flow (vph)	102	0	495	0	0	0	0	1438	1650	758	2411	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	204	0	0	0
Lane Group Flow (vph)	102	0	495	0	0	0	0	1438	1446	758	2411	0
Heavy Vehicles (%)	4%	0%	2%	0%	0%	0%	0%	1%	2%	3%	1%	0%
Turn Type	Perm		Free					NA	Perm	Prot	NA	
Protected Phases								6		5	2	
Permitted Phases	4		Free						6			
Actuated Green, G (s)	14.0		115.0					54.3	54.3	26.4	88.3	
Effective Green, g (s)	14.0		115.0					54.3	54.3	26.4	88.3	
Actuated g/C Ratio	0.12		1.00					0.47	0.47	0.23	0.77	
Clearance Time (s)	6.0							6.7	6.7	7.6	6.7	
Vehicle Extension (s)	2.5							5.0	5.0	2.0	4.0	
Lane Grp Cap (vph)	211		1583					1687	747	780	2744	
v/s Ratio Prot								0.40		0.22	c0.67	
v/s Ratio Perm	c0.06		0.31						c0.91			
v/c Ratio	0.48		0.31					0.85	1.94	0.97	0.88	
Uniform Delay, d1	47.1		0.0					26.8	30.4	43.9	9.5	
Progression Factor	1.00		1.00					0.23	0.63	0.93	2.11	
Incremental Delay, d2	1.3		0.5					0.5	421.7	4.9	0.4	
Delay (s)	48.4		0.5					6.6	440.7	45.9	20.5	
Level of Service	D		A					A	F	D	C	
Approach Delay (s)		8.7			0.0			238.6			26.6	
Approach LOS		A			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	120.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	7	185	41	12	26	108	534	41	16	705	84
Future Volume (vph)	134	7	185	41	12	26	108	534	41	16	705	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1625		1805	1705		1787	3383		1805	1845	1615
Flt Permitted	0.73	1.00		0.46	1.00		0.18	1.00		0.42	1.00	1.00
Satd. Flow (perm)	1374	1625		865	1705		341	3383		798	1845	1615
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)	143	7	197	44	13	28	115	568	44	17	750	89
RTOR Reduction (vph)	0	166	0	0	24	0	0	5	0	0	0	43
Lane Group Flow (vph)	143	38	0	44	17	0	115	607	0	17	750	46
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	14.4	14.4		14.4	14.4		63.4	56.3		51.0	48.1	48.1
Effective Green, g (s)	14.4	14.4		14.4	14.4		63.4	56.3		51.0	48.1	48.1
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.68	0.61		0.55	0.52	0.52
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	213	252		134	265		344	2056		471	958	838
v/s Ratio Prot		0.02			0.01		c0.03	c0.18		0.00	c0.41	
v/s Ratio Perm	c0.10			0.05			0.20			0.02		0.03
v/c Ratio	0.67	0.15		0.33	0.07		0.33	0.30		0.04	0.78	0.06
Uniform Delay, d1	36.9	33.8		34.8	33.4		10.5	8.7		9.4	18.0	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.1	0.3		1.4	0.1		0.6	0.4		0.0	6.4	0.1
Delay (s)	44.9	34.1		36.2	33.5		11.1	9.0		9.5	24.4	11.1
Level of Service	D	C		D	C		B	A		A	C	B
Approach Delay (s)		38.5			34.9			9.4			22.7	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	23.0
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 (vph)	99	8	118	39	6	21	221	1080	51	18	720	104
Future Volume (vph)	99	8	118	39	6	21	221	1080	51	18	720	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1617		1805	1613		1805	3514		1805	1863	1583
Flt Permitted	0.74	1.00		0.64	1.00		0.17	1.00		0.23	1.00	1.00
Satd. Flow (perm)	1363	1617		1224	1613		317	3514		444	1863	1583
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)	103	8	123	41	6	22	230	1125	53	19	750	108
RTOR Reduction (vph)	0	107	0	0	19	0	0	3	0	0	0	53
Lane Group Flow (vph)	103	24	0	41	9	0	230	1175	0	19	750	55
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	12.5	12.5		12.5	12.5		70.8	61.3		52.0	49.0	49.0
Effective Green, g (s)	12.5	12.5		12.5	12.5		70.8	61.3		52.0	49.0	49.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.74	0.64		0.54	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	177	210		159	210		409	2248		283	952	809
v/s Ratio Prot		0.01			0.01		c0.07	c0.33		0.00	c0.40	
v/s Ratio Perm	c0.08			0.03			0.35			0.03		0.03
v/c Ratio	0.58	0.11		0.26	0.04		0.56	0.52		0.07	0.79	0.07
Uniform Delay, d1	39.2	36.8		37.5	36.4		12.3	9.3		10.1	19.1	11.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	0.2		0.9	0.1		1.8	0.9		0.1	6.6	0.2
Delay (s)	44.0	37.0		38.3	36.5		14.1	10.2		10.2	25.7	12.0
Level of Service	D	D		D	D		B	B		B	C	B
Approach Delay (s)		40.1			37.6			10.8			23.7	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	9	226	50	15	32	132	651	50	20	860	102
Future Volume (vph)	164	9	226	50	15	32	132	651	50	20	860	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1626		1805	1706		1787	3383		1805	1845	1615
Flt Permitted	0.72	1.00		0.34	1.00		0.07	1.00		0.37	1.00	1.00
Satd. Flow (perm)	1363	1626		641	1706		130	3383		700	1845	1615
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)	174	10	240	53	16	34	140	693	53	21	915	109
RTOR Reduction (vph)	0	201	0	0	28	0	0	5	0	0	0	55
Lane Group Flow (vph)	174	49	0	53	22	0	140	741	0	21	915	54
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	15.6	15.6		15.6	15.6		67.4	58.0		50.1	47.2	47.2
Effective Green, g (s)	15.6	15.6		15.6	15.6		67.4	58.0		50.1	47.2	47.2
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.71	0.61		0.52	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	222	265		104	278		260	2054		400	911	798
v/s Ratio Prot		0.03			0.01		c0.05	c0.22		0.00	c0.50	
v/s Ratio Perm	c0.13			0.08			0.32			0.03		0.03
v/c Ratio	0.78	0.19		0.51	0.08		0.54	0.36		0.05	1.00	0.07
Uniform Delay, d1	38.3	34.5		36.5	33.9		21.0	9.4		10.9	24.1	12.6
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	0.3		3.9	0.1		2.1	0.5		0.1	30.9	0.2
Delay (s)	54.7	34.8		40.3	34.0		23.1	9.9		11.0	55.0	12.8
Level of Service	D	C		D	C		C	A		B	E	B
Approach Delay (s)		43.0			37.3			12.0			49.7	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	10	144	48	7	26	270	1318	62	22	878	127
Future Volume (vph)	121	10	144	48	7	26	270	1318	62	22	878	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1618		1805	1610		1805	3514		1805	1863	1583
Flt Permitted	0.73	1.00		0.56	1.00		0.07	1.00		0.16	1.00	1.00
Satd. Flow (perm)	1356	1618		1062	1610		135	3514		299	1863	1583
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)	126	10	150	50	7	27	281	1373	65	23	915	132
RTOR Reduction (vph)	0	128	0	0	23	0	0	3	0	0	0	69
Lane Group Flow (vph)	126	32	0	50	11	0	281	1435	0	23	915	63
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	14.0	14.0		14.0	14.0		70.2	60.7		48.8	45.8	45.8
Effective Green, g (s)	14.0	14.0		14.0	14.0		70.2	60.7		48.8	45.8	45.8
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.73	0.63		0.50	0.47	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	196	234		153	233		338	2205		197	882	749
v/s Ratio Prot		0.02			0.01		c0.12	c0.41		0.00	c0.49	
v/s Ratio Perm	c0.09			0.05			0.48			0.06		0.04
v/c Ratio	0.64	0.14		0.33	0.05		0.83	0.65		0.12	1.04	0.08
Uniform Delay, d1	39.0	36.1		37.1	35.6		30.4	11.3		12.3	25.5	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	0.3		1.3	0.1		15.8	1.5		0.3	40.4	0.2
Delay (s)	46.0	36.3		38.4	35.7		46.3	12.8		12.5	65.9	14.2
Level of Service	D	D		D	D		D	B		B	E	B
Approach Delay (s)		40.6			37.3			18.3			58.3	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	23.0
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	8	222	49	14	31	130	641	49	19	846	101
Future Volume (vph)	161	8	222	49	14	31	130	641	49	19	846	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1625		1805	1704		1787	3383		1805	1845	1615
Flt Permitted	0.73	1.00		0.35	1.00		0.07	1.00		0.37	1.00	1.00
Satd. Flow (perm)	1365	1625		666	1704		131	3383		708	1845	1615
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)	171	9	236	52	15	33	138	682	52	20	900	107
RTOR Reduction (vph)	0	198	0	0	28	0	0	5	0	0	0	54
Lane Group Flow (vph)	171	47	0	52	20	0	138	729	0	20	900	53
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	15.5	15.5		15.5	15.5		67.1	57.6		50.0	47.0	47.0
Effective Green, g (s)	15.5	15.5		15.5	15.5		67.1	57.6		50.0	47.0	47.0
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.71	0.61		0.53	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	222	264		108	277		259	2049		406	911	798
v/s Ratio Prot		0.03			0.01		c0.05	c0.22		0.00	c0.49	
v/s Ratio Perm	c0.13			0.08			0.32			0.02		0.03
v/c Ratio	0.77	0.18		0.48	0.07		0.53	0.36		0.05	0.99	0.07
Uniform Delay, d1	38.1	34.3		36.2	33.7		20.1	9.4		10.8	23.8	12.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.1	0.3		3.4	0.1		2.1	0.5		0.1	27.0	0.2
Delay (s)	53.2	34.6		39.5	33.8		22.2	9.9		10.9	50.8	12.7
Level of Service	D	C		D	C		C	A		B	D	B
Approach Delay (s)		42.3			36.8			11.9			46.1	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	10	142	47	7	25	265	1296	61	22	864	125
Future Volume (vph)	119	10	142	47	7	25	265	1296	61	22	864	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1618		1805	1612		1805	3514		1805	1863	1583
Flt Permitted	0.74	1.00		0.55	1.00		0.07	1.00		0.17	1.00	1.00
Satd. Flow (perm)	1357	1618		1040	1612		128	3514		318	1863	1583
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)	124	10	148	49	7	26	276	1350	64	23	900	130
RTOR Reduction (vph)	0	128	0	0	22	0	0	3	0	0	0	66
Lane Group Flow (vph)	124	30	0	49	11	0	276	1411	0	23	900	64
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	13.4	13.4		13.4	13.4		73.1	63.6		51.7	48.7	48.7
Effective Green, g (s)	13.4	13.4		13.4	13.4		73.1	63.6		51.7	48.7	48.7
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.74	0.64		0.52	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	183	219		140	218		329	2257		211	916	778
v/s Ratio Prot		0.02			0.01		c0.12	c0.40		0.00	c0.48	
v/s Ratio Perm	c0.09			0.05			0.50			0.05		0.04
v/c Ratio	0.68	0.14		0.35	0.05		0.84	0.63		0.11	0.98	0.08
Uniform Delay, d1	40.7	37.7		38.8	37.3		31.2	10.6		11.6	24.7	13.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.5	0.3		1.5	0.1		16.8	1.3		0.2	25.8	0.2
Delay (s)	50.3	38.0		40.4	37.3		48.0	11.9		11.8	50.5	13.5
Level of Service	D	D		D	D		D	B		B	D	B
Approach Delay (s)		43.4			39.1			17.8			45.1	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	102.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	10	271	60	17	38	159	782	60	23	1033	123
Future Volume (vph)	196	10	271	60	17	38	159	782	60	23	1033	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1625		1805	1703		1787	3383		1805	1845	1615
Flt Permitted	0.72	1.00		0.25	1.00		0.07	1.00		0.32	1.00	1.00
Satd. Flow (perm)	1353	1625		469	1703		132	3383		604	1845	1615
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)	209	11	288	64	18	40	169	832	64	24	1099	131
RTOR Reduction (vph)	0	194	0	0	33	0	0	5	0	0	0	69
Lane Group Flow (vph)	209	105	0	64	25	0	169	891	0	24	1099	62
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	6%	0%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	17.4	17.4		17.4	17.4		67.6	58.1		49.4	46.4	46.4
Effective Green, g (s)	17.4	17.4		17.4	17.4		67.6	58.1		49.4	46.4	46.4
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.69	0.60		0.51	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	241	290		83	303		273	2015		342	878	768
v/s Ratio Prot		0.06			0.01		c0.07	c0.26		0.00	c0.60	
v/s Ratio Perm	c0.15			0.14			0.36			0.03		0.04
v/c Ratio	0.87	0.36		0.77	0.08		0.62	0.44		0.07	1.25	0.08
Uniform Delay, d1	38.9	35.2		38.2	33.4		25.0	10.8		12.0	25.6	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.3	0.8		34.8	0.1		4.1	0.7		0.1	122.7	0.2
Delay (s)	65.2	36.0		73.0	33.5		29.2	11.5		12.1	148.2	14.1
Level of Service	E	D		E	C		C	B		B	F	B
Approach Delay (s)		48.0			54.2			14.3			131.6	
Approach LOS		D			D			B			F	

Intersection Summary			
HCM 2000 Control Delay	71.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	12	173	57	9	30	323	1581	74	27	1055	153
Future Volume (vph)	145	12	173	57	9	30	323	1581	74	27	1055	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1619		1805	1616		1805	3514		1805	1863	1583
Flt Permitted	0.73	1.00		0.47	1.00		0.07	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1348	1619		894	1616		139	3514		172	1863	1583
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)	151	12	180	59	9	31	336	1647	77	28	1099	159
RTOR Reduction (vph)	0	152	0	0	26	0	0	3	0	0	0	87
Lane Group Flow (vph)	151	41	0	59	14	0	336	1721	0	28	1099	72
Heavy Vehicles (%)	3%	0%	1%	0%	0%	5%	0%	2%	3%	0%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Actuated Green, G (s)	15.3	15.3		15.3	15.3		70.6	59.5		48.9	44.3	44.3
Effective Green, g (s)	15.3	15.3		15.3	15.3		70.6	59.5		48.9	44.3	44.3
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.60		0.50	0.45	0.45
Clearance Time (s)	6.0	6.0		6.0	6.0		8.5	6.5		6.5	8.5	8.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	6.0		3.0	6.0	6.0
Lane Grp Cap (vph)	209	251		139	251		367	2124		161	838	712
v/s Ratio Prot		0.03			0.01		c0.15	c0.49		0.01	c0.59	
v/s Ratio Perm	c0.11			0.07			0.51			0.08		0.05
v/c Ratio	0.72	0.16		0.42	0.06		0.92	0.81		0.17	1.31	0.10
Uniform Delay, d1	39.5	36.0		37.6	35.4		32.0	15.1		14.8	27.1	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.6	0.3		2.1	0.1		26.7	3.5		0.5	148.7	0.3
Delay (s)	51.2	36.3		39.7	35.5		58.7	18.6		15.4	175.7	15.9
Level of Service	D	D		D	D		E	B		B	F	B
Approach Delay (s)		42.8			38.0			25.1			152.5	
Approach LOS		D			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	70.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	23.0
Intersection Capacity Utilization	117.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

