2024 Road Diet Assessments – Field Data Collection Checklist

This checklist serves as documentation of existing conditions for the 2024 Road Diet Assessment project. This information will be used to inform recommendations and considerations as part of future stages of design for the corridor road diet. This checklist will be included as an attachment to the final road diet assessment memorandum.

ANNANDALE ROAD CORRIDOR

The following intersections are included in the operations analysis of the **Annandale Road** corridor:

1. Annandale Road and Annanwood Court/Gallows Road (signalized)
2. Annandale Road and Galanis Drive (unsignalized)
3. Annandale Road and Walton Lane (unsignalized)
4. Annandale Road and Rodeo Court (unsignalized)
5. Annandale Road and Beverly Manor Drive (unsignalized)
6. Annandale Road and Hamilton Street (unsignalized)
7. Annandale Road and Farr Street (unsignalized)
8. Annandale Road and Quiet Cove (unsignalized)
9. Annandale Road and Medford Drive/Glen Hollow Court (unsignalized)
10. Annandale Road and Markham Street/Poplar Street (signalized)
11. Annandale Road and Maple Place (signalized)
12. Annandale Road and Little River Turnpike (signalized)

CHECKLIST *(all fields to be checked off and relevant fields entered/circled)*

- ☐ One photograph of each study intersection approach along the corridor, taken 100 feet from the intersection
- ☐ Photograph and documentation of any bus stop locations
- ☐ Posted speed limit(s) 35 mph @ Gallows Rd
  _____ mph @ _____ (if different)
  _____ mph @ _____ (if different)
- ☐ Speeding issues (Y / N)? If yes, explain:
  Y @ Gallows; one car flew through intersection going SB
- ☐ Horizontal or vertical curve issues (Y / N)? If yes, explain and document with photos (see excerpted tables from AASHTO Green Book below):
  @ Gallows NB LT: vertical curve prevents sight distance, as does queuing for SB LT
  @ Beverly Manor west side for LT: vertical curve & shrubbery
  @ Markham St – for SB lanes, int. on a hill

Wednesday, March 8, 2023

☐ Apparent sight distance issues (Y / N)? If yes, explain and document with photos (see excerpted tables from AASHTO Green Book below):
@ Gallows NB LT: vertical curve and SBLT queuing blocks view of outside SBT lane
@ Beverly Manor W side

☐ Record pavement widths (outside curb-to-outside curb) at three locations along the corridor:
1. 47' feet @ Gallows Rd Gutter width(s): SB 18" W, NB 24" E
2. 48' feet @ Farr St. Gutter width(s): 24"
3. 48' feet @ Little River Turnpike Gutter width(s): 24"
→ goes to 24" at Gallows

☐ Presence of "pinch" points or medians (Y / N)? If yes, explain and document with photos:
N/A

☐ Bike lane impacts (e.g. in-road storm inlets) (Y / N)? If yes, explain and document with photos:
No storm drains present but gutter slope fine

☐ Observed corridor activity at 12:40 AM / PM:
Vehicles (note any unexpected heavy vehicle activity, on-street parking, queuing):
N/A

Transit (if observed, not frequency of travel and boarding/alighting activity):
FC bus drivers on strike so no buses

Bicycles (if observed, note travel on road vs. sidewalk):
none observed

Pedestrians:
two on sidewalk, one walking dog

☐ At signalized intersections, record signal operations and signal head arrangement for **Annandale Road** approaches. Record potential signal impacts below accounting for a bike lane.
@ Gallows: shift 5-section SB, add 3-section ←, 3-section O NB
@ Little River: see notes below ↓

☐ Bike lane transition considerations at endpoints:
- no connection @ Gallows, send NB bikes through to Annandale Ct to get on sidewalk
- @ Little River: existing bike lanes on NB approach on Ravensworth
  - keep L/TR on Ravensworth
  - change L/TR on Little River
  - mast ~~arms~~ arms might not be able to support ~~additional~~ clearance
    ↳ arm extends just to edge of centerline for SB on Annandale
    ↳ " " " " " " NB " "
    → both long enough, just a matter of loading capacity

☐ Notes:

- will have to replace loop detectors @ Gallows Rd.
- bus stop sign S of Walton hit & on ground
- poor crosswalks from Markham to Little River w/ lots of generators
  ↳ crosswalk recommended at Maple

Field data collection sheet prepared by: Elizabeth Keim

EXCERPT TABLES FROM AASHTO GREEN BOOK

Table 3-1. Stopping Sight Distance on Level Roadways

U.S. Customary				
Design Speed (mph)	Brake Reaction Distance (ft)	Braking Distance on Level (ft)	Stopping Sight Distance	
			Calculated (ft)	Design (ft)
15	55.1	21.6	76.7	80
20	73.5	38.4	111.9	115
25	91.9	60.0	151.9	155
30	110.3	86.4	196.7	200
35	128.6	117.6	246.2	250
40	147.0	153.6	300.6	305
45	165.4	194.4	359.8	360
50	183.8	240.0	423.8	425
55	202.1	290.3	492.4	495
60	220.5	345.5	566.0	570
65	238.9	405.5	644.4	645
70	257.3	470.3	727.6	730
75	275.6	539.9	815.5	820
80	294.0	614.3	908.3	910
85	313.5	693.5	1007.0	1010

Metric				
Design Speed (km/h)	Brake Reaction Distance (m)	Braking Distance on Level (m)	Stopping Sight Distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285
140	97.3	224.8	322.1	325

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 11.2 ft/s^2 [3.4 m/s^2] used to determine calculated sight distance.

Table 9-7. Design Intersection Sight Distance—Case B1, Left Turn from Stop

U.S. Customary			
Design Speed (mph)	Stopping Sight Distance (ft)	Intersection Sight Distance for Passenger Cars	
		Calculated (ft)	Design (ft)
15	80	165.4	170
20	115	220.5	225
25	155	275.6	280
30	200	330.8	335
35	250	385.9	390
40	305	441.0	445
45	360	496.1	500
50	425	551.3	555
55	495	606.4	610
60	570	661.5	665
65	645	716.6	720
70	730	771.8	775
75	820	826.9	830
80	910	882.0	885

Metric			
Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

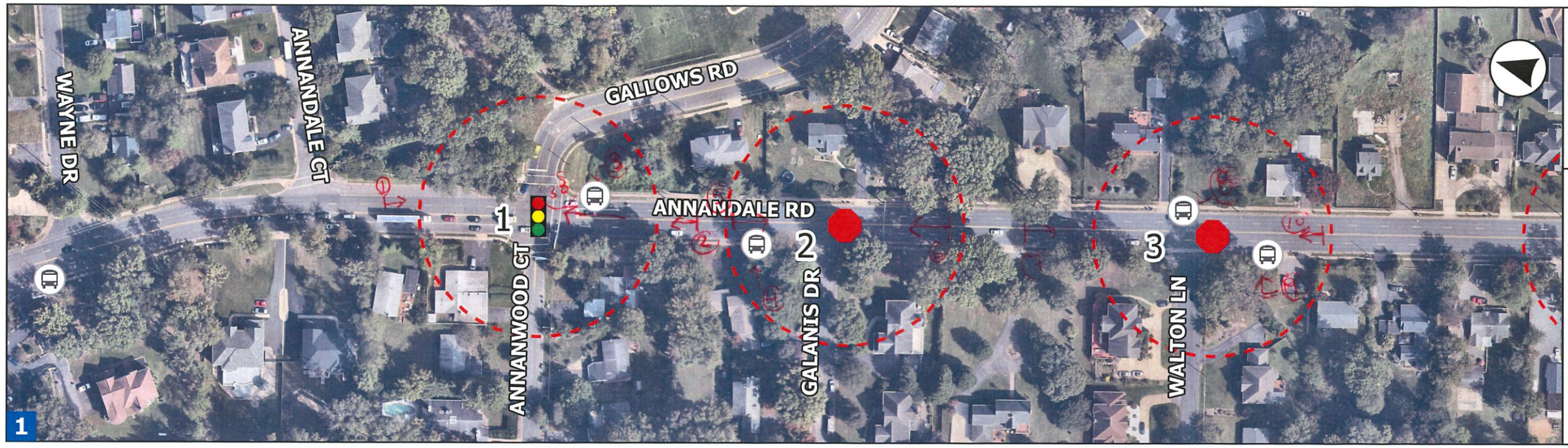
Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

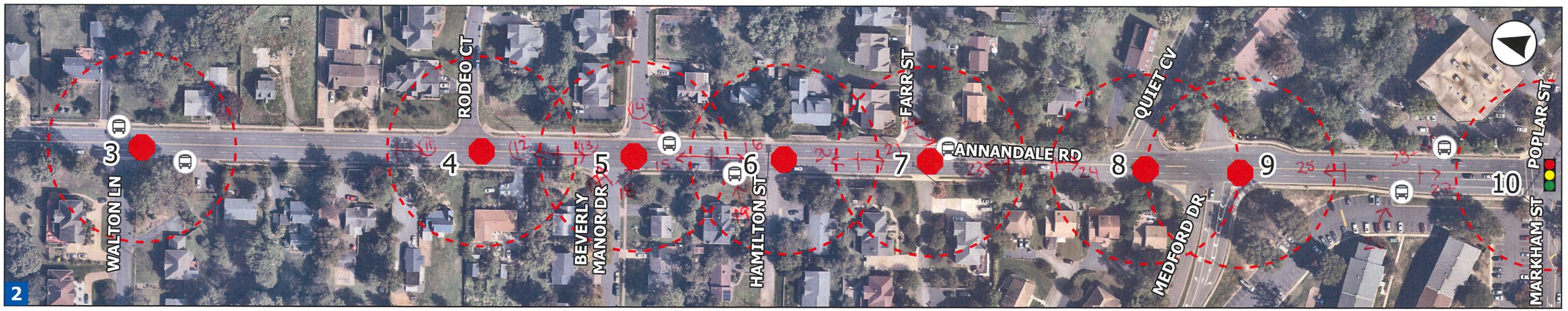
2024 Road Diet Assessments

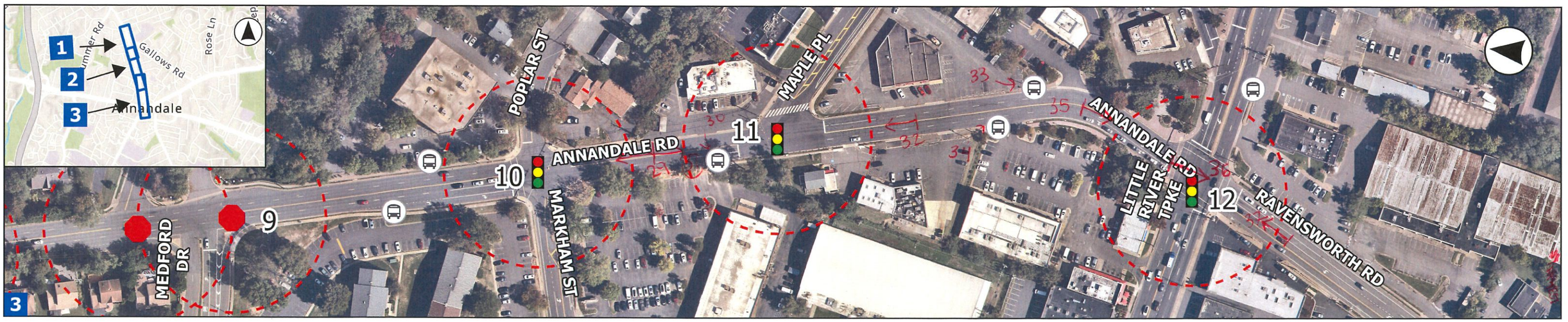
Annandale Road - Gallows Road to Little River Turnpike

- Signalized Study Intersection
- Unsignalized Study Intersection
- Bus Stops
- 150 ft Intersection Buffer

0 50 100 200 300 400 Feet







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Crash Analysis – Annandale Road

Crash Severity

Table 1 provides a summary of crash severity by intersection along the study corridor within the time period of January 1, 2021 through December 31, 2023. Crashes that occurred within 150 feet of the center of an intersection were identified as having occurred within the intersection. All other crashes were identified as corridor crashes.

Table 1: Summary of Crash Severity by Intersection

Annandale Road Cross Street	Property Damage Only	Possible Injury	Suspected Minor Injury	Suspected Serious Injury	Fatal Injury	Total Crashes
Gallows Road	17	0	5	0	0	**22**
Galanis Drive	0	0	0	0	0	**0**
Walton Lane	0	0	0	0	0	**0**
Rodeo Ct	2	0	0	0	0	**2**
Beverly Manor Drive	2	0	0	0	0	**2**
Hamilton Street	1	0	0	0	0	**1**
Farr Street	1	0	0	0	0	**1**
Quiet Cove	0	0	0	0	0	**0**
Medford Drive	2	0	1	1	0	**4**
Markham Street	1	2	1	0	0	**4**
Maple Place	1	1	2	1	1	**6**
Little River Turnpike	7	0	4	0	0	**11**
Corridor Crashes	1	0	0	0	0	**1**
Totals	**35**	**3**	**13**	**2**	**1**	**54**

There were 22 crashes at the intersection of Annandale Road and Gallows Road, with most of these resulting in property damage only (17 crashes). There were 11 crashes at the intersection of Annandale Road and Little River Turnpike, with most of these resulting in property damage only (eight crashes). There were six crashes at the intersection of Annandale Road and Maple Place. Four crashes occurred at the intersection of Annandale Road and Markham Street and the intersection of Annandale Road and Medford Drive. The remaining study intersections had three or fewer crashes recorded during the study period.

Figure 1 provides a corridor map of all reported crashes during the three-year study period, including the one crash that occurred outside of the study intersections. One of the intersection crashes occurred in the northbound travel lanes of Annandale Road just north of Maple Place that resulted in a pedestrian fatality. According to information found online, the crash was the result of a pedestrian crossing Annandale Road outside of a marked crosswalk and being struck by an approaching vehicle. Weather may have been a factor as the conditions at the time of the crash indicate it was snowing. Intersections with two or more crashes of the same collision type are summarized further in the following sections, with a focus on angle and pedestrian-related crashes.

VDOT Repaving Design / Operational Analysis

Annandale Road - Gallows Road to Little River Turnpike

Figure 1: Corridor Map of Crash Locations by Crash Type

- Rear End
- Angle
- Head On
- Sideswipe - same direction
- Sideswipe - opposite direction
- Non-collision
- Fixed object off road
- Pedestrian
- Misc.
- Signalized Study Intersection
- Unsignalized Study Intersection
- Bus Stops
- 150 ft Intersection Buffer
- # Study Intersection ID

0 50 100 200 300 400 Feet

1

WAYNE DR
ANNANDALE CT
GALLOWS RD
ANNANDALE RD
ANNANWOOD CT
GALANIS DR
WALTON LN
1
2
3

2

WALTON LN
RODEO CT
BEVERLY MANOR DR
HAMILTON ST
FARR ST
QUIET CV
ANNANDALE RD
MEDFORD DR
POPLAR ST
MARKHAM ST
3
4
5
6
7
8
9
10

3

MEDFORD DR
MARKHAM ST
POPLAR ST
MAPLE PL
ANNANDALE RD
LITTLE RIVER TPKE
RAVENSWORTH RD
8
9
10
11
12

Date Exported: 3/6/2024

Annandale Road and Gallows Road

There were a total of 22 reported crashes at the intersection of Annandale Road and Gallows Road, with most of these resulting in property damage only. **Figure 2** summarizes the collision types at this study intersection. There were a total of 13 angle crashes, two each of rear end, fixed object off road, head on, and sideswipe-opposite-direction crashes, and one sideswipe-same-direction crash. Angle crashes typically occur when left-turning vehicles fail to yield to opposing through vehicles. A total of 13 crashes occurred in daylight conditions, as shown in **Figure 3**. Crashes were distributed fairly evenly between AM Peak, Off Peak, and PM peak times of day, as shown in **Figure 4**. Due to the prevelance of angle crashes occuring at all times of day and in varied lighting conditions, this suggests the crash pattern may be attributed to constants at the intersection, such as geometry, topography, or operations. The crash records reviewed do not provide information regarding direction of travel for the vehicles involved; however, a review of existing conditions indicates the following could be contributing factors to the frequency of angle crashes at the intersection:

- Left turns must be completed from a shared through lane, which could create a visibility obstruction when two left-turning drivers are present at the same time and have limited visibility of oncoming traffic in the outside (rightmost) opposing through lane.
- Only one approach (southbound) has a sign directing left-turning drivers to yield to opposing traffic.
- There is a vertical curve on the north leg of the intersection, which may limit intersection sight distance for northbound left-turning drivers.

