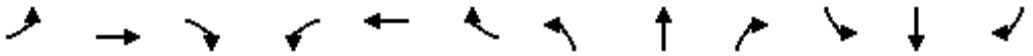
Appendix B

Capacity Analysis

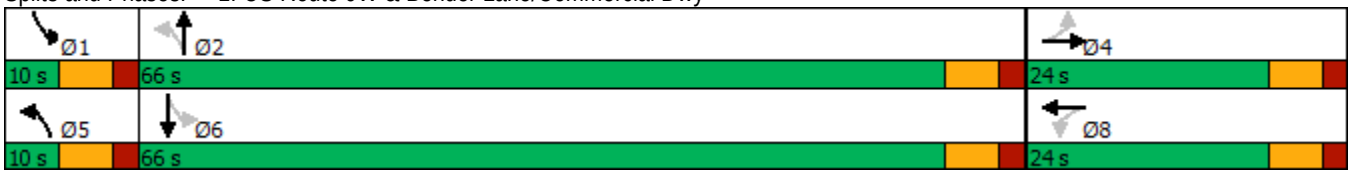


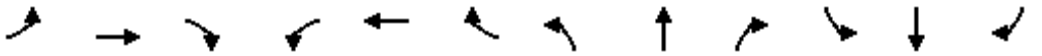
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1	150	110	5	185	70	575	2	5	770	5
Future Volume (vph)	45	1	150	110	5	185	70	575	2	5	770	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	11	12	12	11	11	11
Storage Length (ft)	60		0	50		0	100		0	245		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			25			115			25		
Satd. Flow (prot)	1532	1509	0	1685	1514	0	1745	1845	0	1745	1782	0
Flt Permitted	0.527			0.636			0.170			0.357		
Satd. Flow (perm)	850	1509	0	1128	1514	0	312	1845	0	656	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		158			195						1	
Link Speed (mph)		30			25			40			40	
Link Distance (ft)		504			164			1648			1173	
Travel Time (s)		11.5			4.5			28.1			20.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	0%	0%	0%	0%	0%	0%	3%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	159	0	116	200	0	74	607	0	5	816	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	20.0		4.0	20.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	26.0		10.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	13.8	13.8		13.8	13.8		48.4	47.8		44.9	42.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.63	0.62		0.59	0.55	
v/c Ratio	0.31	0.40		0.57	0.46		0.26	0.53		0.01	0.83	
Control Delay	38.9	9.6		46.2	10.0		7.2	10.3		4.8	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.9	9.6		46.2	10.0		7.2	10.3		4.8	23.6	
LOS	D	A		D	A		A	B		A	C	
Approach Delay		16.3			23.3			9.9			23.5	
Approach LOS		B			C			A			C	
Queue Length 50th (ft)	21	0		54	2		11	130		1	320	
Queue Length 95th (ft)	63	55		128	63		26	309		4	524	
Internal Link Dist (ft)		424			84			1568			1093	
Turn Bay Length (ft)	60			50			100			245		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	223	513		296	542		281	1440		448	1374	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.31		0.39	0.37		0.26	0.42		0.01	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 76.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.2		Intersection LOS: B	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: US Route 9W & Bender Lane/Commercial Dwy





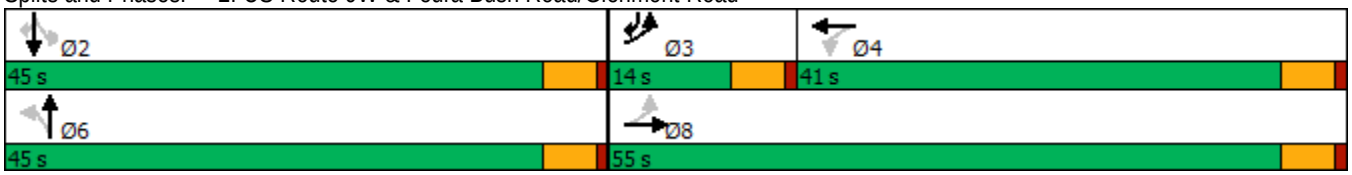
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	115	35	140	245	70	35	360	40	45	480	365
Future Volume (vph)	240	115	35	140	245	70	35	360	40	45	480	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	10	10	12	12	12	12	12	11
Storage Length (ft)	140		0	0		0	0		0	0		205
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1685	1747	0	0	1704	0	0	1806	0	0	1842	1546
Flt Permitted	0.392				0.839			0.688			0.925	
Satd. Flow (perm)	695	1747	0	0	1449	0	0	1247	0	0	1710	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			10			6				384
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		5734			960			1442			1648	
Travel Time (s)		97.7			16.4			24.6			28.1	
Confl. Peds. (#/hr)	1		3	3		1	1		3	3		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	4%	0%	0%	3%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	158	0	0	479	0	0	458	0	0	552	384
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8			4			6			2	3
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		6	6		2	2	3
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		17.0	17.0		17.0	17.0	4.0
Minimum Split (s)	9.0	22.0		9.0	9.0		22.0	22.0		22.0	22.0	9.0
Total Split (s)	14.0	55.0		41.0	41.0		45.0	45.0		45.0	45.0	14.0
Total Split (%)	14.0%	55.0%		41.0%	41.0%		45.0%	45.0%		45.0%	45.0%	14.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Act Effct Green (s)	47.1	47.1			33.1			36.1			36.1	45.1
Actuated g/C Ratio	0.50	0.50			0.35			0.39			0.39	0.48
v/c Ratio	0.57	0.18			0.92			0.94			0.84	0.41
Control Delay	20.2	12.1			54.7			58.3			39.1	2.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	20.2	12.1			54.7			58.3			39.1	2.7
LOS	C	B			D			E			D	A
Approach Delay		17.1			54.7			58.3			24.2	
Approach LOS		B			D			E			C	
Queue Length 50th (ft)	91	45			282			268			306	0
Queue Length 95th (ft)	144	82			#481			#468			#486	41
Internal Link Dist (ft)		5654			880			1362			1568	

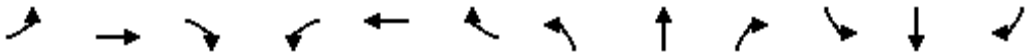
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	140											205
Base Capacity (vph)	447	960			574			546			744	932
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.57	0.16			0.83			0.84			0.74	0.41