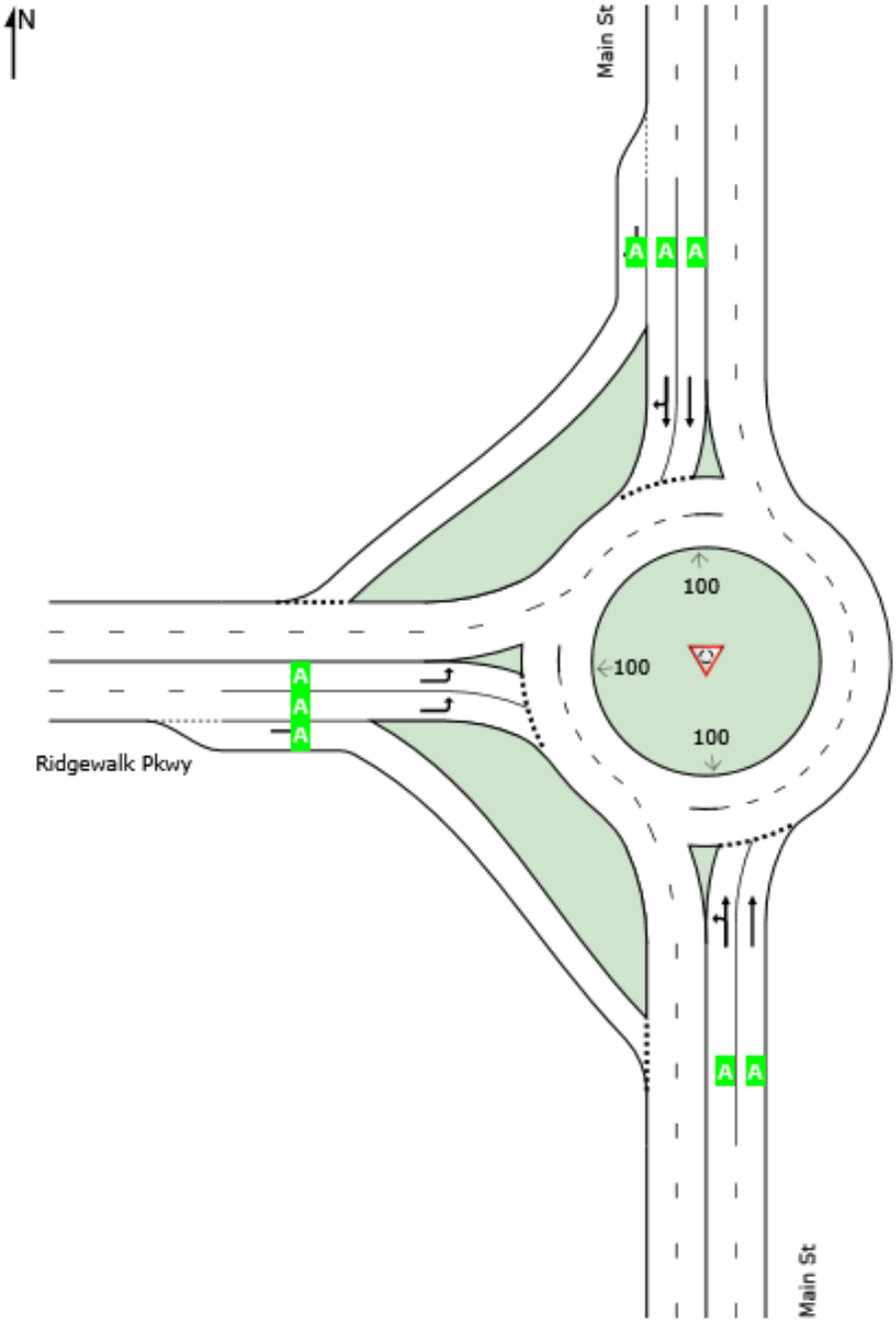
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2028 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2028 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	175	5.2	784	0.223	100	7.0	LOS A	1.0	25.4	Full	1600	0.0	0.0
Lane 2[d]	187	4.0	841	0.223	100	6.6	LOS A	1.0	25.5	Full	1600	0.0	0.0
Approach	362	4.6		0.223		6.8	LOS A	1.0	25.5				
North: Main St													
Lane 1	412	1.3	1321	0.312	100	5.5	LOS A	1.9	46.9	Full	1600	0.0	0.0
Lane 2[d]	441	3.1	1415	0.312	100	5.3	LOS A	1.9	48.2	Full	1600	0.0	0.0
Lane 3	383	4.6	1230	0.312	100	5.8	LOS A	1.6	42.4	Short	400	0.0	NA
Approach	1236	3.0		0.312		5.5	LOS A	1.9	48.2				
West: Ridgewalk Pkwy													
Lane 1	266	7.0	889	0.299	100	7.3	LOS A	1.4	36.2	Full	1600	0.0	0.0
Lane 2[d]	320	7.0	1069	0.299	100	6.3	LOS A	1.4	37.5	Full	1600	0.0	0.0
Lane 3	390	1.8	1142	0.342	100	6.5	LOS A	1.7	43.1	Short	250	0.0	NA
Approach	977	4.9		0.342		6.7	LOS A	1.7	43.1				
Intersection	2574	3.9		0.342		6.1	LOS A	1.9	48.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	88	87	175	5.2	784	0.223	100	NA	NA
Lane 2	-	187	187	4.0	841	0.223	100	NA	NA
Approach	88	274	362	4.6		0.223			

North: Main St

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	412	-	412	1.3	1321	0.312	100	NA	NA
Lane 2	198	243	441	3.1	1415	0.312	100	NA	NA
Lane 3	-	383	383	4.6	1230	0.312	100	0.0	2
Approach	610	626	1236	3.0		0.312			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	266	-	266	7.0	889	0.299	100	NA	NA
Lane 2	320	-	320	7.0	1069	0.299	100	NA	NA
Lane 3	-	390	390	1.8	1142	0.342	100	0.0	2
Approach	586	390	977	4.9		0.342			

	Total	%HV	Deg.Satn (v/c)
Intersection	2574	3.9	0.342

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

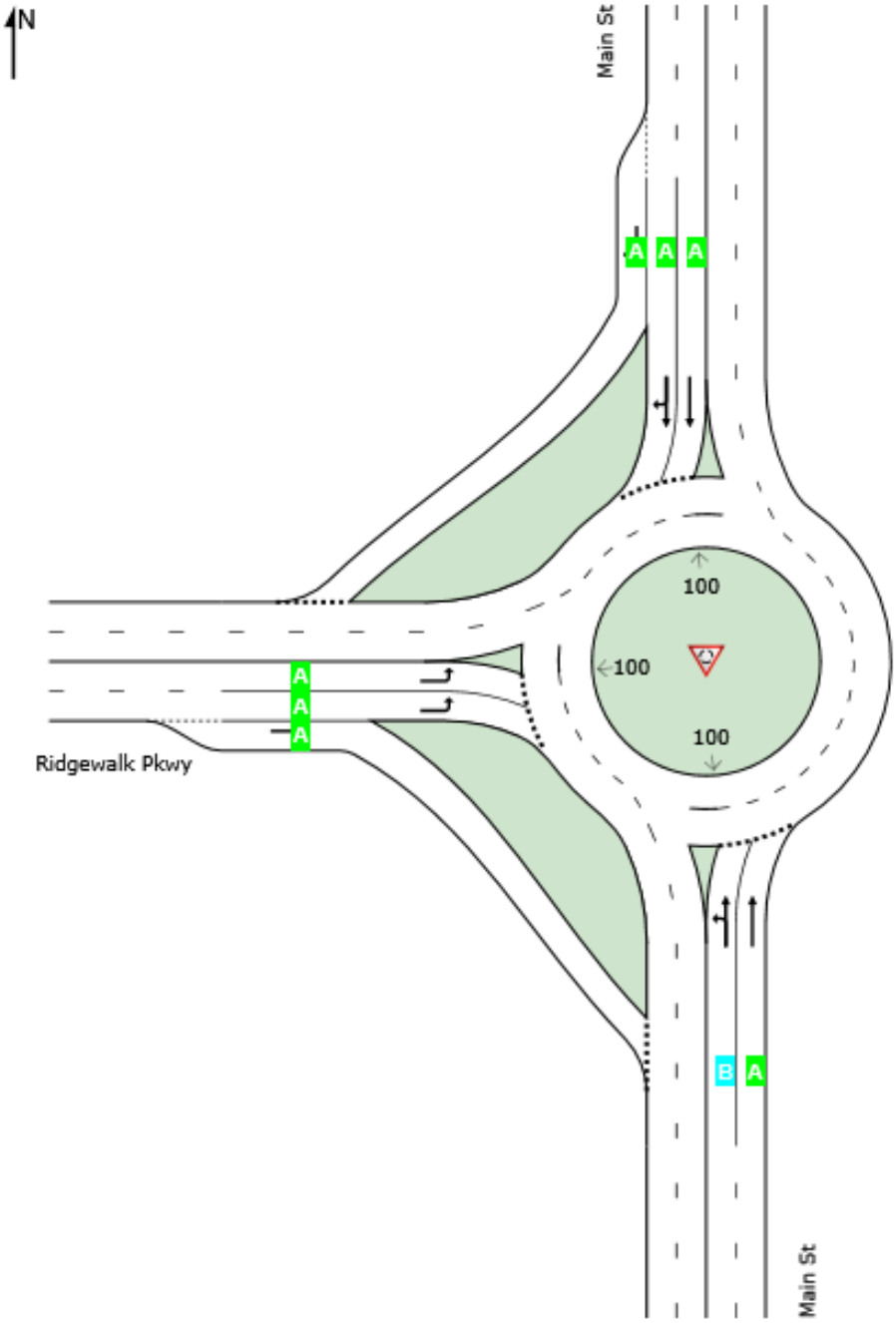
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2028 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2028 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	300	0.7	740	0.405	100	10.2	LOS B	2.2	56.2	Full	1600	0.0	0.0
Lane 2[d]	320	1.6	789	0.405	100	9.7	LOS A	2.3	57.1	Full	1600	0.0	0.0
Approach	619	1.2		0.405		9.9	LOS A	2.3	57.1				
North: Main St													
Lane 1	351	1.0	1150	0.305	95[5]	6.0	LOS A	1.8	45.6	Full	1600	0.0	0.0
Lane 2[d]	410	2.7	1274	0.322	100	5.8	LOS A	2.0	50.9	Full	1600	0.0	0.0
Lane 3	334	2.7	1039	0.322	100	6.7	LOS A	1.9	49.0	Short	400	0.0	NA
Approach	1095	2.2		0.322		6.1	LOS A	2.0	50.9				
West: Ridgewalk Pkwy													
Lane 1	386	0.4	1087	0.355	100	6.9	LOS A	2.1	53.1	Full	1600	0.0	0.0
Lane 2[d]	441	0.4	1241	0.355	100	6.3	LOS A	2.2	55.1	Full	1600	0.0	0.0
Lane 3	242	1.0	1232	0.196	100	4.6	LOS A	1.1	26.9	Short	250	0.0	NA
Approach	1069	0.5		0.355		6.1	LOS A	2.2	55.1				
Intersection	2783	1.3		0.405		7.0	LOS A	2.3	57.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	246	53	300	0.7	740	0.405	100	NA	NA
Lane 2	-	320	320	1.6	789	0.405	100	NA	NA
Approach	246	373	619	1.2		0.405			

North: Main St

Mov. From N	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	W			veh/h	v/c	%	%	No.
Lane 1	351	-	351	1.0	1150	0.305	95[5]	NA	NA
Lane 2	-	410	410	2.7	1274	0.322	100	NA	NA
Lane 3	-	334	334	2.7	1039	0.322	100	0.0	2
Approach	351	744	1095	2.2		0.322			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	386	-	386	0.4	1087	0.355	100	NA	NA
Lane 2	441	-	441	0.4	1241	0.355	100	NA	NA
Lane 3	-	242	242	1.0	1232	0.196	100	0.0	2
Approach	827	242	1069	0.5		0.355			

	Total	%HV	Deg.Satn (v/c)
Intersection	2783	1.3	0.405

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

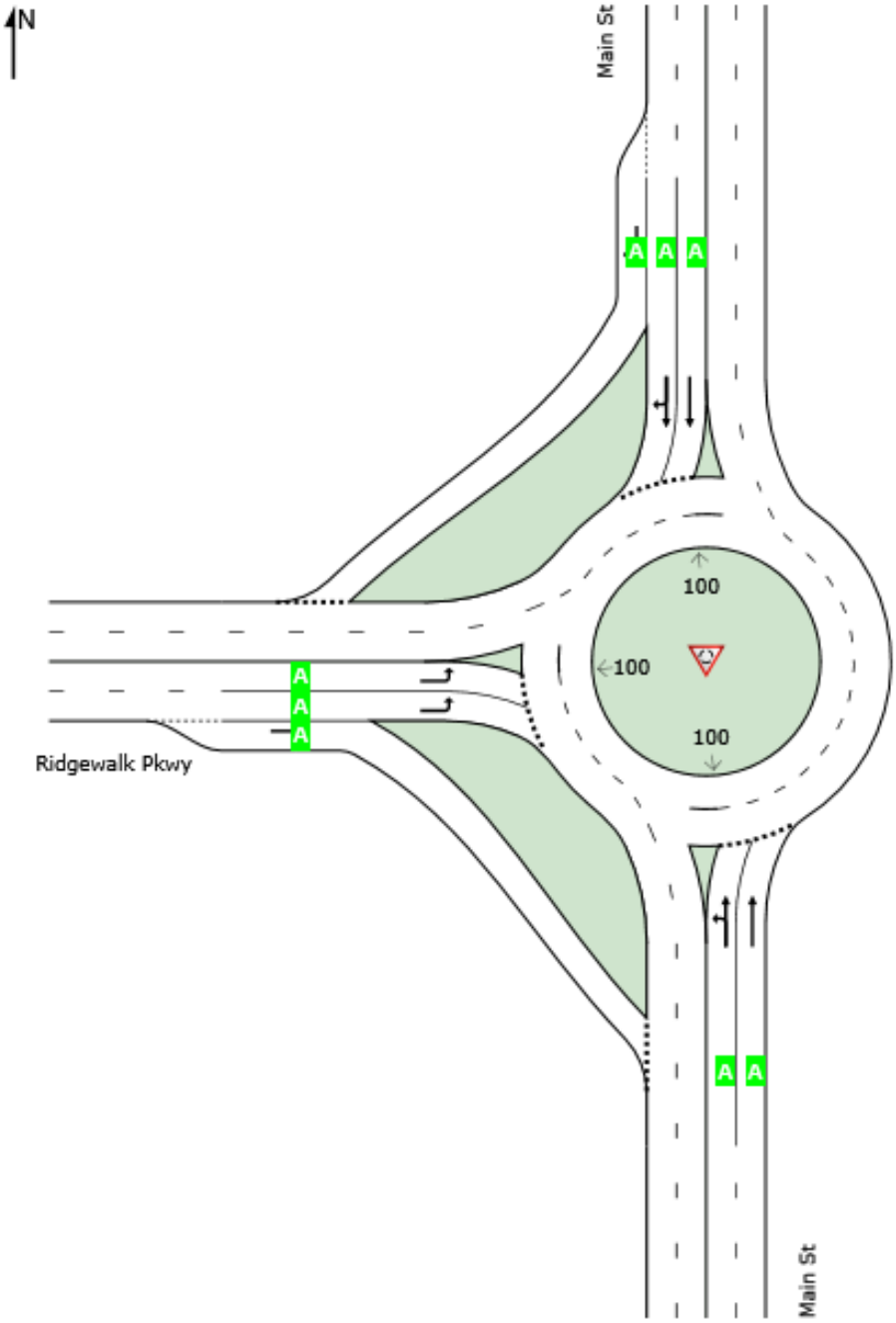
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2048 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2048 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	206	5.2	723	0.285	100	8.4	LOS A	1.3	34.1	Full	1600	0.0	0.0
Lane 2[d]	236	4.0	828	0.285	100	7.5	LOS A	1.4	35.0	Full	1600	0.0	0.0
Approach	442	4.6		0.285		7.9	LOS A	1.4	35.0				
North: Main St													
Lane 1	494	1.3	1323	0.373	100	6.2	LOS A	2.4	61.2	Full	1600	0.0	0.0
Lane 2[d]	546	3.1	1463	0.373	100	5.8	LOS A	2.5	63.3	Full	1600	0.0	0.0
Lane 3	468	4.6	1253	0.373	100	6.4	LOS A	2.1	55.3	Short	400	0.0	NA
Approach	1507	3.0		0.373		6.1	LOS A	2.5	63.3				
West: Ridgewalk Pkwy													
Lane 1	314	7.0	845	0.372	100	8.6	LOS A	1.9	49.4	Full	1600	0.0	0.0
Lane 2[d]	401	7.0	1079	0.372	100	7.2	LOS A	1.9	50.4	Full	1600	0.0	0.0
Lane 3	477	1.8	1153	0.413	100	7.4	LOS A	2.3	59.1	Short	250	0.0	NA
Approach	1191	4.9		0.413		7.6	LOS A	2.3	59.1				
Intersection	3141	3.9		0.413		7.0	LOS A	2.5	63.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	107	99	206	5.2	723	0.285	100	NA	NA
Lane 2	-	236	236	4.0	828	0.285	100	NA	NA
Approach	107	335	442	4.6		0.285			