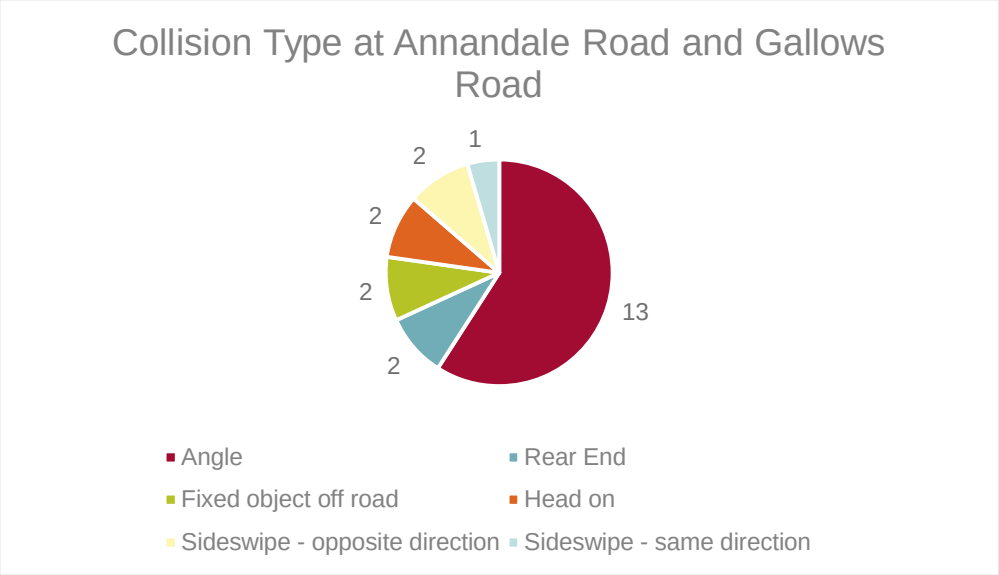


Figure 2: Collision Type at Annandale Road and Gallows Road

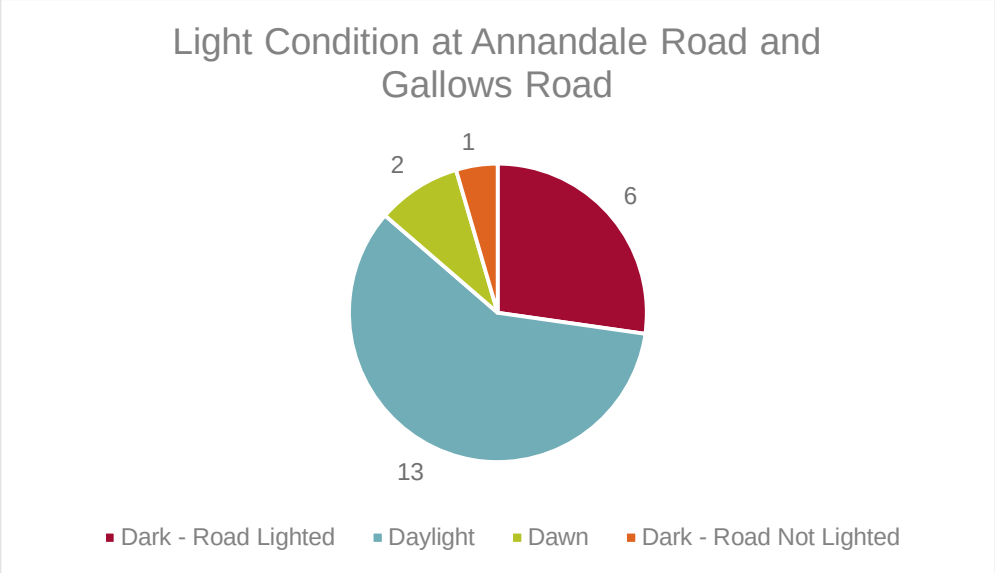


Figure 3: Light Conditions at Annandale Road and Gallows Road

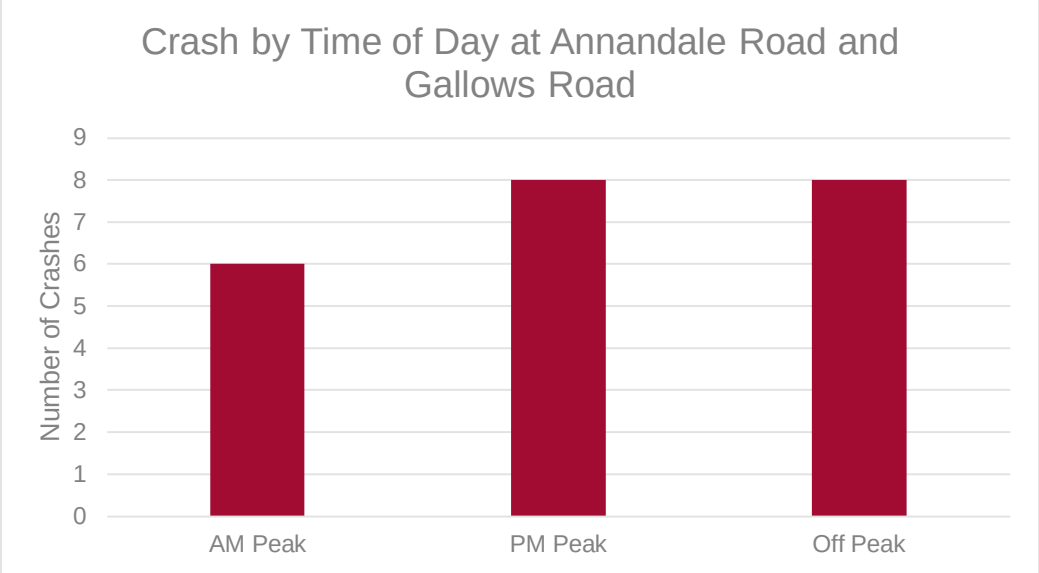


Figure 4: Crash by Time of Day at Annandale Road and Gallows Road

Annandale Road and Beverly Manor Drive

There were a total of two reported crashes at the intersection of Annandale Road and Beverly Manor Drive. **Figure 5** summarizes the collision types at this study intersection. While only two crashes occurred in the three-year study period, both were critical crash types (angle crashes). Both crashes were angle crashes, indicating there may be an issue with sight distance for vehicles turning out of Beverly Manor Drive. One crash occurred in daylight and one crash occurred in darkness on a lighted roadway, as shown in **Figure 6**. Both of the crashes occurred during the off-peak hours, summarized in **Figure 7**. The nighttime crash involved drunk driving and a young driver. The mid-morning crash involved a senior driver.

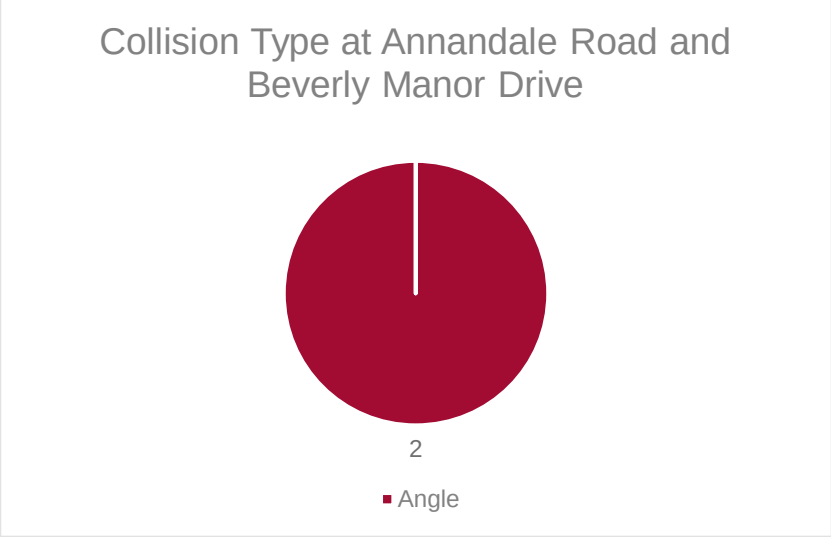


Figure 5: Collision Type at Annandale Road and Beverly Manor Drive

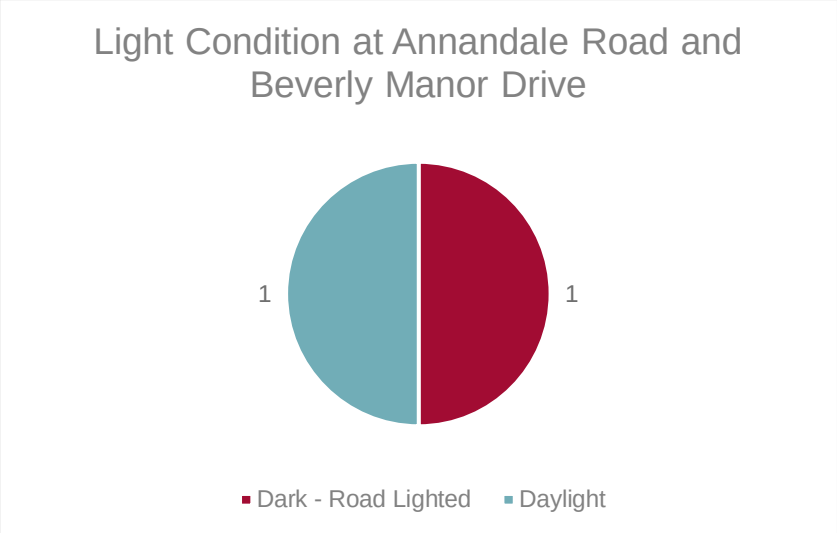


Figure 6: Light Condition at Annandale Road and Beverly Manor Drive

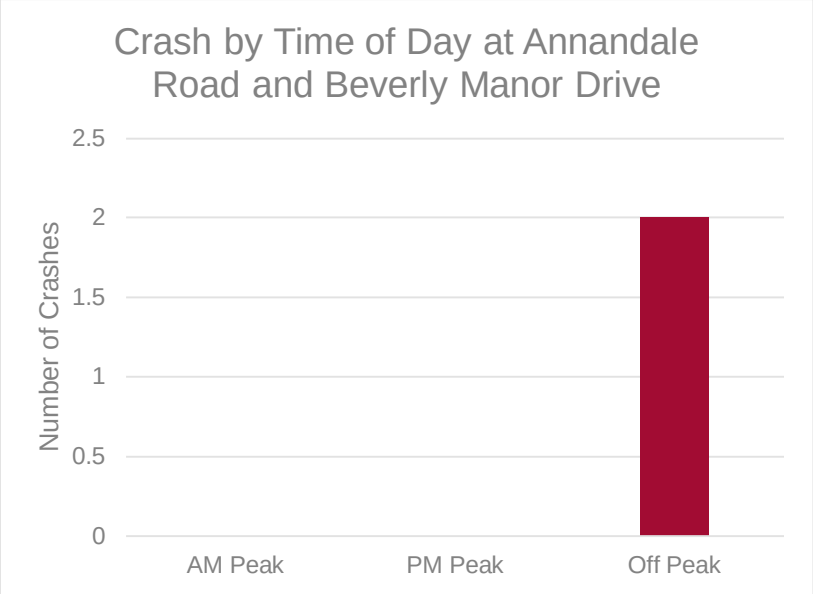


Figure 7: Crash by Time of Day at Annandale Road and Beverly Manor Drive

Annandale Road and Markham Street

There were a total of four reported crashes at the intersection of Annandale Road and Markham Street. **Figure 8** summarizes the collision types at this study intersection. There were a total of two angles crashes, one pedestrian crash, and one rear end crash. The pedestrian crash was located north of the intersection, suggesting the pedestrian was crossing where there is not a crosswalk. Crashes were evenly split between daylight and darkness, as shown in **Figure 9.** Most of the crashes (three) occurred during the off-peak hoursas shown in **Figure 10**.

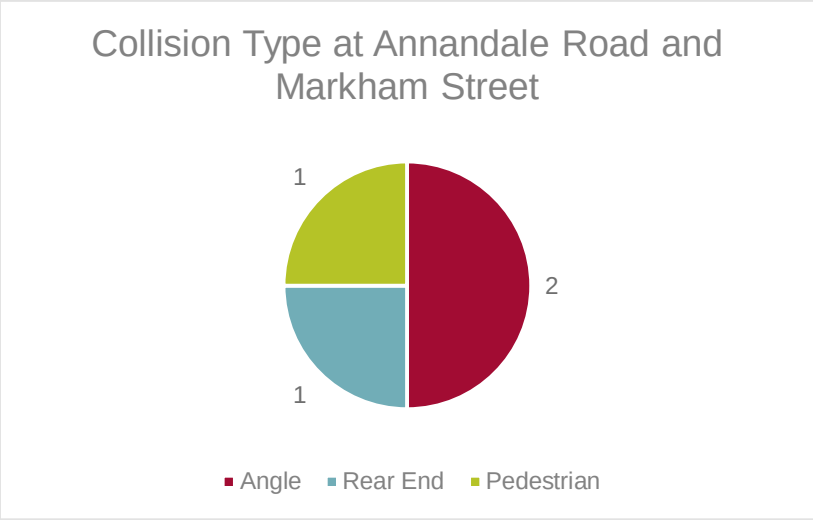


Figure 8: Collision Type at Annandale Road and Markham Street

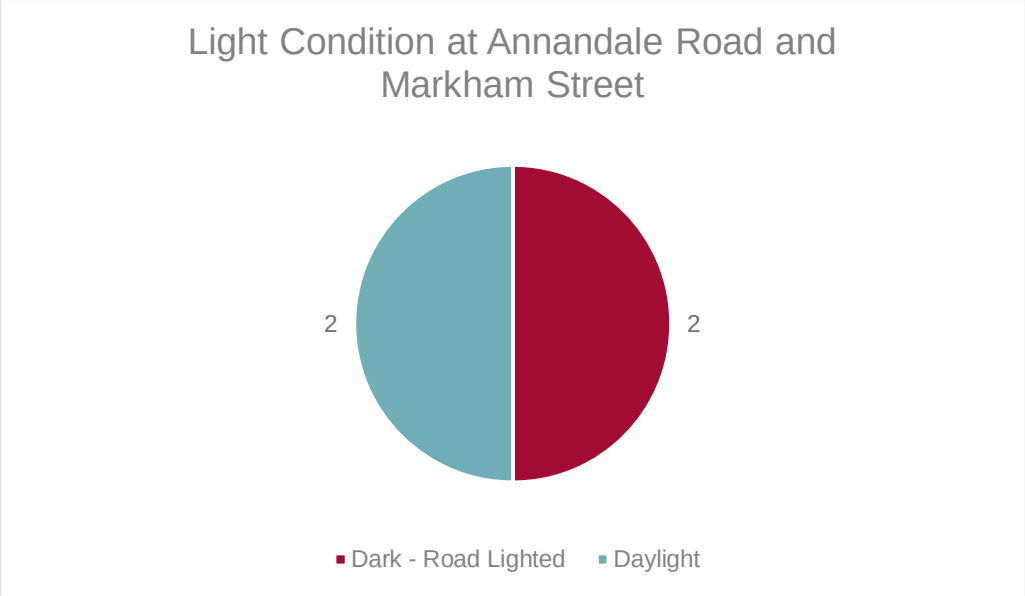


Figure 9: Light Condition at Annandale Road and Markham Street

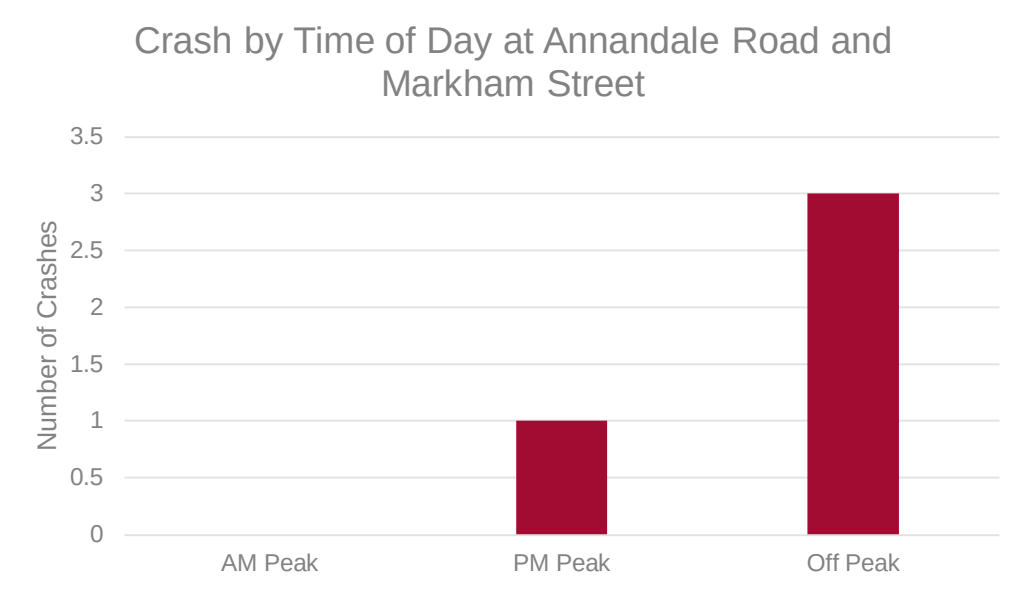


Figure 10: Crash by Time of Day at Annandale Road and Markham Street

Annandale Road and Maple Place

There were a total of six reported crashes at the intersection of Annandale Road and Maple Place. **Figure 11** summarizes the collision types at this study intersection. There were a total of three pedestrian crashes, two angle crashes, and one non-collision crash. One of the pedestrian crashes was a fatality. The first pedestrian crash occurred at 7:20 am on 10/11/2022 and resulted in suspected serious injury. It was daylight, was documented as distracted driving, and occurred at the pedestrian crosswalk across Maple Place. It was most likely the result of the driver failing to yield to the pedestrian. Two pedestrian crashes occurred north of the intersection. There is no marked crosswalk to cross Annandale Road at the intersection with Maple Place. Pedestrians must either go 400 feet north to the crosswalk at Poplar Street or 700 feet south to the crosswalk at Little River Turnpike, so likely the pedestrians were trying to shorten their route. One crash occurred at 7:31 pm on 5/13/2023 and resulted in possible injury. It was dusk and the driver was drunk. The other crash was fatal and occurred on 10/2/2022 at 7:55 pm. This was a hit-and-run crash.

