

Appendix J

Future Background Synchro Reports

Lanes, Volumes, Timings
1: Private Access/Eighth Line & Steeles Avenue

2031 Future Background AM

12/13/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 					
Traffic Volume (vph)	83	756	10	34	825	13	11	21	7	51	162	226
Future Volume (vph)	83	756	10	34	825	13	11	21	7	51	162	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	110.0		70.0	130.0		0.0	145.0		35.0	30.0		0.0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00				1.00		0.99		
Frt			0.850			0.850		0.962			0.913	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	4940	997	1752	4848	1292	2274	1819	0	1805	1705	0
Flt Permitted	0.174			0.278			0.950			0.736		
Satd. Flow (perm)	303	4940	964	511	4848	1292	2274	1819	0	1389	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			126		8			48	
Link Speed (k/h)		60			60			60			70	
Link Distance (m)		485.6			1450.0			261.5			1241.4	
Travel Time (s)		29.1			87.0			15.7			63.8	
Confl. Peds. (#/hr)			5	5					5	5		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	9%	5%	62%	3%	7%	25%	54%	0%	0%	0%	0%	3%
Adj. Flow (vph)	93	849	11	38	927	15	12	24	8	57	182	254
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	849	11	38	927	15	12	32	0	57	436	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Private Access/Eighth Line & Steeles Avenue

2031 Future Background AM

12/13/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6		6				4		
Detector Phase	5	2	2	1	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		8.0	8.0	
Minimum Split (s)	11.5	30.0	30.0	11.5	30.0	30.0	17.0	35.0		35.0	35.0	
Total Split (s)	16.9	58.5	58.5	13.0	54.6	54.6	26.0	58.5		32.5	32.5	
Total Split (%)	13.0%	45.0%	45.0%	10.0%	42.0%	42.0%	20.0%	45.0%		25.0%	25.0%	
Maximum Green (s)	12.9	52.5	52.5	9.0	48.6	48.6	19.0	51.5		25.5	25.5	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	0.2	0.2	4.0	4.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min	Min	None	Min		Min	Min	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		21.0		21.0	21.0	
Pedestrian Calls (#/hr)		0	0		0	0		0		0	0	
Act Effect Green (s)	32.2	24.9	24.9	28.9	21.3	21.3	10.3	28.7		26.2	26.2	
Actuated g/C Ratio	0.44	0.34	0.34	0.39	0.29	0.29	0.14	0.39		0.36	0.36	
v/c Ratio	0.32	0.51	0.03	0.12	0.66	0.03	0.04	0.04		0.12	0.68	
Control Delay	15.4	22.1	0.1	13.2	26.9	0.2	33.3	12.5		21.0	27.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	15.4	22.1	0.1	13.2	26.9	0.2	33.3	12.5		21.0	27.6	
LOS	B	C	A	B	C	A	C	B		C	C	
Approach Delay		21.2			26.0			18.2			26.8	
Approach LOS		C			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 73.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 24.2

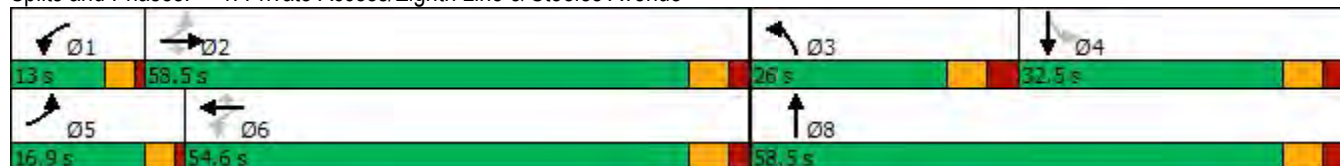
Intersection LOS: C

Intersection Capacity Utilization 59.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Private Access/Eighth Line & Steeles Avenue



Lanes, Volumes, Timings
3: Eighth Line & Future Collector D

2031 Future Background AM

12/13/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	106	448	0
Future Volume (vph)	0	0	0	106	448	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0	0.0	40.0			20.0
Storage Lanes	1	1	1			1
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	1863	1863	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	1863	1863	1863	1863	1863
Link Speed (k/h)	60			70	70	
Link Distance (m)	869.6			1241.4	861.2	
Travel Time (s)	52.2			63.8	44.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	115	487	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	115	487	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Eighth Line & Future Collector D

2031 Future Background AM

12/13/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	106	448	0
Future Volume (Veh/h)	0	0	0	106	448	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	115	487	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLT	TWLT	
Median storage veh				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	602	487	487			
vC1, stage 1 conf vol	487					
vC2, stage 2 conf vol	115					
vCu, unblocked vol	602	487	487			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	591	581	1076			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	115	487	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.07	0.29	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			26.9%		ICU Level of Service	
					A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
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2031 Future Background PM