North: Main St

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	494	-	494	1.3	1323	0.373	100	NA	NA
Lane 2	251	295	546	3.1	1463	0.373	100	NA	NA
Lane 3	-	468	468	4.6	1253	0.373	100	0.0	2
Approach	744	763	1507	3.0		0.373			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	314	-	314	7.0	845	0.372	100	NA	NA
Lane 2	401	-	401	7.0	1079	0.372	100	NA	NA
Lane 3	-	477	477	1.8	1153	0.413	100	0.0	2
Approach	715	477	1191	4.9		0.413			

	Total	%HV	Deg.Satn (v/c)
Intersection	3141	3.9	0.413

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

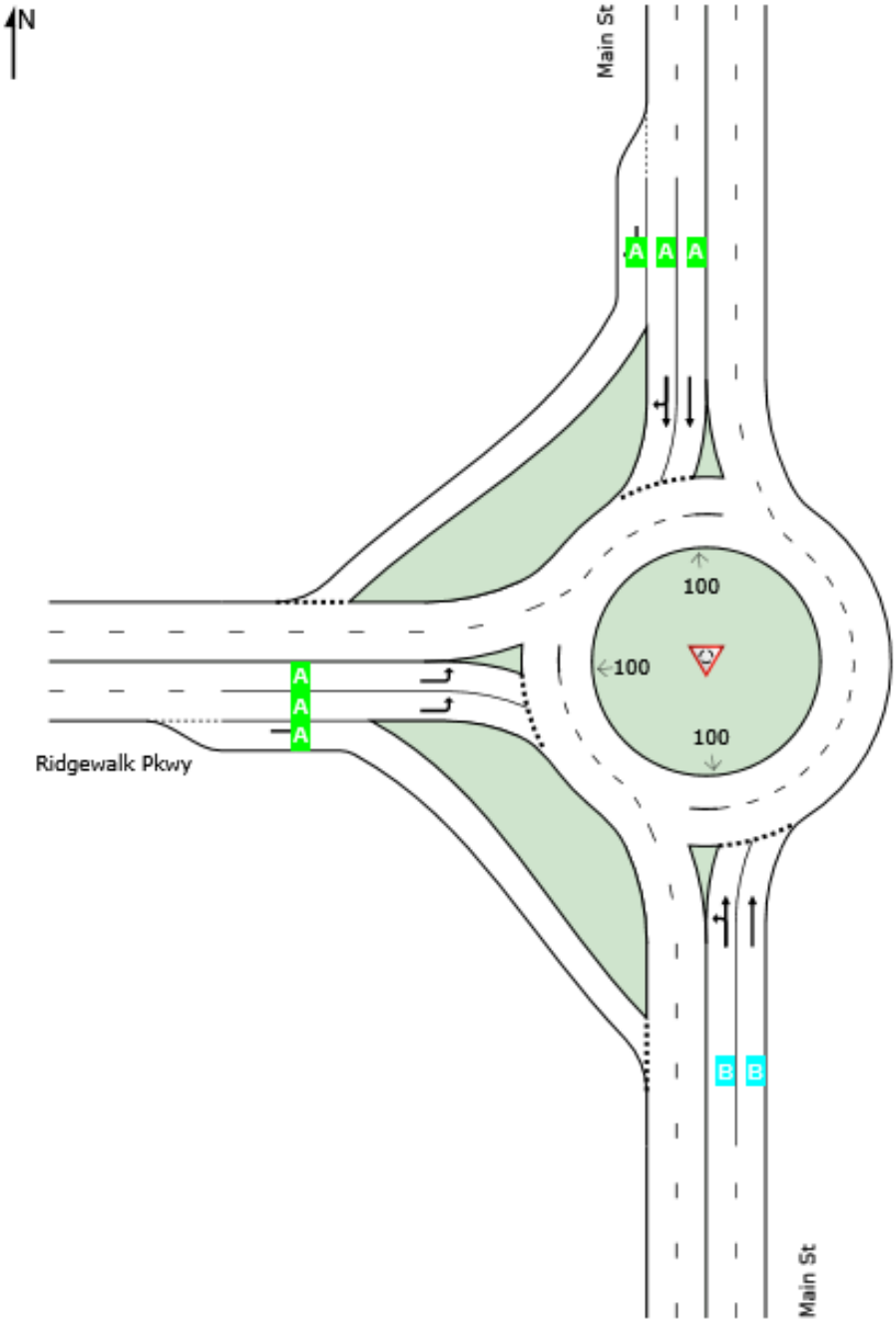
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2048 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2048 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build without Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	352	0.7	654	0.537	100	14.4	LOS B	3.8	94.6	Full	1600	0.0	0.0
Lane 2[d]	404	1.6	752	0.537	100	12.9	LOS B	3.9	99.9	Full	1600	0.0	0.0
Approach	756	1.2		0.537		13.6	LOS B	3.9	99.9				
North: Main St													
Lane 1	428	1.0	1121	0.382	96[5]	7.1	LOS A	2.5	63.0	Full	1600	0.0	0.0
Lane 2[d]	513	2.7	1288	0.398	100	6.6	LOS A	2.8	70.7	Full	1600	0.0	0.0
Lane 3	395	2.7	991	0.398	100	8.0	LOS A	2.7	69.4	Short	400	0.0	NA
Approach	1335	2.2		0.398		7.2	LOS A	2.8	70.7				
West: Ridgewalk Pkwy													
Lane 1	460	0.4	1037	0.443	100	8.4	LOS A	2.9	73.8	Full	1600	0.0	0.0
Lane 2[d]	549	0.4	1239	0.443	100	7.4	LOS A	3.1	78.4	Full	1600	0.0	0.0
Lane 3	296	1.0	1230	0.240	100	5.1	LOS A	1.4	36.5	Short	250	0.0	NA
Approach	1304	0.5		0.443		7.2	LOS A	3.1	78.4				
Intersection	3396	1.3		0.537		8.6	LOS A	3.9	99.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	300	52	352	0.7	654	0.537	100	NA	NA
Lane 2	-	404	404	1.6	752	0.537	100	NA	NA
Approach	300	456	756	1.2		0.537			

North: Main St

Mov. From N	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	W			veh/h	v/c	%	%	No.
Lane 1	428	-	428	1.0	1121	0.382	96[5]	NA	NA
Lane 2	-	513	513	2.7	1288	0.398	100	NA	NA
Lane 3	-	395	395	2.7	991	0.398	100	0.0	2
Approach	428	908	1335	2.2		0.398			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	460	-	460	0.4	1037	0.443	100	NA	NA
Lane 2	549	-	549	0.4	1239	0.443	100	NA	NA
Lane 3	-	296	296	1.0	1230	0.240	100	0.0	2
Approach	1009	296	1304	0.5		0.443			

	Total	%HV	Deg.Satn (v/c)
Intersection	3396	1.3	0.537

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

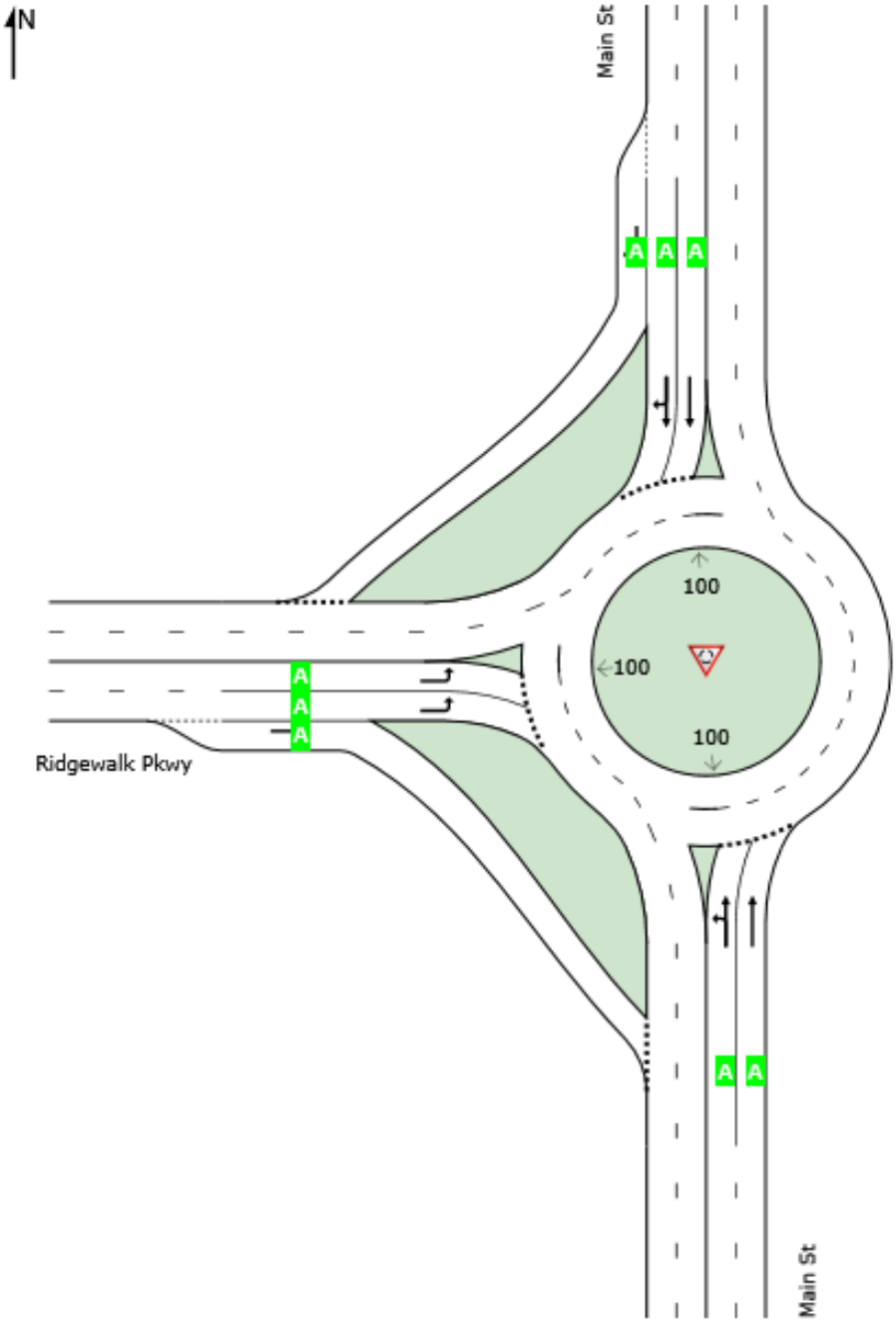
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2028 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2028 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	207	5.2	706	0.294	100	8.7	LOS A	1.3	35.1	Full	1600	0.0	0.0
Lane 2[d]	227	4.0	773	0.294	100	8.1	LOS A	1.4	35.5	Full	1600	0.0	0.0
Approach	435	4.6		0.294		8.4	LOS A	1.4	35.5				
North: Main St													
Lane 1	497	1.3	1297	0.383	100	6.4	LOS A	2.5	63.4	Full	1600	0.0	0.0
Lane 2[d]	534	3.1	1392	0.383	100	6.1	LOS A	2.5	65.3	Full	1600	0.0	0.0
Lane 3	452	4.6	1179	0.383	100	6.9	LOS A	2.2	56.5	Short	400	0.0	NA
Approach	1483	3.0		0.383		6.4	LOS A	2.5	65.3				
West: Ridgewalk Pkwy													
Lane 1	315	7.0	818	0.386	100	9.1	LOS A	2.0	53.3	Full	1600	0.0	0.0
Lane 2[d]	388	7.0	1007	0.386	100	7.7	LOS A	2.0	53.2	Full	1600	0.0	0.0
Lane 3	468	1.8	1076	0.435	100	8.1	LOS A	2.6	66.5	Short	250	0.0	NA
Approach	1172	4.9		0.435		8.2	LOS A	2.6	66.5				
Intersection	3089	3.9		0.435		7.4	LOS A	2.6	66.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	105	102	207	5.2	706	0.294	100	NA	NA
Lane 2	-	227	227	4.0	773	0.294	100	NA	NA
Approach	105	330	435	4.6		0.294			

North: Main St

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	497	-	497	1.3	1297	0.383	100	NA	NA
Lane 2	235	299	534	3.1	1392	0.383	100	NA	NA
Lane 3	-	452	452	4.6	1179	0.383	100	0.0	2
Approach	732	751	1483	3.0		0.383			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	315	-	315	7.0	818	0.386	100	NA	NA
Lane 2	388	-	388	7.0	1007	0.386	100	NA	NA
Lane 3	-	468	468	1.8	1076	0.435	100	0.0	2
Approach	704	468	1172	4.9		0.435			