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 93.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 36.1		Intersection LOS: D	
Intersection Capacity Utilization 101.5%		ICU Level of Service G	
Analysis Period (min) 15			

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

Splits and Phases: 2: US Route 9W & Feura Bush Road/Glenmont Road



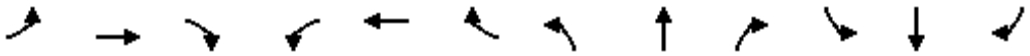


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	70	65	35	45	15	60	365	15	30	530	20
Future Volume (vph)	5	70	65	35	45	15	60	365	15	30	530	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	12	12	12
Satd. Flow (prot)	0	1623	0	0	1747	0	0	1738	0	0	1832	0
Flt Permitted		0.987			0.868			0.875			0.966	
Satd. Flow (perm)	0	1605	0	0	1544	0	0	1531	0	0	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			9			4			4	
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		9173			1035			2132			485	
Travel Time (s)		156.4			23.5			36.3			8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	5%	0%	0%	6%	2%	5%	0%	3%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	100	0	0	463	0	0	611	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		25.0	25.0		25.0	25.0	
Total Split (s)	26.0	26.0		26.0	26.0		74.0	74.0		74.0	74.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		74.0%	74.0%		74.0%	74.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		10.5			10.5			26.6			26.6	
Actuated g/C Ratio		0.25			0.25			0.62			0.62	
v/c Ratio		0.35			0.26			0.48			0.55	
Control Delay		14.3			15.6			8.5			9.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.3			15.6			8.5			9.1	
LOS		B			B			A			A	
Approach Delay		14.3			15.6			8.5			9.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		19			16			64			90	
Queue Length 95th (ft)		69			57			137			184	
Internal Link Dist (ft)		9093			955			2052			405	
Turn Bay Length (ft)												
Base Capacity (vph)		824			779			1531			1775	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.18			0.13			0.30			0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 42.6			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: US Route 9W & Wemple Road

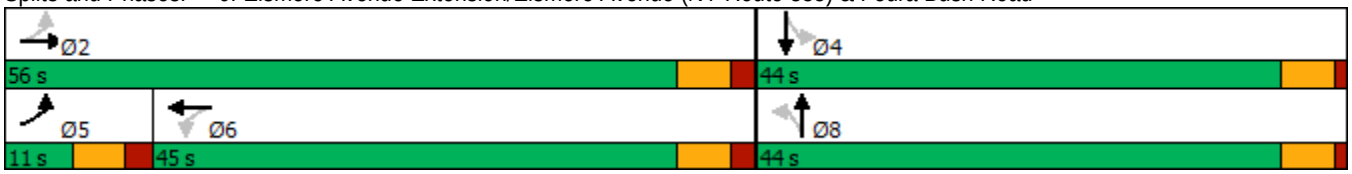


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	220	1	2	350	285	2	1	1	320	5	205
Future Volume (vph)	105	220	1	2	350	285	2	1	1	320	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1795	0	0	1726	0	0	1732	0	0	1681	0
Flt Permitted		0.564			0.999			0.893			0.813	
Satd. Flow (perm)	0	1029	0	0	1725	0	0	1584	0	0	1407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					48			1			37	
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1433			1507			356			1352	
Travel Time (s)		24.4			25.7			9.7			26.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	344	0	0	670	0	0	4	0	0	558	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	21.0		21.0	21.0		15.0	15.0		19.0	19.0	
Total Split (s)	11.0	56.0		45.0	45.0		44.0	44.0		44.0	44.0	
Total Split (%)	11.0%	56.0%		45.0%	45.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		43.0			43.0			38.2			38.2	
Actuated g/C Ratio		0.47			0.47			0.41			0.41	
v/c Ratio		0.72			0.81			0.01			0.93	
Control Delay		29.5			28.2			17.0			49.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.5			28.2			17.0			49.4	
LOS		C			C			B			D	
Approach Delay		29.5			28.2			17.0			49.4	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)		158			307			1			314	
Queue Length 95th (ft)		269			460			8			#557	
Internal Link Dist (ft)		1353			1427			276			1272	
Turn Bay Length (ft)												
Base Capacity (vph)		564			869			677			622	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.61			0.77			0.01			0.90	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.3			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 36.0		Intersection LOS: D	
Intersection Capacity Utilization 104.8%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Elsmere Avenue Extension/Elsmere Avenue (NY Route 335) & Feura Bush Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	320	220	45	460	0	180	0	15	0	0	0
Future Volume (vph)	0	320	220	45	460	0	180	0	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			0%			0%	
Satd. Flow (prot)	0	1710	0	0	1829	0	0	1721	0	0	1837	0
Flt Permitted					0.863			0.956				
Satd. Flow (perm)	0	1710	0	0	1585	0	0	1721	0	0	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54						98				
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		1507			5734			9173			432	
Travel Time (s)		25.7			97.7			156.4			9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	569	0	0	531	0	0	205	0	0	0	0
Turn Type		NA		Perm	NA		Split	NA				
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		21.0	21.0		22.0	22.0		16.0	16.0	
Total Split (s)	60.0	60.0		60.0	60.0		24.0	24.0		16.0	16.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		24.0%	24.0%		16.0%	16.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		21.8			21.8			15.3				
Actuated g/C Ratio		0.44			0.44			0.31				
v/c Ratio		0.72			0.76			0.34				
Control Delay		16.0			19.3			10.2				
Queue Delay		0.0			0.0			0.0				
Total Delay		16.0			19.3			10.2				
LOS		B			B			B				
Approach Delay		16.0			19.3			10.2				
Approach LOS		B			B			B				
Queue Length 50th (ft)		109			117			20				
Queue Length 95th (ft)		204			214			77				
Internal Link Dist (ft)		1427			5654			9093			352	
Turn Bay Length (ft)												
Base Capacity (vph)		1679			1556			697				
Starvation Cap Reductn		0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.34			0.34			0.29				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 49.3			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 84.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Wemple Road/Farm Access & Feura Bush Road