Crashes were evenly split between daylight and darkness, as shown in **Figure 12.** Most of the crashes (five) occurred during the off-peak hours, as shown in **Figure 13**.

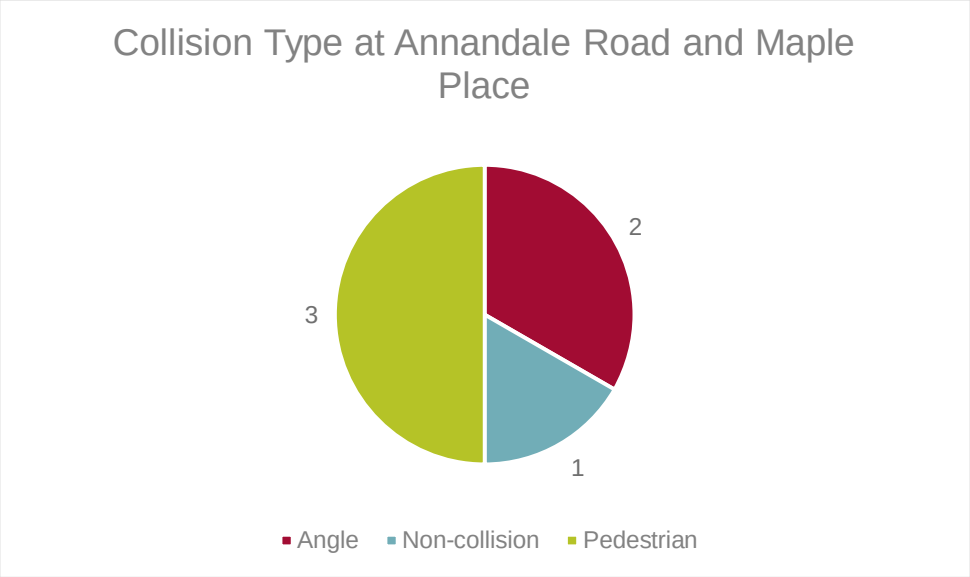


Figure 11: Collision Type at Annandale Road and Maple Place

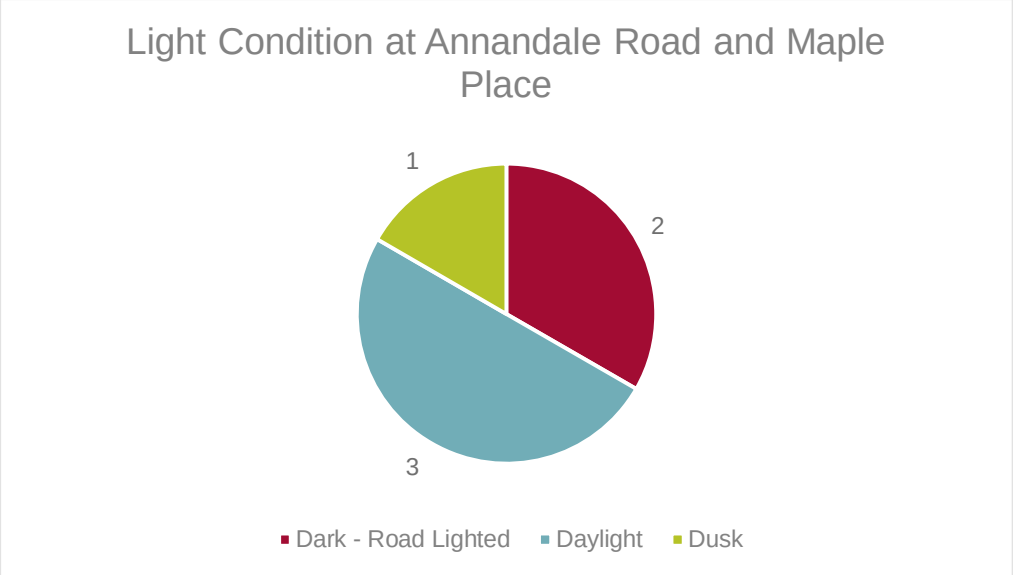


Figure 12: Light Condition at Annandale Road and Maple Place

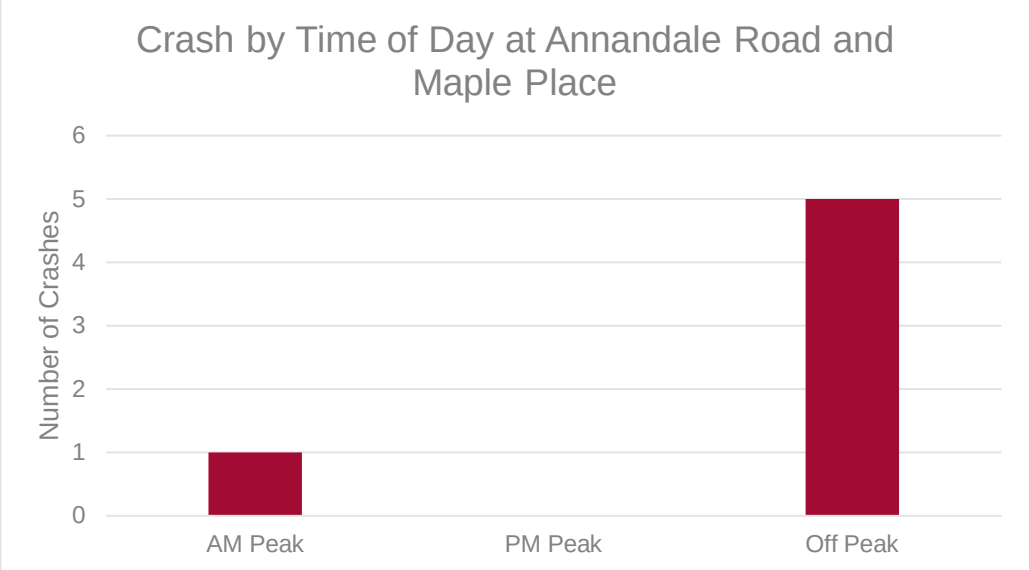


Figure 13: Crash by Time of Day at Annandale Road and Maple Place

Annandale Road and Little River Turnpike

There were a total of 11 reported crashes at the intersection of Annandale Road and Little River Turnpike. **Figure 14** summarizes the collision types at this study intersection. There were a total of three rear end crashes, two head-on crashes, two angle crashes and one of each of the following collision types: fixed object off road, sideswipe-same-direction, non-collision, and pedestrian. The location of the rear end crashes at the approaches to the intersection suggest that they may have been the result of distracted drivers. Based on the location of the pedestrian crash, it is likely the result of a driver failing to yield to a pedestrian within the crosswalk. Nine crashes occurred in daylight conditions, with the remaining two crashes occuring in dark conditions on a lighted road (see **Figure 15**). Over half of the crashes occurred during the off-peak hours, summarized in **Figure 16**. The occurance of primarily off-peak period and daylight crashes may be attributed to the increase in volume associated with midday commercial retail and restaurant activity rather than morning and evening commuters. Unlike commuters who likely travel the corridor on a daily basis, midday traffic is more likely to consist of drivers less familiar with the area, which could make drivers more prone to being involved in a crash. Crashes may be a result of both human factors and built conditions at the intersection. Based upon crash mapping, it appears that the majority of crashes occurred along Little River Turnpike.

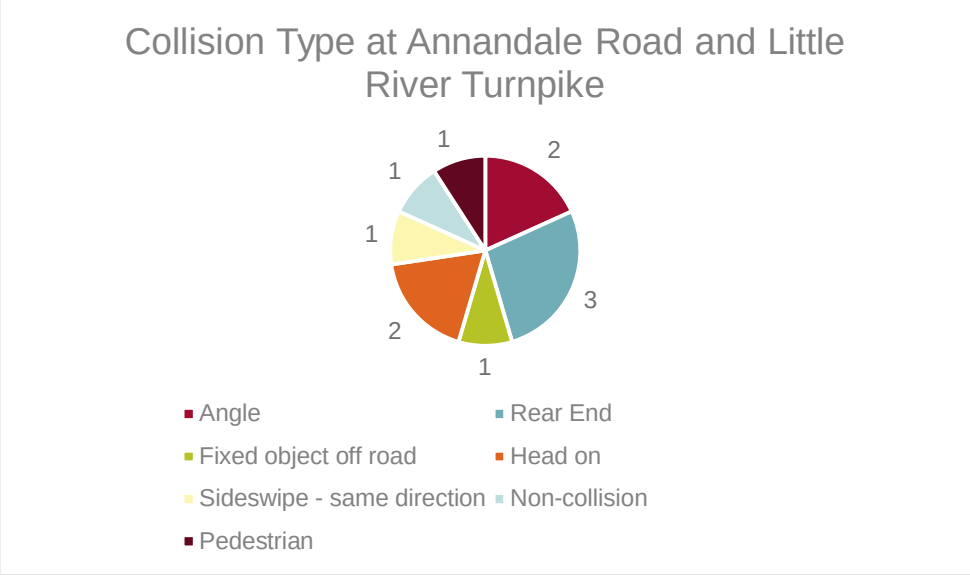


Figure 14: Collision Type at Annandale Road and Little River Turnpike

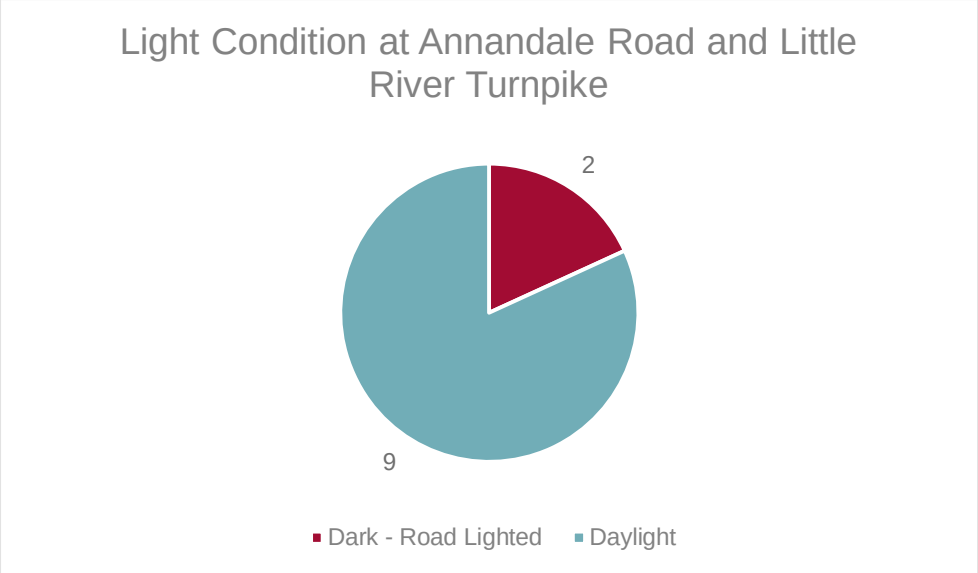


Figure 15: Light Condition at Annandale Road and Little River Turnpike

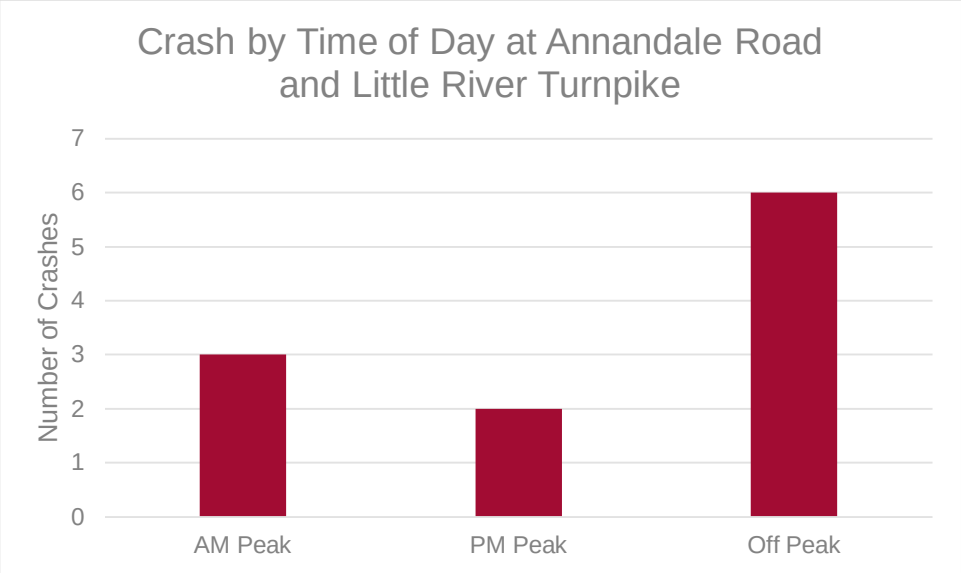


Figure 16: Crash by Time of Day at Annandale Road and Little River Turnpike

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	9	103	612	787	664
v/c Ratio	0.02	0.23	1.01	0.47	1.31dl
Control Delay	19.9	21.4	61.1	12.9	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	21.4	61.1	12.9	19.7
Queue Length 50th (ft)	3	31	214	120	122
Queue Length 95th (ft)	14	84	#531	158	178
Internal Link Dist (ft)	645	814		298	1869
Turn Bay Length (ft)			280		
Base Capacity (vph)	582	499	655	2357	1741
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.21	0.93	0.33	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	0	86	5	545	0	662	38	323	266	2
Future Volume (vph)	5	3	0	86	5	545	0	662	38	323	266	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	11	12
Total Lost time (s)		6.2			6.2	6.3		6.3			6.3	
Lane Util. Factor		1.00			1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Frt		1.00			1.00	0.85		0.99			1.00	
Flt Protected		0.97			0.96	1.00		1.00			0.97	
Satd. Flow (prot)		1777			1798	1599		3391			3343	
Flt Permitted		0.88			0.74	1.00		1.00			0.54	
Satd. Flow (perm)		1614			1384	1599		3391			1851	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	3	0	97	6	612	0	744	43	363	299	2
RTOR Reduction (vph)	0	0	0	0	0	84	0	4	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	103	528	0	783	0	0	663	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	3%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Perm	NA		Perm	NA	pm+ov		NA		pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		24.1			24.1	24.1		36.4			36.4	
Effective Green, g (s)		24.1			24.1	24.1		36.4			36.4	
Actuated g/C Ratio		0.33			0.33	0.33		0.50			0.50	
Clearance Time (s)		6.2			6.2	6.3		6.3			6.3	
Vehicle Extension (s)		3.0			3.0	2.0		5.0			5.0	
Lane Grp Cap (vph)		532			456	527		1690			922	
v/s Ratio Prot								0.23				
v/s Ratio Perm		0.01			0.07	0.33					c0.36	
v/c Ratio		0.02			0.23	1.00		0.46			1.31dl	
Uniform Delay, d1		16.5			17.7	24.4		11.9			14.3	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.0			0.3	39.5		0.4			3.4	
Delay (s)		16.5			18.0	63.9		12.4			17.7	
Level of Service		B			B	E		B			B	
Approach Delay (s)		16.5			57.3			12.4			17.7	
Approach LOS		B			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	2	700	350	1
Future Vol, veh/h	5	3	2	700	350	1
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	6	3	2	795	398	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	802	201	400	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	326	813	1170	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	324	812	1169	-	-	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1169	-	418	-	-
HCM Lane V/C Ratio	0.002	-	0.022	-	-
HCM Control Delay (s)	8.1	0	13.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	0	689	322	2
Future Vol, veh/h	3	6	0	689	322	2
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	3	7	0	792	370	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	768	187	373	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	342	830	1197	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	341	829	1196	-	-	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	561	-	-
HCM Lane V/C Ratio	-	-	0.018	-	-
HCM Control Delay (s)	0	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	1	710	1	0	340
Future Vol, veh/h	3	1	710	1	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	3	1	816	1	0	391