	Total	%HV	Deg.Satn (v/c)
Intersection	3089	3.9	0.435

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

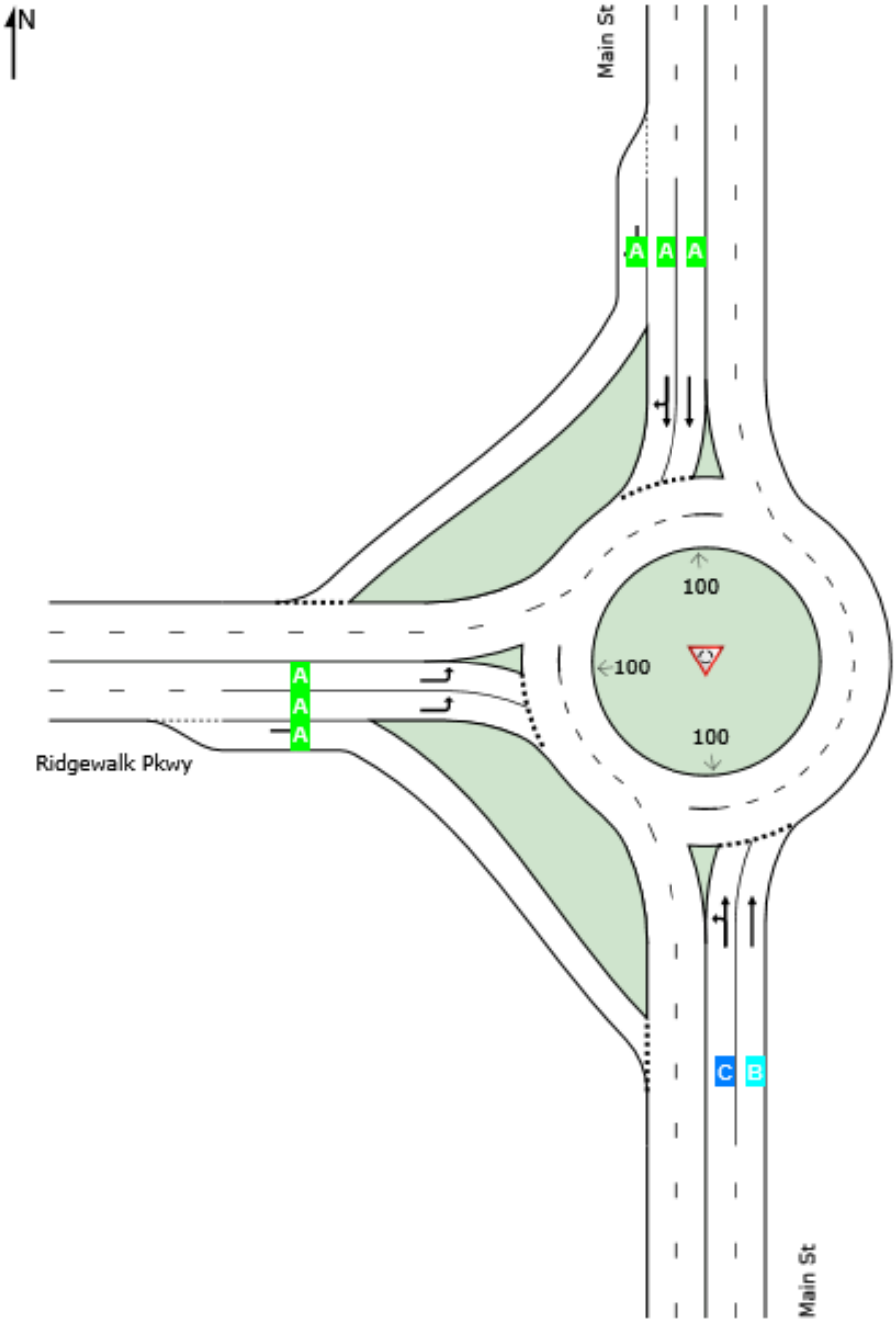
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2028 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2028 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	354	0.7	639	0.555	100	15.2	LOS C	4.0	99.5	Full	1600	0.0	0.0
Lane 2[d]	389	1.6	701	0.555	100	14.2	LOS B	4.1	103.4	Full	1600	0.0	0.0
Approach	743	1.2		0.555		14.7	LOS B	4.1	103.4				
North: Main St													
Lane 1	420	1.0	1089	0.386	93[5]	7.3	LOS A	2.5	63.4	Full	1600	0.0	0.0
Lane 2[d]	507	2.7	1220	0.415	100	7.1	LOS A	2.9	73.6	Full	1600	0.0	0.0
Lane 3	387	2.7	932	0.415	100	8.7	LOS A	2.8	72.5	Short	400	0.0	NA
Approach	1314	2.2		0.415		7.6	LOS A	2.9	73.6				
West: Ridgewalk Pkwy													
Lane 1	460	0.4	1014	0.454	100	8.8	LOS A	3.0	75.6	Full	1600	0.0	0.0
Lane 2[d]	532	0.4	1172	0.454	100	7.9	LOS A	3.2	79.4	Full	1600	0.0	0.0
Lane 3	290	1.0	1163	0.250	100	5.4	LOS A	1.5	37.2	Short	250	0.0	NA
Approach	1283	0.5		0.454		7.6	LOS A	3.2	79.4				
Intersection	3340	1.3		0.555		9.2	LOS A	4.1	103.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	296	59	354	0.7	639	0.555	100	NA	NA
Lane 2	-	389	389	1.6	701	0.555	100	NA	NA
Approach	296	447	743	1.2		0.555			

North: Main St

Mov. From N	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	W			veh/h	v/c	%	%	No.
Lane 1	420	-	420	1.0	1089	0.386	93[5]	NA	NA
Lane 2	-	507	507	2.7	1220	0.415	100	NA	NA
Lane 3	-	387	387	2.7	932	0.415	100	0.0	2
Approach	420	894	1314	2.2		0.415			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	460	-	460	0.4	1014	0.454	100	NA	NA
Lane 2	532	-	532	0.4	1172	0.454	100	NA	NA
Lane 3	-	290	290	1.0	1163	0.250	100	0.0	2
Approach	992	290	1283	0.5		0.454			

	Total	%HV	Deg.Satn (v/c)
Intersection	3340	1.3	0.555

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

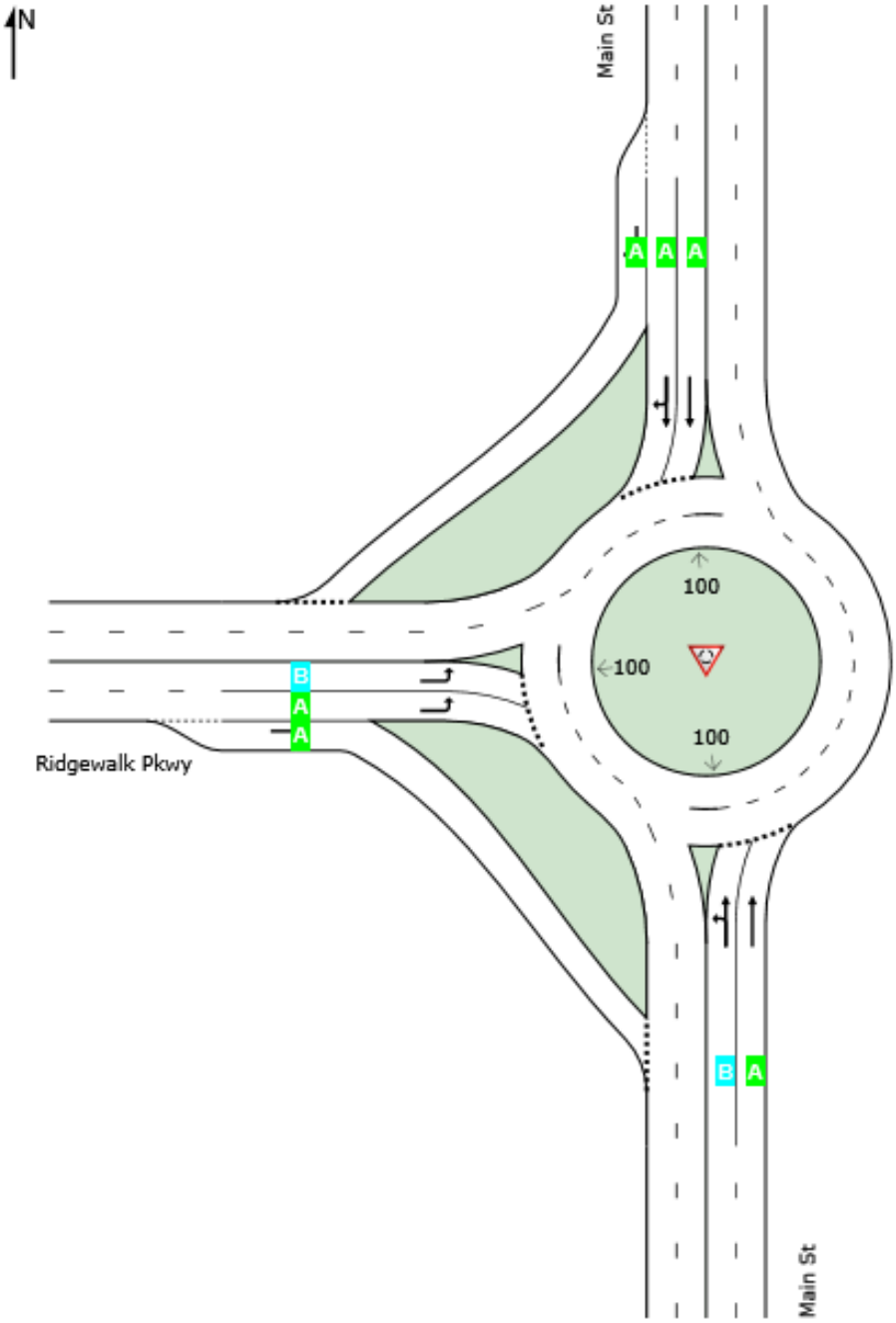
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2048 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2048 AM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	244	5.2	632	0.386	100	11.2	LOS B	2.1	55.0	Full	1600	0.0	0.0
Lane 2[d]	287	4.0	743	0.386	100	9.8	LOS A	2.2	56.3	Full	1600	0.0	0.0
Approach	531	4.6		0.386		10.5	LOS B	2.2	56.3				
North: Main St													
Lane 1	597	1.3	1295	0.461	100	7.4	LOS A	3.4	85.3	Full	1600	0.0	0.0
Lane 2[d]	662	3.1	1436	0.461	100	6.9	LOS A	3.5	88.5	Full	1600	0.0	0.0
Lane 3	549	4.6	1191	0.461	100	7.9	LOS A	2.9	75.6	Short	400	0.0	NA
Approach	1809	3.0		0.461		7.4	LOS A	3.5	88.5				
West: Ridgewalk Pkwy													
Lane 1	372	7.0	762	0.488	100	11.6	LOS B	3.3	85.8	Full	1600	0.0	0.0
Lane 2[d]	488	7.0	1000	0.488	100	9.4	LOS A	3.5	91.8	Full	1600	0.0	0.0
Lane 3	570	1.8	1070	0.533	100	9.8	LOS A	4.3	108.4	Short	250	0.0	NA
Approach	1430	4.9		0.533		10.2	LOS B	4.3	108.4				
Intersection	3769	3.9		0.533		8.9	LOS A	4.3	108.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	128	116	244	5.2	632	0.386	100	NA	NA
Lane 2	-	287	287	4.0	743	0.386	100	NA	NA
Approach	128	402	531	4.6		0.386			

North: Main St

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	597	-	597	1.3	1295	0.461	100	NA	NA
Lane 2	295	367	662	3.1	1436	0.461	100	NA	NA
Lane 3	-	549	549	4.6	1191	0.461	100	0.0	2
Approach	893	916	1809	3.0		0.461			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	372	-	372	7.0	762	0.488	100	NA	NA
Lane 2	488	-	488	7.0	1000	0.488	100	NA	NA
Lane 3	-	570	570	1.8	1070	0.533	100	0.0	2
Approach	859	570	1430	4.9		0.533			

	Total	%HV	Deg.Satn (v/c)
Intersection	3769	3.9	0.533

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

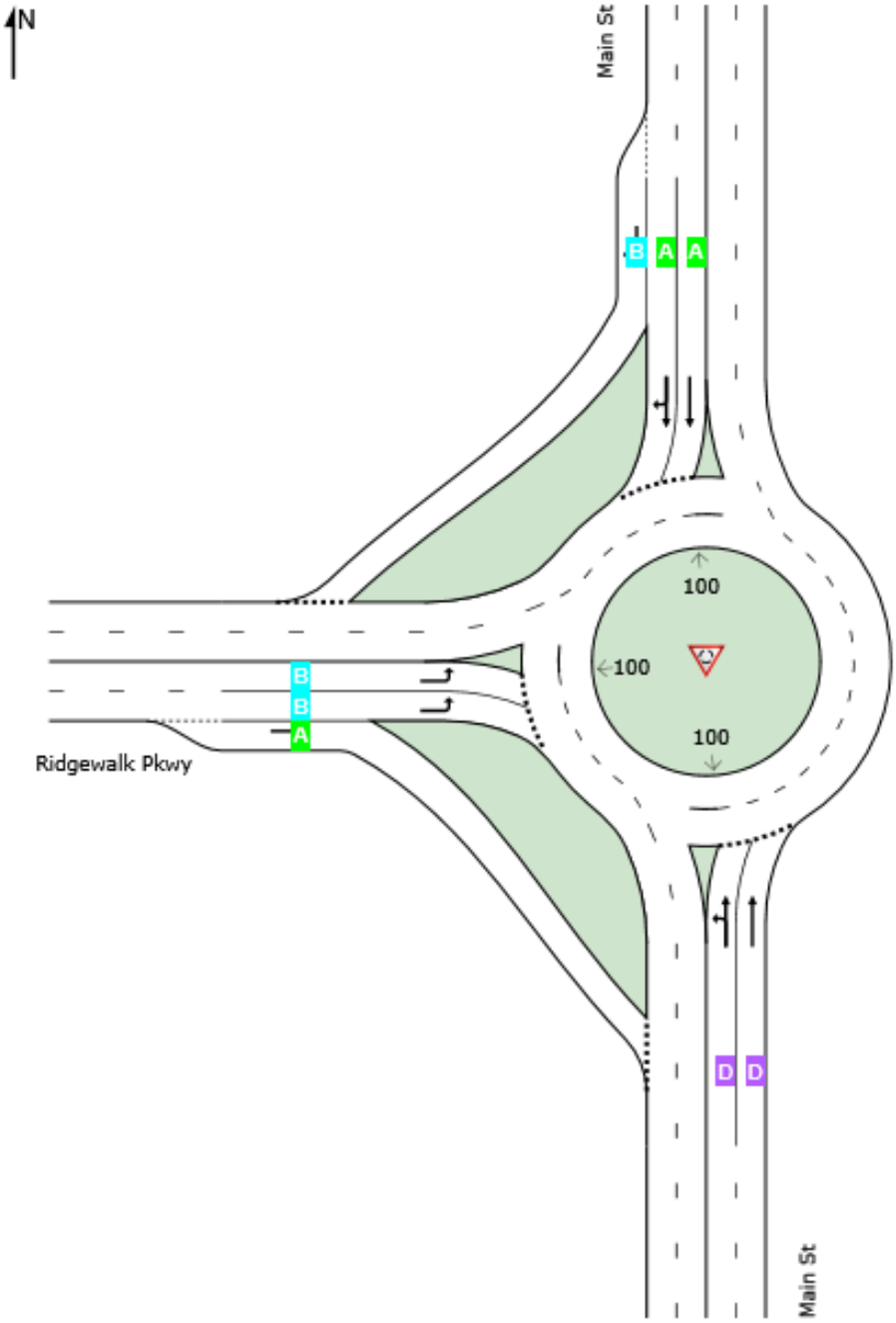
LANE LEVEL OF SERVICE

Lane Level of Service

Site: [#8-Ridgewalk Pkwy_2048 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	D	A	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