12/13/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 					
Traffic Volume (vph)	223	1109	21	164	978	293	198	181	202	35	53	134
Future Volume (vph)	223	1109	21	164	978	293	198	181	202	35	53	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	110.0		70.0	130.0		0.0	145.0		35.0	30.0		0.0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.95	1.00		0.97	0.99	0.99		0.99	0.99	
Frt			0.850			0.850		0.921			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	5036	1538	1805	4988	1615	3502	1729	0	1703	1590	0
Flt Permitted	0.132			0.134			0.950			0.509		
Satd. Flow (perm)	248	5036	1467	254	4988	1561	3480	1729	0	907	1590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			333		51			78	
Link Speed (k/h)		60			60			50			70	
Link Distance (m)		485.6			1450.0			261.5			1241.4	
Travel Time (s)		29.1			87.0			18.8			63.8	
Confl. Peds. (#/hr)	5		10	10		5	6		8	8		6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	3%	5%	0%	4%	0%	0%	0%	0%	6%	0%	7%
Adj. Flow (vph)	253	1260	24	186	1111	333	225	206	230	40	60	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	1260	24	186	1111	333	225	436	0	40	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Private Access/Eighth Line & Steeles Avenue

2031 Future Background PM

12/13/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6		6				4		
Detector Phase	5	2	2	1	6	6	3	8		4		4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	10.0	10.0		8.0		8.0
Minimum Split (s)	11.5	30.0	30.0	11.5	30.0	30.0	17.0	35.0		35.0		35.0
Total Split (s)	16.9	54.6	54.6	16.9	54.6	54.6	39.0	58.5		19.5		19.5
Total Split (%)	13.0%	42.0%	42.0%	13.0%	42.0%	42.0%	30.0%	45.0%		15.0%		15.0%
Maximum Green (s)	12.9	48.6	48.6	12.9	48.6	48.6	32.0	51.5		12.5		12.5
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag		Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0		3.0		3.0
Recall Mode	None	Min	Min	None	Min	Min	None	Min		Min		Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0		7.0		7.0
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		21.0		21.0		21.0
Pedestrian Calls (#/hr)		0	0		0	0		0		0		0
Act Effect Green (s)	46.8	31.9	31.9	42.6	29.8	29.8	12.9	33.6		13.6		13.6
Actuated g/C Ratio	0.50	0.34	0.34	0.46	0.32	0.32	0.14	0.36		0.15		0.15
v/c Ratio	0.76	0.73	0.04	0.63	0.70	0.46	0.47	0.67		0.31		0.71
Control Delay	34.9	30.4	0.1	25.2	30.5	4.9	42.3	29.0		46.2		39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	34.9	30.4	0.1	25.2	30.5	4.9	42.3	29.0		46.2		39.7
LOS	C	C	A	C	C	A	D	C		D		D
Approach Delay		30.6			24.7			33.5				40.7
Approach LOS		C			C			C				D

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 93.6

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 29.3

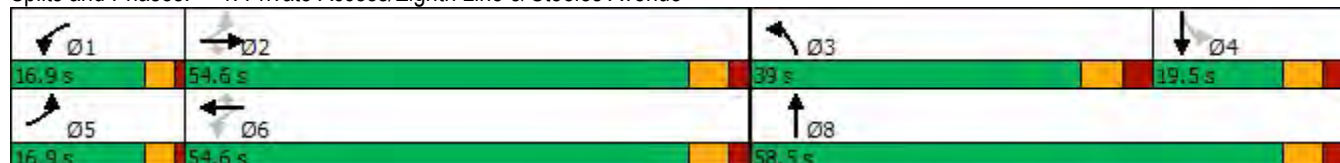
Intersection LOS: C

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Private Access/Eighth Line & Steeles Avenue



Lanes, Volumes, Timings
3: Eighth Line & Future Collector D

2031 Future Background PM

12/13/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	680	226	0
Future Volume (vph)	0	0	0	680	226	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0	0.0	40.0			20.0
Storage Lanes	1	1	1			1
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	1863	1863	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	1863	1863	1863	1863	1863
Link Speed (k/h)	60			70	70	
Link Distance (m)	869.6			1241.4	861.2	
Travel Time (s)	52.2			63.8	44.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	739	246	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	739	246	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Eighth Line & Future Collector D

2031 Future Background PM

12/13/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	680	226	0
Future Volume (Veh/h)	0	0	0	680	226	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	739	246	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLT	TWLT	
Median storage veh				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	985	246	246			
vC1, stage 1 conf vol	246					
vC2, stage 2 conf vol	739					
vCu, unblocked vol	985	246	246			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	443	793	1320			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	739	246	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.43	0.14	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			39.1%	ICU Level of Service		A
Analysis Period (min)			15			