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	35	30	370	480	70
Future Vol, veh/h	35	35	30	370	480	70
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	-	160	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	4	3	0
Mvmt Flow	37	37	32	389	505	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	958	505	579	0	-	0
Stage 1	505	-	-	-	-	-
Stage 2	453	-	-	-	-	-
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	288	571	1005	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	279	571	1005	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1005	-	375	-	-
HCM Lane V/C Ratio	0.031	-	0.196	-	-
HCM Control Delay (s)	8.7	-	16.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	395	10	1	500
Future Vol, veh/h	5	5	395	10	1	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	95	95	95	95	95
Heavy Vehicles, %	14	0	4	0	0	3
Mvmt Flow	5	5	416	11	1	526

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	950	422	0	0	427	0
Stage 1	422	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	6.54	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	275	636	-	-	1143	-
Stage 1	637	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	636	-	-	1143	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	385	1143	-
HCM Lane V/C Ratio	-	-	0.027	0.001	-
HCM Control Delay (s)	-	-	14.6	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

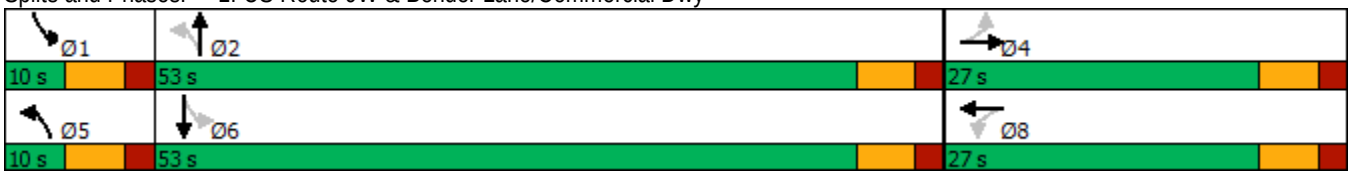
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	5	155	105	5	160	80	780	0	30	975	5
Future Volume (vph)	100	5	155	105	5	160	80	780	0	30	975	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	11	12	12	11	11	11
Storage Length (ft)	60		0	50		0	100		0	245		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			25			115			25		
Satd. Flow (prot)	1532	1514	0	1685	1514	0	1745	1845	0	1745	1782	0
Flt Permitted	0.580			0.594			0.081			0.198		
Satd. Flow (perm)	935	1514	0	1053	1514	0	149	1845	0	364	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		159			168							
Link Speed (mph)		30			25			40			40	
Link Distance (ft)		504			164			1648			1173	
Travel Time (s)		11.5			4.5			28.1			20.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	0%	0%	0%	0%	0%	0%	3%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	168	0	111	173	0	84	821	0	32	1031	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	20.0		4.0	20.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	26.0		10.0	26.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	53.0		10.0	53.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		11.1%	58.9%		11.1%	58.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	13.7	13.7		13.7	13.7		51.8	49.6		50.6	47.5	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.64	0.61		0.62	0.59	
v/c Ratio	0.67	0.43		0.63	0.44		0.48	0.73		0.11	0.99	
Control Delay	52.7	9.7		47.6	9.2		18.0	18.9		6.3	45.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.7	9.7		47.6	9.2		18.0	18.9		6.3	45.7	
LOS	D	A		D	A		B	B		A	D	
Approach Delay		26.2			24.2			18.8			44.5	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	52	4		54	2		12	308		5	~537	
Queue Length 95th (ft)	105	54		107	52		#51	#628		16	#913	
Internal Link Dist (ft)		424			84			1568			1093	
Turn Bay Length (ft)	60			50			100			245		

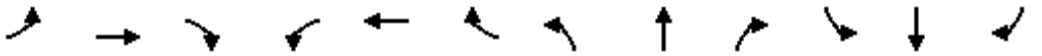
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	245	514		276	520		175	1128		296	1045	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.33		0.40	0.33		0.48	0.73		0.11	0.99	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 81			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 91.8%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 1: US Route 9W & Bender Lane/Commercial Dwy