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LANE SUMMARY

Site: [#8-Ridgewalk Pkwy_2048 PM (Site Folder: General)]

Main St at Ridgewalk Pkwy
Build with Development
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Main St													
Lane 1	414	0.6	529	0.782	100	31.1	LOS D	8.2	206.0	Full	1600	0.0	0.0
Lane 2[d]	493	1.6	630	0.782	100	27.1	LOS D	8.9	226.5	Full	1600	0.0	0.0
Approach	906	1.2		0.782		28.9	LOS D	8.9	226.5				
North: Main St													
Lane 1	513	1.0	1044	0.491	92[5]	9.2	LOS A	3.6	91.5	Full	1600	0.0	0.0
Lane 2[d]	648	2.7	1217	0.532	100	8.9	LOS A	4.3	110.5	Full	1600	0.0	0.0
Lane 3	442	2.7	830	0.532	100	11.8	LOS B	5.1	130.6	Short	400	0.0	NA
Approach	1603	2.2		0.532		9.8	LOS A	5.1	130.6				
West: Ridgewalk Pkwy													
Lane 1	547	0.4	942	0.581	100	11.9	LOS B	6.1	152.0	Full	1600	0.0	0.0
Lane 2[d]	664	0.4	1142	0.581	100	10.3	LOS B	6.2	155.8	Full	1600	0.0	0.0
Lane 3	355	1.0	1134	0.313	100	6.2	LOS A	2.1	53.2	Short	250	0.0	NA
Approach	1566	0.5		0.581		9.9	LOS A	6.2	155.8				
Intersection	4075	1.3		0.782		14.1	LOS B	8.9	226.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Main St

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	360	54	414	0.6	529	0.782	100	NA	NA
Lane 2	-	493	493	1.6	630	0.782	100	NA	NA
Approach	360	546	906	1.2		0.782			

North: Main St

Mov. From N	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	W			veh/h	v/c	%	%	No.
Lane 1	513	-	513	1.0	1044	0.491	92[5]	NA	NA
Lane 2	-	648	648	2.7	1217	0.532	100	NA	NA
Lane 3	-	442	442	2.7	830	0.532	100	0.0	2
Approach	513	1090	1603	2.2		0.532			

West: Ridgewalk Pkwy

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	547	-	547	0.4	942	0.581	100	NA	NA
Lane 2	664	-	664	0.4	1142	0.581	100	NA	NA
Lane 3	-	355	355	1.0	1134	0.313	100	0.0	2
Approach	1211	355	1566	0.5		0.581			

	Total	%HV	Deg.Satn (v/c)
Intersection	4075	1.3	0.782

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Main St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Ridgewalk Pkwy Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	475	316	71	222	494	507
Future Volume (vph)	475	316	71	222	494	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	2707
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	2707
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	586	390	88	274	610	626
RTOR Reduction (vph)	0	261	0	0	0	149
Lane Group Flow (vph)	586	129	88	274	610	477
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	27.7	27.7	6.0	60.0	48.5	76.2
Effective Green, g (s)	27.7	27.7	6.0	60.0	48.5	76.2
Actuated g/C Ratio	0.28	0.28	0.06	0.60	0.48	0.76
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	906	438	210	1140	921	2062
v/s Ratio Prot	c0.18	0.08	c0.03	0.14	c0.32	0.06
v/s Ratio Perm						0.11
v/c Ratio	0.65	0.29	0.42	0.24	0.66	0.23
Uniform Delay, d1	31.8	28.5	45.3	9.3	19.5	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.8	0.6	0.5	2.4	0.1
Delay (s)	34.1	29.3	45.9	9.8	22.0	3.6
Level of Service	C	C	D	A	C	A
Approach Delay (s)	32.2			18.6	12.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	769	225	229	347	326	692
Future Volume (vph)	769	225	229	347	326	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	2760
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	827	242	246	373	351	744
RTOR Reduction (vph)	0	149	0	0	0	7
Lane Group Flow (vph)	827	93	246	373	351	737
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	46.1	46.1	12.4	61.6	43.7	89.8
Effective Green, g (s)	46.1	46.1	12.4	61.6	43.7	89.8
Actuated g/C Ratio	0.38	0.38	0.10	0.51	0.36	0.75
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1331	614	358	956	684	2203
v/s Ratio Prot	c0.24	0.06	c0.07	0.20	c0.19	0.13
v/s Ratio Perm						0.14
v/c Ratio	0.62	0.15	0.69	0.39	0.51	0.33
Uniform Delay, d1	29.9	24.2	51.9	17.8	29.8	5.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	4.5	1.2	1.3	0.2
Delay (s)	31.2	24.4	56.4	19.0	31.2	5.3
Level of Service	C	C	E	B	C	A
Approach Delay (s)	29.7			33.8	13.6	
Approach LOS	C			C	B	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	579	386	87	271	603	618
Future Volume (vph)	579	386	87	271	603	618
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	2707
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	2707
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	715	477	107	335	744	763
RTOR Reduction (vph)	0	225	0	0	0	145
Lane Group Flow (vph)	715	252	107	335	744	618
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	28.7	28.7	7.5	59.0	46.0	74.7
Effective Green, g (s)	28.7	28.7	7.5	59.0	46.0	74.7
Actuated g/C Ratio	0.29	0.29	0.08	0.59	0.46	0.75
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	939	454	262	1121	874	2022
v/s Ratio Prot	c0.22	0.16	0.03	c0.18	c0.39	0.09
v/s Ratio Perm						0.14
v/c Ratio	0.76	0.55	0.41	0.30	0.85	0.31
Uniform Delay, d1	32.5	30.2	44.1	10.2	24.0	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	2.6	0.5	0.7	8.8	0.2
Delay (s)	36.9	32.8	44.6	10.9	32.8	4.3
Level of Service	D	C	D	B	C	A
Approach Delay (s)	35.3			19.0	18.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	938	275	279	424	398	844
Future Volume (vph)	938	275	279	424	398	844
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	2760
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1009	296	300	456	428	908
RTOR Reduction (vph)	0	168	0	0	0	3
Lane Group Flow (vph)	1009	128	300	456	428	905
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	51.9	51.9	13.6	55.8	36.7	88.6
Effective Green, g (s)	51.9	51.9	13.6	55.8	36.7	88.6
Actuated g/C Ratio	0.43	0.43	0.11	0.46	0.31	0.74
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1499	691	392	866	575	2175
v/s Ratio Prot	c0.29	0.08	c0.09	0.24	c0.23	0.18
v/s Ratio Perm						0.15
v/c Ratio	0.67	0.19	0.77	0.53	0.74	0.42
Uniform Delay, d1	27.3	21.0	51.7	22.7	37.4	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.3	7.9	2.3	6.3	0.3
Delay (s)	28.9	21.3	59.6	25.0	43.7	6.2
Level of Service	C	C	E	C	D	A
Approach Delay (s)	27.1			38.7	18.2	
Approach LOS	C			D	B	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	570	379	85	267	593	608
Future Volume (vph)	570	379	85	267	593	608
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	2707
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	2707
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	704	468	105	330	732	751
RTOR Reduction (vph)	0	228	0	0	0	142
Lane Group Flow (vph)	704	240	105	330	732	609
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	28.5	28.5	6.4	59.2	47.3	75.8
Effective Green, g (s)	28.5	28.5	6.4	59.2	47.3	75.8
Actuated g/C Ratio	0.28	0.28	0.06	0.59	0.47	0.76
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	932	451	224	1124	898	2051
v/s Ratio Prot	c0.22	0.15	c0.03	0.17	c0.39	0.08
v/s Ratio Perm						0.14
v/c Ratio	0.76	0.53	0.47	0.29	0.82	0.30
Uniform Delay, d1	32.6	30.1	45.2	10.1	22.6	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	2.3	0.7	0.7	6.5	0.2
Delay (s)	36.8	32.4	45.8	10.7	29.1	4.0
Level of Service	D	C	D	B	C	A
Approach Delay (s)	35.0			19.2	16.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	923	270	275	416	391	831
Future Volume (vph)	923	270	275	416	391	831
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	2760
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	992	290	296	447	420	894
RTOR Reduction (vph)	0	166	0	0	0	3
Lane Group Flow (vph)	992	124	296	447	420	891
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	51.4	51.4	13.6	56.3	37.2	88.6
Effective Green, g (s)	51.4	51.4	13.6	56.3	37.2	88.6
Actuated g/C Ratio	0.43	0.43	0.11	0.47	0.31	0.74
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1485	684	392	874	583	2175
v/s Ratio Prot	c0.29	0.08	c0.09	0.24	c0.22	0.18
v/s Ratio Perm						0.15
v/c Ratio	0.67	0.18	0.76	0.51	0.72	0.41
Uniform Delay, d1	27.5	21.3	51.6	22.2	36.8	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.3	7.3	2.1	5.4	0.3
Delay (s)	29.0	21.5	58.9	24.4	42.2	6.2
Level of Service	C	C	E	C	D	A
Approach Delay (s)	27.3			38.1	17.7	
Approach LOS	C			D	B	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	696	462	104	326	723	742
Future Volume (vph)	696	462	104	326	723	742
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3273	1583	3502	1900	1900	2707
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3273	1583	3502	1900	1900	2707
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	859	570	128	402	893	916
RTOR Reduction (vph)	0	202	0	0	0	116
Lane Group Flow (vph)	859	368	128	402	893	800
Heavy Vehicles (%)	7%	2%	0%	0%	0%	5%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	29.0	29.0	8.1	58.7	45.1	74.1
Effective Green, g (s)	29.0	29.0	8.1	58.7	45.1	74.1
Actuated g/C Ratio	0.29	0.29	0.08	0.59	0.45	0.74
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	949	459	283	1115	856	2005
v/s Ratio Prot	c0.26	0.23	0.04	c0.21	c0.47	0.12
v/s Ratio Perm						0.18
v/c Ratio	0.91	0.80	0.45	0.36	1.04	0.40
Uniform Delay, d1	34.2	32.8	43.8	10.8	27.4	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	11.0	0.5	0.9	42.6	0.3
Delay (s)	46.8	43.8	44.3	11.7	70.1	5.0
Level of Service	D	D	D	B	E	A
Approach Delay (s)	45.6			19.6	37.1	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1126	330	335	508	477	1014
Future Volume (vph)	1126	330	335	508	477	1014
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3467	1599	3467	1863	1881	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3467	1599	3467	1863	1881	2760
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1211	355	360	546	513	1090
RTOR Reduction (vph)	0	170	0	0	0	1
Lane Group Flow (vph)	1211	185	360	546	513	1089
Heavy Vehicles (%)	1%	1%	1%	2%	1%	3%
Turn Type	Prot	Prot	Prot	NA	NA	pm+ov
Protected Phases	7	4	1	6	2	7
Permitted Phases						2
Actuated Green, G (s)	54.0	54.0	11.5	53.7	36.7	90.7
Effective Green, g (s)	54.0	54.0	11.5	53.7	36.7	90.7
Actuated g/C Ratio	0.45	0.45	0.10	0.45	0.31	0.76
Clearance Time (s)	6.0	6.0	5.5	6.3	6.3	6.0
Vehicle Extension (s)	5.1	5.1	2.1	5.1	5.1	5.1
Lane Grp Cap (vph)	1560	719	332	833	575	2224
v/s Ratio Prot	c0.35	0.12	c0.10	0.29	c0.27	0.22
v/s Ratio Perm						0.17
v/c Ratio	0.78	0.26	1.08	0.66	0.89	0.49
Uniform Delay, d1	27.9	20.5	54.2	25.9	39.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.4	73.8	4.0	17.1	0.4
Delay (s)	30.8	20.9	128.0	29.9	56.8	6.0
Level of Service	C	C	F	C	E	A
Approach Delay (s)	28.6			68.9	22.3	
Approach LOS	C			E	C	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	388	123	217	1034	975	648
Future Volume (vph)	388	123	217	1034	975	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	5040	1615	390	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	441	140	247	1175	1108	736
RTOR Reduction (vph)	0	122	0	0	0	311
Lane Group Flow (vph)	441	18	247	1175	1108	425
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	13.1	13.1	72.6	72.6	57.7	57.7
Effective Green, g (s)	13.1	13.1	72.6	72.6	57.7	57.7
Actuated g/C Ratio	0.13	0.13	0.73	0.73	0.58	0.58
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	660	211	430	3552	2797	904
v/s Ratio Prot	c0.09		c0.06	0.24	0.23	
v/s Ratio Perm		0.01	c0.36			0.27
v/c Ratio	0.67	0.09	0.57	0.33	0.40	0.47
Uniform Delay, d1	41.4	38.2	5.4	4.9	11.6	12.3
Progression Factor	1.00	1.00	1.87	0.18	1.12	9.32
Incremental Delay, d2	2.0	0.1	1.8	0.2	0.4	1.5
Delay (s)	43.4	38.3	11.9	1.1	13.3	115.9
Level of Service	D	D	B	A	B	F
Approach Delay (s)	42.1			3.0	54.3	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	616	153	157	1305	1182	629
Future Volume (vph)	616	153	157	1305	1182	629
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	5040	1583	289	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	684	170	174	1450	1313	699
RTOR Reduction (vph)	0	140	0	0	0	298
Lane Group Flow (vph)	684	30	174	1450	1313	401
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	20.2	20.2	80.5	80.5	66.0	66.0
Effective Green, g (s)	20.2	20.2	80.5	80.5	66.0	66.0
Actuated g/C Ratio	0.18	0.18	0.70	0.70	0.57	0.57
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	885	278	332	3595	2947	917
v/s Ratio Prot	c0.14		c0.05	0.28	0.26	
v/s Ratio Perm		0.02	c0.32			0.25
v/c Ratio	0.77	0.11	0.52	0.40	0.45	0.44
Uniform Delay, d1	45.2	39.8	7.7	7.2	14.0	13.9
Progression Factor	1.00	1.00	1.51	0.48	0.58	1.95
Incremental Delay, d2	3.9	0.1	1.4	0.3	0.4	1.3
Delay (s)	49.1	39.9	13.1	3.8	8.5	28.4
Level of Service	D	D	B	A	A	C
Approach Delay (s)	47.3			4.8	15.5	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	474	151	265	1261	1189	791
Future Volume (vph)	474	151	265	1261	1189	791
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.13	1.00	1.00	1.00
Satd. Flow (perm)	5040	1615	249	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	539	172	301	1433	1351	899
RTOR Reduction (vph)	0	146	0	0	0	366
Lane Group Flow (vph)	539	26	301	1433	1351	533
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	15.1	15.1	70.6	70.6	49.8	49.8
Effective Green, g (s)	15.1	15.1	70.6	70.6	49.8	49.8
Actuated g/C Ratio	0.15	0.15	0.71	0.71	0.50	0.50
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	761	243	429	3454	2414	780
v/s Ratio Prot	c0.11		c0.11	0.29	0.28	
v/s Ratio Perm		0.02	c0.38			0.34
v/c Ratio	0.71	0.11	0.70	0.41	0.56	0.68
Uniform Delay, d1	40.4	36.6	14.9	6.1	17.5	19.1
Progression Factor	1.00	1.00	1.45	0.11	1.03	3.95
Incremental Delay, d2	2.5	0.1	4.8	0.3	0.6	3.3
Delay (s)	42.8	36.7	26.4	1.0	18.6	78.7
Level of Service	D	D	C	A	B	E
Approach Delay (s)	41.4			5.4	42.6	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	751	187	192	1592	1442	768
Future Volume (vph)	751	187	192	1592	1442	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.09	1.00	1.00	1.00
Satd. Flow (perm)	5040	1583	166	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	834	208	213	1769	1602	853
RTOR Reduction (vph)	0	144	0	0	0	381
Lane Group Flow (vph)	834	64	213	1769	1602	472
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	23.8	23.8	76.9	76.9	59.0	59.0
Effective Green, g (s)	23.8	23.8	76.9	76.9	59.0	59.0
Actuated g/C Ratio	0.21	0.21	0.67	0.67	0.51	0.51
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	1043	327	299	3434	2634	820
v/s Ratio Prot	c0.17		c0.08	0.34	0.31	
v/s Ratio Perm		0.04	c0.39			0.30
v/c Ratio	0.80	0.19	0.71	0.52	0.61	0.58
Uniform Delay, d1	43.3	37.7	21.7	9.6	19.8	19.4
Progression Factor	1.00	1.00	1.37	0.33	0.57	1.95
Incremental Delay, d2	4.1	0.1	7.2	0.5	0.7	1.9
Delay (s)	47.4	37.8	36.9	3.7	11.9	39.6
Level of Service	D	D	D	A	B	D
Approach Delay (s)	45.5			7.3	21.5	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	465	148	259	1241	1170	778
Future Volume (vph)	465	148	259	1241	1170	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.14	1.00	1.00	1.00
Satd. Flow (perm)	5040	1615	262	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	528	168	294	1410	1330	884
RTOR Reduction (vph)	0	143	0	0	0	362
Lane Group Flow (vph)	528	25	294	1410	1330	522
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	14.9	14.9	70.8	70.8	50.8	50.8
Effective Green, g (s)	14.9	14.9	70.8	70.8	50.8	50.8
Actuated g/C Ratio	0.15	0.15	0.71	0.71	0.51	0.51
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	750	240	424	3464	2462	796
v/s Ratio Prot	c0.10		c0.11	0.29	0.27	
v/s Ratio Perm		0.02	c0.38			0.33
v/c Ratio	0.70	0.10	0.69	0.41	0.54	0.66
Uniform Delay, d1	40.5	36.8	12.9	6.0	16.7	18.1
Progression Factor	1.00	1.00	1.50	0.11	1.03	4.13
Incremental Delay, d2	2.5	0.1	4.6	0.3	0.6	3.0
Delay (s)	42.9	36.9	23.9	1.0	17.8	77.9
Level of Service	D	D	C	A	B	E
Approach Delay (s)	41.5			5.0	41.8	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	739	184	187	1566	1418	755
Future Volume (vph)	739	184	187	1566	1418	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.09	1.00	1.00	1.00
Satd. Flow (perm)	5040	1583	176	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	821	204	208	1740	1576	839
RTOR Reduction (vph)	0	144	0	0	0	380
Lane Group Flow (vph)	821	60	208	1740	1576	459
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	23.5	23.5	77.2	77.2	59.6	59.6
Effective Green, g (s)	23.5	23.5	77.2	77.2	59.6	59.6
Actuated g/C Ratio	0.20	0.20	0.67	0.67	0.52	0.52
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	1029	323	301	3447	2661	828
v/s Ratio Prot	c0.16		c0.08	0.34	0.31	
v/s Ratio Perm		0.04	c0.38			0.29
v/c Ratio	0.80	0.19	0.69	0.50	0.59	0.55
Uniform Delay, d1	43.5	37.8	19.1	9.4	19.3	18.7
Progression Factor	1.00	1.00	1.40	0.34	0.57	2.09
Incremental Delay, d2	4.1	0.1	6.2	0.5	0.6	1.7
Delay (s)	47.6	37.9	33.0	3.7	11.5	40.9
Level of Service	D	D	C	A	B	D
Approach Delay (s)	45.7			6.8	21.7	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	567	182	316	1514	1428	949
Future Volume (vph)	567	182	316	1514	1428	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1615	1805	4893	4848	1568
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	5040	1615	157	4893	4848	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	644	207	359	1720	1623	1078
RTOR Reduction (vph)	0	171	0	0	0	389
Lane Group Flow (vph)	644	36	359	1720	1623	689
Heavy Vehicles (%)	1%	0%	0%	6%	7%	3%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	17.3	17.3	68.4	68.4	44.0	44.0
Effective Green, g (s)	17.3	17.3	68.4	68.4	44.0	44.0
Actuated g/C Ratio	0.17	0.17	0.68	0.68	0.44	0.44
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	871	279	435	3346	2133	689
v/s Ratio Prot	c0.13		c0.16	0.35	0.33	
v/s Ratio Perm		0.02	0.40			c0.44
v/c Ratio	0.74	0.13	0.83	0.51	0.76	1.00
Uniform Delay, d1	39.2	35.0	27.3	7.7	23.6	28.0
Progression Factor	1.00	1.00	1.12	0.12	0.91	2.68
Incremental Delay, d2	2.9	0.1	10.9	0.5	0.9	20.0
Delay (s)	42.1	35.0	41.5	1.4	22.3	95.1
Level of Service	D	D	D	A	C	F
Approach Delay (s)	40.4			8.4	51.4	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	902	225	228	1911	1730	921
Future Volume (vph)	902	225	228	1911	1730	921
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Lane Util. Factor	0.94	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	5040	1583	1787	5136	5136	1599
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	5040	1583	130	5136	5136	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1002	250	253	2123	1922	1023
RTOR Reduction (vph)	0	138	0	0	0	402
Lane Group Flow (vph)	1002	112	253	2123	1922	621
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	27.5	27.5	73.2	73.2	53.3	53.3
Effective Green, g (s)	27.5	27.5	73.2	73.2	53.3	53.3
Actuated g/C Ratio	0.24	0.24	0.64	0.64	0.46	0.46
Clearance Time (s)	7.6	7.6	4.5	6.7	6.7	6.7
Vehicle Extension (s)	2.0	2.0	3.0	5.2	5.2	5.2
Lane Grp Cap (vph)	1205	378	304	3269	2380	741
v/s Ratio Prot	c0.20		c0.11	0.41	0.37	
v/s Ratio Perm		0.07	c0.42			0.39
v/c Ratio	0.83	0.30	0.83	0.65	0.81	0.84
Uniform Delay, d1	41.6	35.8	33.2	12.9	26.5	27.1
Progression Factor	1.00	1.00	1.24	0.27	0.59	1.45
Incremental Delay, d2	4.8	0.2	15.2	0.9	1.0	3.6
Delay (s)	46.4	36.0	56.5	4.4	16.7	42.9
Level of Service	D	D	E	A	B	D
Approach Delay (s)	44.3			9.9	25.8	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX J: B/C RATIOS – OPERATIONAL IMPROVEMENTS