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1013	409	0	0	817	0
Stage 1	817	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	239	597	-	-	820	-
Stage 1	400	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	239	597	-	-	820	-
Mov Cap-2 Maneuver	239	-	-	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	281	820	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	-	-	18	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	5	6	6	3	17	0	689	14	25	322	2
Future Vol, veh/h	3	5	6	6	3	17	0	689	14	25	322	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	3	6	7	7	3	20	0	792	16	29	370	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	828	1238	187	1046	1231	404	373	0	0	808	0	0
Stage 1	430	430	-	800	800	-	-	-	-	-	-	-
Stage 2	398	808	-	246	431	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	267	177	830	185	179	602	1197	-	-	826	-	-
Stage 1	579	587	-	349	400	-	-	-	-	-	-	-
Stage 2	605	397	-	742	586	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	246	169	829	173	171	602	1196	-	-	826	-	-
Mov Cap-2 Maneuver	246	169	-	173	171	-	-	-	-	-	-	-
Stage 1	578	561	-	349	400	-	-	-	-	-	-	-
Stage 2	580	397	-	696	560	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	17.3	0	0.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1196	-	-	286	323	826	-	-
HCM Lane V/C Ratio	-	-	-	0.056	0.093	0.035	-	-
HCM Control Delay (s)	0	-	-	18.3	17.3	9.5	0.2	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	2	700	340	1
Future Vol, veh/h	5	3	2	700	340	1
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	6	3	2	787	382	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	782	193	384	0	-	0
Stage 1	384	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	335	822	1186	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	333	821	1185	-	-	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1185	-	429	-	-
HCM Lane V/C Ratio	0.002	-	0.021	-	-
HCM Control Delay (s)	8	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	1	14	1	8	0	694	12	4	339	0
Future Vol, veh/h	0	1	1	14	1	8	0	694	12	4	339	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	100	0	0	100	0	0	2	0	0	1	0
Mvmt Flow	0	1	1	16	1	9	0	771	13	4	377	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	772	1171	190	976	1165	393	378	0	0	785	0	0
Stage 1	386	386	-	779	779	-	-	-	-	-	-	-
Stage 2	386	785	-	197	386	-	-	-	-	-	-	-
Critical Hdwy	7.5	8.5	6.9	7.5	8.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	7.5	-	6.5	7.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	7.5	-	6.5	7.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	5	3.3	3.5	5	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	293	92	826	208	93	612	1192	-	-	843	-	-
Stage 1	614	416	-	359	233	-	-	-	-	-	-	-
Stage 2	614	230	-	792	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	285	91	825	205	92	611	1191	-	-	842	-	-
Mov Cap-2 Maneuver	285	91	-	205	92	-	-	-	-	-	-	-
Stage 1	613	413	-	359	233	-	-	-	-	-	-	-
Stage 2	602	230	-	784	413	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.3	21.1	0	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1191	-	-	164	249	842	-	-
HCM Lane V/C Ratio	-	-	-	0.014	0.103	0.005	-	-
HCM Control Delay (s)	0	-	-	27.3	21.1	9.3	0	-
HCM Lane LOS	A	-	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	6	700	9	4	350
Future Vol, veh/h	12	6	700	9	4	350
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	17	0	1
Mvmt Flow	13	7	787	10	4	393

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	959	401	0	0	799	0
Stage 1	794	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	292	604	-	-	833	-
Stage 1	400	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	290	603	-	-	832	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	809	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	351	832	-
HCM Lane V/C Ratio	-	-	0.058	0.005	-
HCM Control Delay (s)	-	-	15.9	9.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

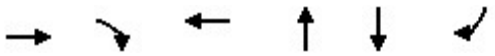
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	0	48	4	0	3	22	645	3	0	314	42
Future Vol, veh/h	62	0	48	4	0	3	22	645	3	0	314	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	0	-	190	-	-	-	-	-	70	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	0	2	0	0	0	5	3	33	0	1	2
Mvmt Flow	71	0	55	5	0	3	25	741	3	0	361	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	782	1158	181	975	1155	374	361	0	0	747	0	0
Stage 1	361	361	-	794	794	-	-	-	-	-	-	-
Stage 2	421	797	-	181	361	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.94	7.5	6.5	6.9	4.2	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.32	3.5	4	3.3	2.25	-	-	2.2	-	-
Pot Cap-1 Maneuver	284	198	831	209	199	629	1173	-	-	870	-	-
Stage 1	630	629	-	352	403	-	-	-	-	-	-	-
Stage 2	581	401	-	809	629	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	275	190	831	189	191	627	1173	-	-	867	-	-
Mov Cap-2 Maneuver	275	190	-	189	191	-	-	-	-	-	-	-
Stage 1	607	629	-	338	387	-	-	-	-	-	-	-
Stage 2	557	385	-	755	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	18.7	0.4	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1173	-	-	275	-	831	270	867	-	-
HCM Lane V/C Ratio	0.022	-	-	0.259	-	0.066	0.03	-	-	-
HCM Control Delay (s)	8.1	0.1	-	22.6	0	9.6	18.7	0	-	-
HCM Lane LOS	A	A	-	C	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	-	0.2	0.1	0	-	-



Lane Group	EBT	EBR	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	64	92	58	757	391	31
v/c Ratio	0.43	0.34	0.27	0.31	0.16	0.03
Control Delay	45.6	7.5	20.1	2.9	3.2	0.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	45.6	7.5	20.1	3.1	3.2	0.0
Queue Length 50th (ft)	35	0	10	56	25	0
Queue Length 95th (ft)	69	24	41	74	44	0
Internal Link Dist (ft)	482		283	284	414	
Turn Bay Length (ft)		100				205
Base Capacity (vph)	325	449	426	2422	2410	1198
Starvation Cap Reductn	0	0	0	689	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.14	0.44	0.16	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	22	80	2	15	34	46	604	9	25	315	27
Future Volume (vph)	34	22	80	2	15	34	46	604	9	25	315	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	11	11	11	11	11	10
Total Lost time (s)		5.9	5.9		5.9			6.4			6.4	6.4
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00			1.00			1.00	1.00
Frt		1.00	0.85		0.91			1.00			1.00	0.85
Flt Protected		0.97	1.00		1.00			1.00			1.00	1.00
Satd. Flow (prot)		1802	1599		1797			3377			3445	1470
Flt Permitted		0.79	1.00		0.99			0.89			0.87	1.00
Satd. Flow (perm)		1459	1599		1776			3029			3015	1470
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	39	25	92	2	17	39	53	694	10	29	362	31
RTOR Reduction (vph)	0	0	84	0	35	0	0	1	0	0	0	7
Lane Group Flow (vph)	0	64	8	0	23	0	0	756	0	0	391	24
Confl. Peds. (#/hr)	7					7	1		2	2		1
Heavy Vehicles (%)	3%	0%	1%	0%	7%	3%	0%	3%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)		8.2	8.2		8.2			69.5			69.5	69.5
Effective Green, g (s)		8.2	8.2		8.2			69.5			69.5	69.5
Actuated g/C Ratio		0.09	0.09		0.09			0.77			0.77	0.77
Clearance Time (s)		5.9	5.9		5.9			6.4			6.4	6.4
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		132	145		161			2339			2328	1135
v/s Ratio Prot												
v/s Ratio Perm		c0.04	0.01		0.01			c0.25			0.13	0.02
v/c Ratio		0.48	0.06		0.14			0.32			0.17	0.02
Uniform Delay, d1		38.9	37.4		37.7			3.1			2.7	2.4
Progression Factor		1.00	1.00		1.00			0.78			1.00	1.00
Incremental Delay, d2		2.8	0.2		0.4			0.0			0.2	0.0
Delay (s)		41.7	37.5		38.1			2.4			2.8	2.4
Level of Service		D	D		D			A			A	A
Approach Delay (s)		39.2			38.1			2.4			2.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBR	NBT	SBT
Lane Group Flow (vph)	425	385	474
v/c Ratio	0.45	0.15	0.25
Control Delay	1.6	2.0	1.2
Queue Delay	0.0	0.0	0.0
Total Delay	1.6	2.0	1.2
Queue Length 50th (ft)	0	11	2
Queue Length 95th (ft)	0	31	3
Internal Link Dist (ft)		638	284
Turn Bay Length (ft)	250		
Base Capacity (vph)	1483	2502	2412
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.29	0.15	0.20

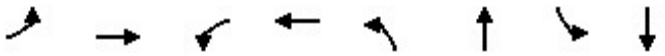
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	357	298	25	1	265	133
Future Volume (vph)	0	357	298	25	1	265	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	12	11	11
Total Lost time (s)		5.1	7.0				7.0
Lane Util. Factor		0.88	0.95				0.95
Frpb, ped/bikes		1.00	1.00				1.00
Flpb, ped/bikes		1.00	1.00				1.00
Frt		0.85	0.99				1.00
Flt Protected		1.00	1.00				0.97
Satd. Flow (prot)		2668	3370				3324
Flt Permitted		1.00	1.00				0.62
Satd. Flow (perm)		2668	3370				2121
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	425	355	30	1	315	158
RTOR Reduction (vph)	0	373	3	0	0	0	0
Lane Group Flow (vph)	0	52	382	0	0	0	474
Confl. Peds. (#/hr)				5		5	
Heavy Vehicles (%)	0%	3%	2%	4%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	1
Turn Type		Over	NA		D.P+P	D.P+P	NA
Protected Phases		4!	2		4!	4	2 4
Permitted Phases		4			2	2	
Actuated Green, G (s)		11.1	66.8				77.9
Effective Green, g (s)		11.1	66.8				77.9
Actuated g/C Ratio		0.12	0.74				0.87
Clearance Time (s)		5.1	7.0				
Vehicle Extension (s)		4.0	4.0				
Lane Grp Cap (vph)		329	2501				1984
v/s Ratio Prot		0.02	0.11				c0.03
v/s Ratio Perm							c0.18
v/c Ratio		0.16	0.15				0.24
Uniform Delay, d1		35.3	3.4				1.0
Progression Factor		1.00	0.55				1.38
Incremental Delay, d2		0.3	0.1				0.1
Delay (s)		35.6	2.0				1.5
Level of Service		D	A				A
Approach Delay (s)	35.6		2.0				1.5
Approach LOS	D		A				A

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	1104	55	1329	141	321	57	81
v/c Ratio	0.08	0.58	0.33	0.60	0.69	0.78	0.47	0.64
Control Delay	83.2	27.9	116.3	6.9	93.0	81.2	89.9	99.0
Queue Delay	0.0	0.0	102.0	0.3	0.0	0.0	0.0	0.0
Total Delay	83.2	27.9	218.4	7.2	93.0	81.2	89.9	99.0
Queue Length 50th (ft)	7	439	67	58	163	176	66	93
Queue Length 95th (ft)	25	559	124	181	237	228	120	156
Internal Link Dist (ft)		807		68		735		638
Turn Bay Length (ft)	195		160		390			
Base Capacity (vph)	117	1899	167	2226	276	546	146	152
Starvation Cap Reductn	0	0	123	322	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	0.05	0.58	1.25	0.70	0.51	0.59	0.39	0.53

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	958	36	1	49	1073	123	127	199	90	51	69
Future Volume (vph)	5	958	36	1	49	1073	123	127	199	90	51	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	9	10	10	10	10	10	11	11
Total Lost time (s)	6.9	6.9			6.1	6.1		6.5	6.5		5.9	5.9
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	0.98		1.00	0.95		1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1745	3373			1593	3244		1685	3159		1745	1804
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1745	3373			1593	3244		1685	3159		1745	1804
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)	6	1064	40	1	54	1192	137	141	221	100	57	77
RTOR Reduction (vph)	0	1	0	0	0	4	0	0	31	0	0	1
Lane Group Flow (vph)	6	1103	0	0	55	1325	0	141	290	0	57	80
Confl. Peds. (#/hr)	3						3	4				
Heavy Vehicles (%)	0%	3%	0%	0%	2%	2%	3%	0%	2%	1%	0%	1%
Turn Type	Prot	NA		Prot	Prot	NA		Split	NA		Split	NA
Protected Phases	5	2		1	1	1 6		4	4		3	3
Permitted Phases												
Actuated Green, G (s)	2.4	101.3			18.9	118.8		21.8	21.8		12.6	12.6
Effective Green, g (s)	2.4	101.3			18.9	118.8		21.8	21.8		12.6	12.6
Actuated g/C Ratio	0.01	0.56			0.10	0.66		0.12	0.12		0.07	0.07
Clearance Time (s)	6.9	6.9			6.1			6.5	6.5		5.9	5.9
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	23	1898			167	2141		204	382		122	126
v/s Ratio Prot	0.00	c0.33			0.03	c0.41		0.08	c0.09		0.03	c0.04
v/s Ratio Perm												
v/c Ratio	0.26	0.58			0.33	0.62		0.69	0.76		0.47	0.64
Uniform Delay, d1	87.9	25.6			74.7	17.6		75.9	76.6		80.5	81.5
Progression Factor	1.00	1.00			1.48	0.34		1.00	1.00		0.97	0.97
Incremental Delay, d2	6.0	1.3			1.1	0.5		9.7	8.4		2.8	9.9
Delay (s)	93.9	26.9			111.5	6.4		85.5	85.0		81.0	88.7
Level of Service	F	C			F	A		F	F		F	F
Approach Delay (s)		27.2				10.6			85.2			85.5
Approach LOS		C				B			F			F

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

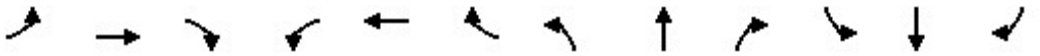
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	4
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	4
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	7	50	528	475	1273
v/c Ratio	0.02	0.17	0.91	0.23	0.99dl
Control Delay	28.6	34.8	37.0	7.0	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	34.8	37.0	7.0	23.8
Queue Length 50th (ft)	3	28	151	56	321
Queue Length 95th (ft)	15	61	#345	87	#533
Internal Link Dist (ft)	645	814		298	1869
Turn Bay Length (ft)			280		
Base Capacity (vph)	512	418	701	2250	1682
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.75	0.21	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	2	45	4	517	1	418	46	552	694	2
Future Volume (vph)	1	4	2	45	4	517	1	418	46	552	694	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	11	12
Total Lost time (s)		6.2			6.2	6.3		6.3			6.3	
Lane Util. Factor		1.00			1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Frt		0.96			1.00	0.85		0.99			1.00	
Flt Protected		0.99			0.96	1.00		1.00			0.98	
Satd. Flow (prot)		1747			1782	1615		3367			3354	
Flt Permitted		0.98			0.75	1.00		0.95			0.64	
Satd. Flow (perm)		1716			1405	1615		3211			2192	
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)	1	4	2	46	4	528	1	427	47	563	708	2
RTOR Reduction (vph)	0	2	0	0	0	251	0	5	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	50	277	0	470	0	0	1273	0
Confl. Peds. (#/hr)			1	1			3		4	4		3
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	2%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		19.0			19.0	19.0		60.7			60.7	
Effective Green, g (s)		19.0			19.0	19.0		60.7			60.7	
Actuated g/C Ratio		0.21			0.21	0.21		0.66			0.66	
Clearance Time (s)		6.2			6.2	6.3		6.3			6.3	
Vehicle Extension (s)		3.0			3.0	2.0		5.0			5.0	
Lane Grp Cap (vph)		353			289	332		2113			1443	
v/s Ratio Prot												
v/s Ratio Perm		0.00			0.04	0.17		0.15			c0.58	
v/c Ratio		0.02			0.17	0.83		0.22			0.99dl	
Uniform Delay, d1		29.1			30.1	35.1		6.3			12.8	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.0			0.3	15.7		0.1			7.2	
Delay (s)		29.2			30.4	50.8		6.4			20.0	
Level of Service		C			C	D		A			C	
Approach Delay (s)		29.2			49.0			6.4			20.0	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	18.8
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	3	460	740	5
Future Vol, veh/h	3	4	3	460	740	5
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	3	4	3	474	763	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1012	387	771	0	-	0
Stage 1	769	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	239	617	853	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	236	615	851	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	779	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	364	-	-
HCM Lane V/C Ratio	0.004	-	0.02	-	-
HCM Control Delay (s)	9.2	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	38	39	457	724	17
Future Vol, veh/h	12	38	39	457	724	17
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	5	0	1	2	6
Mvmt Flow	13	40	41	481	762	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1097	393	783	0	-	0
Stage 1	774	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.96	7	4.1	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.35	2.2	-	-	-
Pot Cap-1 Maneuver	198	598	844	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	184	596	841	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	372	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	841	-	388	-	-
HCM Lane V/C Ratio	0.049	-	0.136	-	-
HCM Control Delay (s)	9.5	0.3	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	490	1	2	760
Future Vol, veh/h	1	2	490	1	2	760
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	1	2	521	1	2	809

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	934	264	0	0	525	0
Stage 1	525	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	268	741	-	-	1052	-
Stage 1	564	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	267	739	-	-	1049	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	643	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	465	1049	-
HCM Lane V/C Ratio	-	-	0.007	0.002	-
HCM Control Delay (s)	-	-	12.8	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	5	1	7	6	1	4	7	486	11	12	748	6
Future Vol, veh/h	5	1	7	6	1	4	7	486	11	12	748	6
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	6	6	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	29	0	0	0	0	1	0	0	2	17
Mvmt Flow	5	1	8	6	1	4	8	523	12	13	804	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1116	1395	410	980	1392	274	815	0	0	541	0	0
Stage 1	838	838	-	551	551	-	-	-	-	-	-	-
Stage 2	278	557	-	429	841	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	7.48	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.59	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	165	143	521	207	143	730	821	-	-	1038	-	-
Stage 1	331	384	-	491	519	-	-	-	-	-	-	-
Stage 2	711	515	-	580	383	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	158	137	519	196	137	726	818	-	-	1033	-	-
Mov Cap-2 Maneuver	158	137	-	196	137	-	-	-	-	-	-	-
Stage 1	325	374	-	482	509	-	-	-	-	-	-	-
Stage 2	695	505	-	557	373	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.4	19.9	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	818	-	-	248	253	1033	-	-
HCM Lane V/C Ratio	0.009	-	-	0.056	0.047	0.012	-	-
HCM Control Delay (s)	9.4	0.1	-	20.4	19.9	8.5	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	3	500	760	5
Future Vol, veh/h	3	4	3	500	760	5
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	15	0	1	2	9
Mvmt Flow	3	4	3	538	817	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1100	416	827	0	-	0
Stage 1	825	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.8	7.2	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.45	2.2	-	-	-
Pot Cap-1 Maneuver	210	551	813	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	548	809	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	809	-	321	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s)	9.5	0	16.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕				↕			↕	
Traffic Vol, veh/h	0	0	5	15	0	11	1	2	493	11	10	756	1
Future Vol, veh/h	0	0	5	15	0	11	1	2	493	11	10	756	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	6	0	7	7	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	0	0	5	16	0	12	1	2	530	12	11	813	1