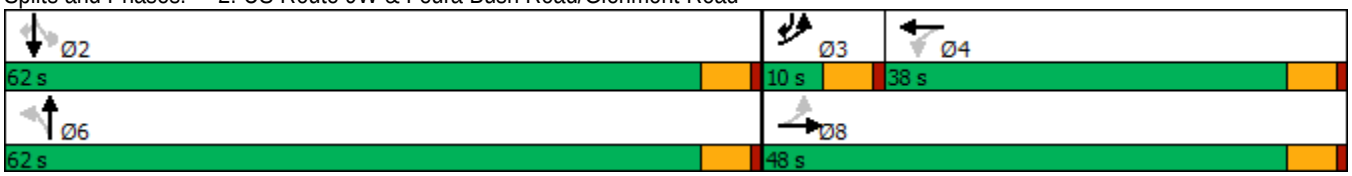


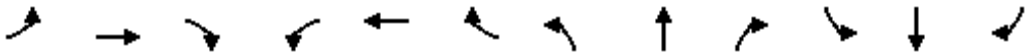
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	130	65	145	270	90	45	550	50	70	615	410
Future Volume (vph)	245	130	65	145	270	90	45	550	50	70	615	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	10	10	12	12	12	12	12	11
Storage Length (ft)	140		0	0		0	0		0	0		205
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1685	1716	0	0	1700	0	0	1808	0	0	1841	1546
Flt Permitted	0.335				0.831			0.665			0.856	
Satd. Flow (perm)	594	1716	0	0	1430	0	0	1206	0	0	1584	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			10			6				317
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		5734			960			1442			1648	
Travel Time (s)		97.7			16.4			24.6			28.1	
Confl. Peds. (#/hr)	1		3	3		1	1		3	3		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	4%	0%	0%	3%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	205	0	0	532	0	0	679	0	0	721	432
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8			4			6			2	3
Permitted Phases	8			4			6			2		2
Detector Phase	3	8		4	4		6	6		2	2	3
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		17.0	17.0		17.0	17.0	4.0
Minimum Split (s)	9.0	22.0		9.0	9.0		22.0	22.0		22.0	22.0	9.0
Total Split (s)	10.0	48.0		38.0	38.0		62.0	62.0		62.0	62.0	10.0
Total Split (%)	9.1%	43.6%		34.5%	34.5%		56.4%	56.4%		56.4%	56.4%	9.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Act Effct Green (s)	43.0	43.0			33.0			57.0			57.0	62.0
Actuated g/C Ratio	0.39	0.39			0.30			0.52			0.52	0.56
v/c Ratio	0.92	0.30			1.22			1.08			0.88	0.44
Control Delay	67.1	21.3			152.6			87.7			37.6	4.3
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	67.1	21.3			152.6			87.7			37.6	4.3
LOS	E	C			F			F			D	A
Approach Delay		46.8			152.6			87.7			25.1	
Approach LOS		D			F			F			C	
Queue Length 50th (ft)	129	84			~460			~537			432	32
Queue Length 95th (ft)	#276	143			#673			#767			#687	80
Internal Link Dist (ft)		5654			880			1362			1568	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	140											205
Base Capacity (vph)	281	687			436			627			820	991
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.92	0.30			1.22			1.08			0.88	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 67.7		Intersection LOS: E	
Intersection Capacity Utilization 123.3%		ICU Level of Service H	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: US Route 9W & Feura Bush Road/Glenmont Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Future Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	12	12	12
Satd. Flow (prot)	0	1577	0	0	1754	0	0	1733	0	0	1834	0
Flt Permitted		0.930			0.612			0.660			0.915	
Satd. Flow (perm)	0	1475	0	0	1092	0	0	1157	0	0	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			9			5			4	
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		9173			1035			2132			485	
Travel Time (s)		156.4			23.5			36.3			8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	5%	0%	0%	6%	2%	5%	0%	3%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	0	0	289	0	0	758	0	0	790	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		25.0	25.0		25.0	25.0	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		24.2			24.2			55.0			55.0	
Actuated g/C Ratio		0.27			0.27			0.62			0.62	
v/c Ratio		0.70			0.96			1.06			0.76	
Control Delay		31.1			75.3			70.7			18.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		31.1			75.3			70.7			18.6	
LOS		C			E			E			B	
Approach Delay		31.1			75.3			70.7			18.6	
Approach LOS		C			E			E			B	
Queue Length 50th (ft)		123			156			~482			298	
Queue Length 95th (ft)		219			#315			#705			464	
Internal Link Dist (ft)		9093			955			2052			405	
Turn Bay Length (ft)												
Base Capacity (vph)		470			312			715			1039	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

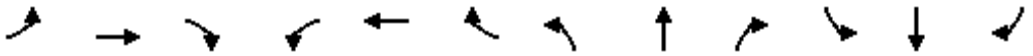
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.68			0.93			1.06			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 46.4		Intersection LOS: D	
Intersection Capacity Utilization 124.9%		ICU Level of Service H	
Analysis Period (min) 15			

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

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

Splits and Phases: 3: US Route 9W & Wemple Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Future Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1798	0	0	1726	0	0	1732	0	0	1687	0
Flt Permitted		0.507			0.999			0.888			0.800	
Satd. Flow (perm)	0	925	0	0	1725	0	0	1576	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					43			1			28	
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1433			1507			356			1352	
Travel Time (s)		24.4			25.7			9.7			26.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	401	0	0	855	0	0	4	0	0	642	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	21.0		21.0	21.0		15.0	15.0		19.0	19.0	
Total Split (s)	11.0	60.0		49.0	49.0		50.0	50.0		50.0	50.0	
Total Split (%)	10.0%	54.5%		44.5%	44.5%		45.5%	45.5%		45.5%	45.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		54.0			54.0			45.0			45.0	
Actuated g/C Ratio		0.49			0.49			0.41			0.41	
v/c Ratio		0.88			0.99			0.01			1.10	
Control Delay		48.4			54.4			17.5			97.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		48.4			54.4			17.5			97.0	
LOS		D			D			B			F	
Approach Delay		48.4			54.4			17.5			97.0	
Approach LOS		D			D			B			F	
Queue Length 50th (ft)		246			556			1			~502	
Queue Length 95th (ft)		#446			#846			8			#727	
Internal Link Dist (ft)		1353			1427			276			1272	
Turn Bay Length (ft)												
Base Capacity (vph)		454			868			645			586	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

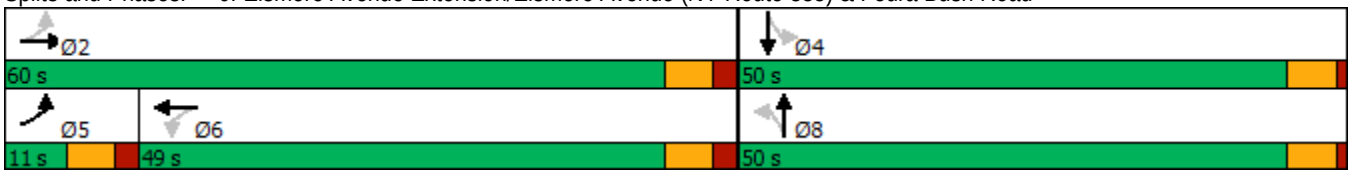
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.88			0.99			0.01			1.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 67.4		Intersection LOS: E	
Intersection Capacity Utilization 121.9%		ICU Level of Service H	
Analysis Period (min) 15			

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

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

Splits and Phases: 6: Elsmere Avenue Extension/Elsmere Avenue (NY Route 335) & Feura Bush Road