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build - Alt 1: Add NB Left Turn Lane

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 750,000
Total	**$ 750,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,939	63.0	4,285	222.0	3,584	101.6	5,228	307.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	51.4		264.2		101.1		446.6	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,939	27.3	4,285	42.3	3,584	36.2	5,228	67.6
Vehicle Denied	0	0.0	0		0		0	0.0
Total Delay (hr)	22.3		50.3		36.0		98.2	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**750,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,105,152
Build	$	484,392
Auto delay savings	**$**	**1,620,760**
Open Year (2028) Truck Delay Costs		
Nobuild	$	344,006
Build	$	79,155
Truck delay savings	**$**	**264,851**
Open Year (2028) Benefits	**$**	**1,885,610**
Design Year (2048) Auto Delay Costs		
Nobuild	$	3,652,520
Build	$	895,008
Auto delay savings	**$**	**2,757,511**
Design Year (2048) Truck Delay Costs		
Nobuild	$	596,863
Build	$	146,255
Truck delay savings	**$**	**450,609**
Design Year (2048) Benefits	**$**	**3,208,120**
Design Life Benefits	**$**	**50,937,302**
Design Life Benefit-Cost Ratio		**67.92**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 750,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.0
Visible Injury	B	0.6
Complaint Injury	C	2.2
Property Damage Only	O	12.0

Weighted cost of fatal and injury collisions
Q = $ 193,786

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$50,937,302	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$50,937,302**	
Design Life Operational Cost	$750,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$750,000**	
Project Benefit-Cost Ratio	**67.92**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Marietta Hwy at Prominence Point Pkwy/Driveway #3
Build - Alt 2: Multilane Roundabout

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 3,000,000
Total	**$ 3,000,000**

Source of traffic data

Peak Hour analysis using Synchro 11 and SIDRA 9

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,939	63.0	4,285	222.0	3,584	101.6	5,228	307.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	51.4		264.2		101.1		446.6	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,939	7.4	4,285	20.3	3,584	9.3	5,228	59.2
Vehicle Denied	0	0.0	0		0		0	0.0
Total Delay (hr)	6.0		24.2		9.3		86.0	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**3,000,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,105,152
Build	$	201,422
Auto delay savings	**$**	**1,903,730**
Open Year (2028) Truck Delay Costs		
Nobuild	$	344,006
Build	$	32,915
Truck delay savings	**$**	**311,091**
Open Year (2028) Benefits	**$**	**2,214,821**
Design Year (2048) Auto Delay Costs		
Nobuild	$	3,652,520
Build	$	635,067
Auto delay savings	**$**	**3,017,453**
Design Year (2048) Truck Delay Costs		
Nobuild	$	596,863
Build	$	103,777
Truck delay savings	**$**	**493,086**
Design Year (2048) Benefits	**$**	**3,510,539**
Design Life Benefits	**$**	**57,253,603**
Design Life Benefit-Cost Ratio		**19.08**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 3,000,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.0
Visible Injury	B	0.6
Complaint Injury	C	2.2
Property Damage Only	O	12.0

Weighted cost of fatal and injury collisions
Q = $ 193,786

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$57,253,603	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$57,253,603**	
Design Life Operational Cost	$3,000,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$3,000,000**	
Project Benefit-Cost Ratio	**19.08**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Marietta Highway at Butterworth Rd/Univeter Rd
Build - Alt 1: Single Lane Roundabout

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 1,800,000
Total	**$ 1,800,000**

Source of traffic data

Peak Hour analysis using Synchro 11 and SIDRA 9

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,770	74.1	3,586	312.8	3,379	150.6	4,374	470.3
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	57.0		311.6		141.4		571.4	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,770	12.2	3,586	60.7	3,379	19.4	4,374	124.0
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	9.4		60.5		18.2		150.7	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,800,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,458,097
Build	$	465,820
Auto delay savings	**$**	**1,992,277**
Open Year (2028) Truck Delay Costs		
Nobuild	$	401,681
Build	$	76,120
Truck delay savings	**$**	**325,561**
Open Year (2028) Benefits	**$**	**2,317,838**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,753,280
Build	$	1,126,146
Auto delay savings	**$**	**3,627,135**
Design Year (2048) Truck Delay Costs		
Nobuild	$	776,740
Build	$	184,025
Truck delay savings	**$**	**592,715**
Design Year (2048) Benefits	**$**	**4,219,850**
Design Life Benefits	**$**	**65,376,884**
Design Life Benefit-Cost Ratio		**36.32**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,800,000

Accident Data	Symbol	Value
Fatality	K	0.2
Serious Injury	A	0.2
Visible Injury	B	0.8
Complaint Injury	C	4.4
Property Damage Only	O	22.4

Weighted cost of fatal and injury collisions
Q = $ 612,857

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$65,376,884	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$65,376,884**	
Design Life Operational Cost	$1,800,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$1,800,000**	
Project Benefit-Cost Ratio	**36.32**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Marietta Highway at Butterworth Rd/Univeter Rd
Build - Alt 2: Multilane Roundabout

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 3,000,000
Total	**$ 3,000,000**

Source of traffic data

Peak Hour analysis using Synchro 11 and SIDRA 9

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,770	74.1	3,586	312.8	3,379	150.6	4,374	470.3
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	57.0		311.6		141.4		571.4	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,770	12.1	3,586	21.9	3,379	16.9	4,374	56.9
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	9.3		21.8		15.9		69.1	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**3,000,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,458,097
Build	$	207,566
Auto delay savings	**$**	**2,250,532**
Open Year (2028) Truck Delay Costs		
Nobuild	$	401,681
Build	$	33,919
Truck delay savings	**$**	**367,763**
Open Year (2028) Benefits	**$**	**2,618,294**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,753,280
Build	$	566,817
Auto delay savings	**$**	**4,186,463**
Design Year (2048) Truck Delay Costs		
Nobuild	$	776,740
Build	$	92,624
Truck delay savings	**$**	**684,116**
Design Year (2048) Benefits	**$**	**4,870,579**
Design Life Benefits	**$**	**74,888,734**
Design Life Benefit-Cost Ratio		**24.96**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 3,000,000

Accident Data	Symbol	Value
Fatality	K	0.2
Serious Injury	A	0.2
Visible Injury	B	0.8
Complaint Injury	C	4.4
Property Damage Only	O	22.4

Weighted cost of fatal and injury collisions
Q = $ 612,857

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$74,888,734	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$74,888,734**	
Design Life Operational Cost	$3,000,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$3,000,000**	
Project Benefit-Cost Ratio	**24.96**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at E Cherokee Dr
Build - Alt 1: Dual Right Turn Lanes on NB and WB Approaches