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	1113	1397	413	978	1391	278	814	820	0	0	549	0	0
Stage 1	842	842	-	549	549	-	-	-	-	-	-	-	-
Stage 2	271	555	-	429	842	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	6.4	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.5	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	166	142	594	208	143	725	443	818	-	-	1031	-	-
Stage 1	329	383	-	493	520	-	-	-	-	-	-	-	-
Stage 2	717	516	-	580	383	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	159	136	590	200	137	720	633	633	-	-	1023	-	-
Mov Cap-2 Maneuver	159	136	-	200	137	-	-	-	-	-	-	-	-
Stage 1	325	373	-	486	513	-	-	-	-	-	-	-	-
Stage 2	700	509	-	563	373	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	18.8	0.2	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	590	288	1023	-	-
HCM Lane V/C Ratio	0.003	-	-	0.009	0.097	0.011	-	-
HCM Control Delay (s)	10.7	0.1	-	11.2	18.8	8.6	0.1	-
HCM Lane LOS	B	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	13	500	6	10	770
Future Vol, veh/h	8	13	500	6	10	770
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	9	14	532	6	11	819

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	890	274	0	0	543	0
Stage 1	540	-	-	-	-	-
Stage 2	350	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	319	730	-	-	1036	-
Stage 1	537	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	311	727	-	-	1032	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	482	1032	-
HCM Lane V/C Ratio	-	-	0.046	0.01	-
HCM Control Delay (s)	-	-	12.8	8.5	0.1
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

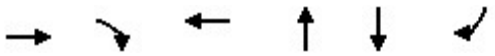
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	3	85	3	2	0	64	430	7	1	667	109
Future Vol, veh/h	82	3	85	3	2	0	64	430	7	1	667	109
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	3	3	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	0	-	190	-	-	-	-	-	70	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	86	3	89	3	2	0	67	453	7	1	702	115

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1071	1306	356	945	1299	230	707	0	0	463	0	0
Stage 1	709	709	-	590	590	-	-	-	-	-	-	-
Stage 2	362	597	-	355	709	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	175	161	646	220	163	779	901	-	-	1109	-	-
Stage 1	391	440	-	466	498	-	-	-	-	-	-	-
Stage 2	629	495	-	641	440	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	159	144	644	171	146	777	898	-	-	1106	-	-
Mov Cap-2 Maneuver	159	144	-	171	146	-	-	-	-	-	-	-
Stage 1	351	438	-	418	447	-	-	-	-	-	-	-
Stage 2	563	444	-	547	438	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.2	28.3	1.5	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	898	-	-	159	144	644	160	1106	-	-
HCM Lane V/C Ratio	0.075	-	-	0.543	0.022	0.139	0.033	0.001	-	-
HCM Control Delay (s)	9.3	0.4	-	51.7	30.6	11.5	28.3	8.3	0	-
HCM Lane LOS	A	A	-	F	D	B	D	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.7	0.1	0.5	0.1	0	-	-



Lane Group	EBT	EBR	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	100	189	91	554	694	101
v/c Ratio	0.55	0.50	0.33	0.33	0.30	0.09
Control Delay	46.9	10.1	22.0	4.1	5.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	10.1	22.0	4.1	5.0	1.0
Queue Length 50th (ft)	54	0	24	34	59	0
Queue Length 95th (ft)	99	55	63	52	103	12
Internal Link Dist (ft)	482		283	284	414	
Turn Bay Length (ft)		100				205
Base Capacity (vph)	305	503	435	1658	2331	1093
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	0.33	0.38	0.21	0.33	0.30	0.09

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	16	180	14	29	43	127	378	21	18	641	96
Future Volume (vph)	79	16	180	14	29	43	127	378	21	18	641	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	11	11	11	11	11	10
Total Lost time (s)		5.9	5.9		5.9			6.4			6.4	6.4
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00			1.00			1.00	1.00
Frt		1.00	0.85		0.93			0.99			1.00	0.85
Flt Protected		0.96	1.00		0.99			0.99			1.00	1.00
Satd. Flow (prot)		1756	1599		1912			3391			3418	1456
Flt Permitted		0.75	1.00		0.93			0.66			0.93	1.00
Satd. Flow (perm)		1369	1599		1794			2269			3195	1456
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)	83	17	189	15	31	45	134	398	22	19	675	101
RTOR Reduction (vph)	0	0	164	0	39	0	0	2	0	0	0	27
Lane Group Flow (vph)	0	100	25	0	52	0	0	552	0	0	694	74
Confl. Peds. (#/hr)	9					9	1		10	10		1
Heavy Vehicles (%)	1%	13%	1%	0%	0%	0%	1%	1%	0%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)		12.0	12.0		12.0			65.7			65.7	65.7
Effective Green, g (s)		12.0	12.0		12.0			65.7			65.7	65.7
Actuated g/C Ratio		0.13	0.13		0.13			0.73			0.73	0.73
Clearance Time (s)		5.9	5.9		5.9			6.4			6.4	6.4
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		182	213		239			1656			2332	1062
v/s Ratio Prot												
v/s Ratio Perm		c0.07	0.02		0.03			c0.24			0.22	0.05
v/c Ratio		0.55	0.12		0.22			0.33			0.30	0.07
Uniform Delay, d1		36.5	34.3		34.8			4.3			4.2	3.5
Progression Factor		1.00	1.00		1.00			0.77			1.00	1.00
Incremental Delay, d2		3.4	0.2		0.5			0.0			0.3	0.1
Delay (s)		39.8	34.6		35.3			3.4			4.5	3.6
Level of Service		D	C		D			A			A	A
Approach Delay (s)		36.4			35.3			3.4			4.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

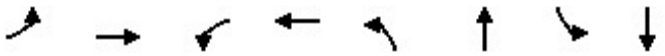
Lane Group	WBR	NBT	SBT
Lane Group Flow (vph)	392	241	878
v/c Ratio	0.26	0.11	0.42
Control Delay	0.4	8.2	1.6
Queue Delay	0.0	0.0	0.0
Total Delay	0.4	8.2	1.6
Queue Length 50th (ft)	0	74	4
Queue Length 95th (ft)	0	111	19
Internal Link Dist (ft)		638	284
Turn Bay Length (ft)	250		
Base Capacity (vph)	1765	2274	2469
Starvation Cap Reductn	0	0	68
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.11	0.37

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	372	166	63	518	316
Future Volume (vph)	0	372	166	63	518	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		5.1	7.0			7.0
Lane Util. Factor		0.88	0.95			0.95
Frpb, ped/bikes		1.00	0.99			1.00
Flpb, ped/bikes		1.00	1.00			1.00
Frt		0.85	0.96			1.00
Flt Protected		1.00	1.00			0.97
Satd. Flow (prot)		2720	3327			3311
Flt Permitted		1.00	1.00			0.67
Satd. Flow (perm)		2720	3327			2301
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	392	175	66	545	333
RTOR Reduction (vph)	0	318	21	0	0	0
Lane Group Flow (vph)	0	74	220	0	0	878
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	0%	1%	0%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	1
Turn Type		Over	NA		D.P+P	NA
Protected Phases		4	2		4	2 4
Permitted Phases		4			2	
Actuated Green, G (s)		16.9	61.0			77.9
Effective Green, g (s)		16.9	61.0			77.9
Actuated g/C Ratio		0.19	0.68			0.87
Clearance Time (s)		5.1	7.0			
Vehicle Extension (s)		4.0	4.0			
Lane Grp Cap (vph)		510	2254			2181
v/s Ratio Prot		0.03	0.07			c0.08
v/s Ratio Perm						c0.27
v/c Ratio		0.14	0.10			0.40
Uniform Delay, d1		30.5	5.0			1.2
Progression Factor		1.00	1.97			1.23
Incremental Delay, d2		0.2	0.1			0.2
Delay (s)		30.7	9.9			1.7
Level of Service		C	A			A
Approach Delay (s)	30.7		9.9			1.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	1160	166	1331	138	255	189	161
v/c Ratio	0.25	0.73	0.67	0.70	0.84	0.68	0.82	0.69
Control Delay	84.3	42.4	121.7	15.6	115.9	68.2	97.5	83.3
Queue Delay	0.0	0.0	90.2	3.0	0.0	0.0	0.0	0.0
Total Delay	84.3	42.4	211.9	18.5	115.9	68.2	97.5	83.3
Queue Length 50th (ft)	32	588	204	173	162	116	220	176
Queue Length 95th (ft)	70	701	m285	255	#277	170	300	245
Internal Link Dist (ft)		807		68		735		638
Turn Bay Length (ft)	195		160		390			
Base Capacity (vph)	126	1597	247	1905	177	396	269	272
Starvation Cap Reductn	0	0	190	450	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	0.22	0.73	2.91	0.91	0.78	0.64	0.70	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

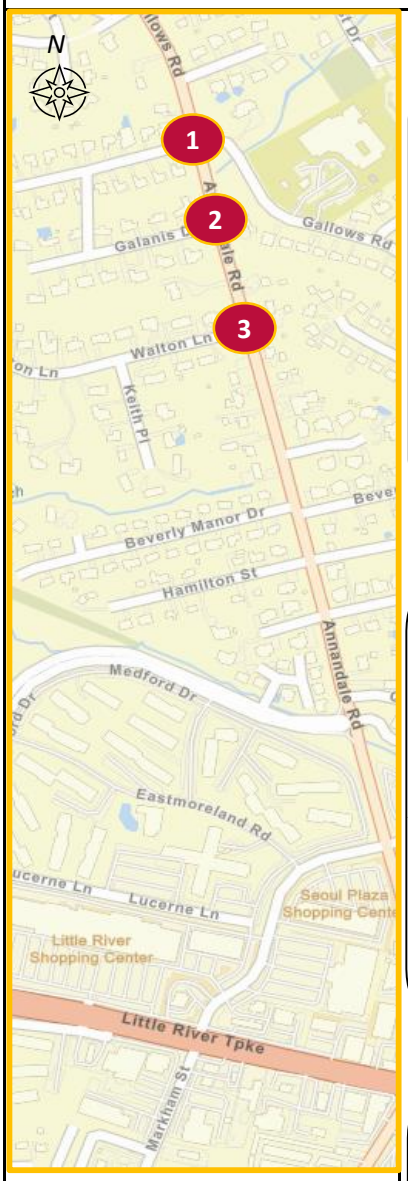
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	26	1025	77	7	151	1218	47	131	148	94	180
Future Volume (vph)	1	26	1025	77	7	151	1218	47	131	148	94	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	9	10	10	10	10	10	11
Total Lost time (s)		6.9	6.9			6.1	6.1		6.5	6.5		5.9
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00		1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.94		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1745	3392			1594	3316		1636	3136		1728
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1745	3392			1594	3316		1636	3136		1728
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)	1	27	1079	81	7	159	1282	49	138	156	99	189
RTOR Reduction (vph)	0	0	3	0	0	0	1	0	0	57	0	0
Lane Group Flow (vph)	0	28	1157	0	0	166	1330	0	138	198	0	189
Confl. Peds. (#/hr)		19		23		23		19	22		9	9
Heavy Vehicles (%)	0%	0%	1%	0%	0%	2%	1%	0%	3%	0%	0%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Split	NA		Split
Protected Phases	5	5	2		1	1	1 6		4	4		3
Permitted Phases												
Actuated Green, G (s)		10.5	84.6			27.9	103.0		18.1	18.1		24.0
Effective Green, g (s)		10.5	84.6			27.9	103.0		18.1	18.1		24.0
Actuated g/C Ratio		0.06	0.47			0.15	0.57		0.10	0.10		0.13
Clearance Time (s)		6.9	6.9			6.1			6.5	6.5		5.9
Vehicle Extension (s)		3.0	3.0			3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		101	1594			247	1897		164	315		230
v/s Ratio Prot		0.02	c0.34			0.10	c0.40		c0.08	0.06		c0.11
v/s Ratio Perm												
v/c Ratio		0.28	0.73			0.67	0.70		0.84	0.63		0.82
Uniform Delay, d1		81.1	38.4			71.7	27.5		79.5	77.7		75.9
Progression Factor		1.00	1.00			1.52	0.47		1.00	1.00		0.94
Incremental Delay, d2		1.5	2.9			5.7	1.0		30.4	3.9		19.7
Delay (s)		82.6	41.3			115.0	13.8		109.9	81.6		91.3
Level of Service		F	D			F	B		F	F		F
Approach Delay (s)			42.3				25.0			91.6		
Approach LOS			D				C			F		

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.5
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	134	19
Future Volume (vph)	134	19
Ideal Flow (vphpl)	1900	1900
Lane Width	11	11
Total Lost time (s)	5.9	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	1733	
Flt Permitted	1.00	
Satd. Flow (perm)	1733	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	141	20
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	158	0
Confl. Peds. (#/hr)		22
Heavy Vehicles (%)	3%	5%
Turn Type	NA	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	24.0	
Effective Green, g (s)	24.0	
Actuated g/C Ratio	0.13	
Clearance Time (s)	5.9	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	231	
v/s Ratio Prot	0.09	
v/s Ratio Perm		
v/c Ratio	0.69	
Uniform Delay, d1	74.4	
Progression Factor	0.94	
Incremental Delay, d2	7.8	
Delay (s)	77.9	
Level of Service	E	
Approach Delay (s)	85.1	
Approach LOS	F	

Intersection Summary

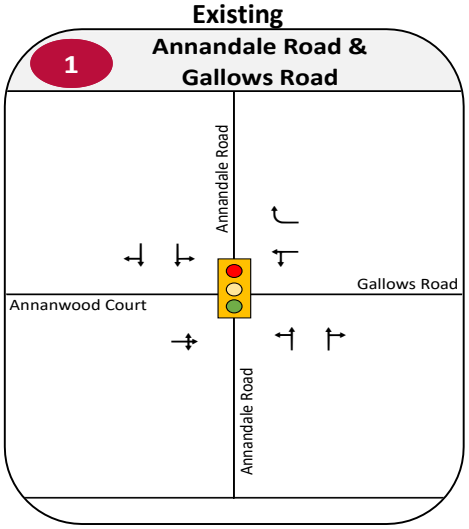
Existing and Proposed Lane Configurations