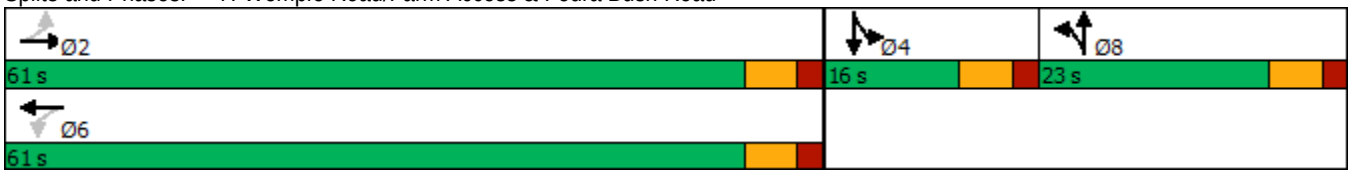


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	365	310	50	535	0	280	0	20	0	0	0
Future Volume (vph)	0	365	310	50	535	0	280	0	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			0%			0%	
Satd. Flow (prot)	0	1697	0	0	1829	0	0	1722	0	0	1837	0
Flt Permitted					0.830			0.955				
Satd. Flow (perm)	0	1697	0	0	1524	0	0	1722	0	0	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68						98				
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		1507			5734			9173			432	
Travel Time (s)		25.7			97.7			156.4			9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	710	0	0	616	0	0	316	0	0	0	0
Turn Type		NA		Perm	NA		Split	NA				
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		21.0	21.0		22.0	22.0		16.0	16.0	
Total Split (s)	61.0	61.0		61.0	61.0		23.0	23.0		16.0	16.0	
Total Split (%)	61.0%	61.0%		61.0%	61.0%		23.0%	23.0%		16.0%	16.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			-2.0	
Total Lost Time (s)		6.0			6.0			6.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		36.1			36.1			16.6				
Actuated g/C Ratio		0.55			0.55			0.25				
v/c Ratio		0.73			0.73			0.62				
Control Delay		14.2			16.1			23.7				
Queue Delay		0.0			0.0			0.0				
Total Delay		14.2			16.1			23.7				
LOS		B			B			C				
Approach Delay		14.2			16.1			23.7				
Approach LOS		B			B			C				
Queue Length 50th (ft)		172			165			72				
Queue Length 95th (ft)		275			266			#225				
Internal Link Dist (ft)		1427			5654			9093			352	
Turn Bay Length (ft)												
Base Capacity (vph)		1450			1293			537				
Starvation Cap Reductn		0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.49			0.48			0.59				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 65.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Wemple Road/Farm Access & Feura Bush Road



Intersection	
Int Delay, s/veh	25.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	160	165	620	675	195
Future Vol, veh/h	65	160	165	620	675	195
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	-	160	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	4	3	0
Mvmt Flow	68	168	174	653	711	205

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1712	711	916	0	-	0
Stage 1	711	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
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	101	436	753	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	436	753	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	358	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	204.9	2.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	753	-	187	-	-
HCM Lane V/C Ratio	0.231	-	1.267	-	-
HCM Control Delay (s)	11.2	-	204.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.9	-	13	-	-

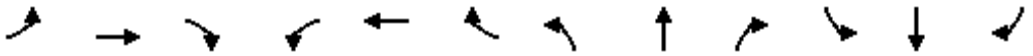
Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	305	480	10	55	765
Future Vol, veh/h	5	305	480	10	55	765
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	96	95	95	95	95	95
Heavy Vehicles, %	14	0	4	0	0	3
Mvmt Flow	5	321	505	11	58	805

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1432	511	0	0	516	0
Stage 1	511	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Critical Hdwy	6.54	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	139	567	-	-	1060	-
Stage 1	579	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	125	567	-	-	1060	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	369	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	537	1060	-
HCM Lane V/C Ratio	-	-	0.608	0.055	-
HCM Control Delay (s)	-	-	21.5	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4	0.2	-



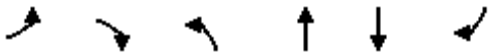
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Future Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1577	0	0	1754	0	1711	1737	0	1752	1837	0
Flt Permitted		0.936			0.644		0.125			0.320		
Satd. Flow (perm)	0	1485	0	0	1149	0	225	1737	0	590	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		90			11			6			3	
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		9173			1035			2132			485	
Travel Time (s)		156.4			23.5			36.3			8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	5%	0%	0%	6%	2%	5%	0%	3%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	0	0	289	0	174	584	0	53	737	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	20.0		4.0	20.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		8.0	25.0		8.0	25.0	
Total Split (s)	28.0	28.0		28.0	28.0		9.0	44.0		8.0	43.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		11.3%	55.0%		10.0%	53.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		4.0	5.0		4.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)		20.6			20.6		41.5	37.8		38.0	32.9	
Actuated g/C Ratio		0.28			0.28		0.57	0.52		0.52	0.45	
v/c Ratio		0.66			0.87		0.75	0.65		0.14	0.89	
Control Delay		24.8			52.9		32.4	18.3		7.7	33.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8			52.9		32.4	18.3		7.7	33.2	
LOS		C			D		C	B		A	C	
Approach Delay		24.8			52.9			21.5			31.5	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)		99			131		35	211		10	306	
Queue Length 95th (ft)		190			#273		#100	330		23	#525	
Internal Link Dist (ft)		9093			955			2052			405	
Turn Bay Length (ft)							100			100		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		540			378		232	959		372	981	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.59			0.76		0.75	0.61		0.14	0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 73			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.9		Intersection LOS: C	
Intersection Capacity Utilization 91.8%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 3: US Route 9W & Wemple Road

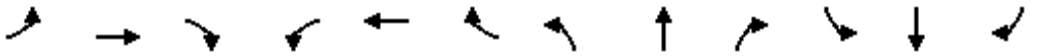


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	160	165	620	675	195
Future Volume (vph)	65	160	165	620	675	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	14	12	13	11
Storage Length (ft)	0	0	160			195
Storage Lanes	1	0	1			1
Taper Length (ft)	25		100			
Satd. Flow (prot)	1750	0	1925	1827	1906	1561
Flt Permitted	0.986		0.278			
Satd. Flow (perm)	1750	0	563	1827	1906	1561
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	129					205
Link Speed (mph)	35			55	55	
Link Distance (ft)	1244			1723	1020	
Travel Time (s)	24.2			21.4	12.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	174	653	711	205
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	24.0		24.0	24.0	24.0	24.0
Total Split (s)	27.0		63.0	63.0	63.0	63.0
Total Split (%)	30.0%		70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	Min
Act Effct Green (s)	9.0		26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.19		0.55	0.55	0.55	0.55
v/c Ratio	0.54		0.56	0.65	0.68	0.22
Control Delay	14.3		16.3	11.6	12.1	1.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	14.3		16.3	11.6	12.1	1.7
LOS	B		B	B	B	A
Approach Delay	14.3			12.6	9.8	
Approach LOS	B			B	A	
Queue Length 50th (ft)	22		25	102	114	0
Queue Length 95th (ft)	93		95	240	265	22
Internal Link Dist (ft)	1164			1643	940	
Turn Bay Length (ft)			160			195

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	873		548	1779	1856	1525
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.27		0.32	0.37	0.38	0.13

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 47.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: US Route 9W & Jericho Road