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 900,000
Total	**$ 900,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,476	51.2	4,153	112.8	4,242	79.3	5,068	210.4
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	49.4		130.1		93.4		296.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,476	48.8	4,153	71.0	4,242	82.5	5,068	108.8
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	47.1		81.9		97.2		153.2	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**900,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,197,466
Build	$	860,439
Auto delay savings	**$**	**337,027**
Open Year (2028) Truck Delay Costs		
Nobuild	$	195,680
Build	$	140,606
Truck delay savings	**$**	**55,074**
Open Year (2028) Benefits	**$**	**392,101**
Design Year (2048) Auto Delay Costs		
Nobuild	$	2,598,400
Build	$	1,669,713
Auto delay savings	**$**	**928,687**
Design Year (2048) Truck Delay Costs		
Nobuild	$	424,608
Build	$	272,850
Truck delay savings	**$**	**151,758**
Design Year (2048) Benefits	**$**	**1,080,445**
Design Life Benefits	**$**	**14,725,465**
Design Life Benefit-Cost Ratio		**16.36**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 900,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.0
Visible Injury	B	0.6
Complaint Injury	C	4.2
Property Damage Only	O	23.8

Weighted cost of fatal and injury collisions
Q = $ 158,875

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$14,725,465	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$14,725,465**	
Design Life Operational Cost	$900,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$900,000**	
Project Benefit-Cost Ratio	**16.36**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at Sixes Rd
Build - Alt 1: Remove EB Right Turns and Provide Dual EB Left Turns

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 1,200,000
Total	**$ 1,200,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,789	96.5	3,987	152.6	4,624	254.0	4,866	284.0
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	101.6		169.0		326.2		383.9	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,967	35.6	3,047	53.7	3,621	86.7	3,716	93.1
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	29.3		45.5		87.2		96.1	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,200,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,804,369
Build	$	498,765
Auto delay savings	**$**	**1,305,603**
Open Year (2028) Truck Delay Costs		
Nobuild	$	294,854
Build	$	81,504
Truck delay savings	**$**	**213,351**
Open Year (2028) Benefits	**$**	**1,518,954**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,735,628
Build	$	1,222,419
Auto delay savings	**$**	**3,513,208**
Design Year (2048) Truck Delay Costs		
Nobuild	$	773,856
Build	$	199,757
Truck delay savings	**$**	**574,098**
Design Year (2048) Benefits	**$**	**4,087,306**
Design Life Benefits	**$**	**56,062,604**
Design Life Benefit-Cost Ratio		**46.72**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,200,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.0
Visible Injury	B	0.0
Complaint Injury	C	3.2
Property Damage Only	O	20.6

Weighted cost of fatal and injury collisions
Q = $ 110,000

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$56,062,604	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$56,062,604**	
Design Life Operational Cost	$1,200,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$1,200,000**	
Project Benefit-Cost Ratio	**46.72**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at Holly St/Hickory Rd
Build - Alt 1: Add SB Right Turn Lane

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 300,000
Total	**$ 300,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	114.3	3,362	99.9	3,728	179.2	4,103	157.2
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	97.0		93.3		185.6		179.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	54.2	3,362	52.6	3,728	89.8	4,103	98.6
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	46.0		49.1		93.0		112.4	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**300,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,269,008
Build	$	634,313
Auto delay savings	**$**	**634,695**
Open Year (2028) Truck Delay Costs		
Nobuild	$	207,370
Build	$	103,654
Truck delay savings	**$**	**103,716**
Open Year (2028) Benefits	**$**	**738,411**
Design Year (2048) Auto Delay Costs		
Nobuild	$	2,432,332
Build	$	1,369,558
Auto delay savings	**$**	**1,062,775**
Design Year (2048) Truck Delay Costs		
Nobuild	$	397,471
Build	$	223,801
Truck delay savings	**$**	**173,670**
Design Year (2048) Benefits	**$**	**1,236,444**
Design Life Benefits	**$**	**19,748,553**
Design Life Benefit-Cost Ratio		**65.83**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 300,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$19,748,553	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$19,748,553**	
Design Life Operational Cost	$300,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$300,000**	
Project Benefit-Cost Ratio	**65.83**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at Holly St/Hickory Rd
Build - Alt 2: Dual SB Left Turn Lanes

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 1,000,000
Total	**$ 1,000,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	114.3	3,362	99.9	3,728	179.2	4,103	157.2
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	97.0		93.3		185.6		179.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	65.1	3,362	51.4	3,728	103.2	4,103	80.0
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	55.2		48.0		106.9		91.2	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,000,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,269,008
Build	$	688,525
Auto delay savings	**$**	**580,483**
Open Year (2028) Truck Delay Costs		
Nobuild	$	207,370
Build	$	112,513
Truck delay savings	**$**	**94,858**
Open Year (2028) Benefits	**$**	**675,341**
Design Year (2048) Auto Delay Costs		
Nobuild	$	2,432,332
Build	$	1,320,727
Auto delay savings	**$**	**1,111,606**
Design Year (2048) Truck Delay Costs		
Nobuild	$	397,471
Build	$	215,822
Truck delay savings	**$**	**181,649**
Design Year (2048) Benefits	**$**	**1,293,255**
Design Life Benefits	**$**	**19,685,957**
Design Life Benefit-Cost Ratio		**19.69**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,000,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$19,685,957	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$19,685,957**	
Design Life Operational Cost	$1,000,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$1,000,000**	
Project Benefit-Cost Ratio	**19.69**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at Holly St/Hickory Rd
Build - Alt 3: Dual SB Left Turn Lanes, Add SB Right Turn Lane, and Dual WB Right Turn Lanes

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 1,500,000
Total	**$ 1,500,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	114.3	3,362	99.9	3,728	179.2	4,103	157.2
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	97.0		93.3		185.6		179.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	54.1	3,362	46.3	3,728	81.3	4,103	60.4
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	45.9		43.2		84.2		68.8	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,500,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,269,008
Build	$	594,512
Auto delay savings	**$**	**674,496**
Open Year (2028) Truck Delay Costs		
Nobuild	$	207,370
Build	$	97,150
Truck delay savings	**$**	**110,220**
Open Year (2028) Benefits	**$**	**784,717**
Design Year (2048) Auto Delay Costs		
Nobuild	$	2,432,332
Build	$	1,020,518
Auto delay savings	**$**	**1,411,814**
Design Year (2048) Truck Delay Costs		
Nobuild	$	397,471
Build	$	166,764
Truck delay savings	**$**	**230,707**
Design Year (2048) Benefits	**$**	**1,642,521**
Design Life Benefits	**$**	**24,272,377**
Design Life Benefit-Cost Ratio		**16.18**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,500,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$24,272,377	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$24,272,377**	
Design Life Operational Cost	$1,500,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$1,500,000**	
Project Benefit-Cost Ratio	**16.18**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Holly Springs Pkwy at Holly St/Hickory Rd
Build - Alt 4: Dual SB Left Turn Lanes and Add SB Right Turn Lane

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 1,250,000
Total	**$ 1,250,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	114.3	3,362	99.9	3,728	179.2	4,103	157.2
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	97.0		93.3		185.6		179.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,055	54.4	3,362	48.8	3,728	82.2	4,103	72.1
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	46.2		45.6		85.1		82.2	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**1,250,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,269,008
Build	$	611,779
Auto delay savings	**$**	**657,229**
Open Year (2028) Truck Delay Costs		
Nobuild	$	207,370
Build	$	99,972
Truck delay savings	**$**	**107,399**
Open Year (2028) Benefits	**$**	**764,628**
Design Year (2048) Auto Delay Costs		
Nobuild	$	2,432,332
Build	$	1,115,659
Auto delay savings	**$**	**1,316,673**
Design Year (2048) Truck Delay Costs		
Nobuild	$	397,471
Build	$	182,312
Truck delay savings	**$**	**215,159**
Design Year (2048) Benefits	**$**	**1,531,832**
Design Life Benefits	**$**	**22,964,600**
Design Life Benefit-Cost Ratio		**18.37**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 1,250,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$22,964,600	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$22,964,600**	
Design Life Operational Cost	$1,250,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$1,250,000**	
Project Benefit-Cost Ratio	**18.37**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: SR 5 BUS/Riverstone Pkwy at I-575 NB Ramps
Build - Alt 1: Free-Flow Right Turn from Exit Ramp

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 400,000
Total	**$ 400,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,231	76.2	4,517	154.7	3,943	146.1	5,511	294.1
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	68.4		194.1		160.0		450.2	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	3,231	56.5	4,517	92.5	3,943	139.1	5,511	154.3
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	50.7		116.1		152.4		236.2	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**400,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	1,750,514
Build	$	1,112,151
Auto delay savings	**$**	**638,363**
Open Year (2028) Truck Delay Costs		
Nobuild	$	286,054
Build	$	181,738
Truck delay savings	**$**	**104,316**
Open Year (2028) Benefits	**$**	**742,678**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,069,526
Build	$	2,591,214
Auto delay savings	**$**	**1,478,311**
Design Year (2048) Truck Delay Costs		
Nobuild	$	665,007
Build	$	423,434
Truck delay savings	**$**	**241,573**
Design Year (2048) Benefits	**$**	**1,719,884**
Design Life Benefits	**$**	**24,625,628**
Design Life Benefit-Cost Ratio		**61.56**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 400,000

Accident Data	Symbol	Value
Fatality	K	0.2
Serious Injury	A	0.2
Visible Injury	B	1.0
Complaint Injury	C	3.6
Property Damage Only	O	17.6

Weighted cost of fatal and injury collisions
Q = $ 688,840

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$24,625,628	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$24,625,628**	
Design Life Operational Cost	$400,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$400,000**	
Project Benefit-Cost Ratio	**61.56**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps
Build - Alt 1: DDI

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 5,000,000
Total	**$ 5,000,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,308	124.6	5,167	112.9	5,257	225.8	6,305	192.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	**149.1**		**162.0**		**329.7**		**337.1**	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,308	111.2	5,167	118.1	5,257	232.3	6,305	251.3
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	**133.1**		**169.5**		**339.2**		**440.1**	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**5,000,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,074,965
Build	$	2,017,801
Auto delay savings	**$**	**57,164**
Open Year (2028) Truck Delay Costs		
Nobuild	$	339,073
Build	$	329,732
Truck delay savings	**$**	**9,341**
Open Year (2028) Benefits	**$**	**66,505**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,447,210
Build	$	5,197,267
Auto delay savings	**$**	**(750,057)**
Design Year (2048) Truck Delay Costs		
Nobuild	$	726,725
Build	$	849,293
Truck delay savings	**$**	**(122,568)**
Design Year (2048) Benefits	**$**	**(872,625)**
Design Life Benefits	**$**	**(8,061,204)**
Design Life Benefit-Cost Ratio		**(1.61)**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 5,000,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.8
Visible Injury	B	3.0
Complaint Injury	C	4.8
Property Damage Only	O	17.8

Weighted cost of fatal and injury collisions
Q = $ 448,721

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	($8,061,204)	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**($8,061,204)**	
Design Life Operational Cost	$5,000,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$5,000,000**	
Project Benefit-Cost Ratio	**-1.61**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: SR 5 BUS/Riverstone Pkwy at I-575 SB Ramps
Build - Alt 2: Add SB Left Turn Lane

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 750,000
Total	**$ 750,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,308	124.6	5,167	112.9	5,257	225.8	6,305	192.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	149.1		162.0		329.7		337.1	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,308	63.2	5,167	59.4	5,257	147.8	6,305	120.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	75.6		85.3		215.8		211.0	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**750,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	2,074,965
Build	$	1,072,901
Auto delay savings	**$**	**1,002,064**
Open Year (2028) Truck Delay Costs		
Nobuild	$	339,073
Build	$	175,324
Truck delay savings	**$**	**163,749**
Open Year (2028) Benefits	**$**	**1,165,813**
Design Year (2048) Auto Delay Costs		
Nobuild	$	4,447,210
Build	$	2,846,699
Auto delay savings	**$**	**1,600,511**
Design Year (2048) Truck Delay Costs		
Nobuild	$	726,725
Build	$	465,183
Truck delay savings	**$**	**261,542**
Design Year (2048) Benefits	**$**	**1,862,053**
Design Life Benefits	**$**	**30,278,660**
Design Life Benefit-Cost Ratio		**40.37**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 750,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.8
Visible Injury	B	3.0
Complaint Injury	C	4.8
Property Damage Only	O	17.8

Weighted cost of fatal and injury collisions
Q = $ 448,721

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$30,278,660	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$30,278,660**	
Design Life Operational Cost	$750,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$750,000**	
Project Benefit-Cost Ratio	**40.37**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Marietta Hwy at Ridge Rd/Canterbury Ridge Pkwy
Build - Alt 1: Additional NB Through Lane and Side Street Left Turn Lanes

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 600,000
Total	**$ 600,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,271	66.5	2,983	89.0	2,772	131.1	3,639	192.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	42.0		73.7		100.9		194.6	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,271	32.7	2,983	29.9	2,772	71.6	3,639	70.3
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	20.6		24.8		55.1		71.1	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**600,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	771,553
Build	$	302,786
Auto delay savings	**$**	**468,767**
Open Year (2028) Truck Delay Costs		
Nobuild	$	126,081
Build	$	49,479
Truck delay savings	**$**	**76,602**
Open Year (2028) Benefits	**$**	**545,369**
Design Year (2048) Auto Delay Costs		
Nobuild	$	1,970,832
Build	$	841,553
Auto delay savings	**$**	**1,129,278**
Design Year (2048) Truck Delay Costs		
Nobuild	$	322,056
Build	$	137,519
Truck delay savings	**$**	**184,537**
Design Year (2048) Benefits	**$**	**1,313,815**
Design Life Benefits	**$**	**18,591,842**
Design Life Benefit-Cost Ratio		**30.99**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 600,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$18,591,842	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$18,591,842**	
Design Life Operational Cost	$600,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$600,000**	
Project Benefit-Cost Ratio	**30.99**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Main St at Ridgewalk Pkwy
Build - Alt 1: Multilane Roundabout

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 2,000,000
Total	**$ 2,000,000**

Source of traffic data

Peak Hour analysis using Synchro 11 and SIDRA 9

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,502	27.5	3,106	33.9	3,053	42.6	3,790	47.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	19.1		29.2		36.1		50.0	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,502	7.4	3,106	9.2	3,053	8.9	3,790	14.1
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	5.1		7.9		7.5		14.8	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**2,000,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	322,505
Build	$	87,231
Auto delay savings	**$**	**235,274**
Open Year (2028) Truck Delay Costs		
Nobuild	$	52,701
Build	$	14,255
Truck delay savings	**$**	**38,447**
Open Year (2028) Benefits	**$**	**273,721**
Design Year (2048) Auto Delay Costs		
Nobuild	$	574,407
Build	$	149,326
Auto delay savings	**$**	**425,081**
Design Year (2048) Truck Delay Costs		
Nobuild	$	93,865
Build	$	24,402
Truck delay savings	**$**	**69,463**
Design Year (2048) Benefits	**$**	**494,544**
Design Life Benefits	**$**	**7,682,650**
Design Life Benefit-Cost Ratio		**3.84**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 2,000,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$7,682,650	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$7,682,650**	
Design Life Operational Cost	$2,000,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$2,000,000**	
Project Benefit-Cost Ratio	**3.84**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: Main St at Ridgewalk Pkwy
Build - Alt 2: Dual SB Right Turn Lanes