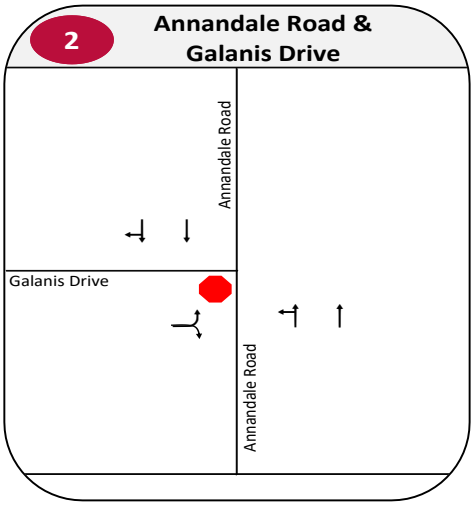


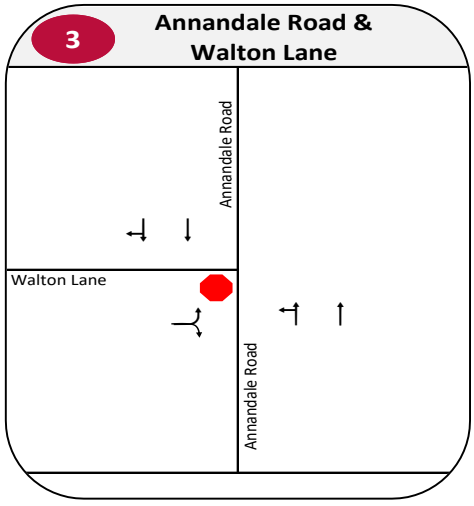
LEGEND

- # — *Intersection ID*
- *Siganlized Intersection*
- *Stop Controlled Approach*

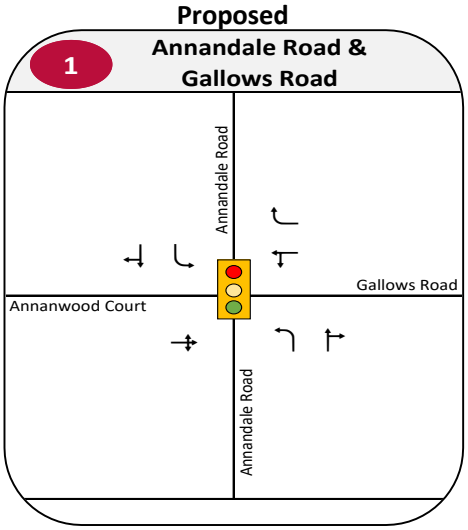
Existing

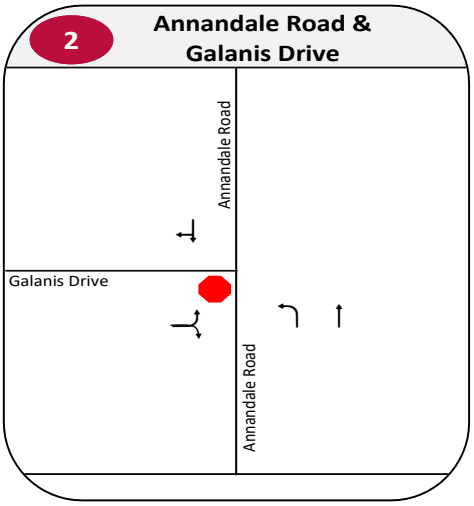


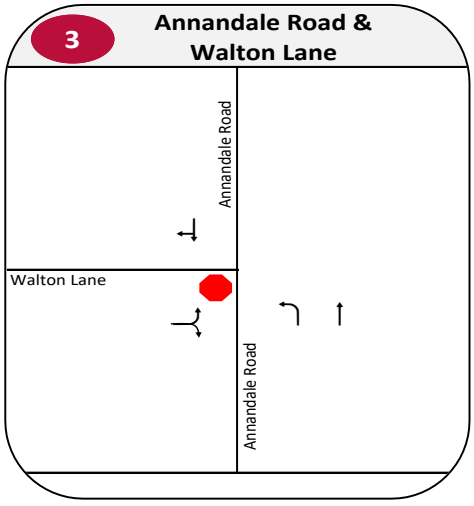




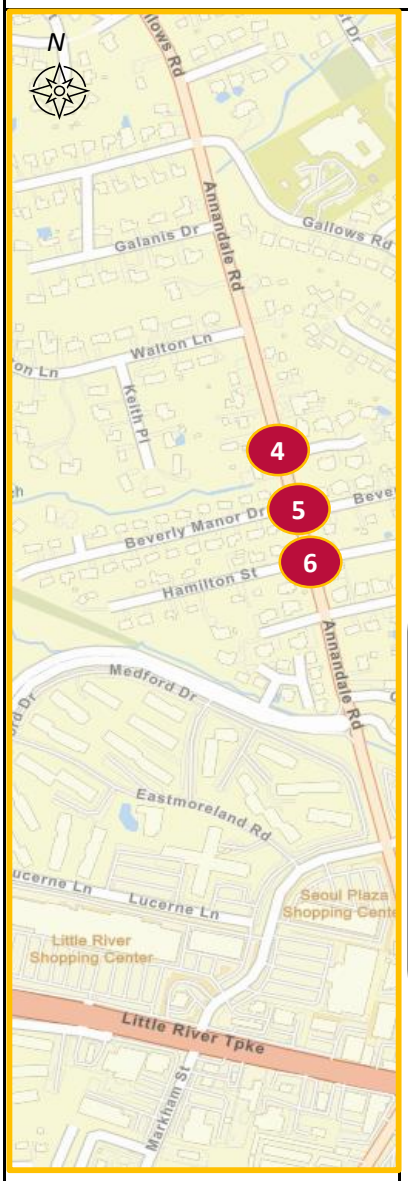
Proposed







Existing and Proposed Lane Configurations



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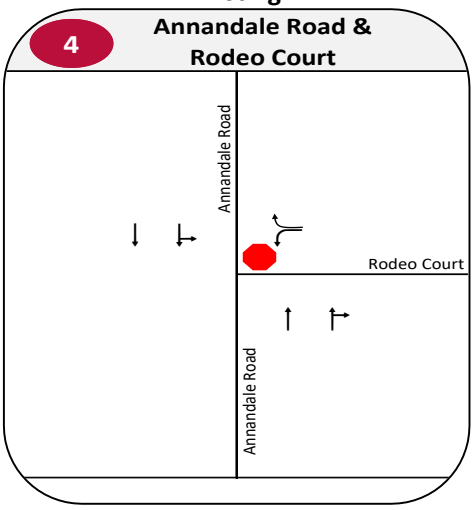

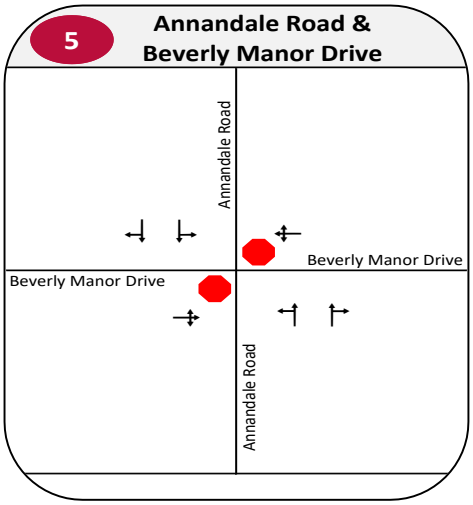

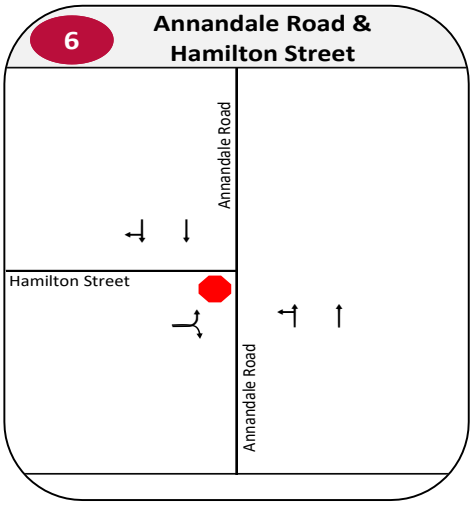

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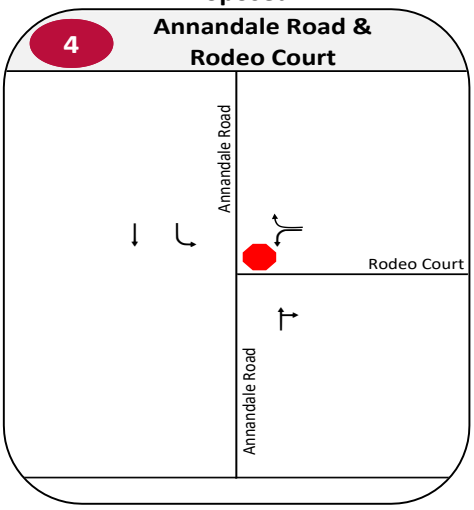
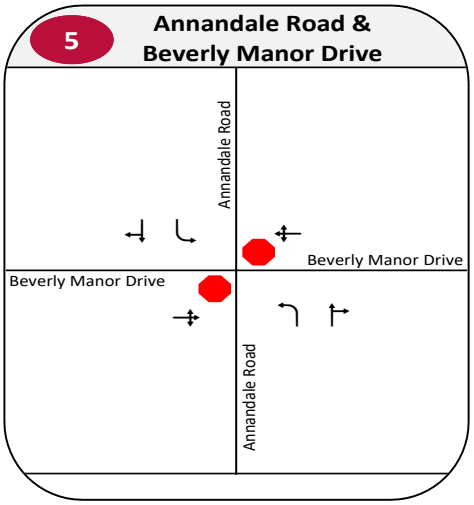
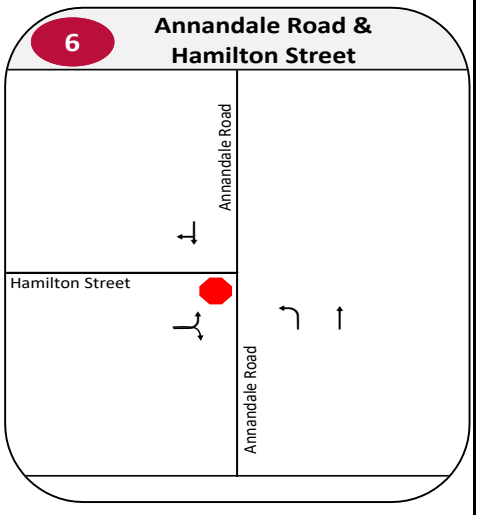


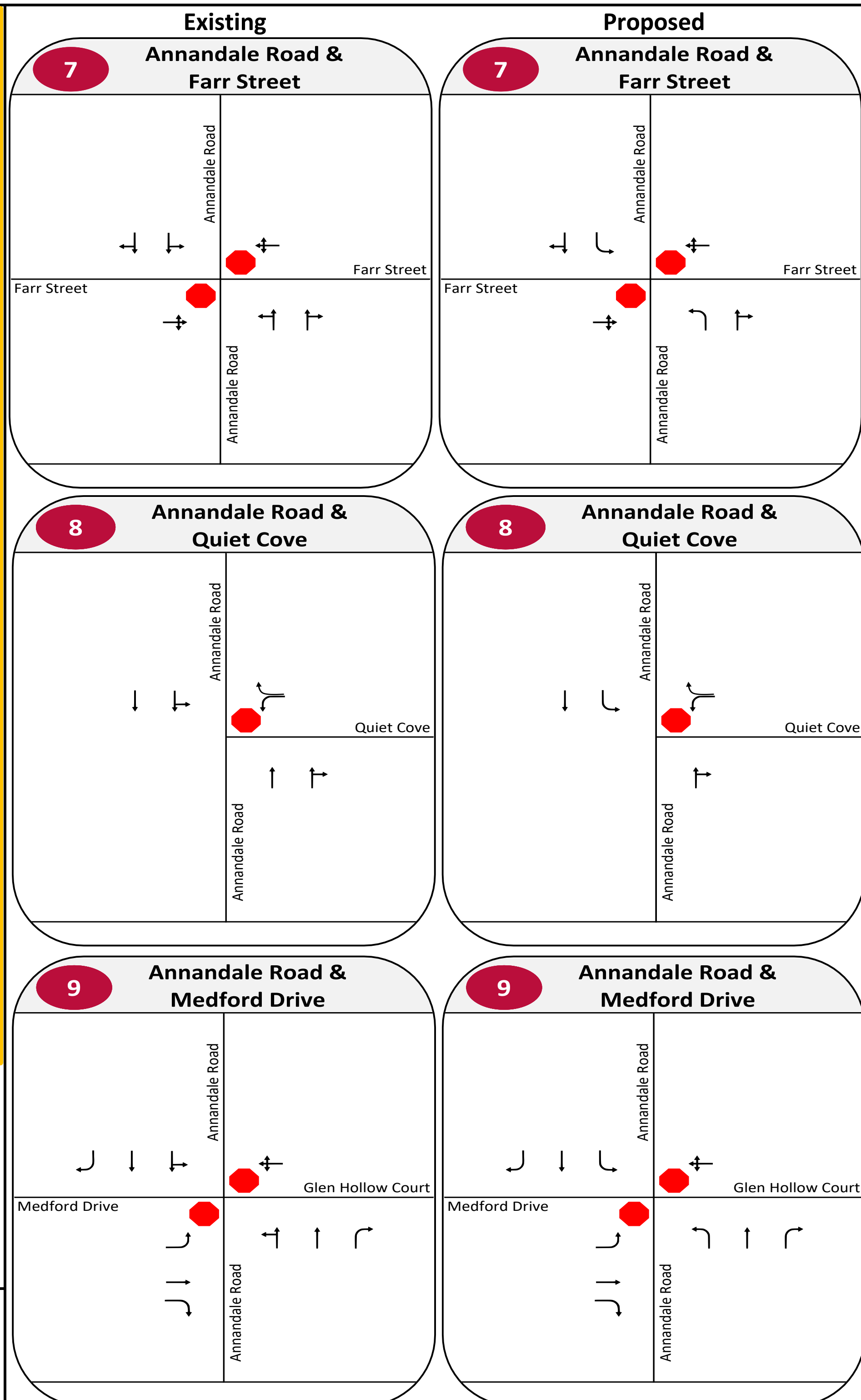




LEGEND

- # — *Intersection ID*
- *Siganlized Intersection*
- *Stop Controlled Approach*

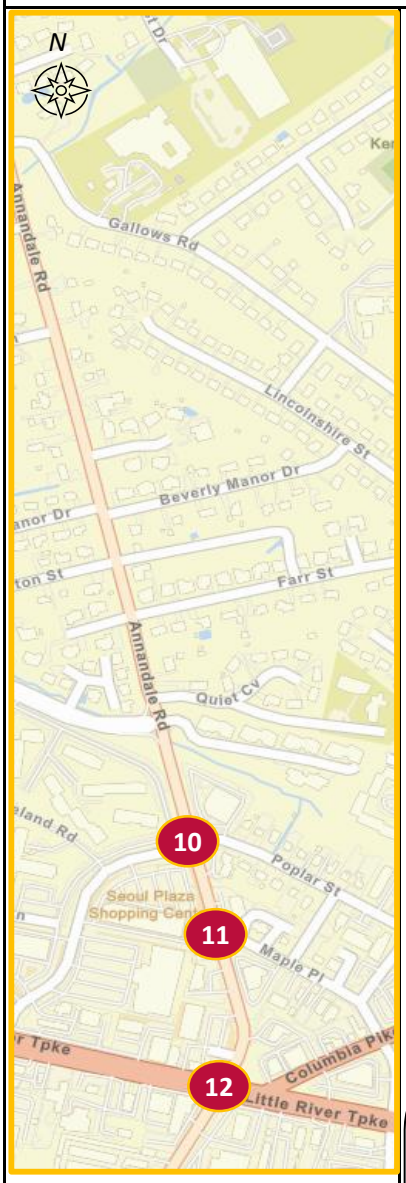
Existing and Proposed Lane Configurations



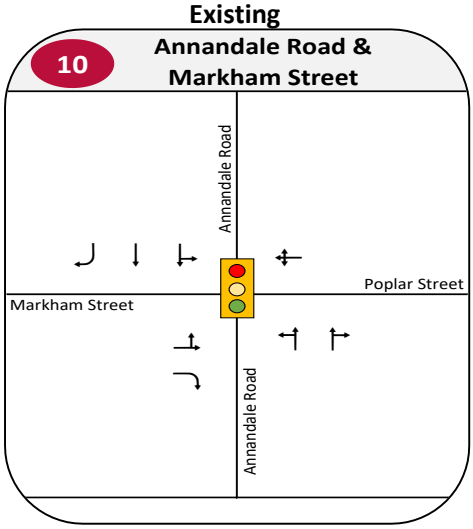
LEGEND

#	*Intersection ID*
	Siganlized Intersection
	Stop Controlled Approach

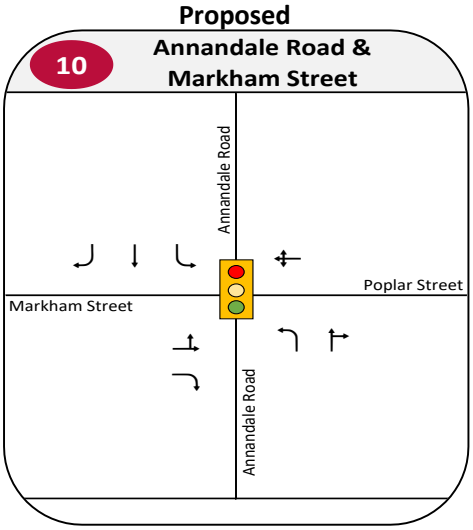
Existing and Proposed Lane Configurations

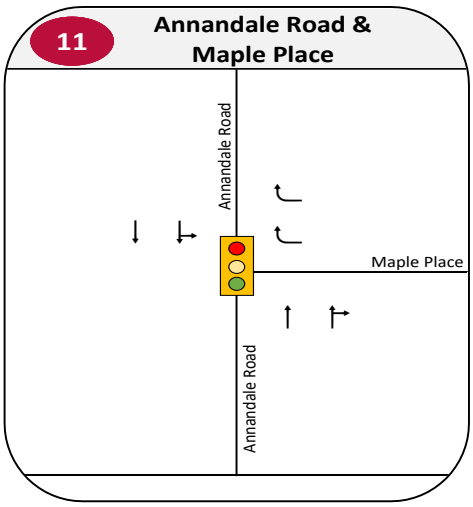


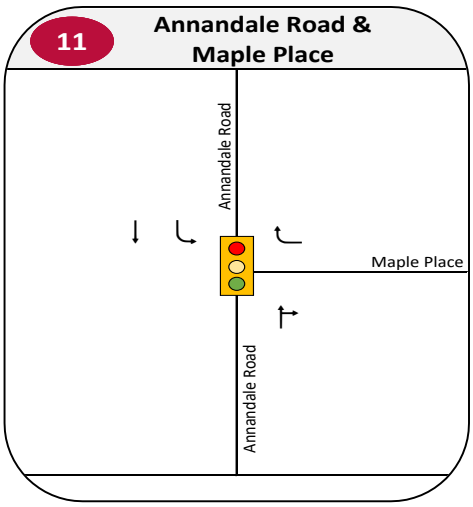
Existing

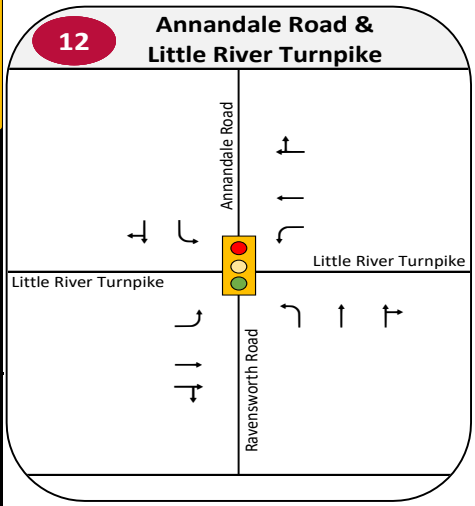


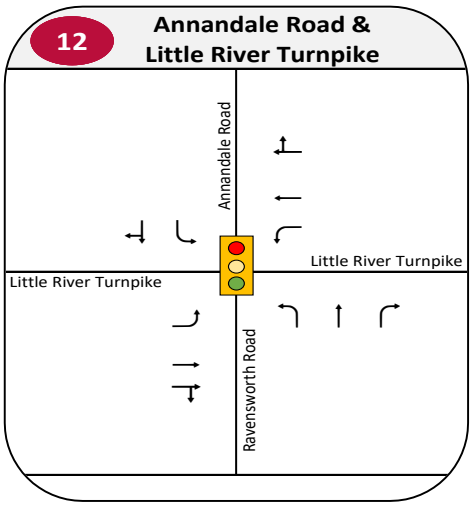
Proposed











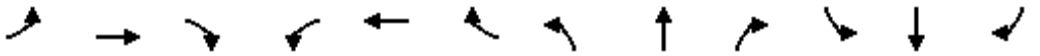
LEGEND

- # — *Intersection ID*
- *Siganlized Intersection*
- *Stop Controlled Approach*

Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	9	103	612	787	363	301
v/c Ratio	0.02	0.28	0.72	0.63	0.84	0.28
Control Delay	25.9	29.1	20.0	26.0	31.7	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	29.1	20.0	26.0	31.7	10.0
Queue Length 50th (ft)	4	45	192	199	103	81
Queue Length 95th (ft)	17	98	378	256	#240	123
Internal Link Dist (ft)	645	814		298		1869
Turn Bay Length (ft)			280			
Base Capacity (vph)	475	409	833	1941	460	1480
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	0.02	0.25	0.73	0.41	0.79	0.20