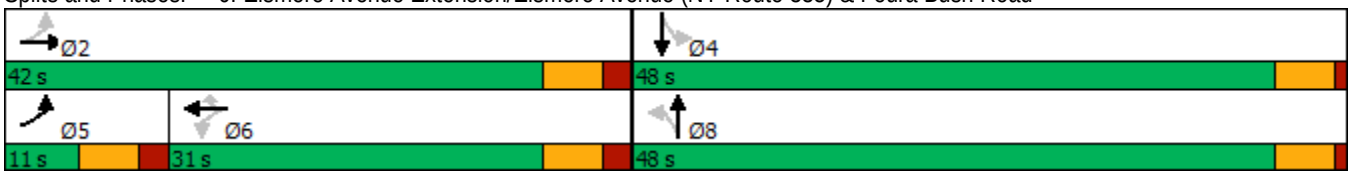
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Future Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	0		450	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1817	0	0	1837	1561	0	1732	0	0	1687	0
Flt Permitted	0.143				0.999			0.893			0.800	
Satd. Flow (perm)	263	1817	0	0	1835	1561	0	1584	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						379		1			40	
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1433			1507			356			1352	
Travel Time (s)		24.4			25.7			9.7			26.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	290	0	0	476	379	0	4	0	0	642	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	21.0		21.0	21.0	21.0	15.0	15.0		19.0	19.0	
Total Split (s)	11.0	42.0		31.0	31.0	31.0	48.0	48.0		48.0	48.0	
Total Split (%)	12.2%	46.7%		34.4%	34.4%	34.4%	53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	-2.0			-2.0	0.0		-1.0			-1.0	
Total Lost Time (s)	4.0	4.0			4.0	6.0		4.0			4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	
Act Effct Green (s)	33.6	33.6			25.5	23.4		40.3			40.3	
Actuated g/C Ratio	0.41	0.41			0.31	0.28		0.49			0.49	
v/c Ratio	0.46	0.39			0.84	0.53		0.01			0.91	
Control Delay	22.7	19.5			43.5	6.0		10.8			39.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	
Total Delay	22.7	19.5			43.5	6.0		10.8			39.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	B			D	A		B			D	
Approach Delay		20.4			26.9			10.8			39.4	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	38	110			254	0		1			307	
Queue Length 95th (ft)	72	175			#428	66		6			#545	
Internal Link Dist (ft)		1353			1427			276			1272	
Turn Bay Length (ft)	200					450						
Base Capacity (vph)	239	880			631	755		888			799	
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	0.46	0.33			0.75	0.50		0.00			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 82.3			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 6: Elsmere Avenue Extension/Elsmere Avenue (NY Route 335) & Feura Bush Road



Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	273	284	905	1063
Demand Flow Rate, veh/h	284	284	930	1094
Vehicles Circulating, veh/h	1200	1045	152	200
Vehicles Exiting, veh/h	94	37	1331	1129
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.9	10.4	11.8	26.2
Approach LOS	B	B	B	D

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	L	TR	L	TR	L	TR
Assumed Moves	L	TR	L	TR	L	TR	L	TR
RT Channelized								
Lane Util	0.408	0.592	0.391	0.609	0.090	0.910	0.029	0.971
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544
Entry Flow, veh/h	116	168	111	173	84	846	32	1062
Cap Entry Lane, veh/h	476	476	549	549	1237	1237	1184	1184
Entry HV Adj Factor	0.905	1.000	1.000	1.000	1.000	0.971	1.000	0.971
Flow Entry, veh/h	105	168	111	173	84	821	32	1031
Cap Entry, veh/h	431	476	549	549	1237	1201	1184	1149
V/C Ratio	0.243	0.353	0.202	0.315	0.068	0.684	0.027	0.897
Control Delay, s/veh	12.2	13.4	9.2	11.1	3.5	12.6	3.3	26.9
LOS	B	B	A	B	A	B	A	D
95th %tile Queue, veh	1	2	1	1	0	6	0	14

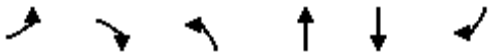
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Future Volume (vph)	35	90	180	95	140	40	165	520	35	50	675	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1575	0	0	1754	0	1711	1739	0	1752	1837	0
Flt Permitted		0.936			0.638		0.119			0.288		
Satd. Flow (perm)	0	1483	0	0	1138	0	214	1739	0	531	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		108			13			5			3	
Link Speed (mph)		40			30			40			40	
Link Distance (ft)		9173			1035			2132			485	
Travel Time (s)		156.4			23.5			36.3			8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Heavy Vehicles (%)	0%	0%	5%	0%	0%	6%	2%	5%	0%	3%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	0	0	301	0	181	607	0	55	766	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	20.0		4.0	20.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		8.0	25.0		8.0	25.0	
Total Split (s)	32.0	32.0		32.0	32.0		9.0	35.0		8.0	34.0	
Total Split (%)	42.7%	42.7%		42.7%	42.7%		12.0%	46.7%		10.7%	45.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		4.0	5.0		4.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)		19.4			19.4		37.6	33.7		34.3	29.2	
Actuated g/C Ratio		0.29			0.29		0.55	0.50		0.51	0.43	
v/c Ratio		0.67			0.90		0.79	0.70		0.16	0.97	
Control Delay		20.7			51.9		39.4	22.3		9.2	47.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		20.7			51.9		39.4	22.3		9.2	47.8	
LOS		C			D		D	C		A	D	
Approach Delay		20.7			51.9			26.2			45.2	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)		79			113		32	205		9	300	
Queue Length 95th (ft)		159			#233		#154	#445		28	#615	
Internal Link Dist (ft)		9093			955			2052			405	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		659			464		229	868		340	793	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.51			0.65		0.79	0.70		0.16	0.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 67.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 35.8		Intersection LOS: D	
Intersection Capacity Utilization 95.0%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 3: US Route 9W & Wemple Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	160	165	620	675	195
Future Volume (vph)	65	160	165	620	675	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	14	12	13	11
Storage Length (ft)	0	0	160			195
Storage Lanes	1	0	1			1
Taper Length (ft)	25		100			
Satd. Flow (prot)	1750	0	1925	1827	1906	1561
Flt Permitted	0.986		0.078			
Satd. Flow (perm)	1750	0	158	1827	1906	1561
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	123					213
Link Speed (mph)	35			55	55	
Link Distance (ft)	1244			1723	1020	
Travel Time (s)	24.2			21.4	12.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	146%	146%	146%	146%	146%	146%
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	346	0	254	953	1037	300
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases			2			6
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	24.0		8.0	24.0	24.0	24.0
Total Split (s)	24.0		13.0	66.0	53.0	53.0
Total Split (%)	26.7%		14.4%	73.3%	58.9%	58.9%
Yellow Time (s)	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0		0.5	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None		None	Min	Min	Min
Act Effct Green (s)	15.5		62.1	60.1	47.1	47.1
Actuated g/C Ratio	0.18		0.71	0.69	0.54	0.54
v/c Ratio	0.84		0.87	0.76	1.01	0.32
Control Delay	41.6		48.3	14.8	54.2	4.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	41.6		48.3	14.8	54.2	4.7
LOS	D		D	B	D	A
Approach Delay	41.6			21.9	43.1	
Approach LOS	D			C	D	
Queue Length 50th (ft)	121		86	333	~645	24
Queue Length 95th (ft)	#252		#226	514	#881	66
Internal Link Dist (ft)	1164			1643	940	