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 500,000
Total	**$ 500,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,502	27.5	3,106	33.9	3,053	42.6	3,790	47.5
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	19.1		29.2		36.1		50.0	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	2,502	23.9	3,106	25.9	3,053	37.9	3,790	35.1
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	16.6		22.3		32.1		37.0	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**500,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	322,505
Build	$	259,791
Auto delay savings	**$**	**62,714**
Open Year (2028) Truck Delay Costs		
Nobuild	$	52,701
Build	$	42,453
Truck delay savings	**$**	**10,248**
Open Year (2028) Benefits	**$**	**72,963**
Design Year (2048) Auto Delay Costs		
Nobuild	$	574,407
Build	$	460,769
Auto delay savings	**$**	**113,638**
Design Year (2048) Truck Delay Costs		
Nobuild	$	93,865
Build	$	75,295
Truck delay savings	**$**	**18,570**
Design Year (2048) Benefits	**$**	**132,207**
Design Life Benefits	**$**	**2,051,699**
Design Life Benefit-Cost Ratio		**4.10**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 500,000

Accident Data	Symbol	Value
Fatality	K	
Serious Injury	A	
Visible Injury	B	
Complaint Injury	C	
Property Damage Only	O	

Weighted cost of fatal and injury collisions
Q = $ -

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$2,051,699	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$2,051,699**	
Design Life Operational Cost	$500,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$500,000**	
Project Benefit-Cost Ratio	**4.10**	

GDOT Benefit-Cost Calculator

Project Information

ID

Description: SR 5 BUS/Riverstone Pkwy at Riverstone Blvd
Build - Alt 1: Provide Triple EB Left Turn Lanes

Cost Estimate

Date of estimate	8/2/2022
Preliminary Engineering	$ -
Reimbursable Utility	$ -
Right-of-Way	$ -
Construction	$ 250,000
Total	**$ 250,000**

Source of traffic data

Peak Hour analysis using Synchro 11

Without project (No-Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,061	31.5	4,849	24.1	4,956	38.8	5,917	31.9
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	35.5		32.5		53.4		52.4	

With project (Build with Dev)	Open Year 2028				Design Year 2048			
	AM		PM		AM		PM	
	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)	Number of Vehicles	Delay per vehicle (s)
Vehicle Served	4,061	28.1	4,849	20.9	4,956	33.8	5,917	23.6
Vehicle Denied	0	0.0	0	0.0	0	0.0	0	0.0
Total Delay (hr)	31.7		28.2		46.5		38.8	

F: Annual number of collisions involving fatalities during study period
I: Average annual number of collisions involving injured people for the period of the study
P: Average annual number of collisions involving only property damage for the period of the study
R: Reduction of fatal and injury collisions by type (from Table A - Appendix E)
r: Crash modification factor for fatal and injury collisions
Rp: Reduction of property damage only collisions by type (from Table A - Appendix E)
rp: Crash modification factor for property damage only collisions
Pc: Average cost, in thousands of $, per property damage only collision
Q: Weighted cost, in thousands of $, of fatal and injury collisions
Ic: Average cost per injury in thousands of $
Fc: Average cost per fatality in thousands of $
Ek: Capital recovery factor based on countermeasure life (from Table B - Appendix E)
Ci: Estimated initial cost of the countermeasure (cost of the improvement including r/w) in thousands of $
Cm: Estimated annual maintenance and operating cost of the countermeasure in thousands of $

Parameters	Default	Override	Used
Open year	2016	2028	2028
Design year	2036	2048	2048
Discount rate	7%		7.0%
AM peak period (hr)	2	2	2
PM peak period (hr)	3	2	2
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	3.0%	3.0%
Fatality Cost (Kc)	$9,100,000	$ 10,451,000	$10,451,000
Serious Injury Cost (Ac)		$ 2,285,000	$2,285,000
Visible Injury Cost (Bc)		$ 501,000	$501,000
Complaint Injury Cost (Cc)	$955,500	$ 110,000	$110,000
Property Damage Only Cost (Oc)	$27,300	$ 24,000	$24,000
Annual Maintenance/Operating Cost (Cm)	$20,000		$20,000
Operational Benefit Factor	100%		100%

===> Operational Design Life = 20 Years

===> Safety Benefit Factor = 0%

Operational Benefits

Costs	**$**	**250,000**
Open Year (2028) Auto Delay Costs		
Nobuild	$	453,442
Build	$	399,121
Auto delay savings	**$**	**54,321**
Open Year (2028) Truck Delay Costs		
Nobuild	$	74,098
Build	$	65,221
Truck delay savings	**$**	**8,877**
Open Year (2028) Benefits	**$**	**63,198**
Design Year (2048) Auto Delay Costs		
Nobuild	$	705,860
Build	$	568,981
Auto delay savings	**$**	**136,878**
Design Year (2048) Truck Delay Costs		
Nobuild	$	115,346
Build	$	92,978
Truck delay savings	**$**	**22,367**
Design Year (2048) Benefits	**$**	**159,246**
Design Life Benefits	**$**	**2,224,433**
Design Life Benefit-Cost Ratio		**8.90**

Safety Benefits

Targeted Crash Types: All

Recommendation	CRF IDs	Ek	R	r	Rp	rp
				1.00		1.00

Description	Symbol	Value
Reduction Factor (F, I)	R	0
Reduction Factor (PDO)	Rp	0
Capital Recovery Factor	Ek	0.000
Initial Improvement Cost	Ci	$ 250,000

Accident Data	Symbol	Value
Fatality	K	0.0
Serious Injury	A	0.2
Visible Injury	B	0.8
Complaint Injury	C	4.4
Property Damage Only	O	20.2

Weighted cost of fatal and injury collisions
Q = $ 248,481

Annual Benefit: $ -
Annual Cost: $ -
Annual B/C Ratio: **N/A**

Design Life Benefit
B = $ -

Design Life Cost
C = $ -

Design Life Benefit/Cost Ratio
B/C = **N/A**

Total Project Benefit

Design Life Operational Benefit	$2,224,433	**Weight=** 100%
Design Life Safety Benefit	$0	**Weight=** 0%
Total Weighted Benefit	**$2,224,433**	
Design Life Operational Cost	$250,000	**Weight=** 100%
Design Life Safety Cost	$0	**Weight=** 0%
Total Weighted Cost	**$250,000**	
Project Benefit-Cost Ratio	**8.90**	

APPENDIX K: B/C RATIOS – SAFETY IMPROVEMENTS

BENEFIT COST ANALYSIS WORKSHEET

Holly Springs Pkwy at E Cherokee Dr
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	0	0.00
Non-incapacitating injury	B	3	0.60
Possible injury	C	21	4.20
Property Damage Only (PDO)	O	119	23.80
All	KABCO	143	28.60

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	64%
Reduction Factor (PDO Crashes, O)	CRF_O	69%
Capital Recovery Factor	E_k	0.237
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$400,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$158,875**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$877,217**

C = Cost => $C = E_k\,(C_i) + C_m$ **$94,800**

B/C = Benefit/Cost Ratio => **B/C** **9.2533**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Marietta Hwy at Butterworth Rd/Univeter Rd
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	1	0.20
Incapacitating injury	A	1	0.20
Non-incapacitating injury	B	4	0.80
Possible injury	C	22	4.40
Property Damage Only (PDO)	O	112	22.40
All	KABCO	140	28.00

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	81%
Reduction Factor (PDO Crashes, O)	CRF_O	81%
Capital Recovery Factor	E_k	0.102
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$500,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$612,857**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$3,230,593**

C = Cost => $C = E_k\,(C_i) + C_m$ **$51,000**

B/C = Benefit/Cost Ratio => **B/C** **63.3450**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Marietta Hwy at Butterworth Rd/Univeter Rd
Cherokee County
Convert to Roundabout

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	1	0.20
Incapacitating injury	A	1	0.20
Non-incapacitating injury	B	4	0.80
Possible injury	C	22	4.40
Property Damage Only (PDO)	O	112	22.40
All	KABCO	140	28.00

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	74%
Reduction Factor (PDO Crashes, O)	CRF_O	35%
Capital Recovery Factor	E_k	0.087
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$1,800,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$612,857**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$2,727,840**

C = Cost => $C = E_k\,(C_i) + C_m$ **$156,600**

B/C = Benefit/Cost Ratio => **B/C** **17.4192**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

SR 5 Bus/Riverstone Pkwy at I-575 SB Ramps
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	4	0.80
Non-incapacitating injury	B	15	3.00
Possible injury	C	24	4.80
Property Damage Only (PDO)	O	89	17.80
All	KABCO	132	26.40

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	80%
Reduction Factor (PDO Crashes, O)	CRF_O	76%
Capital Recovery Factor	E_k	0.102
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$400,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$448,721**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$3,419,566**

C = Cost => $C = E_k\,(C_i) + C_m$ **$40,800**

B/C = Benefit/Cost Ratio => **B/C** **83.8129**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

SR 5 Bus/Riverstone Pkwy at Riverstone Blvd
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	1	0.20
Non-incapacitating injury	B	4	0.80
Possible injury	C	22	4.40
Property Damage Only (PDO)	O	101	20.20
All	KABCO	128	25.60

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	54%
Reduction Factor (PDO Crashes, O)	CRF_O	53%
Capital Recovery Factor	E_k	0.102
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$400,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$248,481**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$977,304**

C = Cost => $C = E_k\,(C_i) + C_m$ **$40,800**

B/C = Benefit/Cost Ratio => **B/C** **23.9535**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Holly Springs Pkwy at Sixes Road
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	0	0.00
Non-incapacitating injury	B	0	0.00
Possible injury	C	16	3.20
Property Damage Only (PDO)	O	103	20.60
All	KABCO	119	23.80

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	57%
Reduction Factor (PDO Crashes, O)	CRF_O	52%
Capital Recovery Factor	E_k	0.135
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$500,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$110,000**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$456,281**

C = Cost => $C = E_k\,(C_i) + C_m$ **$67,500**

B/C = Benefit/Cost Ratio => **B/C** **6.7597**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

SR 5 Bus/Riverstone Pkwy at I-575 NB Ramps
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	1	0.00
Incapacitating injury	A	1	0.20
Non-incapacitating injury	B	5	1.00
Possible injury	C	18	3.60
Property Damage Only (PDO)	O	88	17.60
All	KABCO	113	22.60

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	76%
Reduction Factor (PDO Crashes, O)	CRF_O	74%
Capital Recovery Factor	E_k	0.135
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$300,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$282,083**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$1,339,133**

C = Cost => $C = E_k\,(C_i) + C_m$ **$40,500**

B/C = Benefit/Cost Ratio => **B/C** **33.0650**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Holly Springs Pkwy/Marietta Hwy at I-575 SB Ramps
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	0	0.00
Non-incapacitating injury	B	6	1.20
Possible injury	C	18	3.60
Property Damage Only (PDO)	O	56	11.20
All	KABCO	80	16.00

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	68%
Reduction Factor (PDO Crashes, O)	CRF_O	66%
Capital Recovery Factor	E_k	0.087
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$350,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$207,750**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$852,220**

C = Cost => $C = E_k\,(C_i) + C_m$ **$30,450**

B/C = Benefit/Cost Ratio => **B/C** **27.9875**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Holly Springs Pkwy at Misty Hollow Way/Toonigh Rd
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	1	0.20
Non-incapacitating injury	B	4	0.80
Possible injury	C	13	2.60
Property Damage Only (PDO)	O	57	11.40
All	KABCO	75	15.00

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	73%
Reduction Factor (PDO Crashes, O)	CRF_O	73%
Capital Recovery Factor	E_k	0.135
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$250,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$317,722**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$1,034,291**

C = Cost => $C = E_k\,(C_i) + C_m$ **$33,750**

B/C = Benefit/Cost Ratio => **B/C** **30.6456**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Marietta Hwy at Prominence Point Pkwy/Driveway 3 (Kroger)
Cherokee County
Minor Safety Improvements

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	0	0.00
Non-incapacitating injury	B	3	0.60
Possible injury	C	11	2.20
Property Damage Only (PDO)	O	60	12.00
All	KABCO	74	14.80

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	66%
Reduction Factor (PDO Crashes, O)	CRF_O	60%
Capital Recovery Factor	E_k	0.135
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$300,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$193,786**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$532,193**

C = Cost => $C = E_k\,(C_i) + C_m$ **$40,500**

B/C = Benefit/Cost Ratio => **B/C** **13.1406**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure

BENEFIT COST ANALYSIS WORKSHEET

Marietta Hwy at Prominence Point Pkwy/Driveway 3 (Kroger)
Cherokee County
Convert to Roundabout

Years for Crash Data =	5

Crash Data for 5 Years (KABCO System)			
Severity Description	Severity Symbol	No. Crashes	Crash Rate (per year)
Fatal	K	0	0.00
Incapacitating injury	A	0	0.00
Non-incapacitating injury	B	3	0.60
Possible injury	C	11	2.20
Property Damage Only (PDO)	O	60	12.00
All	KABCO	74	14.80

Crash Costs		
Severity Description	Symbol	Value
Fatal	C_k	$10,451,000
Incapacitating injury	C_A	$2,285,000
Non-incapacitating injury	C_B	$501,000
Possible injury	C_C	$110,000
Property Damage Only	C_O	$24,000
Maintenance	C_m	$20,000

BC CALCULATION PARAMETERS AND VALUES		
Description	Symbol	Value
Reduction Factor (Fatal and Injury Crashes, KABC)	CRF_{KABC}	74%
Reduction Factor (PDO Crashes, O)	CRF_O	35%
Capital Recovery Factor	E_k	0.087
Initial Improvement Cost (Itemized Cost Estimate)	C_i	$2,500,000
Maintenance / Operating Cost (per year)	C_m	$0

Q = Weighted Cost of Fatal and Injury Crashes => $\frac{(C_k \times K) + (C_A \times A) + (C_B \times B) + (C_C \times C)}{K + A + B + C}$ **$193,786**

B = Benefit => $Q\,(K + A + B + C)\,(CRF_{KABC}) + C_O\,(O)\,(CRF_O)$ **$502,324**

C = Cost => $C = E_k\,(C_i) + C_m$ **$217,500**

B/C = Benefit/Cost Ratio => **B/C** **2.3095**

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

K: Average annual number of collisions involving fatalities during study period

A: Average annual number of collisions involving incapacitating injuries for the period of the study

B: Average annual number of collisions involving non-incapacitating injuries for the period of the study

C: Average annual number of collisions involving possible (not visible) injuries for the period of the study

C: Average annual number of collisions involving only property damage for the period of the study

CRF_{KABC}: Percentage of reduction in fatal and injury crashes by type (correctable crashes)

CRF_{O}: Percentage of reduction in property damage only crashes by type (correctable crashes)

C_k: Average cost per fatal crash

C_A: Average cost per incapacitating injury crash

C_B: Average cost per non-incapacitating injury crash

C_C: Average cost per possible injury (not visible injury) crash

C_O: Average cost per property damage only crash

Q: Weighted cost of fatal and injury crashes

E_k: Capital recovery factor based on countermeasure (proposed alternative) life

C_i: Estimated initial cost of the countermeasure (cost of the improvement including Right of Way)

C_m: Estimated annual maintenance and operating cost of the countermeasure