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	0	86	5	545	0	662	38	323	266	2
Future Volume (vph)	5	3	0	86	5	545	0	662	38	323	266	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	11	12
Total Lost time (s)		6.2			6.2	6.3		6.3		6.3	6.3	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.97			0.96	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1777			1798	1599		3391		1770	1817	
Flt Permitted		0.87			0.73	1.00		1.00		0.20	1.00	
Satd. Flow (perm)		1600			1378	1599		3391		377	1817	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	3	0	97	6	612	0	744	43	363	299	2
RTOR Reduction (vph)	0	0	0	0	0	73	0	4	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	103	539	0	783	0	363	301	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	3%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Perm	NA		Perm	NA	pm+ov		NA		pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		23.6			23.6	36.8		32.5		52.0	52.0	
Effective Green, g (s)		23.6			23.6	36.8		32.5		52.0	52.0	
Actuated g/C Ratio		0.27			0.27	0.42		0.37		0.59	0.59	
Clearance Time (s)		6.2			6.2	6.3		6.3		6.3	6.3	
Vehicle Extension (s)		3.0			3.0	2.0		5.0		2.0	5.0	
Lane Grp Cap (vph)		428			369	667		1250		431	1072	
v/s Ratio Prot						c0.12		0.23		c0.13	0.17	
v/s Ratio Perm		0.01			0.07	0.22				c0.37		
v/c Ratio		0.02			0.28	0.81		0.63		0.84	0.28	
Uniform Delay, d1		23.7			25.5	22.5		22.8		12.8	8.9	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.4	6.7		1.4		13.4	0.3	
Delay (s)		23.8			25.9	29.3		24.2		26.2	9.2	
Level of Service		C			C	C		C		C	A	
Approach Delay (s)		23.8			28.8			24.2			18.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	18.8
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	2	700	350	1
Future Vol, veh/h	5	3	2	700	350	1
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	6	3	2	795	398	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1199	400	400	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	207	654	1170	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	653	1169	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1169	-	277	-	-
HCM Lane V/C Ratio	0.002	-	0.033	-	-
HCM Control Delay (s)	8.1	-	18.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	0	689	322	2
Future Vol, veh/h	3	6	0	689	322	2
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	3	7	0	792	370	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1164	372	373	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	217	678	1197	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	677	1196	-	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	450	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	510	-	-
HCM Lane V/C Ratio	-	-	0.02	-	-
HCM Control Delay (s)	0	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	1	710	1	0	340
Future Vol, veh/h	3	1	710	1	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	3	1	816	1	0	391

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1208	817	0	0	817	0
Stage 1	817	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	204	380	-	-	820	-
Stage 1	438	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	204	380	-	-	820	-
Mov Cap-2 Maneuver	330	-	-	-	-	-
Stage 1	438	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	341	820	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	-	-	15.7	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	3	5	6	6	3	17	0	689	14	25	322	2
Future Vol, veh/h	3	5	6	6	3	17	0	689	14	25	322	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	3	6	7	7	3	20	0	792	16	29	370	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1242	1238	372	1236	1231	800	373	0	0	808	0	0
Stage 1	430	430	-	800	800	-	-	-	-	-	-	-
Stage 2	812	808	-	436	431	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	177	678	154	179	388	1197	-	-	826	-	-
Stage 1	607	587	-	382	400	-	-	-	-	-	-	-
Stage 2	376	397	-	603	586	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	139	171	677	145	173	388	1196	-	-	826	-	-
Mov Cap-2 Maneuver	139	171	-	145	173	-	-	-	-	-	-	-
Stage 1	606	566	-	382	400	-	-	-	-	-	-	-
Stage 2	354	397	-	570	565	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.4	21.1	0	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1196	-	-	235	254	826	-	-
HCM Lane V/C Ratio	-	-	-	0.068	0.118	0.035	-	-
HCM Control Delay (s)	0	-	-	21.4	21.1	9.5	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	2	700	340	1
Future Vol, veh/h	5	3	2	700	340	1
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	6	3	2	787	382	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1175	384	384	0	-	0
Stage 1	384	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	214	668	1186	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	213	667	1185	-	-	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	450	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1185	-	416	-	-
HCM Lane V/C Ratio	0.002	-	0.022	-	-
HCM Control Delay (s)	8	-	13.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	0	1	1	14	1	8	0	694	12	4	339	0
Future Vol, veh/h	0	1	1	14	1	8	0	694	12	4	339	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	100	0	0	100	0	0	2	0	0	1	0
Mvmt Flow	0	1	1	16	1	9	0	771	13	4	377	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1169	1171	378	1165	1165	779	378	0	0	785	0	0
Stage 1	386	386	-	779	779	-	-	-	-	-	-	-
Stage 2	783	785	-	386	386	-	-	-	-	-	-	-
Critical Hdwy	7.1	7.5	6.2	7.1	7.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	6.5	-	6.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	6.5	-	6.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.9	3.3	3.5	4.9	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	172	128	673	173	129	399	1192	-	-	843	-	-
Stage 1	641	470	-	392	292	-	-	-	-	-	-	-
Stage 2	390	290	-	641	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	166	127	672	171	128	399	1191	-	-	842	-	-
Mov Cap-2 Maneuver	166	127	-	171	128	-	-	-	-	-	-	-
Stage 1	640	467	-	392	292	-	-	-	-	-	-	-
Stage 2	380	290	-	635	467	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	24.5	0	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1191	-	-	214	210	842	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.122	0.005	-	-
HCM Control Delay (s)	0	-	-	22	24.5	9.3	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	6	700	9	4	350
Future Vol, veh/h	12	6	700	9	4	350
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	17	0	1
Mvmt Flow	13	7	787	10	4	393

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	999	794	0	0	799	0
Stage 1	794	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	258	391	-	-	833	-
Stage 1	449	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	256	390	-	-	832	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	372	832	-
HCM Lane V/C Ratio	-	-	0.054	0.005	-
HCM Control Delay (s)	-	-	15.2	9.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	0	48	4	0	3	22	645	3	0	314	42
Future Vol, veh/h	62	0	48	4	0	3	22	645	3	0	314	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	0	-	190	-	-	-	100	-	70	50	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	0	2	0	0	0	5	3	33	0	1	2
Mvmt Flow	71	0	55	5	0	3	25	741	3	0	361	48

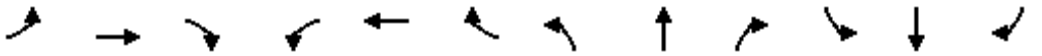
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1155	1158	361	1155	1155	744	361	0	0	747	0	0
Stage 1	361	361	-	794	794	-	-	-	-	-	-	-
Stage 2	794	797	-	361	361	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.1	6.5	6.2	4.15	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.5	4	3.3	2.245	-	-	2.2	-	-
Pot Cap-1 Maneuver	174	198	684	175	199	418	1181	-	-	870	-	-
Stage 1	657	629	-	384	403	-	-	-	-	-	-	-
Stage 2	381	401	-	662	629	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	193	684	158	194	417	1181	-	-	867	-	-
Mov Cap-2 Maneuver	170	193	-	158	194	-	-	-	-	-	-	-
Stage 1	643	629	-	375	393	-	-	-	-	-	-	-
Stage 2	370	391	-	609	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.6	22.4	0.3	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1181	-	-	170	-	684	215	867	-	-
HCM Lane V/C Ratio	0.021	-	-	0.419	-	0.081	0.037	-	-	-
HCM Control Delay (s)	8.1	-	-	40.7	0	10.7	22.4	0	-	-
HCM Lane LOS	A	-	-	E	A	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	-	0.3	0.1	0	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	64	92	58	53	704	29	362	31
v/c Ratio	0.43	0.34	0.27	0.07	0.49	0.06	0.28	0.03
Control Delay	45.6	7.5	20.2	3.0	5.4	7.7	7.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	45.6	7.5	20.2	3.0	6.0	7.7	7.8	0.0
Queue Length 50th (ft)	35	0	10	5	112	6	85	0
Queue Length 95th (ft)	69	24	41	22	263	18	148	0
Internal Link Dist (ft)	482		283		284		414	
Turn Bay Length (ft)		100		150		75		205
Base Capacity (vph)	324	449	422	825	1423	524	1308	1089
Starvation Cap Reductn	0	0	0	0	361	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	0.14	0.06	0.66	0.06	0.28	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	22	80	2	15	34	46	604	9	25	315	27
Future Volume (vph)	34	22	80	2	15	34	46	604	9	25	315	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	11	11	11	11	11	10
Total Lost time (s)		5.9	5.9		5.9		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1795	1599		1780		1745	1780		1744	1818	1470
Flt Permitted		0.79	1.00		0.99		0.48	1.00		0.40	1.00	1.00
Satd. Flow (perm)		1454	1599		1759		886	1780		730	1818	1470
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	39	25	92	2	17	39	53	694	10	29	362	31
RTOR Reduction (vph)	0	0	84	0	35	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	64	8	0	23	0	53	704	0	29	362	21
Confl. Peds. (#/hr)	7					7	1		2	2		1
Heavy Vehicles (%)	3%	0%	1%	0%	7%	3%	0%	3%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)		8.2	8.2		8.2		69.5	69.5		59.7	59.7	59.7
Effective Green, g (s)		8.2	8.2		8.2		69.5	69.5		59.7	59.7	59.7
Actuated g/C Ratio		0.09	0.09		0.09		0.77	0.77		0.66	0.66	0.66
Clearance Time (s)		5.9	5.9		5.9		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0		3.0		2.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		132	145		160		716	1374		484	1205	975
v/s Ratio Prot							0.00	c0.40			0.20	
v/s Ratio Perm		c0.04	0.01		0.01		0.05			0.04		0.01
v/c Ratio		0.48	0.06		0.14		0.07	0.51		0.06	0.30	0.02
Uniform Delay, d1		38.9	37.4		37.7		2.7	3.9		5.3	6.4	5.2
Progression Factor		1.00	1.00		1.00		0.94	0.99		1.00	1.00	1.00
Incremental Delay, d2		2.8	0.2		0.4		0.0	1.3		0.2	0.6	0.0
Delay (s)		41.7	37.5		38.1		2.6	5.1		5.5	7.0	5.2
Level of Service		D	D		D		A	A		A	A	A
Approach Delay (s)		39.2			38.1			4.9			6.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	425	385	316	158
v/c Ratio	0.73	0.31	0.32	0.09
Control Delay	11.9	6.6	1.7	0.1
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	11.9	6.6	1.8	0.1
Queue Length 50th (ft)	15	32	0	0
Queue Length 95th (ft)	60	169	0	0
Internal Link Dist (ft)		638		284
Turn Bay Length (ft)	250		150	
Base Capacity (vph)	853	1242	1214	1793
Starvation Cap Reductn	0	0	183	0
Spillback Cap Reductn	15	58	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.33	0.31	0.09

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	357	298	25	1	265	133
Future Volume (vph)	0	357	298	25	1	265	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	12	11	11
Total Lost time (s)		5.1	7.0			5.1	7.0
Lane Util. Factor		1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00
Frt		0.86	0.99			1.00	1.00
Flt Protected		1.00	1.00			0.95	1.00
Satd. Flow (prot)		1542	1776			1726	1793
Flt Permitted		1.00	1.00			0.53	1.00
Satd. Flow (perm)		1542	1776			964	1793
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	425	355	30	1	315	158
RTOR Reduction (vph)	0	330	2	0	0	0	0
Lane Group Flow (vph)	0	95	383	0	0	316	158
Confl. Peds. (#/hr)				5		5	
Heavy Vehicles (%)	0%	3%	2%	4%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	1
Turn Type		Over	NA		D.P+P	D.P+P	NA
Protected Phases		4!	2		4!	4	2 4
Permitted Phases		4			2	2	
Actuated Green, G (s)		15.0	62.9			77.9	90.0
Effective Green, g (s)		15.0	62.9			77.9	84.9
Actuated g/C Ratio		0.17	0.70			0.87	0.94
Clearance Time (s)		5.1	7.0			5.1	
Vehicle Extension (s)		4.0	4.0			4.0	
Lane Grp Cap (vph)		257	1241			961	1691
v/s Ratio Prot		c0.06	0.22			0.05	0.09
v/s Ratio Perm						c0.23	
v/c Ratio		0.37	0.31			0.33	0.09
Uniform Delay, d1		33.3	5.2			1.0	0.2
Progression Factor		1.00	0.96			2.19	1.00
Incremental Delay, d2		1.2	0.5			0.3	0.0
Delay (s)		34.5	5.5			2.4	0.2
Level of Service		C	A			A	A
Approach Delay (s)	34.5		5.5				1.7
Approach LOS	C		A				A

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	6	1104	55	1329	141	221	100	57	81
v/c Ratio	0.08	0.62	0.33	0.63	0.55	0.83	0.30	0.47	0.64
Control Delay	83.2	32.3	118.1	8.1	77.9	98.8	5.9	86.7	96.5
Queue Delay	0.0	0.0	102.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	32.3	220.1	8.5	77.9	98.8	5.9	86.7	96.5
Queue Length 50th (ft)	7	477	67	65	156	256	0	66	94
Queue Length 95th (ft)	25	600	m117	188	228	350	30	117	157
Internal Link Dist (ft)		807		68		735			638
Turn Bay Length (ft)	195		160		390			200	
Base Capacity (vph)	117	1793	167	2121	313	323	381	146	152
Starvation Cap Reductn	0	0	123	325	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	0.05	0.62	1.25	0.74	0.45	0.68	0.26	0.39	0.53

Intersection Summary

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

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	958	36	1	49	1073	123	127	199	90	51	69
Future Volume (vph)	5	958	36	1	49	1073	123	127	199	90	51	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	9	10	10	10	10	10	11	11
Total Lost time (s)	6.9	6.9			6.1	6.1		6.5	6.5	6.5	5.9	5.9
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	0.98		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	3373			1593	3241		1685	1739	1492	1745	1804
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1745	3373			1593	3241		1685	1739	1492	1745	1804
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)	6	1064	40	1	54	1192	137	141	221	100	57	77
RTOR Reduction (vph)	0	1	0	0	0	4	0	0	0	85	0	1
Lane Group Flow (vph)	6	1103	0	0	55	1325	0	141	221	15	57	80
Confl. Peds. (#/hr)	3						3	4				
Heavy Vehicles (%)	0%	3%	0%	0%	2%	2%	3%	0%	2%	1%	0%	1%
Turn Type	Prot	NA		Prot	Prot	NA		Split	NA	Perm	Split	NA
Protected Phases	5	2		1	1	1 6		4	4		3	3
Permitted Phases										4		
Actuated Green, G (s)	2.4	95.6			18.9	113.1		27.5	27.5	27.5	12.6	12.6
Effective Green, g (s)	2.4	95.6			18.9	113.1		27.5	27.5	27.5	12.6	12.6
Actuated g/C Ratio	0.01	0.53			0.10	0.63		0.15	0.15	0.15	0.07	0.07
Clearance Time (s)	6.9	6.9			6.1			6.5	6.5	6.5	5.9	5.9
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	1791			167	2036		257	265	227	122	126
v/s Ratio Prot	0.00	c0.33			0.03	c0.41		0.08	c0.13		0.03	c0.04
v/s Ratio Perm										0.01		
v/c Ratio	0.26	0.62			0.33	0.65		0.55	0.83	0.07	0.47	0.64
Uniform Delay, d1	87.9	29.4			74.7	21.0		70.5	74.0	65.3	80.5	81.5
Progression Factor	1.00	1.00			1.50	0.33		1.00	1.00	1.00	0.93	0.93
Incremental Delay, d2	6.0	1.6			1.0	0.7		2.4	19.7	0.1	2.8	10.0
Delay (s)	93.9	31.0			113.3	7.6		72.9	93.7	65.4	77.7	86.1
Level of Service	F	C			F	A		E	F	E	E	F
Approach Delay (s)		31.3				11.8			81.2			82.6
Approach LOS		C				B			F			F

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.5
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