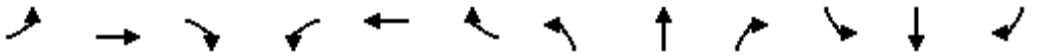
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Bay Length (ft)			160			195
Base Capacity (vph)	457		293	1253	1024	937
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.76		0.87	0.76	1.01	0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

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

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

Splits and Phases: 4: US Route 9W & Jericho Road

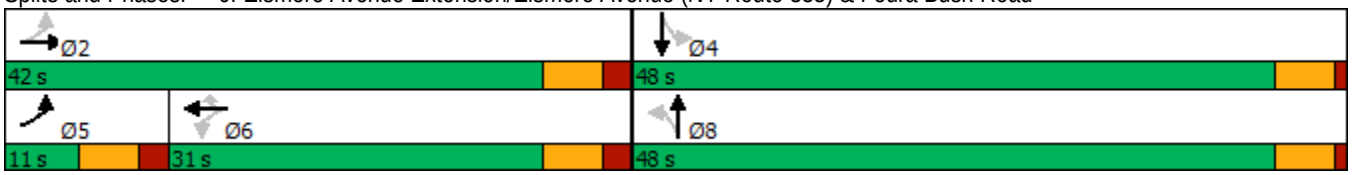


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Future Volume (vph)	105	275	1	2	450	360	2	1	1	400	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Storage Length (ft)	200		0	0		450	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1819	0	0	1837	1561	0	1732	0	0	1687	0
Flt Permitted	0.129				0.999			0.890			0.800	
Satd. Flow (perm)	237	1819	0	0	1835	1561	0	1579	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						409		1			40	
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1433			1545			356			1352	
Travel Time (s)		24.4			26.3			9.7			26.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	314	0	0	514	409	0	4	0	0	694	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	21.0		21.0	21.0	21.0	15.0	15.0		19.0	19.0	
Total Split (s)	11.0	42.0		31.0	31.0	31.0	48.0	48.0		48.0	48.0	
Total Split (%)	12.2%	46.7%		34.4%	34.4%	34.4%	53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	-2.0			-2.0	0.0		-1.0			-1.0	
Total Lost Time (s)	4.0	4.0			4.0	6.0		4.0			4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	
Act Effct Green (s)	38.0	38.0			27.0	25.0		44.0			44.0	
Actuated g/C Ratio	0.42	0.42			0.30	0.28		0.49			0.49	
v/c Ratio	0.55	0.41			0.94	0.56		0.01			0.99	
Control Delay	26.0	20.2			57.7	6.1		10.8			55.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	
Total Delay	26.0	20.2			57.7	6.1		10.8			55.0	
LOS	C	C			E	A		B			D	
Approach Delay		21.8			34.9			10.8			55.0	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	41	121			283	0		1			359	
Queue Length 95th (ft)	76	190			#478	68		6			#613	
Internal Link Dist (ft)		1353			1465			276			1272	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	200					450						
Base Capacity (vph)	217	768			550	729		772			701	
Starvation Cap Reductn	0	0			0	0		0			0	
Spillback Cap Reductn	0	0			0	0		0			0	
Storage Cap Reductn	0	0			0	0		0			0	
Reduced v/c Ratio	0.55	0.41			0.93	0.56		0.01			0.99	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Elsmere Avenue Extension/Elsmere Avenue (NY Route 335) & Feura Bush Road



MOVEMENT SUMMARY

Site: 1 [Glenmont Rdbt Test]

Test
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 9W											
3	L2	47	0.0	0.714	15.8	LOS B	8.0	206.3	0.89	0.96	34.6
8	T1	579	4.0	0.714	10.2	LOS B	8.0	206.3	0.89	0.96	34.4
18	R2	53	0.0	0.099	7.7	LOS A	0.5	11.4	0.60	0.70	34.7
Approach		679	3.4	0.714	10.4	LOS B	8.0	206.3	0.87	0.94	34.4
East: Glenmont Rd											
1	L2	153	0.0	0.733	25.3	LOS C	8.7	217.2	1.00	1.21	29.7
6	T1	284	0.0	0.733	19.5	LOS B	8.7	217.2	1.00	1.21	29.6
16	R2	95	0.0	0.275	13.1	LOS B	1.5	36.7	0.82	0.90	32.0
Approach		532	0.0	0.733	20.0	LOS C	8.7	217.2	0.97	1.16	30.0
North: 9W											
7	L2	74	0.0	0.831	19.5	LOS B	12.5	319.4	1.00	1.12	32.7
4	T1	647	3.0	0.831	13.8	LOS B	12.5	319.4	1.00	1.12	32.5
14	R2	432	1.0	0.577	9.0	LOS A	4.8	121.2	0.81	0.90	34.0
Approach		1153	2.1	0.831	12.4	LOS B	12.5	319.4	0.93	1.04	33.1
West: Feura Bush Rd											
5	L2	258	0.0	0.709	23.9	LOS C	7.9	198.6	1.00	1.17	29.6
2	T1	137	1.0	0.709	18.1	LOS B	7.9	198.6	1.00	1.17	29.5
12	R2	68	0.0	0.212	12.6	LOS B	1.1	28.5	0.83	0.91	32.3
Approach		463	0.3	0.709	20.5	LOS C	7.9	198.6	0.97	1.13	30.0
All Vehicles		2826	1.7	0.831	14.7	LOS B	12.5	319.4	0.93	1.05	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

RESERVE CAPACITY

MOVEMENT SUMMARY

Site: 1 [Glenmont Rdbt Test - Growth]

Test
Roundabout

INPUT VOLS
Growth 12%

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 9W											
3	L2	53	0.0	0.844	21.1	LOS C	13.1	336.5	1.00	1.18	32.0
8	T1	648	4.0	0.844	15.5	LOS B	13.1	336.5	1.00	1.18	31.8
18	R2	59	0.0	0.117	8.2	LOS A	0.6	13.9	0.63	0.74	34.5
Approach		760	3.4	0.844	15.3	LOS B	13.1	336.5	0.97	1.15	32.0
East: Glenmont Rd											
1	L2	171	0.0	0.985	62.3	LOS E	22.3	556.8	1.00	1.71	20.1
6	T1	318	0.0	0.985	56.5	LOS E	22.3	556.8	1.00	1.71	20.1
16	R2	106	0.0	0.370	16.8	LOS B	2.2	54.5	0.89	0.97	30.4
Approach		595	0.0	0.985	51.0	LOS D	22.3	556.8	0.98	1.58	21.3
North: 9W											
7	L2	82	0.0	0.985	37.9	LOS D	26.7	682.2	1.00	1.58	25.9
4	T1	725	3.0	0.985	32.3	LOS C	26.7	682.2	1.00	1.58	25.8
14	R2	483	1.0	0.688	11.7	LOS B	6.9	174.7	0.91	1.03	32.7
Approach		1291	2.1	0.985	24.9	LOS C	26.7	682.2	0.96	1.38	27.9
West: Feura Bush Rd											
5	L2	288	0.0	0.931	50.2	LOS D	17.0	426.6	1.00	1.52	22.2
2	T1	154	1.0	0.931	44.4	LOS D	17.0	426.6	1.00	1.52	22.1
12	R2	77	0.0	0.278	14.6	LOS B	1.6	38.8	0.88	0.93	31.4
Approach		519	0.3	0.931	43.2	LOS D	17.0	426.6	0.98	1.43	23.1
All Vehicles		3164	1.7	0.985	30.5	LOS C	26.7	682.2	0.97	1.37	26.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Bender Lane Rdbt Test]

Test
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 9W											
3	L2	84	0.0	0.114	11.0	LOS B	0.5	12.5	0.36	0.66	34.2
8	T1	821	3.0	0.704	5.3	LOS A	6.9	177.6	0.63	0.51	35.8
18	R2	1	0.0	0.704	5.3	LOS A	6.9	177.6	0.63	0.51	34.7
Approach		906	2.7	0.704	5.8	LOS A	6.9	177.6	0.60	0.52	35.6
East: Glenmont Rd											
1	L2	111	0.0	0.207	15.5	LOS B	1.1	26.6	0.76	0.92	32.3
6	T1	5	0.0	0.263	8.8	LOS A	1.5	37.5	0.78	0.87	35.2
16	R2	168	0.0	0.263	8.9	LOS A	1.5	37.5	0.78	0.87	34.1
Approach		284	0.0	0.263	11.5	LOS B	1.5	37.5	0.77	0.89	33.4
North: 9W											
7	L2	32	0.0	0.044	11.2	LOS B	0.2	4.2	0.36	0.66	34.2
4	T1	1026	3.0	0.901	10.5	LOS B	17.6	451.8	0.98	0.86	34.4
14	R2	5	0.0	0.901	10.4	LOS B	17.6	451.8	0.98	0.86	33.4
Approach		1063	2.9	0.901	10.5	LOS B	17.6	451.8	0.97	0.85	34.4
West: Feura Bush Rd											
5	L2	105	10.0	0.357	21.2	LOS C	2.1	58.0	0.91	0.99	29.8
2	T1	5	0.0	0.396	12.8	LOS B	2.9	71.7	0.97	1.01	33.1
12	R2	163	0.0	0.396	12.9	LOS B	2.9	71.7	0.97	1.01	32.1
Approach		274	3.8	0.396	16.1	LOS B	2.9	71.7	0.94	1.00	31.2
All Vehicles		2527	2.6	0.901	9.6	LOS A	17.6	451.8	0.81	0.75	34.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Bender Lane Rdbt Test - Growth]

9% Growth

Test
Roundabout

INPUT VOLS

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 9W											
3	L2	92	0.0	0.125	11.1	LOS B	0.6	13.9	0.38	0.67	34.2
8	T1	895	3.0	0.777	6.3	LOS A	9.7	247.4	0.75	0.62	35.3
18	R2	1	0.0	0.777	6.3	LOS A	9.7	247.4	0.75	0.62	34.3
Approach		987	2.7	0.777	6.8	LOS A	9.7	247.4	0.71	0.63	35.2
East: Glenmont Rd											
1	L2	120	0.0	0.255	16.5	LOS B	1.4	34.4	0.81	0.94	31.9
6	T1	5	0.0	0.322	9.7	LOS A	1.9	48.7	0.84	0.92	34.7
16	R2	183	0.0	0.322	9.8	LOS A	1.9	48.7	0.84	0.92	33.6
Approach		308	0.0	0.322	12.4	LOS B	1.9	48.7	0.83	0.92	32.9
North: 9W											
7	L2	35	0.0	0.049	11.3	LOS B	0.2	4.8	0.38	0.67	34.2
4	T1	1119	3.0	0.995	22.3	LOS C	34.3	877.4	1.00	1.16	29.2
14	R2	5	0.0	0.995	22.2	LOS C	34.3	877.4	1.00	1.16	28.5
Approach		1159	2.9	0.995	22.0	LOS C	34.3	877.4	0.98	1.14	29.3
West: Feura Bush Rd											
5	L2	115	10.0	0.462	27.3	LOS C	3.0	81.1	0.95	1.05	27.6
2	T1	5	0.0	0.505	18.5	LOS B	4.1	101.9	1.00	1.08	30.6
12	R2	178	0.0	0.505	18.6	LOS B	4.1	101.9	1.00	1.08	29.7
Approach		298	3.9	0.505	21.9	LOS C	4.1	101.9	0.98	1.07	28.9
All Vehicles		2753	2.6	0.995	15.5	LOS B	34.3	877.4	0.87	0.93	31.6

INPUT VOLS: 87, 850, 1, 114, 5, 174, 33, 1063, 5, 109, 5, 169

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.