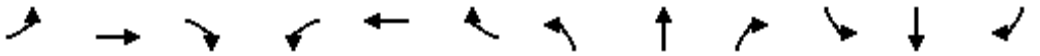
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	4
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	4
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	7	50	528	475	563	710
v/c Ratio	0.02	0.19	0.58	0.38	0.85	0.60
Control Delay	21.9	28.1	8.6	19.1	23.9	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	28.1	8.6	19.1	23.9	11.9
Queue Length 50th (ft)	2	21	62	82	117	166
Queue Length 95th (ft)	12	50	152	147	#389	383
Internal Link Dist (ft)	645	814		298		1869
Turn Bay Length (ft)			280			
Base Capacity (vph)	564	455	888	2050	669	1630
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	0.01	0.11	0.59	0.23	0.84	0.44

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	2	45	4	517	1	418	46	552	694	2
Future Volume (vph)	1	4	2	45	4	517	1	418	46	552	694	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	11	12
Total Lost time (s)		6.2			6.2	6.3		6.3		6.3	6.3	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.96			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.96	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1743			1781	1615		3368		1785	1800	
Flt Permitted		0.97			0.74	1.00		0.95		0.38	1.00	
Satd. Flow (perm)		1703			1376	1615		3213		711	1800	
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)	1	4	2	46	4	528	1	427	47	563	708	2
RTOR Reduction (vph)	0	2	0	0	0	198	0	9	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	50	330	0	466	0	563	710	0
Confl. Peds. (#/hr)			1	1			3		4	4		3
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	2%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		14.8			14.8	29.6		30.6		51.7	51.7	
Effective Green, g (s)		14.8			14.8	29.6		30.6		51.7	51.7	
Actuated g/C Ratio		0.19			0.19	0.37		0.39		0.65	0.65	
Clearance Time (s)		6.2			6.2	6.3		6.3		6.3	6.3	
Vehicle Extension (s)		3.0			3.0	2.0		5.0		2.0	5.0	
Lane Grp Cap (vph)		319			257	605		1244		666	1177	
v/s Ratio Prot						c0.10				c0.16	0.39	
v/s Ratio Perm		0.00			0.04	0.10		0.15		c0.39		
v/c Ratio		0.02			0.19	0.55		0.37		0.85	0.60	
Uniform Delay, d1		26.2			27.1	19.4		17.3		7.9	7.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.4	0.5		0.4		9.3	1.3	
Delay (s)		26.2			27.4	20.0		17.7		17.2	9.1	
Level of Service		C			C	B		B		B	A	
Approach Delay (s)		26.2			20.6			17.7			12.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	3	460	740	5
Future Vol, veh/h	3	4	3	460	740	5
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	3	4	3	474	763	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1249	769	771	0	-	0
Stage 1	769	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	193	404	853	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	191	403	851	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	458	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	273	-	-
HCM Lane V/C Ratio	0.004	-	0.026	-	-
HCM Control Delay (s)	9.2	-	18.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	38	39	457	724	17
Future Vol, veh/h	12	38	39	457	724	17
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	5	0	1	2	6
Mvmt Flow	13	40	41	481	762	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1337	774	783	0	-	0
Stage 1	774	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Critical Hdwy	6.48	6.25	4.1	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.345	2.2	-	-	-
Pot Cap-1 Maneuver	164	394	844	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	393	841	-	-	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	556	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	841	-	361	-	-
HCM Lane V/C Ratio	0.049	-	0.146	-	-
HCM Control Delay (s)	9.5	-	16.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	490	1	2	760
Future Vol, veh/h	1	2	490	1	2	760
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	1	2	521	1	2	809

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1338	525	0	0	525	0
Stage 1	525	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	170	556	-	-	1052	-
Stage 1	598	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	555	-	-	1049	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	436	1049	-
HCM Lane V/C Ratio	-	-	0.007	0.002	-
HCM Control Delay (s)	-	-	13.3	8.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	5	1	7	6	1	4	7	486	11	12	748	6
Future Vol, veh/h	5	1	7	6	1	4	7	486	11	12	748	6
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	6	6	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	29	0	0	0	0	1	0	0	2	17
Mvmt Flow	5	1	8	6	1	4	8	523	12	13	804	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1386	1395	812	1389	1392	535	815	0	0	541	0	0
Stage 1	838	838	-	551	551	-	-	-	-	-	-	-
Stage 2	548	557	-	838	841	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	122	143	340	121	143	549	821	-	-	1038	-	-
Stage 1	364	384	-	522	519	-	-	-	-	-	-	-
Stage 2	524	515	-	364	383	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	138	339	115	138	546	818	-	-	1033	-	-
Mov Cap-2 Maneuver	118	138	-	115	138	-	-	-	-	-	-	-
Stage 1	359	377	-	514	511	-	-	-	-	-	-	-
Stage 2	514	507	-	350	376	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26	28.5	0.1	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	818	-	-	185	165	1033	-	-
HCM Lane V/C Ratio	0.009	-	-	0.076	0.072	0.012	-	-
HCM Control Delay (s)	9.4	-	-	26	28.5	8.5	-	-
HCM Lane LOS	A	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	3	500	760	5
Future Vol, veh/h	3	4	3	500	760	5
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	15	0	1	2	9
Mvmt Flow	3	4	3	538	817	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1369	825	827	0	-	0
Stage 1	825	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	2.2	-	-	-
Pot Cap-1 Maneuver	163	353	813	-	-	-
Stage 1	434	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	161	351	809	-	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	809	-	326	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s)	9.5	-	16.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	0	5	15	0	11	1	2	493	11	10	756	1
Future Vol, veh/h	0	0	5	15	0	11	1	2	493	11	10	756	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	6	0	7	7	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	0	0	5	16	0	12	1	2	530	12	11	813	1

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	1388	1397	820	1385	1391	543	-	820	0	0	549	0	0
Stage 1	842	842	-	547	549	-	-	-	-	-	-	-	-
Stage 2	546	555	-	838	842	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	121	142	378	122	143	544	-	818	-	-	1031	-	-
Stage 1	362	383	-	525	520	-	-	-	-	-	-	-	-
Stage 2	526	516	-	364	383	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	117	139	376	118	140	540	~ -3	~ -3	-	-	1023	-	-
Mov Cap-2 Maneuver	117	139	-	118	140	-	-	-	-	-	-	-	-
Stage 1	362	376	-	525	516	-	-	-	-	-	-	-	-
Stage 2	514	512	-	355	376	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	29.3		0.1
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	+	-	-	376	176	1023	-	-
HCM Lane V/C Ratio	-	-	-	0.014	0.159	0.011	-	-
HCM Control Delay (s)	-	-	-	14.7	29.3	8.6	-	-
HCM Lane LOS	-	-	-	B	D	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0	0.6	0	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	13	500	6	10	770
Future Vol, veh/h	8	13	500	6	10	770
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	9	14	532	6	11	819

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	972	540	0	0	543	0
Stage 1	540	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	268	546	-	-	1036	-
Stage 1	588	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	264	544	-	-	1032	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	476	1032	-
HCM Lane V/C Ratio	-	-	0.047	0.01	-
HCM Control Delay (s)	-	-	12.9	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	3	85	3	2	0	64	430	7	1	667	109
Future Vol, veh/h	82	3	85	3	2	0	64	430	7	1	667	109
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	3	3	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	0	-	190	-	-	-	100	-	70	50	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	86	3	89	3	2	0	67	453	7	1	702	115

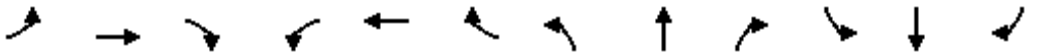
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1301	1306	707	1296	1299	456	707	0	0	463	0	0
Stage 1	709	709	-	590	590	-	-	-	-	-	-	-
Stage 2	592	597	-	706	709	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	138	161	439	140	163	609	901	-	-	1109	-	-
Stage 1	425	440	-	497	498	-	-	-	-	-	-	-
Stage 2	493	495	-	430	440	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	128	148	437	103	150	607	898	-	-	1106	-	-
Mov Cap-2 Maneuver	128	148	-	103	150	-	-	-	-	-	-	-
Stage 1	392	438	-	458	459	-	-	-	-	-	-	-
Stage 2	454	456	-	339	438	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.7	36.9	1.2	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	898	-	-	128	148	437	118	1106	-	-
HCM Lane V/C Ratio	0.075	-	-	0.674	0.021	0.205	0.045	0.001	-	-
HCM Control Delay (s)	9.3	-	-	77.8	29.9	15.3	36.9	8.3	-	-
HCM Lane LOS	A	-	-	F	D	C	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.7	0.1	0.8	0.1	0	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	100	189	91	134	420	19	675	101
v/c Ratio	0.55	0.50	0.33	0.31	0.32	0.03	0.64	0.11
Control Delay	47.1	10.1	22.1	4.6	3.7	10.3	17.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	47.1	10.1	22.1	4.6	4.1	10.3	17.4	2.2
Queue Length 50th (ft)	54	0	24	13	46	4	234	0
Queue Length 95th (ft)	99	55	63	25	74	17	435	20
Internal Link Dist (ft)	482		283		284		414	
Turn Bay Length (ft)		100		150		75		205
Base Capacity (vph)	304	503	432	485	1317	551	1052	897
Starvation Cap Reductn	0	0	0	0	445	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	0.38	0.21	0.28	0.48	0.03	0.64	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	16	180	14	29	43	127	378	21	18	641	96
Future Volume (vph)	79	16	180	14	29	43	127	378	21	18	641	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	11	11	11	11	11	10
Total Lost time (s)		5.9	5.9		5.9		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1747	1599		1897		1727	1803		1737	1801	1455
Flt Permitted		0.75	1.00		0.93		0.25	1.00		0.52	1.00	1.00
Satd. Flow (perm)		1362	1599		1780		460	1803		945	1801	1455
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)	83	17	189	15	31	45	134	398	22	19	675	101
RTOR Reduction (vph)	0	0	164	0	39	0	0	2	0	0	0	42
Lane Group Flow (vph)	0	100	25	0	52	0	134	418	0	19	675	59
Confl. Peds. (#/hr)	9					9	1		10	10		1
Heavy Vehicles (%)	1%	13%	1%	0%	0%	0%	1%	1%	0%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)		12.0	12.0		12.0		65.7	65.7		52.6	52.6	52.6
Effective Green, g (s)		12.0	12.0		12.0		65.7	65.7		52.6	52.6	52.6
Actuated g/C Ratio		0.13	0.13		0.13		0.73	0.73		0.58	0.58	0.58
Clearance Time (s)		5.9	5.9		5.9		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0		3.0		2.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		181	213		237		430	1316		552	1052	850
v/s Ratio Prot							0.02	c0.23			c0.37	
v/s Ratio Perm		c0.07	0.02		0.03		0.20			0.02		0.04
v/c Ratio		0.55	0.12		0.22		0.31	0.32		0.03	0.64	0.07
Uniform Delay, d1		36.5	34.3		34.8		7.0	4.3		7.9	12.4	8.1
Progression Factor		1.00	1.00		1.00		0.70	0.66		1.00	1.00	1.00
Incremental Delay, d2		3.6	0.2		0.5		0.1	0.6		0.1	3.0	0.2
Delay (s)		40.1	34.6		35.3		5.0	3.4		8.0	15.4	8.3
Level of Service		D	C		D		A	A		A	B	A
Approach Delay (s)		36.5			35.3			3.8			14.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	392	241	545	333
v/c Ratio	0.46	0.20	0.50	0.19
Control Delay	1.7	14.5	3.0	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.7	14.5	3.0	0.2
Queue Length 50th (ft)	0	193	18	0
Queue Length 95th (ft)	0	268	61	0
Internal Link Dist (ft)		638		284
Turn Bay Length (ft)	250		150	
Base Capacity (vph)	1013	1194	1258	1787
Starvation Cap Reductn	0	0	15	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.20	0.44	0.19

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	372	166	63	518	316
Future Volume (vph)	0	372	166	63	518	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		5.1	7.0		5.1	7.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.96		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1573	1758		1710	1793
Flt Permitted		1.00	1.00		0.61	1.00
Satd. Flow (perm)		1573	1758		1096	1793
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	392	175	66	545	333
RTOR Reduction (vph)	0	317	10	0	0	0
Lane Group Flow (vph)	0	75	231	0	545	333
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	0%	1%	0%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	1
Turn Type		Over	NA		D.P+P	NA
Protected Phases		4	2		4	2 4
Permitted Phases		4			2	
Actuated Green, G (s)		17.2	60.7		77.9	90.0
Effective Green, g (s)		17.2	60.7		77.9	84.9
Actuated g/C Ratio		0.19	0.67		0.87	0.94
Clearance Time (s)		5.1	7.0		5.1	
Vehicle Extension (s)		4.0	4.0		4.0	
Lane Grp Cap (vph)		300	1185		1065	1691
v/s Ratio Prot		0.05	0.13		c0.10	0.19
v/s Ratio Perm					c0.34	
v/c Ratio		0.25	0.20		0.51	0.20
Uniform Delay, d1		30.9	5.5		1.2	0.2
Progression Factor		1.00	2.50		3.08	1.00
Incremental Delay, d2		0.6	0.3		0.5	0.1
Delay (s)		31.5	14.0		4.1	0.2
Level of Service		C	B		A	A
Approach Delay (s)	31.5		14.0			2.7
Approach LOS	C		B			A

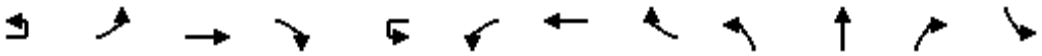
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	28	1160	166	1331	138	156	99	189	161
v/c Ratio	0.25	0.74	0.67	0.71	0.78	0.81	0.37	0.82	0.69
Control Delay	84.3	43.9	121.8	17.0	105.9	108.0	7.9	109.8	95.6
Queue Delay	0.0	0.0	90.8	3.9	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	43.9	212.6	20.9	105.9	108.0	7.9	109.8	95.6
Queue Length 50th (ft)	32	601	204	175	160	181	0	206	172
Queue Length 95th (ft)	70	715	m281	280	#255	#286	30	309	266
Internal Link Dist (ft)		807		68		735			638
Turn Bay Length (ft)	195		160		390			200	
Base Capacity (vph)	126	1571	247	1878	195	211	286	269	272
Starvation Cap Reductn	0	0	191	451	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	0.22	0.74	2.96	0.93	0.71	0.74	0.35	0.70	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	26	1025	77	7	151	1218	47	131	148	94	180
Future Volume (vph)	1	26	1025	77	7	151	1218	47	131	148	94	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	9	10	10	10	10	10	11
Total Lost time (s)		6.9	6.9			6.1	6.1		6.5	6.5	6.5	5.9
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00		1.00	1.00	0.97	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1745	3392			1594	3314		1636	1773	1462	1728
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (perm)		1745	3392			1594	3314		1636	1773	1462	1728
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)	1	27	1079	81	7	159	1282	49	138	156	99	189
RTOR Reduction (vph)	0	0	3	0	0	0	1	0	0	0	88	0
Lane Group Flow (vph)	0	28	1157	0	0	166	1330	0	138	156	11	189
Confl. Peds. (#/hr)		19		23		23		19	22		9	9
Heavy Vehicles (%)	0%	0%	1%	0%	0%	2%	1%	0%	3%	0%	0%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	1 6		4	4		3
Permitted Phases											4	
Actuated Green, G (s)		10.5	83.2			27.9	101.6		19.5	19.5	19.5	24.0
Effective Green, g (s)		10.5	83.2			27.9	101.6		19.5	19.5	19.5	24.0
Actuated g/C Ratio		0.06	0.46			0.15	0.56		0.11	0.11	0.11	0.13
Clearance Time (s)		6.9	6.9			6.1			6.5	6.5	6.5	5.9
Vehicle Extension (s)		3.0	3.0			3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		101	1567			247	1870		177	192	158	230
v/s Ratio Prot		0.02	c0.34			0.10	c0.40		0.08	c0.09		c0.11
v/s Ratio Perm											0.01	
v/c Ratio		0.28	0.74			0.67	0.71		0.78	0.81	0.07	0.82
Uniform Delay, d1		81.1	39.5			71.7	28.5		78.2	78.5	72.1	75.9
Progression Factor		1.00	1.00			1.53	0.49		1.00	1.00	1.00	1.09
Incremental Delay, d2		1.5	3.2			5.6	1.0		19.2	22.4	0.2	20.3
Delay (s)		82.6	42.7			115.1	15.1		97.4	100.8	72.3	103.5
Level of Service		F	D			F	B		F	F	E	F
Approach Delay (s)			43.6				26.2			92.4		
Approach LOS			D				C			F		

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	30.5
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	134	19
Future Volume (vph)	134	19
Ideal Flow (vphpl)	1900	1900
Lane Width	11	11
Total Lost time (s)	5.9	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	1733	
Flt Permitted	1.00	
Satd. Flow (perm)	1733	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	141	20
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	158	0
Confl. Peds. (#/hr)		22
Heavy Vehicles (%)	3%	5%
Turn Type	NA	
Protected Phases	3	
Permitted Phases		
Actuated Green, G (s)	24.0	
Effective Green, g (s)	24.0	
Actuated g/C Ratio	0.13	
Clearance Time (s)	5.9	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	231	
v/s Ratio Prot	0.09	
v/s Ratio Perm		
v/c Ratio	0.69	
Uniform Delay, d1	74.4	
Progression Factor	1.10	
Incremental Delay, d2	8.1	
Delay (s)	90.2	
Level of Service	F	
Approach Delay (s)	97.4	
Approach LOS	F	

Intersection Summary